Research Article

Potential and prospects of tourism in KP through effective use of e-commerce and tourism operators compatible with the best international practices

Nohman Khan[1]*, Sadaf Latif[2], Shazia Hassan[3], Huma Sikandar[4]

[1]Business School, Universiti Kuala Lumpur (UNiKL), Kuala Lumpur, 50300, Malaysia
[2]IVY Business School, IVY College of Management Sciences, Lahore, Pakistan
[3]Department of Leadership & Management Studies, National Defence University, Pakistan
[4]Azman Hashim International Business School (AHIBS), Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia

*Corresponding Author email: nohman.khan@s.unikl.my

ABSTRACT

Tourism is one of Pakistan's top outstanding development industries because of its attractiveness and novelty. The world is beginning to enter the fourth industrial revolution, which has strongly impacted every nation, business, and person across the globe. In addition, it is generally accepted that the advancement of information and communication commerce is one of the innovations that is transforming the demand for businesses. Electronic commerce (e-commerce) is regarded as efficient marketing, selling, and combining online services that may be essential in client awareness, acquisition, and retention. People may also market services through the e-commerce site, which is cheaper and more efficient than the traditional procedure. However, the Pakistan tourism sector is still in the early stages of embracing e-commerce in the tourism sector. The current study aims to determine the potential and prospects of tourism in KP via the appropriate use of e-commerce and tourism operators by the best international standards. In addition, we will examine state approaches and collaboration to implement e-commerce techniques in the tourist industry. We used the PRISMA statement 2020 for the inclusion and exclusion of records for the current study to achieve the objective. Fifty-six papers from the two major databases, Web of Science and Scopus, were included. The VOS viewer is also used to analyse relevant phrase occurrences and classify noteworthy streams. The three primary classifications of the literature identified in the current study for discussing the tourism industry, e-commerce, and travel operators. The present study's findings indicate that adopting sophisticated technologies and digital mediums is critical for developing the tourism industry. The data also demonstrate that developed countries focus on sustainable tourism development to safeguard natural resources while gaining financial advantages for community development. Finally, the practical implications for the tourism industry in Khyber Pakhtunkhwa (KPK) are suggested.

Keywords: *Tourism, E-Commerce, Tourism Operators, Digital Sources, ICTs, PRISMA*

1. INTRODUCTION

Tourism is a sociological, cultural, and monetary aspect that involves people travelling to nations or locations other than their own for personal or business/professional reasons 1 (Arshad et al., 2017). It is a multifaceted commercial activity with a high capacity for job creation due to its labour-intensive nature, revenue generation through tax collection, primarily from the hotel sector, earnings of massive foreign exchange and relation of cross-cultural apprehension and cooperation, business opportunities for entrepreneurs, and

economic development of the country (ISMAIL et al., 2021). In addition, travel has been a feature of all human societies since the dawn. However, since the mid-twentieth century, mass tourism has emerged as a significant global industry (N. Khan, Van et al., 2020). Additionally, from the perspective of policymakers, global tourism investment is a substantial component for the nations of origin of tourists as well as exporters of destination countries, which is critical to macroeconomic management in many countries, particularly emerging ones (Rehman et al., 2020). Also, the engagement of digital platforms and social media sources has substantially increased the growth of the tourism industry (Izogo et al., 2021). According to (Saseanu et al., 2020), having technology as a critical resource to innovate e-commerce is becoming more popular in the digital era. Trends in the field of information technology (IT) are forcing companies to become agile and implement new innovative business models and processes. According to (Ursache, 2015), tourism is one of the most significant economic industries on the planet. Tourism is an essential pillar in conserving natural resources and cultural heritage. As a result, strengthening this sector is critical. Tourism is improved through digital developments and innovations via inclusivity, empowerment of local populations, and effective resource management (Fariza et al., 2018). Digital transformation is altering labour patterns, customer relationships, and the delivery of on- and offline services (Mustapha et al., 2022).

Furthermore, digitisation is critical to tourism growth in terms of e-commerce potential for local businesses, travellers, and tour operators worldwide (Costa & Castro, 2021). The developed world is focused on the growth of electronic enterprises, and the digital revolution touches the tourist sector (Santos et al., 2022). In addition, Tourism is improved through digital developments and innovations via inclusivity, empowerment of local populations, and effective resource management. Digital transformation is altering labour patterns, customer relationships, and the delivery of on- and offline services (Meo et al., n.d.). Secondly, almost all foreign travel firms rely on digital booking because it gives appropriate information, properly organises data, and delivers rapid and prompt services (Jayathilaka et al., 2020). Booking platforms, often known as online travel agents (OTA), give information about hotels and vehicle rentals, restaurant services, and many other services. They offer real-time pricing comparisons of several packages to help customers find the best solution for their needs and budget (M. M. Khan et al., 2022).

However, some developing nations, such as Pakistan, are still striving to integrate digital sources into the tourist business with modern e-commerce strategies (N. Khan, Van et al., 2020). Unfortunately, Pakistan is still trying to attract international tourists due to several impediments. Pakistan is ranked 130th out of 141 countries in terms of having an enabling environment, 138th in terms of safety and security, 102nd in terms of health and hygiene, 138th in terms of human resources and labour market, 123rd in terms of travel and tourism policy and enabling conditions, 120th in terms of the government's priority of travel and tourism, 107th in terms of tourism infrastructure, and 141st in terms of environmental sustainability (Akhtar et al., 2021). However, e-commerce services in other sectors are not new; consumer items have been the primary emphasis of the e-commerce business. Online clients in Pakistan look for and buy consumer electronics, apply for jobs, get online education and counselling, sell/buy and get information about autos, computers, financial

services, and many other items and services. Consumer decisions and their records generate a wealth of data utilised in targeted advertising (N. Khan, Qureshi et al., 2020).

In the issues mentioned above and challenges, the current study aims to identify KP's tourist potential and prospects via efficient usage of e-commerce and tourism operators by the best international standards. In addition, the present study will investigate the collaboration opportunities for e-commerce-related activities in the KPK tourism industry. There is a significant gap between the e-commerce practices used in the KPK tourism sector and the worldwide industry. The current study will investigate and suggest the possible outcomes of the research for the Khyber Pakhtunkhwa tourism industry.

2. RESEARCH METHODOLOGY

This research has used the PRISMA statement 2020 to include and exclude articles from the current investigation. After more than a decade after the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement was prepared and published in 2009, the PRISMA 2020 statement gives revised recommendations that reflect developments in methodologies in this field (Rethlefsen et al., 2021). The PRISMA Statement includes reporting criteria for the literature search component and is the most often utilised set of reporting recommendations for systematic reviews. At the end of October 2022, a thorough online search was conducted on Scopus and the Web of Science. These databases have been chosen because of the many updated articles, book chapters, and review papers. The period under consideration was from 2018 to 2022, considering the most recent reports with studies on tourism and e-commerce (Sikandar & Abdul Kohar, 2021). The databases thoroughly analysed the records to select suitable relevant for the study. The search was made using several queries containing the terms "Tourism" AND "E-commerce", AND "ICTs" AND "Tourism operators". The criteria for this study's selection were the following: (a) studies about tourism in Pakistan; (b) there were also restrictions on language (only English).

Moreover, the papers need (c) to have to full-text available and (d) to be published after 2018. More specifically, the new research and trends in e-selection and tourism selection were based on the first criteria of keywords resulting in 757 articles. The second criterion discipline resulted in 414 articles published as criteria 233. The fourth stage in PRISMA statement criteria is regarding the type of publication, and all were excluded except the review articles (4), book chapters (5) and the research articles (82), resulting in a total of 104 pieces (Fig. 1). Finally, the fifth criterion was based on scientific papers resulting only from Pakistan in 51 articles to be analysed. Fig. 1 illustrates the PRISMA statement 2020 selection and rejection criteria.
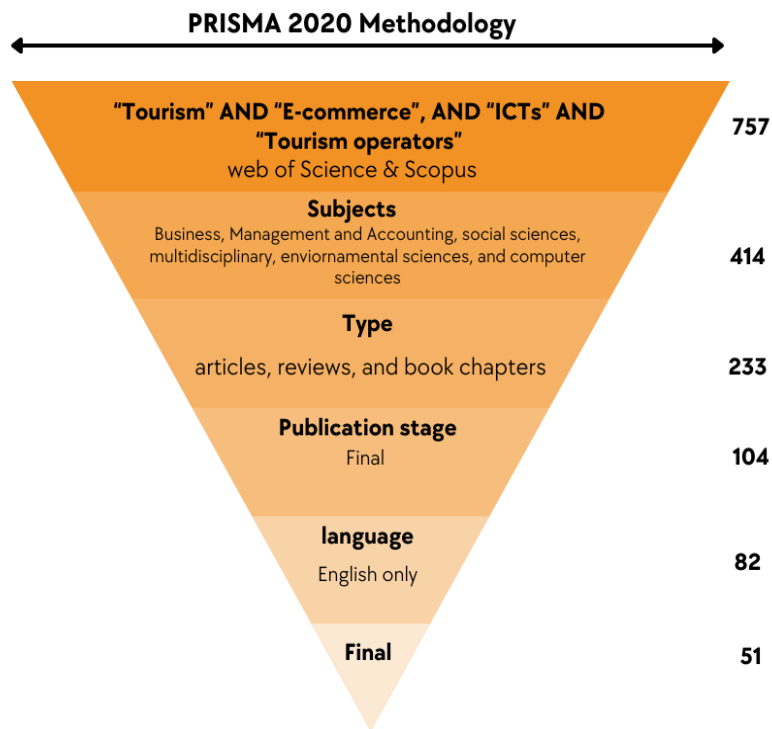
PRISMA 2020 Methodology

"Tourism" AND "E-commerce", AND "ICTs" AND "Tourism operators"
web of Science & Scopus — 757

Subjects
Business, Management and Accounting, social sciences, multidisciplinary, enviornamental sciences, and computer sciences — 414

Type
articles, reviews, and book chapters — 233

Publication stage
Final — 104

language
English only — 82

Final — 51

Fig. 1. Research methodology using the PRISMA 2020

Most of the selected tourism sector, e-commerce, tourism operators, and ICTs documents in reputed journals followed the robust selection criteria for the current study. Fig. 2 highlights the perspective of analysis based on document-type contributions. The significant contribution of the article (79%), review articles (12%) and book chapters (9%) are presented in Fig. 2.
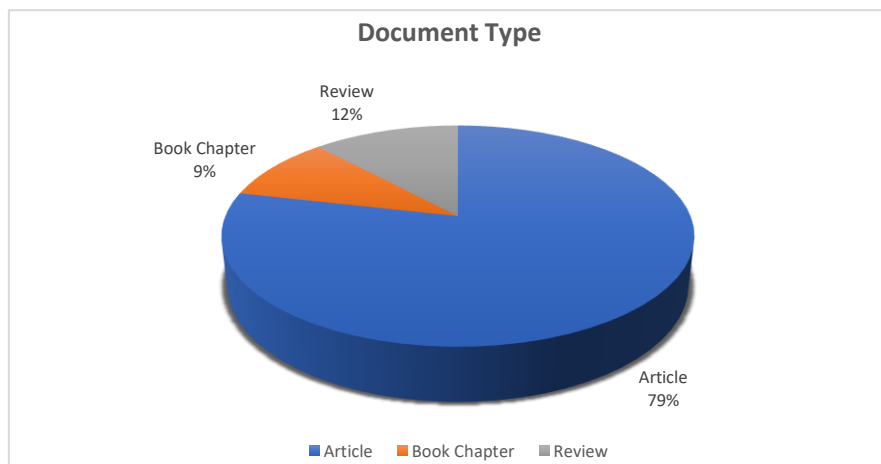
Document Type

Review 12%

Book Chapter 9%

Article 79%

Article   Book Chapter   Review

Fig. 2. Documents type

In addition, the subject criteria used for the extraction of records for the data analysis part, Business, Management and Accounting, social sciences, and computer sciences, are significant areas that contributed to the current study. On the other hand, Fig. 3 illustrates the number of low articles selected from multidisciplinary, environmental sciences, economics, and psychology.
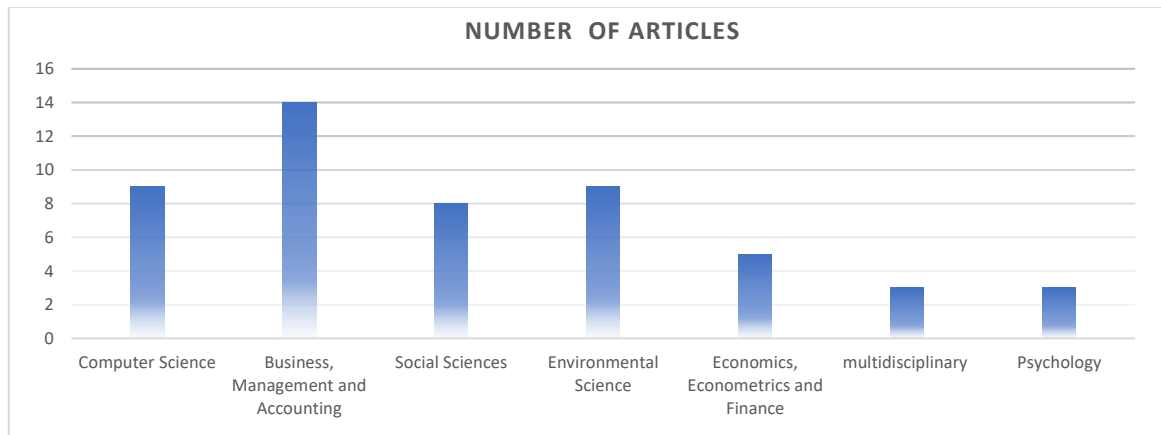
NUMBER OF ARTICLES

Fig. 3. Distribution of documents from each subject

The selected articles published between 2018 and 2022 are shown in Fig. 4. Most papers were published in 2021, and few reports were published from 2018 to 2022. This shows that each year number of publications is increasing, indicating the growing interest in the tourism sector and ICTs in worldwide journals. The COVI-19 pandemic is a triggering factor for more research and publications. Fig. 4 illustrates the number of articles selected each year.
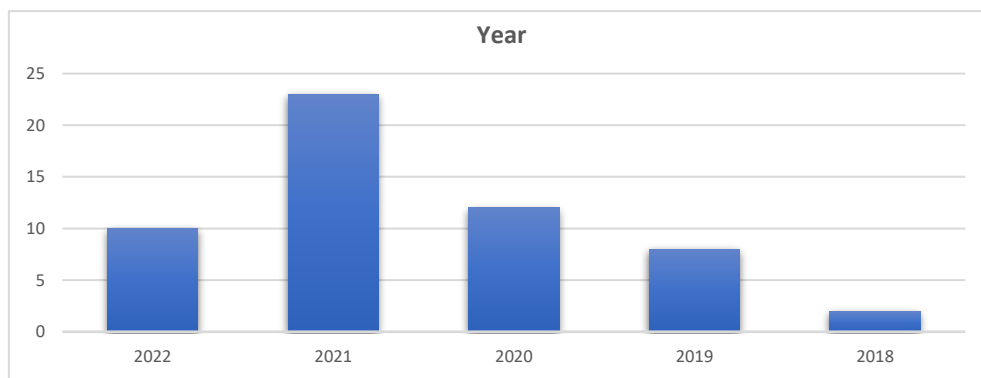

Fig. 4. Distribution of documents from each year

Additionally, the source-based publication analysis for the current study reveals that Sustainability (Switzerland) contributed the most publications, 7, with an average of 20% citations. Second, with four publications and 12% of all sources, Mobile Information Systems are where most articles are chosen. The names of the previous studies are gradually being removed from the current study, and additional critical contributions are highlighted in Table 1 with the title of the source, the number of publications chosen, the number of times cited, and the average number of citations each time.

Table 1. Source titles, number of articles cited, and average citations

Source Title	No. of articles	Cited by	Average
Sustainability (Switzerland)	7	44	20%
Mobile Information Systems	4	26	12%
Journal of Organizational and End User Computing	3	11	5%
Eurasip Journal on Wireless Communications and Networking	2	6	3%
International Journal of Advanced Computer Science and Applications	2	6	3%
Journal of Theoretical and Applied Electronic Commerce Research	2	18	8%

Source Title	No. of articles	Cited by	Average
Journal of Tourism and Services	2	16	7%
Electronics (Switzerland)	2	1	0%
Journal of Destination Marketing and Management	2	41	19%
Sociologia Ruralis	2	12	5%
ACM Transactions on Knowledge Discovery from Data	1	0	0
European Journal of Management and Business Economics	1	13	6%
Future Internet	1	10	5%
Journal of Quality Assurance in Hospitality and Tourism	1	17	8%

The country-based distribution is a significant indication for demonstrating the role of nations in the tourism sector development. Fig. 4 depicts a map of the nations that have contributed most to the tourism industry and the influence of ICTs on tour operators and e-commerce. The current analysis included seven publications provided by scholars from China, with the highest seven records. The Spanish scholars contributed substantially, with six documents linked to the present review. South Korea, Taiwan, and United Kingdom are the other nations that participated in the current study. Fig. 4 depicts the geographical location that was provided for the current study.
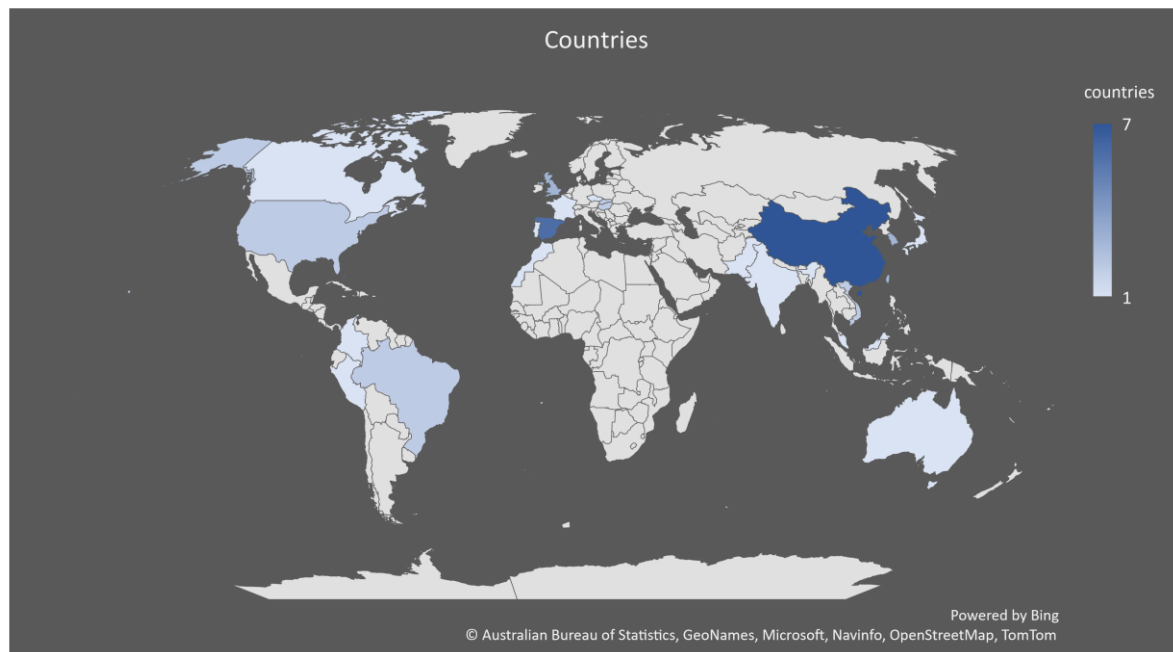

Fig. 5. Distribution of documents from each country

3. REVIEW OF LITERATURE

E-commerce is expanding continuously in tourism sector around the globe, and researchers are looking deep into these digital transformation changes step by step. The current study evaluates e-commerce efficiency for the KPK, Pakistan tourism sector. Further classification drives the published literature and researcher perspective toward e-commerce and ICTs adaptation in the tourism sector. We identified the occurrences of e-commerce, ICTs, Tourism, and tourism operators' sustainability to identify the most frequent keywords used in the studies. As mentioned above, there were fifty-one studies

included in the keywords at literature review stage 1; further, these studies were used to identify the literature classifications from these keywords, as

Table 2. Keyword occurrences and total link strength.

Term	Classification	Occurrences	Relevance score
adoption	E-commerce	37	0.801
application		32	0.3523
aspect		13	0.4077
China		14	0.2109
content		29	0.4549
e-commerce website		12	0.32
e tourism		15	0.8317
education		13	0.9715
electronic commerce		10	0.8934
experiment		24	1.01
experimental result		15	1.7764
firm		12	0.916
government		15	0.4806
innovation		11	0.7796
knowledge		17	0.1773
loyalty		15	1.9052
majority		8	0.2086
marketing		27	0.5063
recommendation		20	1.8125
system		55	0.6018
tool		28	0.2903
variable		14	1.0227
variety		9	2.4839
web		21	0.2877
website		52	0.6815
algorithm	ICTs	19	2.5291
communication		12	0.7125
communication technology		11	1.6317
competitiveness		12	0.8882
dataset		20	2.9695
effect		31	0.5872
effectiveness		12	0.2971
evaluation		18	0.5155
ict		11	1.5238
information technology		11	0.8368
lack		12	1.1695
manager		16	0.89
perception		20	0.5469
popularity		13	2.0503
recommender system		22	3.4099
security		10	0.4749
state		14	0.477
turn		9	1.5987
user		51	0.806
work		21	0.6888
barrier	Operators	11	1.519
basis		9	0.4733
customer satisfaction		10	1.1183
domain		21	2.4785

Term	Classification	Occurrences	Relevance score
improvement		13	0.4808
intention		25	0.9422
interest		16	0.7453
interview		11	0.9834
item		13	3.8508
market		21	0.5268
person		19	0.2771
preference		25	1.4633
problem		19	2.3587
social network		12	1.3588
travel agency		17	1.0298
trust		20	1.0858
usefulness		9	1.349
approach	Tourism	51	0.3126
benefit		22	0.7339
company		20	0.5558
consumer		38	0.5922
country		30	0.6007
decision		20	0.4886
demand		16	0.4722
feature		33	0.3776
hospitality		8	1.0585
implication		26	1.4839
influence		22	0.6779
insight		12	0.3116
issue		15	0.3324
organisation		11	0.8303
originality value		17	1.7022
performance		28	0.4852
practical implication		11	1.7451
satisfaction		20	0.8403
sector		21	0.8128
tourism e-commerce		12	0.3762
tourism industry		28	0.467
tourism product		13	0.7551
tourism sector		19	0.7989
tourism website		10	1.0239

A more in-depth investigation of the records using content analysis was performed to establish and validate the research's categories. The published literature is examined using VOS Viewer software, which groups the text's data into clusters based on related themes. According to a recent study, keywords used by researchers and those added later in the databases' indexation of journals are both relevant for bibliometric analyses to identify the structures of an investigation's field. We used both keywords for the co-occurrence analysis within the research domain related to E-learning. The study included 51 documents, and the data contained 87 keywords. We carefully considered and selected only the 87 keywords that appeared at least ten times. The results of the content analysis are displayed in Fig. 5. Research related to tourism, sector and innovation is shown in the red cluster. In addition, the blue indicates approach, evaluation, user and recommendation. Finally, the green collection represents travel agencies, websites, marketing and tourism websites. The

detailed key-term occurrences and classification tailored for the current investigation are shown in Fig. 6.
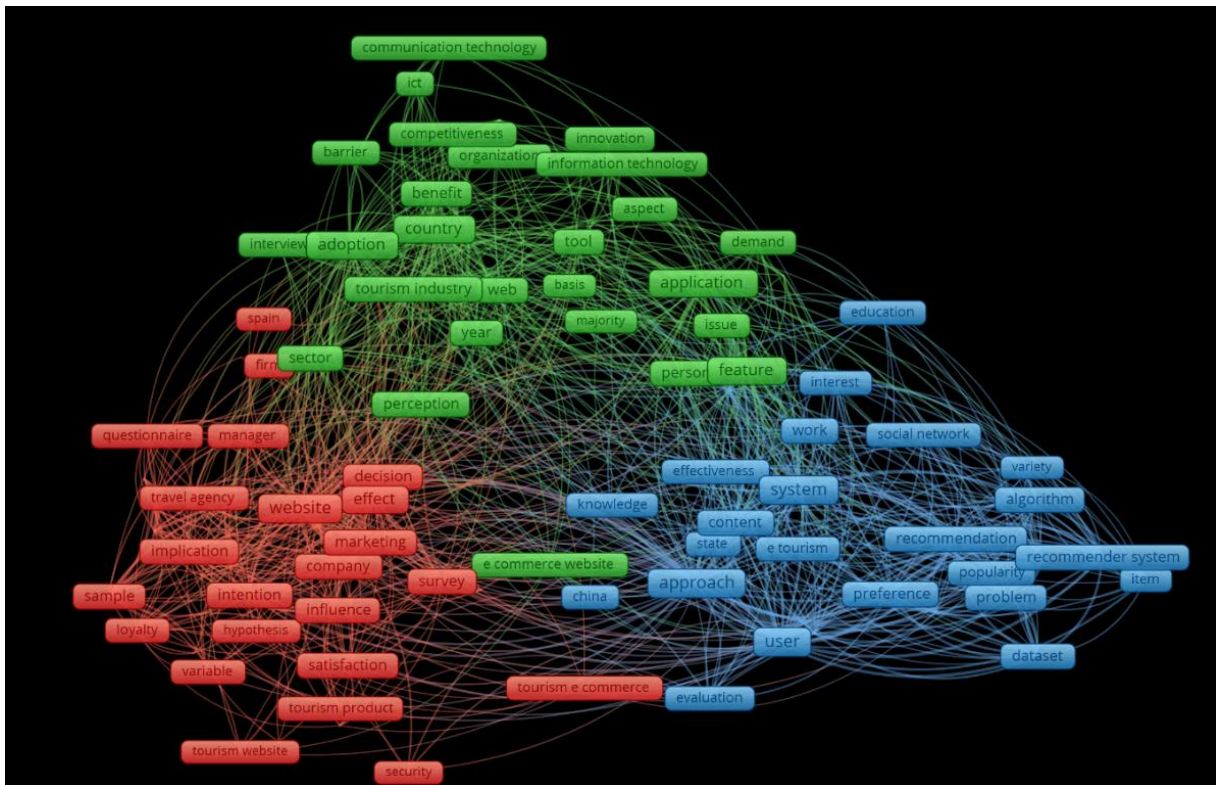

Fig. 6. Illustrate the data streams

3.1. TOURISM INDUSTRY

The tourism sector is under more competition as the global marketplace continues to internationalise. Improving the competitiveness of the tourist sector is another critical problem in Pakistan's economic growth (Wei et al., 2021). In addition, the use of network e-commerce and technology will substantially improve the service level, management level, and management level of the tourism sector, improve the operation quality of the tourism industry, and so significantly increase the worldwide tourism competitiveness (Kurowska-Pysz et al., 2022). In addition, the competitiveness of tourism goods with tourism resources as the core, in which the tourist area (point) is the carrier, is primarily determined by product quality, brand, and product innovation, which is the determining factor of the ultimate competition outcome (Kim et al., 2021). The competitiveness of tourist goods is the most fundamental basis of the tourism industry's competitiveness, and its state primarily impacts its competitiveness (Daries et al., 2020). The achievement of a competitive edge tourism industry is developing and implementing novel business models that substantially impact other economic sectors (Chen et al., 2015). On the other hand, the increased availability of information and communication technologies has affected the tourism and travel sectors, particularly in how travellers investigate, plan, and purchase tourism goods (Bilgihan, 2016). Instead of going to a travel agency, travellers increasingly visit tourism websites to get travel information, organise their trips, and buy travel items (Kaya et al., 2019).

Many experts and investors are seeking new tourist models; personalised tourism is in line with market growth trends, and its size is growing by the day, making it a significant force in the tourism sector (H. Zhang et al., 2021). According to (Santamaria-Granados et al., 2020), the intelligent age, rising Internet popularity, and the merger of the travel sector and e-commerce have enticed many entrepreneurs to enter the online travel business. New business models, travel service platforms, and applications, such as Qunar, Ctrip, and Fliggy, are constantly emerging. The tourist e-commerce platform holds a significant market share in the tourism industry, fuelling the fast growth of customised tourism e-commerce (Bilgihan, 2016). According to (Marzo-Navarro & Pedraja-Iglesias, 2021), a tourism product is typically defined as an integrated package that includes various required travel-related elements such as the departure/destination city, financial cost, number of days, transportation, and lodging, among others. Much research on personalised travel product recommendations has been conducted. Based on tourist product consumption data given by an offline travel firm, they discovered that travel product suggestions differ from typical items such as movies, books, and groceries (Cristobal-Fransi et al., 2018). However, many visitors are resistant to transactions on e-commerce websites, and the dependability of paying online remains an issue of trust in underdeveloped countries (Tang & Zeng, 1 C.E.a). Figure Table below shows the details of authors, citations, settings and segments in which research was conducted.

Table 3. Author details, citations, segment, and settings

Author full names	Cited by	Settings	Segment
Ye et al., 2023	0	Information technology deepens	The hotel price information
Daries et al., 2020	10	Destinations	Tourists
Wei et al., 2021	1	E-commerce	ICT
Chen et al., 2015	12	Cultural economy	electronic commerce
Cristobal-Fransi et al., 2018	13	Climate change	Europe
Marzo-Navarro & Pedraja-Iglesias, 2021	3	Websites to provide information	Social implications
Peng, 2022	1	E-commerce Service Quality Evaluation	Mobile
Wittwer & Anderson, 2021	5	COVID-19 pandemic	Travel and tourism
Parra-Lopez et al., 2018	13	Public service application system	Tourist destination
Kim et al., 2021	0	Online tourism platforms	Travelers' familiarity
Tang & Zeng, 1 C.E.a	8	Generation Z	WOM/EWOM
Santamaria-Granados et al., 2020	10	e-commerce,	Entertainment
H. Zhang et al., 2021	2	Custom tourism	Exploration and innovation
Kaya et al., 2019	0	Sustainability	Cross-border cooperation

Moreover, e-commerce contributes to the development of tourism at the market level primarily by promoting various business activities in tourism transactions, such as posting tourism information online, online promotion, tourism market research, and trade activities that help to achieve electronic tourism transactions online negotiations with travel companies, pre-sales consultation, online travel transactions, online payment, and after-sales service (Ye et al., 2023). However, regarding the quality of the e-commerce services, the most frequently acknowledged characteristics of service quality in the online tourist environment are those contained in the e-SERVQUAL model, an adaptation of the SERVQUAL model to the online context (Parra-Lopez et al., 2018). The transformation of the

e-SERVQUAL model still needs to be more specialists in tourist e-commerce, and it cannot play a role in tourism promotion (Wittwer & Anderson, 2021). In addition, talent training must be adequately linked between tourism and e-commerce at the domestic higher education level. Many tourism majors cannot establish tourism e-commerce (Peng, 2022).

3.2. TOURISM OPERATORS

The emphasis on tourism operators' views, preferences, and decision-making has been identified as critical in understanding how the tourism sector might attempt to adapt to technological changes (Putri et al., 2019). In Pakistan's tourism industry, the country's tour operating firms have been limited to keeping up with the current global trend of incorporating information communication technology into their company operations; other subsectors of the industry, such as hotels, airlines, and travel agencies, have (Abbass et al., 2022). According to (J. Zhang et al., 2019), the critical observation is that most of the research on the role of information communication technologies in the tourism industry has primarily focused on developments in developed countries, indicating the need to assess how information communication technologies are affecting the growth of the sector in developing countries. In addition, the prevalence of small and medium-sized tourist firms with low financial resources and little expertise in information and communication technology exacerbates the difficulty of ICT adoption by tour operators in underdeveloped nations (Tseng et al., 2020).

Nowadays, the Internet has proven to be an effective distribution channel for tourism-related products and services, giving a massive chance for travel enterprises to prosper. Overall, the tourism sector has gradually transitioned away from traditional booking channels and toward online distributors, with online travel agencies, also known as third-party booking sites, serving as the primary driving force behind this new business climate (Maia et al., 2022). That trend is likely to continue, and by 2020, internet channels (including mobile) will account for 49% of all US travel bookings (Lee, 2020). According to (Liang et al., 2019), understanding booking conversion behaviour has become increasingly vital in the tourist business as online sales have grown in importance. The most crucial task in tourist marketing is promoting client engagement and conversion on the road to booking. In addition, after the introduction of ICTs, Online Travel Agencies (OTA) have become quite prevalent in developed countries, and conventional tour operators are also employing advanced technologies for tour reservations (Machova et al., 2021). According to (VO et al., 2019), online travel agencies offer travellers online booking, hotel, transportation and information services, tour assistance and planning, and entertainment activities. That travel company executed tasks such as online booking, giving information, providing good services and products, providing safe and secure transactions, and protecting customers' privacy. Table 4 below shows the details of authors, citations, settings and segments in which research was conducted.

Table 4. Author details, citations, segment, and settings

Author full names	Cited by	Settings	Segment
Maia et al., 2022	0	Online travel agencies	Online tourism
Liang et al., 2019	32	Services or hotels online	Increasing tourists
Lee, 2020	1	Booking conversion behaviour	Airline booking website
Jang & Hsieh, 2021	2	Gamification and virtual reality (VR)-	Web services
Jiang, 2021	0	Use e-commerce	Mobile internet
Lu & Cui, 2022	0	Promoting companies	Intelligent technology
Tseng et al., 2020	4	Online consumer reviews	eWOM.
Machova et al., 2021	8	COVID-19 pandemic	Tourism
Abbass et al., 2022	1	E-Tourism business	Online travel agents
Putri et al., 2019	19	Tourism and big data	Big data

Furthermore, with the democratisation of travel and the rising relevance of experiences for customers, the business of global tour operators has developed over time. On the other hand, online booking is generally restricted to simple items, such as sites like TripAdvisor and Viatour (Jiang, 2021). The lengthy tails of activity stretched in many directions worldwide may one day be bought online, fundamentally changing the industry's economy (Lu & Cui, 2022). The manner of packing trips has altered to match worldwide customers' expectations, which contradicts the traditional understanding of a tour (Sh. & B., 2021). In addition, while tourism has historically been defined as a "brick-and-mortar" sector, many conventional travel companies have moved forward to construct, launch, and operate their websites to provide an online channel through which to expand and extend their service scope (Jang & Hsieh, 2021). Through their distinctive e-commerce methods and online service systems, emerging iconic start-ups such as Airbnb and Klook deliver various tourist items online and serve travellers globally.

3.3. E-COMMERCE

The global economy has entered an information era centred on the Internet in the twenty-first century. Anyone who can understand the knowledge as rapidly as possible will be successful. E-commerce, as the most excellent platform, gives a large area for customers and producers to stay in business and interact effectively (Tang & Zeng, 2012). E-commerce business refers to a connected business system that operates travel agencies, travel information release systems, and transaction banks based on electronic databases (Yin & He, 2022). According to (Zhao et al., 2021), when compared to developed countries, the emergence of domestic e-commerce and rural tourism is comparatively late; the rise of domestic tourism comes after reform and opening up; the commencement of e-commerce comes later; nonetheless, the velocity of development over the years should not be ignored. However, the expansion of information technology has provided ideal circumstances for the growth of e-commerce, and the merging of e-commerce with tourism has increased the convenience of tourism services even more (Beheshti et al., 2022). In addition, e-commerce has grown significantly due to the advancement of ICT technology. The number of individuals who frequently interact with ICT technology is constantly rising, a crucial element in the expansion of e-commerce.

E-commerce, in particular, has achieved significant and continues to rise in popularity in the tourist business. According to European Union research, travel and vacation accommodation were the second most popular online purchase during the 2016 poll (52% of e-shoppers in the EU) (Abdullah & Sarno, 2021). As a result, e-commerce has considerably impacted how tourist goods and services are sold. Its acceptance and use in tourism have offered new chances to implement innovative management methods. In addition, the blessing and usage of e-commerce in the tourist industry have provided opportunities to introduce business strategies that promote growth by reducing costs and improving efficiency. As a result, tourist businesses that employ IT advancements gain a competitive advantage (Morimura et al., 2020). According to (Jurdi et al., 2021), e-commerce allows information to flow globally with almost no entry barriers, creating a platform where travellers can get the information they require, personalise their journeys, and make purchases. Table 5 illustrates the authors details, citations, settings and settings in which research conducted.

Table 5. Author details, citations, segment, and settings

Author &year	Cited by	Settings	Segment
Hameed et al., 2022	0	Mobile payment system	Travel industry
Yin & He, 2022	1	Education	Customer profile
Beheshti et al., 2022	0	Travel around the world	Cloud computing platform, extensive data analysis
Abdullah & Sarno, 2021	3	Tripadvisor	Website
Jurdi et al., 2021	0	Behaviour	e-learning
Tang & Zeng, 2012	11	Tourism	Customer satisfaction
Kelen et al., 2019	1	Tourism, and social media	Location-based social networks
Morimura et al., 2020	0	Web-based tools	Low Experience and High Experience
Boppana & Sandhya, 2021	0	Social networks	Tourism
Zhao et al., 2021	5	Leisure and entertainment	Internet technology
Reinartz et al., 2019	8	Tourism industry	Tourism products online
LUMI, 2020	5	Online-to-offline	Tourism

Despite the numerous benefits of e-commerce adoption, start-up enterprises are hesitant to do so (Hu & Deng, 2019). Research has been conducted to investigate why new businesses are less responsive to e-commerce adoption (Hameed et al., 2022). Several arguments have been advanced, including high costs, inadequate IT infrastructure, a lack of interest from corporate partners, a lack of educated human resources, government assistance, and security concerns (Kelen et al., 2019). However, the consequences and benefits of e-commerce are helping to enhance the tourism industry in developed countries (Boppana & Sandhya, 2021). In addition, e-commerce provides an excellent platform for businesses to develop and promote their services to customers. It inspires firms to reinvent and enhance their offerings to improve client experience (Reinartz et al., 2019). According to (LUMI, 2020), the fast development of information and communication technology in modern society leads to the growth of the hotel business and the establishment of a communication network for recruiting new clients. Because of the worldwide Internet, e-Commerce is now more accessible to any business.

3.4. INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT)

The rise of the internet and information and communication technologies (ICTs) have created new opportunities for innovation in business models, altering the corporate structure and introducing new methods of doing things (Autónoma del Perú et al., 2022). Similarly, the benefits of ICT in boosting organisational efficiency, lowering costs, and increasing production have been acknowledged (X. Zhang, 2020). Tourism is one of the industries impacted by ICT and is expected to increase. Tourism organisations use ICT technologies to undertake e-commerce in tourist-related operations in the tourism industry. E-commerce adoption in developing nations is lower than that of significant firms (Wang et al., 2019). The internet and other information and communication technologies (ICTs) have changed tourist trade and marketing. Tourism has progressed quicker than other industries toward a digital paradigm. Websites have become the connector between customers, products, and tourism businesses (Martínez-González & Álvarez-Albelo, 2021). To better their decision-making process, an increasing number of travellers compare the contents of other websites and share their thoughts, experiences, and judgments (Buhalis et al., 2020). As a result of this process, the tourist sector is intensifying its efforts to ensure that, in a market-oriented framework, sites are tailored to customers (Živoder et al., 2015). Table 6 illustrates the author's details, citations, settings and settings in which research conducted.

Table 6. Author details, citations, segment, and settings

Author and year	Cited by	Settings	segment
Donmez-Turan & Kiliclar, 2021	1	Innovation in business models	Electronic commerce
Cristobal-Fransi et al., 2020	5	Tourism industry	Websites
Bi & Kim, 2020	15	The public service application system	Travel websites
Martínez-González & Álvarez-Albelo, 2021	5	Consumers' loyalty	Tourism websites
Buhalis et al., 2020	41	e-loyality	eWOM
Raluca-Florentina, 2022	2	Interactive applications	Blockchain technology
Wang et al., 2019	2	Software industry	e-commerce and tourism
Qomariyah & Kazakov, 2021	1	Big data	e-tourism

One barrier to adoption is that most people need to understand how information technology (IT) may help their businesses and help them achieve their goals; as a result, they do not invest in e-commerce. Some nations lag in ICT adoption owing to underdeveloped economies, a lack of infrastructure, and an untrained labour population (Qomariyah & Kazakov, 2021). In addition, one major issue related to ICT is that consumer loyalty is difficult to create due to rising consumer demands, fierce competition in the industry, and the intangible nature of tourism (Donmez-Turan & Kiliclar, 2021). These factors indicate the necessity for further research on customer loyalty to tourist websites. It is also critical to create new prediction models so that tourist firms understand how to increase website loyalty (Hoang et al., 2022). Although satisfaction is widely recognised as the most critical factor in increasing e-loyalty among tourists, the service convenience aspects that maximise travellers' pleasure have yet to be established (Bi & Kim, 2020). However, today's tourists acquire their information from the Internet. Therefore, websites must match their consumers' expectations and wants to reach their target audience and achieve their

planned objectives (Cristobal-Fransi et al., 2020). That implies that incorporating social networks into marketing strategy is critical since they assist in developing linkages, boost client satisfaction and loyalty, and produce more trust (Raluca-Florentina, 2022).

4. DISCUSSION AND RESULT

The current study investigates the potential and prospects of efficient usage of e-commerce opportunities and tourism operators' adaptation to the best international practices in the Khyber Pakhtunkhwa (KPK), Pakistan tourism industry. In addition, the current study will also examine the overall opportunities for e-commerce-related activities in the Pakistan tourism industry. For the inclusion and exclusion of results from the two central databases, Scopus and Web of Science, we utilised the PRISMA statement 2020. The records were filtered using a rigorous approach that excluded irrelevant, duplicate, and missing document information. Furthermore, subjects, full articles, published documents, and only English language materials were chosen. In addition, the descriptive section discusses citation reports, averages, year base publications, and record sources. The evaluation comprised fifty-one publications and classified the most critical data stream identification using the VOS viewer software. The content analysis and effective term occurrences indicated four classifications: tourism, tourism operators, e-commerce, and information and communication technology.

Results indicate that due to internationalise and global tourism sector is facing severe competition in recent years. According to (Kim et al., 2021) competitiveness of tourism products with tourism resources as the core, in which the tourist area (point) is the carrier, is primarily defined by product quality, brand, and product innovation, which determines the ultimate competition outcome. The tourist industry must create and deploy unique business models influencing other economic sectors to gain a competitive advantage. The results of (H. Zhang et al., 2021) suggested that personalised tourism is by market growth trends, and its scale is expanding by the day, making it a key force in the tourism sector. From a global tourist viewpoint, the tourism sector relies on creative business models fueled by e-commerce websites and ICTs. The results of (Santamaria-Granados et al., 2020) suggested that many businesses have been persuaded to enter the online travel company by the intelligent age, expanding Internet popularity and combining the travel sector and e-commerce. In addition, e-commerce promotes various business activities in tourism transactions, such as posting tourism information online, online promotion, tourism market research, and trade activities that help to achieve electronic tourism transactions, online negotiations with travel companies, pre-sales consultation, online travel transactions, online payment, and after-sales service (Ye et al., 2023).

Furthermore, the results of (Machova et al., 2021) suggested that Online Travel Agencies (OTA) have been relatively common in developed countries with the introduction of ICTs, and traditional tour operators are also using new technology for tour reservations. These online agencies are executed tasks such as online booking, giving information, providing good services and products, providing safe and secure transactions, and protecting customers' privacy. In this regard, the results of (Jang & Hsieh, 2021) indicated that many conventional travel companies had moved forward to construct, launch, and operate their

websites to provide an online channel through which to expand and extend their service scope. Also, many new start-ups emerged during the e-commerce rise in the tourism industry, such as Airbnb and Klook, which deliver various tourist items online and serve travellers globally. The results (Yin & He, 2022) illustrated that e-commerce is a networked business system that operates travel agencies, travel information release systems, and transaction banks based on electronic databases. Also, the adoption and use of e-commerce in the tourism sector have provided opportunities to implement business strategies that support development by lowering costs and increasing efficiency. As a result, tourism enterprises that use technological advances acquire a competitive advantage (Morimura et al., 2020).

However, the (Kelen et al., 2019) results show that excessive expenditures, insufficient IT infrastructure, a lack of enthusiasm from business partners, a lack of skilled human resources, government help, and security issues have all been raised for the implementation of e-commerce set-ups. Aside from that, most people need to understand how information technology (IT) may help their businesses and help them achieve their goals; as a result, they do not invest in e-commerce. Some nations lag in ICT adoption owing to underdeveloped economies, a lack of infrastructure, and an untrained labour population (Qomariyah & Kazakov, 2021). Despite that, Tourism is one of the industries that has been touched by ICT and is predicted to grow. Tourism organisations employ information and communication technology (ICT) to conduct e-commerce in tourist-related operations in the tourism business. Results (Martínez-González & Álvarez-Albelo, 2021) suggested that the Internet and other information and communication technologies (ICTs) have transformed the tourism industry and marketing. Tourism has advanced faster than other businesses to a digital paradigm. Websites have evolved as the link between customers, products, and tourism businesses.

5. CONCLUSION

Since the innovative interaction between e-commerce and tourism operators to implement a worldwide standard practice in the tourism sector, the current study's findings are relevant to the tourism industry of KPK, Pakistan. The results suggest that e-commerce makes travellers' access to tourist places more accessible and more trustworthy, and travellers no longer need to visit offices or travel agents. The complete booking system is online, including a functional payment mechanism. E-commerce improves understanding of the secondary market. The travel business is not restricted to a single country or city but targets clients worldwide. People may now plan excursions to exotic locations from any location, including their office or even the comfort of their own homes. E-commerce enables us to connect to different markets worldwide and deliver the most appropriate services to visitors, even if they are situated abroad. In addition, tourist operators are an essential element of the tourism sector, with the integration of ICTs and e-commerce websites to make trips more convenient and enjoyable. Secondly, developing countries like Pakistan's tourism industry and economy can develop by encouraging e-commerce websites to promote tourism destinations. Fig. 7 depicts the outcomes and recommendations of the current study.

Fig. 7. Recommendations and outcomes

Our results also suggested that ICTs help travellers by offering information, recommendations, and booking information about tourist sites through internet apps such as Booking.com, Agoda, and Google services. In addition, improvements in ICT capabilities, smaller equipment sizes, and lower ICT costs increased dependability and compatibility. ICTs are a vital instrument that can help promote and develop the tourist industry's strategy and operations. One of the significant findings of the current study is that to improve tourist business operations, current information and communications technology must be updated, improved, and seamlessly integrated both internally and internationally. Incorporating ICT in tourism will help service providers and visitors while bringing other stakeholders together on a shared platform.

5.1. PRACTICAL IMPLICATIONS AND FUTURE RESEARCH

The current study's findings are vital for the KPK tourism industry to implement e-commerce websites. On a broader scale, private tourism firms can launch new partnerships with tourist-related businesses by bridging the gap between visitors and preferred locations using e-commerce platforms. Also, tourism operators must use digital channels to expand their commercial operations and attract a bigger audience through e-commerce websites.

The study has certain drawbacks, the most significant of which is static published records. The study's second issue is context specificity. The research focuses on Pakistan, which has a rich and distinctive cultural environment. As a result, the study's conclusions may be restricted in their applicability to other nations. Based on the study's shortcomings, we recommend that future researchers use panel data from different geographical nations.

Author Contributions:

This work was the output of collaborative research between researchers from different nationalities and institutions. N. K. and H. S. were responsible for the conceptualization of the idea, manuscript preparation and data analysis, and revision of the manuscript. The prepared manuscript was reviewed and amended by S. L. and S. A. contributed to the revised manuscript and also secured article processing charges to facilitate the publication of the research article S.H. helped with reviewing and proofreading.

Funding:

Not applicable

Institutional Review Board Statement:

Not applicable

Informed Consent Statement:

Not applicable

Data Availability Statement:

Not applicable

Acknowledgments:

Not applicable

Conflicts of Interest:

There is no conflict of interest.

Reference:

Abbass, K., Begum, H., Ferdous Alam, A. S. A., Awang, A. H., Abdelsalam, M. K., Egdair, I. M. M., & Wahid, R. (2022). Fresh Insight through a Keynesian Theory Approach to Investigate the Economic Impact of the COVID-19 Pandemic in Pakistan. *Sustainability 2022, Vol. 14, Page 1054*, *14*(3), 1054. https://doi.org/10.3390/SU14031054

Abdullah, R., & Sarno, R. (n.d.). Aspect Based Sentiment Analysis for Explicit and Implicit Aspects in Restaurant Review using Grammatical Rules, Hybrid Approach, and SentiCircle. *International Journal of Intelligent Engineering and Systems*, *14*(5), 2021. https://doi.org/10.22266/ijies2021.1031.27

Akhtar, N., Khan, N., Mahroof Khan, M., Ashraf, S., Hashmi, M. S., Khan, M. M., & Hishan, S. S. (2021). Post-COVID 19 Tourism: Will Digital Tourism Replace Mass Tourism? *Sustainability*, *13*(10), 5352.

Arshad, M. I., Iqbal, M. A., & Shahbaz, M. (2017). Pakistan tourism industry and challenges: a review. *Https://Doi.Org/10.1080/10941665.2017.1410192*, *23*(2), 121–132. https://doi.org/10.1080/10941665.2017.1410192

Autónoma del Perú, U., Sur Km, P., el lv dor, V. S., & Romy Estrada, L.-P. (n.d.). Critical Success Factors Associated to Tourism e-Commerce: Study of Peruvian Tourism Operators Sussy Bayona-Oré 1. *IJACSA) International Journal of Advanced Computer Science and Applications*, *12*(10), 2021. Retrieved November 2, 2022, from www.ijacsa.thesai.org

Beheshti, A., Kiarostami, M. S., Stitini, O., Kaloun, S., & Bencharef, O. (2022). An Improved Recommender System Solution to Mitigate the Over-Specialization Problem Using Genetic Algorithms. *Electronics 2022, Vol. 11, Page 242*, *11*(2), 242. https://doi.org/10.3390/ELECTRONICS11020242

Bi, Y., & Kim, I. (2020). Older Travelers' E-Loyalty: The Roles of Service Convenience and Social Presence in Travel Websites. *Sustainability 2020, Vol. 12, Page 410*, *12*(1), 410. https://doi.org/10.3390/SU12010410

Bilgihan, A. (2016). Gen Y customer loyalty in online shopping: An integrated model of trust, user experience and branding. *Computers in Human Behavior*, *61*, 103–113. https://doi.org/10.1016/J.CHB.2016.03.014

Boppana, V., & Sandhya, P. (2021). Web crawling based context aware recommender system using optimized deep recurrent neural network. *Journal of Big Data*, *8*(1), 1–24. https://doi.org/10.1186/S40537-021-00534-7/TABLES/12

Buhalis, D., Parra López, E., & Martinez-Gonzalez, J. A. (2020). Influence of young consumers' external and internal variables on their e-loyalty to tourism sites. *Journal of Destination Marketing & Management*, *15*, 100409. https://doi.org/10.1016/J.JDMM.2020.100409

Chen, J. V., Yen, D. C., Pornpriphet, W., & Widjaja, A. E. (2015). E-commerce web site loyalty: A cross cultural comparison. *Information Systems Frontiers*, *17*(6), 1283–1299. https://doi.org/10.1007/S10796-014-9499-0/FIGURES/4

Costa, J., & Castro, R. (2021). SMEs Must Go Online—E-Commerce as an Escape Hatch for Resilience and Survivability. *Journal of Theoretical and Applied Electronic Commerce Research 2021, Vol. 16, Pages 3043-3062*, *16*(7), 3043–3062. https://doi.org/10.3390/JTAER16070166

Cristobal-Fransi, E., Daries, N., Martin-Fuentes, E., & Montegut-Salla, Y. (2020). Industrial Heritage 2.0: Internet Presence and Development of the Electronic Commerce of Industrial Tourism. *Sustainability 2020, Vol. 12, Page 5965*, *12*(15), 5965. https://doi.org/10.3390/SU12155965

Cristobal-Fransi, E., Daries, N., Serra-Cantallops, A., Ramón-Cardona, J., & Zorzano, M. (2018). Ski Tourism and Web Marketing Strategies: The Case of Ski Resorts in France and Spain. *Sustainability 2018, Vol. 10, Page 2920*, *10*(8), 2920. https://doi.org/10.3390/SU10082920

Daries, N., Cristobal-Fransi, E., & Ferrer-Rosell, B. (2020). Implementation of Website Marketing Strategies in Sports Tourism: Analysis of the Online Presence and E-Commerce of Golf Courses. *Journal of Theoretical and Applied Electronic Commerce Research 2021, Vol. 16, Pages 542-561*, *16*(3), 542–561. https://doi.org/10.3390/JTAER16030033

Donmez-Turan, A., & Kiliclar, I. E. (2021). The analysis of pro-environmental behaviour based on ecological worldviews, environmental training/ knowledge and goal frames. *Journal of Cleaner Production*, *279*. https://doi.org/10.1016/J.JCLEPRO.2020.123518

Fariza, W., Rahman, W. A., Abdalla, A. H., Islam, M. R., & Sutriadi, R. (2018). Defining smart city, smart region, smart village, and technopolis as an innovative concept in indonesia's urban and regional development themes to reach sustainability. *IOP Conference Series: Earth and Environmental Science*, *202*(1), 012047. https://doi.org/10.1088/1755-1315/202/1/012047

Hameed, I., Mubarik, M. S., Khan, K., & Waris, I. (2022). Can Your Smartphone Make You a Tourist? Mine Does: Understanding the Consumer's Adoption Mechanism for Mobile Payment System. *Human Behavior and Emerging Technologies*, *2022*, 1–14. https://doi.org/10.1155/2022/4904686

Hoang, S. D., Pham, T. P., & Tučková, Z. (2022). Tourist Motivation as an Antecedent of Destination and Ecotourism Loyalty. *Emerging Science Journal*, *6*(5), 1114–1133. https://doi.org/10.28991/ESJ-2022-06-05-014

Hu, X., & Deng, Z. (2019). Research on perception bias of implementation benefits of urban intelligent transportation system based on big data. *Eurasip Journal on Wireless Communications and Networking*, *2019*(1), 1–7. https://doi.org/10.1186/S13638-019-1452-Y/TABLES/3

ISMAIL, F., IMRAN, A., KHAN, N., & QURESHI, M. I. (2021). Past, present and future of ecotourism, a systematic literature review from last decade. In *Estudios de Economia Aplicada* (Vol. 39, Issue 4). https://doi.org/10.25115/eea.v39i4.4592

Izogo, E. E., Mpinganjira, M., Karjaluoto, H., & Liu, H. (2021). Examining the Impact of eWOM-Triggered Customer-to-Customer Interactions on Travelers' Repurchase and Social Media Engagement. *Https://Doi.Org/10.1177/00472875211050420*, *61*(8), 1872–1894. https://doi.org/10.1177/00472875211050420

Jang, Y. T., & Hsieh, P. S. (2021). Understanding consumer behavior in the multimedia context: incorporating gamification in VR-enhanced web system for tourism e-commerce. *Multimedia Tools and Applications*, *80*(19), 29339–29365. https://doi.org/10.1007/S11042-021-11149-8/TABLES/5

Jayathilaka, R., Dharmasena, T., Rezahi, N., & Haththotuwegama, S. (2020). The impact of online reviews on inbound travellers' decision making. *Quality and Quantity*, *54*(3), 1005–1021. https://doi.org/10.1007/S11135-020-00971-1/FIGURES/4

Jiang, X. (2021). Application of E-Commerce Interactive Marketing Model Based on Distributed Algorithm of Mobile Ad Hoc Network. *Wireless Communications and Mobile Computing*, *2021*. https://doi.org/10.1155/2021/9766214

Jurdi, W. al, Abdo, J. B., Demerjian, J., & Makhoul, A. (2021). Critique on Natural Noise in Recommender Systems. *ACM Transactions on Knowledge Discovery from Data (TKDD)*, *15*(5). https://doi.org/10.1145/3447780

Kaya, B., Behravesh, E., Abubakar, A. M., Kaya, O. S., & Orús, C. (2019). The Moderating Role of Website Familiarity in the Relationships Between e-Service Quality, e-Satisfaction and e-Loyalty. *Https://Doi.Org/10.1080/15332861.2019.1668658*, *18*(4), 369–394. https://doi.org/10.1080/15332861.2019.1668658

Kelen, D., Daróczy, B., Ayala-Gómez, F., Ország, A., & Benczúr, A. (2019). Session Recommendation via Recurrent Neural Networks over Fisher Embedding Vectors. *Sensors 2019, Vol. 19, Page 3498*, *19*(16), 3498. https://doi.org/10.3390/S19163498

Khan, M. M., Siddique, M., Yasir, M., Qureshi, M. I., Khan, N., & Safdar, M. Z. (2022). The Significance of Digital Marketing in Shaping Ecotourism Behaviour through Destination Image. *Sustainability*, *14*(12), 7395. https://doi.org/10.3390/su14127395

Khan, N., Qureshi, M. I., Mustapha, I., Harasis, A. A., & Ashfaq, M. (2020). The Digital Marketing Past, Present, and Future in Malaysia. *Journal of Computational and Theoretical Nanoscience*, *17*(2), 583–595. https://doi.org/10.1166/jctn.2020.8732

Khan, N., Van, N. T., Imran, A., Raza, H., & Sikandar, H. (2020). Ecotourism is the future of alternative tourism for environmental sustainability and natural areas protection. *Systematic Literature Review and Meta-Analysis Journal*, *1*(2), 99–116.

Kim, S., Bi, Y., & Kim, I. (2021). Travel Website Atmospheres Inducing Older Travelers' Familiarity: The Moderating Role of Cognitive Age. *International Journal of Environmental Research and Public Health 2021, Vol. 18, Page 4812*, *18*(9), 4812. https://doi.org/10.3390/IJERPH18094812

Kurowska-Pysz, J., Castanho, R. A., Loures, L. C., Khmeleva, G. A., Kurnikova, M. V., Nedelka, E., & Tóth, B. I. (2022). Determinants of Sustainable Cross-Border Cooperation: A Structural Model for the Hungarian Context Using the PLS-SEM Methodology. *Sustainability 2022, Vol. 14, Page 893*, *14*(2), 893. https://doi.org/10.3390/SU14020893

Lee, M. (2020). Will this search end up with booking? Modeling airline booking conversion of anonymous visitors. *Journal of Tourism Analysis*, *27*(2), 237–250. https://doi.org/10.1108/JTA-11-2019-0038/FULL/PDF

Liang, X., Liu, P., & Wang, Z. (2019). Hotel selection utilizing online reviews: a novel decision support model based on sentiment analysis and DL-VIKOR method. *Technological and Economic Development of Economy*, *25*(6), 1139–1161. https://doi.org/10.3846/TEDE.2019.10766

Lu, Y., & Cui, B. (2022). Intelligent Tourism Marketing and Publicity Methods for Revenue Enhancement. *Mobile Information Systems, 2022.* https://doi.org/10.1155/2022/6943120

LUMI, A. (2020). The Impact of Digitalisation on Human Resources Development. *PRIZREN SOCIAL SCIENCE JOURNAL, 4*(3), 39–46. https://doi.org/10.32936/PSSJ.V4I3.178

Machova, R., Korcsmaros, E., Esseova, M., & Marca, R. (2021). Changing Trends of Shopping Habits and Tourism During the Second Wave of COVID-19 – International Comparison. *Journal of Tourism and Services, 12*(22), 131–149. https://doi.org/10.29036/JOTS.V12I22.256

Maia, C. R., Lunardi, G. L., Dolci, D. B., & Añaña, E. da S. (2022). The effects of brand and online reviews on consumer trust and purchase intentions in developing countries: the case of the online travel agencies in Brazil. *BBR. Brazilian Business Review, 19,* 288–308. https://doi.org/10.15728/BBR.2022.19.3.4.EN

Martínez-González, J. A., & Álvarez-Albelo, C. D. (2021). Influence of Site Personalization and First Impression on Young Consumers' Loyalty to Tourism Websites. *Sustainability 2021, Vol. 13, Page 1425, 13*(3), 1425. https://doi.org/10.3390/SU13031425

Marzo-Navarro, M., & Pedraja-Iglesias, M. (2021). Use of a winery's website for wine tourism development: Rioja region. *International Journal of Wine Business Research, 33*(4), 523–544. https://doi.org/10.1108/IJWBR-03-2020-0008/FULL/PDF

Meo, M. S., Utara Malaysia, U., Kanwal, S., Ali, S., Zaini, M., Karim, A., Abdullah, Y., & Kamboh, A. Z. (n.d.). *The Future and Challenges of Applying Innovative Technologies in the Tourism and Hospitality Industry in Asia.* Retrieved October 31, 2022, from https://ssrn.com/abstract=3712462

Morimura, L., Pinochet, L. H. C., Lopes, E. L., Herrero, E., & Oishi Nemoto, M. C. M. (2020). Uma visão sobre a qualidade de websites e seus efeitos na intenção de uso e na recomendação de serviços turísticos nos diferentes níveis de experiência do consumidor. *ReMark - Revista Brasileira de Marketing, 19*(2), 261–286. https://doi.org/10.5585/remark.v19i2.16118

Mustapha, I., Khan, N., & Qureshi, M. I. (2022). Is Technology Affecting the Way Our Minds Operate? Digital Psychology of Users in the Era of Digitalization. In *Advanced Transdisciplinary Engineering and Technology* (pp. 71–92). Springer, Cham.

Parra-Lopez, E., Martínez-gonzález, J. A., & Chinea-Martin, A. (2018). Drivers of the formation of e-loyalty towards tourism destinations. *European Journal of Management and Business Economics, 27*(1), 66–82. https://doi.org/10.1108/EJMBE-11-2017-0050/FULL/PDF

Peng, X. (2022). Single-valued neutrosophic linguistic reducible weighted MSM for tourism mobile e-commerce service quality evaluation. *Scientia Iranica, 29*(1), 247–264. https://doi.org/10.24200/SCI.2020.52511.2749

Putri, A. M., Shihab, M. R., & Budi, N. F. A. (2019). The role of risk and quality in establishing perceived value affecting the intention to book a tour package through an open trip marketplace site. *2018 International Conference on Advanced Computer Science and Information Systems, ICACSIS 2018,* 75–80. https://doi.org/10.1109/ICACSIS.2018.8618259

Qomariyah, N. N., & Kazakov, D. (2021). A genetic-based pairwise trip planner recommender system. *Journal of Big Data, 8*(1), 1–23. https://doi.org/10.1186/S40537-021-00470-6/FIGURES/16

Raluca-Florentina, T. (2022). The Utility of Blockchain Technology in the Electronic Commerce of Tourism Services: An Exploratory Study on Romanian Consumers. *Sustainability 2022, Vol. 14, Page 943, 14*(2), 943. https://doi.org/10.3390/SU14020943

Rehman, A., Ma, H., Irfan, M., Ahmad, M., & Traore, O. (2020). Investigating the Influence of International Tourism in Pakistan and Its Linkage to Economic Growth: Evidence From ARDL Approach. *Https://Doi.Org/10.1177/2158244020932525, 10*(2). https://doi.org/10.1177/2158244020932525

Reinartz, W., Wiegand, N., & Imschloss, M. (2019). The impact of digital transformation on the retailing value chain. *International Journal of Research in Marketing*, *36*(3), 350–366. https://doi.org/10.1016/J.IJRESMAR.2018.12.002

Rethlefsen, M. L., Kirtley, S., Waffenschmidt, S., Ayala, A. P., Moher, D., Page, M. J., Koffel, J. B., Blunt, H., Brigham, T., Chang, S., Clark, J., Conway, A., Couban, R., de Kock, S., Farrah, K., Fehrmann, P., Foster, M., Fowler, S. A., Glanville, J., … Young, S. (2021). PRISMA-S: an extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. *Systematic Reviews*, *10*(1), 1–19. https://doi.org/10.1186/S13643-020-01542-Z/TABLES/1

Santamaria-Granados, L., Mendoza-Moreno, J. F., & Ramirez-Gonzalez, G. (2020). Tourist Recommender Systems Based on Emotion Recognition—A Scientometric Review. *Future Internet 2021, Vol. 13, Page 2*, *13*(1), 2. https://doi.org/10.3390/FI13010002

Santos, V., Ramos, P., Sousa, B., & Valeri, M. (2022). Towards a framework for the global wine tourism system. *Journal of Organizational Change Management*, *35*(2), 348–360. https://doi.org/10.1108/JOCM-11-2020-0362/FULL/PDF

Saseanu, A. S., Ghita, S. I., Albastroiu, I., & Stoian, C. A. (2020). Aspects of Digitalization and Related Impact on Green Tourism in European Countries. *Information 2020, Vol. 11, Page 507*, *11*(11), 507. https://doi.org/10.3390/INFO11110507

Sh., B. D., & B., A. N. (2021). The Role of Tourism Companies in the World Community: Their Logistics Processes. *International Journal of Development and Public Policy*, *1*(5), 137–141. https://openaccessjournals.eu/index.php/ijdpp/article/view/367

Sikandar, H., & Abdul Kohar, U. H. (2021). A systematic literature review of open innovation in small and medium enterprises in the past decade. In *Foresight*. https://doi.org/10.1108/FS-01-2021-0030

Tang, G., & Zeng, H. (1 C.E.a). Evaluation of Tourism E-Commerce User Satisfaction. *Https://Services.Igi-Global.Com/Resolvedoi/Resolve.Aspx?Doi=10.4018/JOEUC.20210901.Oa2*, *33*(5), 25–41. https://doi.org/10.4018/JOEUC.20210901.OA2

Tang, G., & Zeng, H. (1 C.E.b). Evaluation of Tourism E-Commerce User Satisfaction. *Https://Services.Igi-Global.Com/Resolvedoi/Resolve.Aspx?Doi=10.4018/JOEUC.20210901.Oa2*, *33*(5), 25–41. https://doi.org/10.4018/JOEUC.20210901.OA2

Tseng, T. H., Chang, S. H., Wang, Y. M., Wang, Y. S., & Lin, S. jeng. (2020). An Empirical Investigation of the Longitudinal Effect of Online Consumer Reviews on Hotel Accommodation Performance. *Sustainability 2021, Vol. 13, Page 193*, *13*(1), 193. https://doi.org/10.3390/SU13010193

Ursache, M. (2015). Tourism – Significant Driver Shaping a Destinations Heritage. *Procedia - Social and Behavioral Sciences*, *188*, 130–137. https://doi.org/10.1016/J.SBSPRO.2015.03.348

VO, N. T., Chovancová, M., & Tri, H. T. (2019). The Impact of E-service Quality on the Customer Satisfaction and Consumer Engagement Behaviors Toward Luxury Hotels. *Https://Doi.Org/10.1080/1528008X.2019.1695701*, *21*(5), 499–523. https://doi.org/10.1080/1528008X.2019.1695701

Wang, J., Zhang, K., Sun, X., Tan, Y., Wu, Q., & Wu, Q. (2019). Package Network Model: A Way to Capture Holistic Structural Features of Open-Source Operating Systems. *Symmetry 2019, Vol. 11, Page 172*, *11*(2), 172. https://doi.org/10.3390/SYM11020172

Wei, C., Wang, Q., & Liu, C. (2021). Application of an artificial neural network optimization model in e-commerce platform based on tourism management. *Eurasip Journal on Wireless Communications and Networking*, *2021*(1), 1–21. https://doi.org/10.1186/S13638-021-01947-X/FIGURES/12

Wittwer, G., & Anderson, K. (2021). COVID-19 and Global Beverage Markets: Implications for Wine. *Journal of Wine Economics*, *16*(2), 117–130. https://doi.org/10.1017/JWE.2021.13

Ye, X., Fu, Y. K., Wang, H., & Zhou, J. (2023). Information asymmetry evaluation in hotel E-commerce market: Dynamics and pricing strategy under pandemic. *Information Processing & Management*, *60*(1), 103117. https://doi.org/10.1016/J.IPM.2022.103117

Yin, X., & He, J. (2022). Construction of Tourism E-Commerce Platform Based on Artificial Intelligence Algorithm. *Computational Intelligence and Neuroscience*, *2022*. https://doi.org/10.1155/2022/5558011

Zhang, H., Guo, T., & Su, X. (2021). Application of Big Data Technology in the Impact of Tourism E-Commerce on Tourism Planning. *Complexity*, *2021*. https://doi.org/10.1155/2021/9925260

Zhang, J., Wu, T., Fan, Z., & Yim, J. (2019). Research on precision marketing model of tourism industry based on user's mobile behavior trajectory. *Mobile Information Systems*, *2019*. https://doi.org/10.1155/2019/6560848

Zhang, X. (2020). Ongoing Trust and Tourism O2O Platform Continuance: A Two-Trustee Involved Model with Moderating Variable. *Https://Doi.Org/10.1177/2158244020920659*, *10*(2). https://doi.org/10.1177/2158244020920659

Zhao, M., Zhou, J., & Mu, J. (2021). SWOT Research on the Development of Rural Tourism E-Commerce System under the Background of Big Data Era. *Mobile Information Systems*, *2021*. https://doi.org/10.1155/2021/8112747

Živoder, S. B., Ateljević, I., & Čorak, S. (2015). Conscious travel and critical social theory meets destination marketing and management studies: Lessons learned from Croatia. *Journal of Destination Marketing and Management*, *4*(1), 68–77. https://doi.org/10.1016/J.JDMM.2014.12.002