

The performance of digital campaign for smart tourism and on-line purchasing - the case of China

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ABSTRACT

Given the rapid development of digitization, social media has become a key platform for digital campaigns to promote business and products, with an aim of maximizing profits. Yet, empirical evidence on the performance of a digital campaign for smart tourism and on-line purchasing remains under explored. Using an innovative design of an ecosystem for both smart tourism and on-line purchasing promotion becomes an important tool especially during mobility restriction due to COVID-19. The research was carried out studying the construction and operation of an ecosystem for smart tourism and on-line purchasing of one case of China. Key findings identify components of the ecosystem and its working mechanisms promoting smart tourism and on-line purchasing, and reveal the performance of the digital campaign. Although a larger data amount should be grasped by designing a more comprehensive ecosystem, results of the research show the effectiveness of social media as a marketing platform for smart tourism essence as “products”, and how an ecosystem is constructed and applied at a smart tourism destination, together with its logic combining and promoting smart tourism together with on-line purchasing.

Keywords: digital campaign, smart tourism, smart tourism destination, on-line purchasing, ecosystem

1. INTRODUCTION

Tourism, as one of the world's most important economic sectors, had been seriously impacted by COVID-19. According to World Travel & Tourism Council (WTTC) [1], the travel & tourism sector suffered a large loss. Almost US\$4.5 trillion to reach US\$4.7 trillion was lost in 2020, with the contribution to GDP dropping by a staggering 49.1% compared to 2019, relative to a 3.7% GDP decline of the global economy in 2020. The ongoing mobility restriction caused a sharp decrease of the contribution from travel & tourism sector. In 2019, the travel & tourism sector contributed 10.4% to the global GDP while the share decreased to 5.5% in 2020. Unprecedentedly, domestic visitor spending decreased by

45% while international visitor spending declined by 69.4%. Meanwhile, in 2020, 18.5% jobs in the sector were lost, representing 62 million jobs. Compared to 334 million jobs in 2019, there were only 272 million left across the sector globally.

UNWTO had predicted that until 2020, China will become the largest tourist country and the fourth largest for overseas travel. However, China did not escape away from the loss of travel & tourism sector caused by COVID-19. China government website of travel & tourism sector data [2] showed that in 2020, the domestic tourists decreased to 2.879 billion, representing a share of 52.1%. The number of urban visitors was 2.065 billion, decreasing 53.8%, while that of rural visitors was 814 million, decreasing 47.0%. The domestic tourism revenue was 2.23 trillion Chinese yuan, decreasing 3.50 trillion yuan, a share of 61.1% from the same period last year. Among them, urban residents spent 1.80 trillion Chinese yuan on travel & tourism, decreasing 62.2%, while rural residents spent 43 trillion Chinese yuan on travel & tourism, decreasing 55.7%. Travel expense per capita was 774.14 Chinese yuan, dropping 18.8% from the same period last year. Urban residents spent 870.25 Chinese yuan per trip, dropping 18.1%, while rural residents spent 530.47 Chinese yuan, decreasing 16.4%. The inbound and outbound travel & tourism sector of China were even more seriously impacted due to the mobility restriction. According to China Tourism Academy, the outbound travel & tourism of China almost froze in 2020 while the inbound travel & tourism decreased 80.1%. The full recovery of the sector is urgent needed.

However, facing the reality that human might have to deal with the variation of the virus caused by COVID-19 for a long time, the crisis should be taken into consideration as an opportunity to rethink travel & tourism sector. Both researchers and practitioners should rethink its contribution to the people and planet, and take the opportunity to build back better towards a more sustainable and smart tourism sector. Comparing with the urgency and importance of its full recovery, it is more imperative to build an ecosystem promoting new business models and smart tourism in an advanced way. Therefore,

the research focuses on an example of China, building an ecosystem which includes travel & tourism sector in a smart way coexistence with on-line purchasing. By applying digital marketing, the ecosystem presents customers various products including domestic smart tourism destinations.

Accordingly, the research questions are:

- 1) How the ecosystem is built?
- 2) What is the performance of the ecosystem promoting smart tourism as a product together with other products?
- 3) What is the performance of digital campaign promoting the smart tourism destination and on-line purchasing?

2. SMART TOURISM AND THE ECOSYSTEM

Smart tourism has been defined as “tourism supported by integrated efforts at a destination to collect, aggregate and analyzed data derived from physical infrastructure, social connections, government/organizational sources and human actors in combination with the use of advanced technologies to transform that data into on-site experiences and business value propositions with a clear focus on efficiency, sustainability and experience enrichment” [3]. However, researchers also doubt smart tourism as a slippery concept which covers too wide range meanings in academic researches, corporate settings, and government sectors [4; 5; 6]. The general concept of “smart tourism” derives from “smart city” initiatives with specific applications focusing on the tourism sector or destinations [7; 8]. Meanwhile smart tourism is a combination of technologies (“smartness”) and tourism [4]. Technologies, such as, Information and Communication Technologies (ICT) [4], Web of Science [4], Artificial Intelligence (AI) [5; 21; 22; 23], Big Data [3; 5; 9; 10; 16], Blockchain [3; 5; 10; 11; 12; 13; 14; 15], Internet of Things (IoT) [16; 17; 18; 19; 20] are normally applied in creating smart tourism. In terms of destinations, smart tourism destinations imply the smart tourism development at destinations [24; 25; 26; 27], which reflects an interconnection of tourism destinations with multiple community stakeholders through dynamic platforms, in a knowledge intensive way [28]. Therefore, with a further extension of “smart city” concept, “smart tourism” shows an ecosystem which is composed of various tourism stakeholders, destination management & marketing strategies and plans, promoted by technologies, and the interconnection among them above reflected at smart tourism destinations.

3. DIGITAL CAMPAIGN FOR SMART TOURISM DESTINATION: THE CASE OF CHINA

The research was carried out based on a digital campaign for smart tourism and on-line purchasing for one of China’s cultural and natural tourism destination, Huaxi District. As in Chinese language, “Hua” means “flowers”,

while “Xi” means “streams”, therefore, the district represents an image of romantic “streams” with “flowers”, impressive natural resources. Huaxi District locates in Guiyang City, Guizhou Province, the southwest of China. The district slogan is “Romantic Huaxi” and it is famous for its rich natural and cultural resources.

Huaxi District covers an area of 964.32 square kilometers, with longitude and latitude at 106°E 27'-106° 52' ; 26°N 11'-26° 34'. The annual average temperature is 15.6 °C, including 6.7 °C in winter, 17.5 °C in spring, 23.3 °C in summer and 15.5 °C in autumn. The annual extreme maximum temperature is 33.4 °C in July, while the extreme minimum temperature is - 3.8 °C in December. The annual precipitation is 1450.8 mm. The annual sunshine hours are 1287.4 hours, and the annual sunshine percentage is 29%, while the number of days ≥ 60% is 86 days, and the number of days ≤ 20% is 184 days. The annual frost free period is 352 days. Huaxi District is a typical karst area, which is the watershed between the Yangtze River system and the Pearl River system. Huaxi District is an ecological area and an important water source protection area, with 55 rivers and 390 km in total. Huaxi has two medium-sized reservoirs with a total capacity of 71.4 million cubic meters. It is an important drinking water source in Guiyang city. The existing forest area of the region is 464778 mu, and the forest coverage rate reaches 32.36%.

The cultural resources of Huaxi District is very distinctive from other districts of Chia. Huaxi is a multi-ethnic area. The total population of the region is 324100, and the minority population is 115924, accounting for 34.38%. There are 38 ethnic groups such as Miao, Han and Buyi. The festival activities of ethnic minorities are rich in content, concentrated in venues, diverse in forms, simple in ethnic customs and rich in ethnic customs. Therefore, Huaxi is an important tourism destination.

As the local government is putting efforts in creating the region as a smart tourism destination as a whole, there are yearly digital campaigns for the destination. The research picked up one of the digital campaigns, which intended to create an ecosystem for Huaxi smart tourism destination combining on-line purchasing as a case. The case was recorded by 8 ministries of China as a method promoting the recovery of purchasing. The ecosystem showed in the case includes local government, the district as a smart tourism destination as a whole, main products and commerce of the district, applying social media, and combining smart tourism destination management and marketing strategies. One point needs to be stressed that Huaxi District has the richest resources of auto trade and services of the Guizhou Province, the promoted products in the ecosystem contains vehicles, vehicle brands and a wide range of vehicle services. Besides, vehicle is just one part of the promoted products and commerce.

Digital campaign for smart tourism and online purchasing

Digital campaign refers to digital marketing activities, involving digital marketing strategies across all digital channels where customers engage with brands, and publicity which helps brands reaching to customers. Therefore the effectiveness of digital campaigns is reflected by “customer engagement” and customers’ digital purchasing shows the effectiveness [29], with the ultimate aim of maximizing profits. With the development of technologies, data generated from digital marketing activities creates opportunities for management and marketing. Digital marketing technologies include search engine marketing, web analytics and social media, customer analytics, and mobile applications [29]. Digital marketing technologies creating value for customers and how this impacts their purchase decisions become key issues of the campaigns [30]. In the research, Huaxi District created a social media platform named “Flower & Purchasing” as marketing tool to augment consumer reach with the hopes to foster business outcomes for business and products in Huaxi District and the district as a smart tourism destination for visitors.

The digital campaign of “Flower & Purchasing” makes use of one of the most important national holiday “May Day” holidays of China, and the campaign lasts only a couple of days, starting from the 1st of May, ending at 5th of May, 2021. The campaign employed three main social media platforms of China: Sina (Sina Guizhou), Tiktok, and Wechat. The campaign was launched across these three social media platforms at the same time. Figure 1 shows the digital campaign page on social media platforms.



Figure 1 Digital campaign of “Flower & Purchasing”

The digital campaign created an ecosystem combining different stakeholders. It involves the local government, the commerce and investment promotion bureau of Huaxi District, Huaxi District as a smart tourism destination, Tian He Tan (one of the most important natural tourist attraction

in the district), foods, Xi Shan Li (one of the hotels in the district, a brand new hotel), e-commerce, mineral water, supermarkets, banks (financial sector), real estate, vehicle and its services. The elements were included as the ecosystem, shown in Figure 2 (on the next page).

The logic of the ecosystem shows the upper design of involving stakeholders of the smart tourism destination and on-line purchasing with the lower basic supports from financial sectors and local government. Tourism related sectors, such as foods, the hotel, the attraction are included while online purchasing involves different types of commerce and products. From products perspective, all these items from the third level could be regarded as “products”, tourist essences as products, services as products, commodities as products, and other products. Social media plays a technological role creating the ecosystem, presenting the ecosystem together with “products”, and engaging customers and tourists.

The platform employs three main social media of China, Sina, Wechat and Tiktok, and applies campaign publicity articles, short videos, digital posts, live stream, and weibo publicity to promote the smart tourism destination and on-line purchasing. Items reflected the performance of the platforms are basically amount of readings, participants, clicks and likes. The table below shows the performance of the platforms during the 5-day holiday of “May Day” of China in 2021. The amount of each item shows the participant of internet users. However, the data below only represents the digital engagement of the campaign. Performance metrics based on Data Sciences as used in digital marketing techniques and strategies reflect the effectiveness of the digital campaign and of the platforms [31].

Table 1 (on the next page) shows the digital performance of the campaign, with some key performance items (KPI). However, the purchasing engagement was not shown by the numbers of the social media platforms’ KPI. Therefore, a further investigation of on-line purchasing was carried out. Fundamentally, social media KPIs or social media indicators are the most important indicators of a form, which can help understand the performance of advertising and strategy. Social media KPIs can be the number of interactions and sharing on social networks, and can also track the hits of the website through social media, or the conversion rate of users after visiting the website through this channel. However, KPIs do not always represent the effect of a digital campaign. Firms also need to know what are the objectives of the activities and the effects achieved in practice? Or how do participants experience the brand during the campaign?

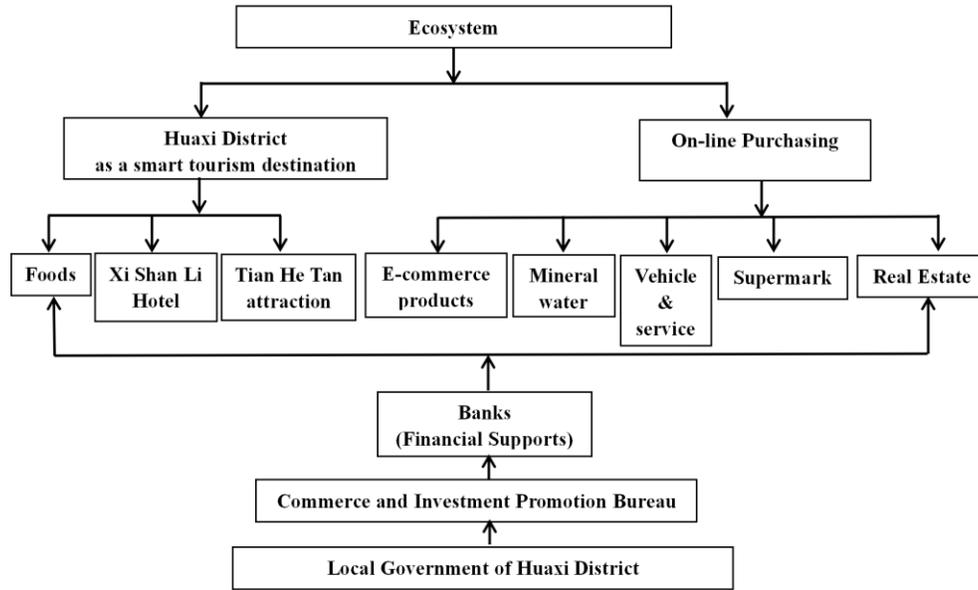


Figure 2 The ecosystem of smart tourism and on-line purchasing for the digital campaign (developed by authors)

Table 1

The performance of the digital campaign

Platforms	Items	Amount
Sina (Guizhou)	Amount of reading	2.67 million
	Live stream participants	0.36 million
Wechat	Amount of reading	0.48 million
	Clicks	1029
	“Likes”	15
Tiktok	Amount of reading	0.56 million
	Clicks	5785
Campaign	Publicity articles	28

Source: created by authors using the digital campaign data from company Guizhou Chi Yu Ltd.

Table 2 shows the on-line booking and on-line purchasing systems and the on-line consumption during the holiday. As the data only shows successful on-line purchasing, just the information of “Xi Shan Li (hotel)”, “Tian He Tan (Attraction)”, “E-commerce of imported products”, “Mineral water” and “Supermarket” are caught by the data system of the operation. It shows the amount of items sold because of the digital campaign, and amount of consumption made by the campaign. However the platform has no further possibilities to create data system for commodities, the sales and consumption information created by the digital campaign could not be grasped. “Real estate” and “Vehicle & Services” have their own comprehension isolated data system, which is not available in the campaign data set.

Table 2

The performance of the on-line purchasing

Stakeholders	On-line Sales	On-line Consumption
Xi Shan Li (Hotel)	396 nights	0.432 million Chinese Yuan
Tian He Tan (Attraction)	0.185 million tickets	0.37 million Chinese Yuan
E-commerce products	4897 items	0.735 million Chinese Yuan
Mineral Water	0.1 million bottles	0.15 million Chinese Yuan
Supermarket	1987 items	1.96 million Chinese Yuan

Source: created by authors using the digital campaign data from company Guizhou Chi Yu Ltd.

Moreover, as the link “foods” connected food brands, the sales and consumption because of the campaign are not shown either. However, in terms of advertisement and exposure, brands got attentions from the social media. Furthermore, financial sector and the local government together with its organization work as a supportive mechanism in the ecosystem. There is no data available for the supportive mechanism, but the invisible influence of the supportive mechanism is the solid base of the whole ecosystem functioning.

4. CONCLUSIONS

The research focuses on the construction of the ecosystem combining the smart tourism destination and on-line purchasing, together with financial sector, local government and its commerce and investment promotion bureau as the supportive mechanism. Therefore, in other

words, the ecosystem for smart tourism actually involves different stakeholders, technologies, and the supportive mechanism working at the destination. The ecosystem of smart tourism promotes not only tourism related purchasing, but also other purchasing behavior, by applying technologies as the glue. The main purpose of building such an ecosystem for smart tourism is to promote consumption. Therefore, all the items which could be purchased in the ecosystem could be regarded as “products”. Besides, even brands could not be purchased in the ecosystem, tourism essences, commodities, are regarded as normal product, which is the basic logic behind the function of the ecosystem, while promoting customer engagement is the starting point of a digital campaign.

The ecosystem promoting smart tourism as a product together with other products is an innovative method which regards smart tourism essences as “products”. The construct of the ecosystem implies that smart tourism could be regarded as “products”. From the third level of Figure 2, all these purchasable items in the level are “products”. The on-line sales and consumption data show the performance of the ecosystem promoting smart tourism as a “product”. Table 2 presents data about how smart tourism essences were purchased during the digital campaign across the on-line booking and on-line purchasing systems.

Meanwhile, Table 1 shows the performance of the digital campaign promoting the smart tourism destination and on-line purchasing. The key performance items show how the digital campaign attract the attentions from customers and how the publicity is working with the public. The digital campaign promotes not only the smart tourism destination, but also products on the platform. The amount of the items shows the involvement of the public. The total number of the items reflects the effectiveness of the digital campaign. However, due to an inadequate design of the ecosystem, the platform did not grasp bigger amount of data.

The research takes one the digital campaigns of Huaxi District of China as the research target. The targeted digital campaign was carried out during a 5-day “May Day” holiday from 1st of May to 5th of May, during which millions of “products” were sold, worth 3.647 million Chinese Yuan. However, the data does not fully reflect all consumption made by the digital campaign. The data shows only the direct successful on-line purchasing closely related to the digital campaign. There are possible participants in the digital campaign, visiting Huaxi District, having fun, spending money without visiting Tian He Tan attraction or staying in Xi Shan Li hotel. There are also potential participants getting loan buying vehicle or apartment because of the campaign advertising of the commodity brands. Therefore, the effect of the digital campaign could be reflected by both the visible data of purchasing, sales and consumption, and invisible economic activities because of the digital campaign.

However, in the terms of identifying a more accurate economic contribution of digital campaigns, the economic clues of the invisible parts should be further identified, and the platform should be upgraded with a more comprehensive design and a further cooperation and dialogue with the commodity and financial parts. On the other hand, the platform did not fully construct a big data system reflecting all necessary KPI of the platform performance appraisal. Besides, from the existence data of the items, the on-line engagement of the public was not fully activated or engaged, because there are only a small number of “clicks” or “likes” among such millions of participants. Moreover, further qualitative researches could be carried out if there will be more data.

The crisis of COVID-19 pushes digital campaigns moving forward to created more innovative models to promote a sustainable development of travel & tourism sector. In the era of big data, technologies are applied to work for smart tourism. Designing innovative business models, constructing comprehensive big data base, and making full use data become imperative for smart tourism management and marketing. Firms and operators of digital campaign may think about questions after the campaigns, for example “What are the social resources accumulated through activities? Can I use it next time? What resources are needed in the future?”.

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6. REFERENCES

- [1] World Travel & Travel Council (WTTC), economic impact <https://wttc.org/Research/Economic-Impact>: 12th, June, 2021.
- [2] China government data about travel & tourism http://www.gov.cn/xinwen/2021-02/19/content_5587665.htm: 12th, June, 2021.
- [3] U. Gretzel, M. Sigala, Z. Xiang, & C. Koo, “Smart tourism: Foundations and developments”, **Electronic Markets**, Vol. 25(3), 2015, pp. 179–188.
- [4] J.H. Park, L. Cheolhan, C. Yoo, & Y. Nam, “An analysis of the utilization of Facebook by local Korean

- governments for tourism development and the network of smart tourism ecosystem”, **International Journal of Information Management**, Vol. 36, 2016, pp. 1320-1327.
- [5] J.K. Yadav, D.C. Verma, S. Jangirala, S.K. Srivastava, “An IAD framework for Blockchain enabled smart tourism ecosystem”, **Journal of High Technology Management Research**, Vol. 32, 2021, 100404.
- [6] P. Tavitiyaman, H. Qu, W.L. Tsang, C.R. Lam, “The influence of smart tourism applications on perceived destination image and behavioral intention: The moderating role of information search behavior”, **Journal of Hospitality and Tourism Management**, Vol. 46, 2021, pp. 476-487.
- [7] K. Boes, D. Buhalis, & A. Inversini, “Conceptualizing smart tourism destination dimensions”, **Information and communication technologies in tourism**, Springer, 2015, pp.391-403.
- [8] Z. Xiang, J. Stienmetz, D.R. Fesenmaier, “Smart Tourism Design: Launching the annals of tourism research curated collection on designing tourism places”, **Annals of Tourism Research**, Vol. 86, 2021, 103154.
- [9] D. Beverungen, O. Muller, M. Matzner, J. Mendling, & J. Vom Brocke, “Conceptualizing smart services systems”, **Electronic Markets**, Vol. 29(1), 2019, pp. 7-18.
- [10] K. Nam, C.S., Dutt, P. Chathoth, & M.S. Khan, “Blockchain technology for smart city and smart tourism: Latest trends and challenges”, **Asia Pacific Journal of Tourism**, 2019, pp. 1-15.
- [11] I. Önder, H. Treildmaier, “Blockchain and tourism: Three research propositions”, **Annals of Tourism Research**, 2018, Vol. 72(C), pp. 180-182.
- [12] W. Raymaekers, “Cryptocurrency bitcoin: Disruption, challenges and opportunities”, **Journal of Payments Strategy & Systems**, 2015, Vol. 9(1), pp. 30-46.
- [13] P. De Filippi, “What Blockchain means for the sharing economy”, **Harvard Business Review**, 2017, Vol. 15.
- [14] A. O. Kwok, & S.G. Koh, “Is Blockchain technology a watershed for tourism development? **Current Issues in Tourism**, 2019, Vol. 22(20), pp. 2447-2452.
- [15] S. Varelas, P. Georgitseas, F. Nechita, & A. Sahinidis, “Strategic innovations in tourism enterprises through Blockchain technology”, **Strategic innovation marketing and tourism**, Springer, 2019, pp. 885-891.
- [16] L. Luo & J. Zhou, “BlockTour: A blockchain-based smart tourism platform”, **Computer Communications**, 2021, Vol. 175, pp. 186-192.
- [17] R. Belka, R.S. Deniziak, G. Łukawski, P. Pieta, “BLE-based indoor tracking system with overlapping-resistant IoT solution for tourism applications”, **Sensors**, 2021, Vol. 21 (2), pp. 329.
- [18] C. Bin, T. Gu, Y. Sun, L. Chang, L. Sun, “A travel route recommendation system based on smart phones and IoT environment”, **Wirel. Commun. Mobile Comput**, 2019.
- [19] S.J. Miah, H.Q. Vu, J. Gammack, M. McGrath, “A big data analytics method for tourist behaviour analysis”, **Inf. Manage**, 2017, Vol. 54 (6), pp. 771–785.
- [20] P. Del Vecchio, G. Mele, V. Ndou, G. Secundo, “Creating value from social big data: Implications for smart tourism destinations”, **Inf. Process. Manage**. 2018, Vol. 54 (5), pp. 847–860.
- [21] M. KárnÖy, T.V. Guy, **Automated Preferences Elicitation**.
- [22] L.M. Garcia, S. Aciar, R. Mendoza, J.J. Puello, “Smart tourism platform based on microservice architecture and recommender services”, **Lecture Notes in Computer Science**, 2018, Vol. 10995, pp. 167–180.
- [23] J.L. Jorro-Aragoneses, M.B. Diaz Agudo, J.A. Recio Garcia, “Madrid live:A context-aware recomendar system of leisure plans”, **Proceedings -International Conference on Tools with Artificial Intelligence, ICTAI**, 2018, pp. 796–801.
- [24] D. Wang, X. (Robert), Li, Y.P. Li, “China ‘smart tourism destination’ initiative: A taste of the service-dominant logic’, **Journal of Destination Marketing & Management**, 2013, Vol. 2, pp. 59-61.
- [25] P. Del Vecchio, G. Mele, V. Ndou, G. Secundo, “Creating value from social big data: Implications for smart tourism destinations”, **Inf. Process. Manage**, 2018, Vol. 54 (5), pp. 847–860.
- [26] V. Albino, U. Berardi, & M. R. Dangelico, “Smart cities: Definitions, dimensions, performance and initiatives”, **Journal of Urban Technology**, 2015, Vol. 22(1), pp. 3–21.
- [27] K. Boes, D. Buhalis, & A. Inversini, “Conceptualising smart tourism destination dimensions”, **Information and communication technologies in tourism**, 2015. Springer.
- [28] D. Buhalis, A. Amaranggana, I. Tussyadiah, & A. Inversini, “Smart tourism destinations enhancing tourism experience through personalisation of services”, ENTER, 2015.
- [29] D. Jayaram, A.K. Manrai, & L.A. Manrai, “Effective use of marketing technology in Eastern Europe: Web analytics, social media, customer analytics, digital campaigns, and mobile application”, **Journal of Economics, Finance and Administrative Science**, 2015, Vol. 20, pp. 118-132.
- [30] L. Dolega, F. Rowe, E. Branagan, “Going digital? The impact of social media marketing on retail website traffic, orders and sales”, **Journal of Retailing and Consumer Services**, 2021, Vol. 60, 102501.
- [31] J.R. Saura, “Using Data Sciences in Digital Marketing: Framework, methods, and performance metrics”, **Journal of Innovation & Knowledge**, 2021, Vol. 6, pp. 92-102.