

## **Research** Article

# Development of Tourism for Culture and Innovation Based on Convergence of Data in the Perspective of Industrial Integration

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The blurring of industry lines, or the phenomenon of new products or industries crossing over, is becoming more common. Academic circles have taken notice of this phenomenon, and the term "industrial integration" has been coined to describe the shift in interindustry relations. It can not only meet the demand of urban residents to return to nature and tradition with the connotation of rural ecology, agricultural production, and farmer's life in tourism for culture and innovation, as well as the expression of tourism activities. However, traditional tourism, which is primarily based on sightseeing, is no longer able to meet the demands of customers. People are increasingly interested in interactive, creative, experiential, and diverse tourism, and tourism destinations and services are increasingly valued for their cultural connotation and unique creativity. The basic idea behind data convergence as a data processing method is to make extensive use of data from all aspects of the system in order to extract the most effective information about the object or environment, resulting in a more precise and comprehensive understanding of the observed object or environment. As a result, this paper uses convergence of the data method based on a large amount of empirical research experience to study the driving factors, paths, and patterns of the fusion of commercial and innovative businesses with the tourism industry. It is based on industrial fusion theory and value chain theory and uses convergence of the data method based on a large amount of empirical research experience to study the driving factors, paths, and patterns of the fusion of commercial and innovative businesses with the tourism industry. The experimental results show that the global adjustment algorithm improves the model (i.e., the evidence) without changing the fusion formula. The fusion results improved by 0.595 on average when compared to the D-S algorithm, and the probability rapidly increased. As a result, the study of tourism for cultural and innovation development based on data convergence summarises the interaction between subsystems with logical thinking and depicts the process and direction of tourism creative industry fusion development in a more image and concrete manner.

## 1. Introduction

The phenomenon of industrial integration is gradually becoming more prevalent, and countries all over the world are paying attention to it [1]. Intangible cultural heritage should be inherited and protected during the development process, and it should also be integrated with traditional tourism to improve the cultural connotation, thereby speeding up the promotion of tourism consumption demand [2]. In this context, leisure consumption forms that can meet people's needs to reconnect with nature, experience tranquilly, and participate in tradition have grown in popularity among modern people [3]. With fierce international competition, serious environmental destruction, and a scarcity of nonrenewable resources, countries all over the world have begun to place a premium on the incorporation of cultural creativity into various industries. Among them, the state of tourism and its social environment has changed dramatically [4]. Culture and innovation tourism has become one of the most popular types of tourism among visitors. Tourism for culture and innovation has sparked new tourism development trends and resulted in a spatial expansion of tourism [5]. It has a unique connotation and comprehensively reflects the new form of cultural, artistic, and technological integration [6].

Despite the fact that tourism's importance in the national economy is gradually growing, it still faces a number of challenges: people's tourism needs are more at the stage of "superficial experience" in the era of mass tourism, pursuing the effect of "visiting this place" [7]. Data technology convergence has emerged as one of the international research hotspots, as a high-level common key technology of multidisciplinary, multisectoral, and multidisciplinary concern [8]. Cultural tourism is an advanced form of tourism that is experiential and creative in nature and is driven by tourism, socioeconomic, and cultural development. The current state of cultural, economic, and tourism development in most Chinese cities and regions also allows for the realisation of cultural and creative experiential tourism [9]. The combination of data integration and tourism for culture and innovation will meet China's rapid growth of mass tourism and new transportation needs, allowing for the integration, coordination, and efficient development of transportation and tourism, as well as a significant improvement in the convenience, comfort, safety, coordination, and effectiveness of tourism transportation [10].

The evolution of the division of labour, from the original domestic division of labour to an international one, has been fueled by the development of information technology and data convergence, which has linked markets all over the world, creating a massive market that has driven the evolution of the division of labour [11]. Simultaneously, pure landscape tourism is dwindling, and more and more tourism products are incorporating a humanistic component. The expansion of tourism into other industries, particularly commercial and innovative businesses, is continuing, and the integration with commercial and innovative businesses is deepening [12]. People will pay more attention to the diversification and enrichment of tourism products, as well as meeting people's spiritual needs, if policy research on tourism for culture and innovation is conducted. At the same time, it raises people's awareness of the importance of the creative tourism industry in the extension of the cultural industry's value chain [13]. The high integration between commercial and innovative businesses and the tourism industry has resulted in commercial and innovative businesses [14]. The development of industrial structure, industrial integration, and other related theories can be aided by the high integration of commercial and innovative businesses with the tourism industry [15].

The innovation points of this paper are as follows:

- This paper conducts a systematic and comprehensive research on tourism for culture and innovation from the perspective of industrial integration, and the research perspective and research object are relatively novel.
- (2) It has changed the traditional thinking of studying tourism. On the basis of absorbing the theories and achievements of various related disciplines, the corresponding theories and innovations are throughout, specifically concerning the specific mode of integration of the two industries and how to develop them.
- (3) The definitions of commercial and innovative businesses and tourism for culture and innovation always start from the perspective of industrial

integration, while the definition of tourism industry integration is based on the integration process, with certain content innovation.

## 2. Related Work

2.1. Tourism for Culture and Innovation Development from the Perspective of Industrial Integration. Developed countries are increasingly paying attention to the development of commercial and innovative businesses, and commercial and innovative businesses have become an incalculable force in a country's or region's economic development. Tourism accounts for a significant portion of China's national economy, and the development of modern tourism is of strategic importance and has a significant driving effect on the country's economy. However, as China's social and economic system continues to change, the traditional tourism industry, which is primarily based on natural tourism, faces serious resource consumption, a prominent supply-demand mismatch, and weak international competitiveness, as well as development bottlenecks and severe tests. As a result, finding a new breakthrough in tourism development has become an urgent problem to solve in the face of massive tourism demand and new in-depth tourism demand.

Zhou et al. define industrial integration as the reduction of interindustry barriers and the enhancement of interindustry competition and cooperation through technological innovation and relaxation of restrictions [16]. Caceres et al. state that the same technologies appear in different industries and that the reason for the continuous upgrading and innovation of these technologies is the integration and crossfertilization of different production technologies [17]. Huang et al. argue that industrial integration can be classified as technology substitution integration, technology integration integration, or technology complementary integration [18]. Zhang et al. argue that there are certain barriers between industries, specifically, the phenomenon of increasing crossover between different industries, mainly because the government no longer has strong control over firms, while technology is advancing and there is more and more cooperation between industries, which is the phenomenon of industrial integration [19]. Cvetek et al. construct a theoretical framework expressed in theoretical framework represented by three-dimensional coordinates to explain the nature of the convergence of media information services such as telecommunications and broadcasting [20].

The development model of tourism industry is changing from resource-oriented to market-oriented. The tourism industry has entered the era of experience economy, simple replication, no innovative connotation of tourism products have not been able to keep pace with the increasing demand of tourists. The trend is to transform and upgrade the traditional tourism industry. Therefore, the degree of industry integration has become one of the signs of a country's economic strength. The study of tourism industry integration theory can deepen the government's attention to the integration of various industries, especially tourism, and then formulate corresponding policies to promote better development of tourism. 2.2. Convergence of Data. Taking advantage of commercial and innovative businesses, traditional tourism, local special culture, and city marketing activities can be organically combined, which has a great effect on the local tourism image and city image. The penetration of commercial and innovative businesses into tourism industry provides an opportunity for the development of tourism industry. The continuous integration of tourism and commercial and innovative businesses has resulted in a series of new forms of tourism for culture and innovation such as tourism for culture and innovation parks and cultural festivals and tourism activities. Based on the nouns in the passages, the convergence of data method is used to calculate the common similarity between passages and between passages and texts and then fuse different texts.

Ottaviano and Cui have done a lot of work to unify the definition of convergence of data, establish a unified reference framework for convergence of data, and promote the application of convergence of data by establishing academic groups, organizing symposia, and publishing journals [21]. Li et al. proved that in general, the combination of Bayesian approximations of trust functions is equivalent to the Bayesian approximation of these trust functions, thus greatly simplifying the computation [22]. Zhang et al. consider convergence of data as a multilevel and multifaceted process of detecting, merging, correlating, estimating, and combining data from multiple sources to achieve accurate state estimation and identity estimation, as well as complete and timely situational and threat assessment [23]. Guo and Yang propose a consistent approximation method, which is characterized by the fact that the approximation computation focal elements are nested and the number of focal elements does not exceed the number assumed in the identification framework [24]. Yokoya et al. argue that it is difficult to grasp the intrinsic mechanism of industrial integration if we only stay at the level of some mediating factors, especially technological progress [25].

China's tourism industry is changing from closed tourism to an open "tourism plus" development model. Data integration, as a basic support, will continuously enrich the connotation of tourism and create new trends and new models of traffic tourism development. Therefore, in this context, exploring the integration development mode of cultural creativity and tourism industry will play an important role in China's economic development and industrial transformation and upgrading and will play a huge role in promoting in the future.

## 3. Research Ideas of Tourism for Culture and Innovation Development Based on Convergence of Data from the Perspective of Industry Convergence

3.1. Industrial Penetration and Integration Mode. Commercial and innovative businesses and tourism industries have different integration modes in terms of integration and penetration. This permeable mode of integration can extend their original industrial value chain, resulting in a new industrial form development model [26]. Creative industry is a composite industry formed by the fusion of cultural industry and creative industry, and its formation is schematically shown in Figure 1.

First of all, it is the mode of penetration of commercial and innovative businesses into tourism industry. Tourism performing arts is a new form of expression born from the integration of commercial and innovative businesses and tourism industry, which can promote the transformation and upgrading of tourism. The integration basis mainly plays a role in the integration preparation stage, and the integration dynamics mainly affects the integration occurrence stage, but also affects the degree of integration in the integration realisation stage [27]. Information fusion based on subsystem state prediction data and local sensor measurement data is performed to obtain subsystem state estimation data. Then, at the system level, convergence of data is performed between the state estimation data of the subsystem, the state prediction data of the subsystem, and the system state prediction data. The weights of the convergence of data obtained from the calculation are normalized by the following equation:

$$W(t,d) = \frac{1 + \log_2 t f(t,d) \times \log_2(N/n_l)}{\sqrt{-\sum_{t \in d} \left[ \left(1 + \log_2 t f(t,d) \times \log_2(N/n_t)\right) \right]}},$$
 (1)

where W(t, d) is the weight, t f(t, d) is the frequency, N is the total number of all videos in the training set, and  $n_t$  is the frequency of appearance of the word t.

The process is complex, and adaptive because human senses have different metric characteristics and thus can measure various physical phenomena in different spatial scales. The threshold T of the method is calculated by averaging E, the squared difference between pixels P, and the root mean square value Q between pixels for this window together, and the parametric equation for performing the threshold calculation is as follows:

$$T = a^* E + b^* p + c^* Q.$$
 (2)

Because the nonzero probability density gradient always points in the direction of the largest increase in probability density [28], sample points sampled from a probability density function are more often distributed along the direction of the probability density gradient. As a result, the mean drift vector corresponds to the probability density gradient [29] points in the same direction. The basis and premise of the integration of the two industries is formed by various forces such as tourism, commercial and innovative businesses, the external environment, and consumers. The foundation and interaction diagram of the integration of tourism and commercial and innovative businesses is shown in Figure 2.

Secondly, tourism penetrates into commercial and innovative businesses. Commercial and innovative businesses need to rely on the brand influence of tourist attractions in order to gain high popularity. Tourism industry can also take advantage of the development, and the two industries can complement each other in terms of function. However, barriers to integration may exist in the whole process of



FIGURE 1: Schematic diagram of the formation of commercial and innovative businesses.



FIGURE 2: The foundation of the integration of tourism and commercial and innovative businesses and the schematic diagram of their interaction.

integration: the preparation stage of integration may be constrained by institutional and policy barriers. And the integration phase may face technical barriers from various aspects of the business, and even the integration may fail to meet the needs of tourists after it is achieved. If a stochastic process is a Markov decision process, then for this stochastic process, there must exist a strategy whose outcome is better than other strategies in all cases. This strategy is also known as the optimal strategy; then,

$$\pi^*(s) = \arg\max Q(s, a), \tag{3}$$

where s is the moment,  $\pi^*(s)$  is the optimal strategy, and *a* is the action.

Then, the optimal value return function can be obtained:

$$Q^{*}(s,a) = \sum_{x_{*} \in s} T((s,a)) (R(s,a) + \gamma V^{*}(s^{*})), \qquad (4)$$

where  $\gamma$  is the influence factor.

In statistics, kernel densitometry is used to illustrate the density functions of random variables, as well as nonparametric test methods. Since the optimal indicator used is to achieve the best accuracy of the measurement estimation, the dynamic and statistical information related to the estimated quantity is not required to be used in the estimation. Even the statistical information of the measurement is not always applicable, so the estimation accuracy is not high. To convert various information or data (images, sounds, smells, physical shapes, or contexts) into a valuable interpretation of the environment requires a large number of different intelligent processes and a knowledge base suitable for interpreting the meaning of the combined information. Let  $x \in \mathbb{R}^n$  be a vector of unknown parameters, the measure y be a m-dimensional random vector, and a set of samples of y with capacity N be  $\{y_1, y_2, y_3\}$ , for which the statistic is

$$\widehat{x}^{(N)} = \phi\{y_1, y_2, ..., y_n\}.$$
(5)

Finally, industries with different types of industries but close ties, prompted by common interests, reintegrate their products or services and gradually merge into one. Technology, business, operation, and market boundaries gradually blur until they vanish, and then industry boundaries cross, leading to industrial integration. The majority of information on tourism websites is manually organised, and it is largely static, with little introduction of scenic spotrelated ancillary information. Although there are reviews of attractions for people's reference, there are a lot of them, and the reviewers of each review have different concerns, perspectives, and feelings about the attractions. The identification framework is the foundation of evidence theory; it underpins every concept and function of evidence theory, as well as the rules for combining evidence. When both the estimator and the real measure obey normal distribution, the linear minimum variance estimate is equal to the minimum variance estimate, implying that the linear minimum variance estimate is the best estimate among all estimates.

3.2. Industrial Integration Mode. This new model refers to the integrated development of industrial planning, resources, products, development, service facilities, customer groups, markets, and management of commercial and innovative businesses and tourism industry in a certain space. This integrated development is often mutual exchange and intermingling. The two industrial integrations did not directly transition from industrial separation to industrial integration, but gradually realized industrial integration through several microstages of accumulation and enhancement. The framework of information integration in tourism integration is shown in Figure 3.

Firstly, combining cultural creativity with tourism industry, adding some tourism elements to the cultural and creative industrial park, and making the cultural and creative industrial park into a tourism park can provide a richer product chain. Then, it leads to the blurring of technology boundary, product and business boundary, and market boundary; then, it realizes the integration of technology, product, business, and market; finally, it leads to the industrial integration. Tourism is characterized by dependency, and tourism activities need to be realized through a carrier. Previously, it was dependent on famous mountains and rivers, but now it is dependent on agricultural resources. Thus, two sets of points are given:

$$A = \{ (A_1, w(A_1), (A_2, w(A_2)), ..., (A_m, w(A_m))) \}, B = \{ (B_1, w(B_1), (B_2), ..., (B_m, w(B_m))) \},$$
(6)

where  $w(A_i), w(B_i)$  are the weight.

Using the logical sequence of "cause-process-result," on the one hand, we can find accurate conceptual ideas from the previous misunderstanding analysis, and at the same time, we can also clearly explain the connotation of the concept. We accelerate the transformation of transportation stations into tourist distribution centers, integrate ticketing services of civil aviation, railroad, and waterways, and provide tourists with one-stop convenient ticketing services such as self-service ticketing and online ticketing.

Secondly, the value chain of the original industry is dissolved so that each value chain activity link forms a chaotic value network, and then the core value-added links of the value chain of the original industry are extracted to build a new value channel. If it is greater than the threshold value, it is considered as a key frame. The following formula is often used to calculate the entropy between samples. The smaller the entropy is, the greater the similarity between samples. For an n dimensional space, the Minkowski distance between point X and point Y can be expressed as

dis 
$$(X, Y) = \sqrt[p]{\left|\sum_{i=1}^{n} |x_i - y_i|^p}, \quad i = 1, 2, ..., n.$$
 (7)

 $x_i$  is the *i* dimension characteristic data of point *X*.  $y_i$  is the *i* dimension characteristic data of point *Y*.

The integration of the two industries is a dynamic, forward, and deepening process, a "process" rather than a "result," and the degree of integration is its manifestation. The conceptual model explains the essential connotation of the concept of tourism industry integration by combining the essential causes of tourism industry integration with the process of interindustry change and integration results in the process of interindustry integration. Thus, it avoids the definition of the concept that previous conceptual studies discuss causes, patterns, and results separately, which cannot grasp the essence of tourism industry integration. Route planning can provide better routes and alternative route options for driving, public transportation, and two or more point interchanges based on the information of destinations, attractions, and service areas along the way determined by travelers or tourists. Assuming that w(k) is a smooth process with ideal spectral density, it can be described as follows according to the spectral decomposition theorem :

$$w(k) = \Lambda_k w(k-1) + \delta_k, \tag{8}$$

where  $\delta(k)$  is a zero-mean independent process that can be solved by augmenting the dimensionality of the state variables such that

$$X(k) = \begin{bmatrix} x(k) \\ w(k) \end{bmatrix}.$$
 (9)

Finally, if the two industries are functionally complementary, integration can be achieved through extension. The business and operation boundaries between the original industries are broken by extending the activity links of the respective industrial value chain, allowing the two industries to cross-fertilize. In this way, market competition and additional functions can be improved in both industries, resulting in a complete industrial system. The essential cause of integration, according to industrial integration theory, is an intangible element that crosses the industrial boundary. Because of its intangible nature, this intangible element can be applied across multiple integrated industries at the same time, and because of its rapid spread and development, it can



FIGURE 3: Information fusion framework in tourism information integration.

eventually lead to the emergence of new business models across industry boundaries, resulting in industrial integration. Traditional service areas are upgraded by means of information technology, and traditional offline services are upgraded to online services on the Internet to realize the digitalization of the industry and promote the socialisation of service area management, based on the "back station" transformation of highway service areas, under the guidance of the government and led by enterprises.

## 4. Application Analysis of Convergence of Data in the Research of Tourism for Culture and Innovation Development

4.1. Analysis of Global Adjustment Algorithm. The so-called global adjustment is to adjust the parameters of all focal elements so that the evidence relevance is reduced to the actual requirements. According to the global adjustment, the connotation of tourism for culture and innovation is expanded, and the development of tourism is also promoted. Tourism for culture and innovation industry is the product of the integration of cultural creativity and tourism industry, which skillfully integrates the unique, innovative, and artistic local culture with traditional tourism products.

First, it solves the problem of how to judge the relevant source evidence, the number of focal elements contained therein, and their degree of relevance, so that each evidence is approximately independent. We use artificial intelligence, big data, and other technologies, based on neural networks, clustering, classification, and other technical means to mine all kinds of data and perform correlation analysis. The thrust generated by the supply system, the pull generated by the demand system, and the support system of the external environment together constitute the power system of the integration of the two, and the three systems interact and influence each other to promote the development of industrial integration. Eliminate web symbols in the text, such as formatting symbols used in certain web pages. Their encoding format is not present in the text, so much so that these formatting symbols cannot be displayed properly in the text but exist in an unrecognizable encoding. The expected errors for network training are 0.01 and 0.05. The training error curves are shown in Figure 4.

The basic goal of convergence of data is to derive more information through data combination (which does not depend only on any single element of the input information), which is the result of optimal synergy. That is, the common or joint operation of multiple sensors is used to improve the effectiveness of the sensor system. The MAT-LAB platform is used here for network modeling and simulation analysis. The fusion results of the global tuning algorithm are shown in Table 1.

Secondly, the relevant evidence is decomposed by using standardized evidence correlation degree, so that the correlation between the evidence meets the requirements of practical application. Through the construction of traffic condition release system, traffic event detection system, and traffic operation judgment system, we realize the analysis and judgment of traffic data, provide the management department with decision basis, and provide the public and tourists with more effective and reliable travel services. This is decided by tourism enterprises, cultural and creative enterprises, and cultural and tourism creative products, and the power of industrial integration comes from industrial subjects. Training samples are extracted from various types of texts, and after training, the set of feature words and the association between various types of feature words and their corresponding categories are generated. The resources of multiple sensors are fully utilized, these sensors and their observation information are rationally controlled and used, and the redundant or complementary data of multiple sensors in space or time are combined according to certain guidelines to obtain a consistent interpretation or





TABLE 1: Fusion results of the global adjustment algorithm.

	Refuse to sentence	Misjudge	Correct
Training sample	19	16	9
Test sample	22	15	14
Proportion	25.9%	77.3%	56.9%

description of the measured object. To more clearly compare the effects of multisensor fusion estimation and sensor estimation, the comparison of fusion error, single-sensor error, and multisensor error is shown in Figure 5.

Finally, the correlation of relevant evidence is reduced, and local parameters are optimised, making fully independent evidence a requirement. We customise mature data products in the form of offline data packages, open data interfaces for enterprises, and push data packages for potential data demanders such as Gaode and Ali according to data sharing rules, based on the traffic and tourism integrated data resource catalogue and data sharing mechanism. The class relevance of the document is calculated using the classification formula described in this paper based on the number of feature words in the text and the class relevance of each feature word, which determines the text category. The digitised electrical signals will invariably have some interference and noise due to the influence of random factors such as the environment. As a result, the system state transfer model predicts the prior probability distribution, which is then corrected with updated quantitative measurements to produce the posterior probability density of the state.

4.2. Analysis of Local Parameter Optimization Algorithm. Although after the above global adjustment, the combination of evidence is bound to be overestimated if the above evidence is used directly. It cannot meet the error requirement of the system, which inevitably leads to inaccurate classification of the system. However, it cannot utilize multisensor resources as effectively as a multisensor information fusion system. In order to classify the evidence accurately, the local parameters among the evidence need to be optimised so that the proportion of relevant source evidence in each independent source evidence is minimized, and thus the almost independent evidence is completely decomposed into independent evidence.

First, the reason for the overestimation of the trust function of the synthetic evidence focus in the synthesis of relevant evidence is that the trust function of the relevant focus is reused in the synthesis of evidence. Most of the texts collected from travel websites in XML format are semistructured or unstructured texts. For those structured information, such as addresses, contact information, and tickets, data attribute fields can be easily extracted and placed in storage using only tags. Since the measured objects contain nonelectricity with different characteristics such as pressure, temperature, color, and clarity, they are first converted into electrical signals and then, through A/D conversion, into digital quantities that can be processed by the computer. Demanding parties can apply the received data products directly to the development of travel service software products such as Flying Pig and Ctrip according to their own business needs, reducing the cost of enterprise data collection and meeting the needs of the public for convenient travel. The linearized useful signal is subjected to feature extraction, and the convergence of data calculation of the feature quantity is performed according to certain rules, and the fusion result is finally output. The data estimation is carried out using the following three methods: estimation based on single-sensor I measurement data, estimation based on single-sensor II measurement data, and estimation



FIGURE 6: Comparison between actual value and estimated value based on single-sensor I measurement data.

of fused sensor III measurement data, respectively. The results are shown in Figures 6-8.

Second, the relevant evidence synthesis algorithm is linearized to facilitate the use of computers or other electronic devices to achieve the synthesis of relevant evidence. The text is then observed and analyzed to find the structural information contained in the text that can be stored and used. From there, simple extraction rules are developed, and attribute fields are extracted according to the rules and stored in the database. At the same time, application developers can feed other data related to the transportation industry into this platform, so that both parties can "take what they need" and "make the best use of it." In general, linear minimum variance estimation is equal to or very close to minimum variance estimation. General graphic scene information can be obtained using



FIGURE 7: Comparison between actual value and estimated value based on single-sensor II measurement data.



FIGURE 8: Comparison between actual value and estimated value based on single-sensor III measurement data.

TABLE 2: Comparison of fusion results.

	<i>m</i> 1, <i>m</i> 2	<i>m</i> 1, <i>m</i> 2, <i>m</i> 3	<i>m</i> 1, <i>m</i> 2, <i>m</i> 3, <i>m</i> 4
D-S	0.926	1.823	2.541
Local parameter optimization algorithm	1.324	2.524	3.227
Differential value	0.398	0.701	0.686

a TV camera system or charge-coupled device, external graphic scene information into the TV camera system, or charge-coupled device changing luminous flux into a changing electrical signal, after A/D conversion into the computer system. Therefore, we take the linear minimum variance estimation of the estimated quantities as the optimal criterion for convergence of data estimation. The convergence of data results using the D-S method and the local parameter optimization algorithm are shown in Table 2.

The local parameter optimization algorithm, that is, the evidence is modified, but the fusion formula is not modified, and the improvement is obvious. Compared with the D-S algorithm, the fusion result is improved by 0.595 on average, i.e., the probability improvement is very significant.

Finally, the combination rule of relevant evidence is inconvenient in practice due to the use of orthogonal sum to combine relevant evidence, which is not easily implemented by computer and needs to be linearized. According to various predefined similarity calculation rules, the similarity of information of the same attribute fields between two attractions from different websites is calculated, and the similarity of two attractions being the same attraction is obtained. Promote the connection with the transportation and tourism industry emergency command platform, and combine the data provided by big data analysis and research to assess and analyze the traffic situation, traffic volume forecast, scenic spot analysis, traffic congestion detection, etc. to realize the monitoring, early warning and diversion of tourist flow on key roads, tourist cities, and key scenic spots.

#### **5. Conclusions**

The integration of the creative and tourism industries is based on a new state of industrial development, with product integration, customer integration, enterprise integration, talent integration, and space integration serving as the cornerstones of the entire process, culminating in a new and dynamic development. The integration perspective can be understood as an industrial perspective based on the integration of the cultural and tourism industries. The specific product mix system of cultural tourism products, basic service facilities, soft services, and the social and cultural environment are all important considerations. Simply put, it is a cultural tourism industry perspective that develops with culture as the primary element, technology as a strong support, and product cultural creativity as the primary driver. Finally, it meets the diverse needs of citizens and achieves the unification of both economic and social values through product circulation on the market. It is difficult to establish more accurate mathematical or physical models due to the complexity of data, and people are increasingly demanding data system convergence performance. Because it is difficult to rely on just one fusion method, the complementarity of multiple fusion methods is becoming more popular. As a result, this paper investigates the development of tourism for culture and innovation using data convergence and proposes the industry penetration fusion model and industry fusion model. One of the most significant benefits of effective integration of the two industries is that it greatly promotes both industries' development while increasing tourism consumption, which improves people's consumer goods position. It can also unite the essence of the core level of creative products, raise the level of creative products, and increase the products' added value. It aids in the transformation of basic tourism creative products into more advanced tourism creative products to some extent.

## **Data Availability**

The data used to support the findings of this study are available from the corresponding author upon request.

## **Conflicts of Interest**

The author does not have any possible conflicts of interest.

#### References

- S. Lai, S. Zhang, L. Zhang, H. W. Tseng, and Y. C. Shiau, "Study on the influence of cultural contact and tourism memory on the intention to revisit a case study of cultural and creative districts," *Sustainability*, vol. 13, no. 4, p. 2416, 2021.
- [2] O. G. Francisca, F. A. Mariluz, and R. N. José, "THE IN-FLUENCE OF THE CULTURAL ENTREPRENEUR ON THE PERFORMANCE OF CULTURAL AND CREATIVE FIRMS[J]," Academia Revista Latinoamerica de Administracion, vol. 31, 2018.
- [3] X. Xia, "Cultural and creative park: city sightseeing landscape[J]," *Chongqing today*, vol. 000, no. 010, pp. 32–39, 2017.
- [4] Y. X. Liu, J. L. Xiong, Y. Chen, and T. F. Yen, "How to develop cultural and creative tourism at a demonstrated village in yi nationality region of liangshan prefecture," *Asian Journal of Education and Social Studies*, vol. 1, pp. 43–55, 2020.
- [5] V. Cariou, J. R. Jouan-Rimbaud Bouveresse, E. M. Qannari, and D. N. Rutledge, "ComDim methods for the analysis of multiblock data in a data fusion perspective," *Data Handling in Science and Technology*, vol. 31, pp. 179–204, 2019.
- [6] F. Mandreoli and M. Montangero, "Dealing with data heterogeneity in a data fusion perspective," *Data Handling in Science and Technology*, vol. 31, pp. 235–270, 2019.
- [7] L. Du and X. Yang, "Research on "marathon + tourism" industry integration strategy based on big data analysis from the perspective of global tourism," *Journal of Physics: Conference Series*, vol. 1648, no. 2, Article ID 022148, 2020.
- [8] Z. Wang, G. Cheng, and Y. Xiong, "A new model development for demand forecasting of supply chain from data fusion perspective," *Journal of Intelligent and Fuzzy Systems*, vol. 5, pp. 1–7, 2021.
- [9] H. Yinglei, Q. Dexin, and Z. Shengyuan, "Smart transportation travel model based on multiple data sources fusion for defense systems," *Soft Computing*, vol. 26, no. 7, pp. 3247–3259, 2022.
- [10] X. Chang, J. Wu, H. Liu, X. Yan, H. Sun, and Y. Qu, "Travel mode choice a data fusion model using machine learning methods and evidence from travel diary survey data," *Transportmetrica Transportation Science*, vol. 15, no. 2, pp. 1587–1612, 2019.
- [11] C. Shi, C. B. Chen, and W. Lam, "Heterogeneous data fusion method to estimate travel time distributions in congested road networks," *Sensors*, vol. 17, no. 12, p. 2822, 2017.
- [12] J. Zhao, Y. Gao, Y. Qu, and Q. Wang, "Travel Time Prediction: Based on Gated Recurrent Unit Method and Data Fusion[J]," *IEEE Access*, p. 1, 2018.
- [13] H. Bin, F. Zhao, G. Xie et al., "Crowd-sourcing a way to sustainable urban logistics: what factors influence enterprises' willingness to implement crowd logistics?" *IEEE Access*, vol. 8, pp. 225064–225075, 2020.
- [14] L. You, F. Zhao, and L. Cheah, "A generic future mobility sensing system for travel data collection, management, fusion, and visualization[J]," *IEEE Transactions on Intelligent Transportation Systems*, vol. 1, pp. 1–12, 2019.
- [15] S. Hossain and K. N. Habib, "Inferring the Purposes of Using Ride-Hailing Services through Data Fusion of Trip Trajectories, Secondary Travel Surveys, and Land Use Data[J]," *Transportation Research Record Journal of the Transportation Research Board*, vol. :12, 2021.

- [16] W. Zhou, Q. Li, Z. Li, N. Wang, Z. Pu, and Q. Wang, "Old town fringe recognition and travel characteristics analysis based on multi-source data fusion," *Advances in Mechanical Engineering*, vol. 11, no. 4, 2019.
- [17] N. Caceres, L. M. Romero, and F. G. Benitez, "Exploring strengths and weaknesses of mobility inference from mobile phone data vs. travel surveys[J]," *Transportmetrica A Transport Science*, vol. 16, no. 2, pp. 1–46, 2020.
- [18] Z. Huang, X. Ling, P. Wang et al., "Modeling real-time human mobility based on mobile phone and transportation data fusion," *Transportation Research Part C: Emerging Technol*ogies, vol. 96, no. NOV, pp. 251–269, 2018.
- [19] Z. Zhang, X. Wang, Y. Wu, and Z. Zhao, "Applied research on InSAR and GPS data fusion in deformation monitoring," *Scientific Programming*, vol. 2021, no. 4, pp. 1–9, Article ID 3888975, 2021.
- [20] D. Cvetek, M. Muštra, N. Jelušić, and L. Tišljarić, "A survey of methods and technologies for congestion estimation based on multisource data fusion," *Applied Sciences*, vol. 11, no. 5, p. 2306, 2021.
- [21] F. Ottaviano, F. Cui, and A. Chow, "Modeling and data fusion of dynamic highway traffic," *Transportation Research Record: Journal of the Transportation Research Board*, vol. 2644, no. 1, pp. 92–99, 2017.
- [22] M. Li, M. Zou, and H. Li, "Urban travel behavior study based on data fusion model," *Data-Driven Solutions to Transportation Problems*, vol. 1, pp. 111–135, 2019.
- [23] L. Zhang, J. Xu, and Y. Gong, "Unsupervised image and text fusion for travel information enhancement[J]," *IEEE Transactions on Multimedia*, vol. 99, p. 1, 2021.
- [24] Y. Guo and L. Yang, "Reliable estimation of urban link travel time using multi-sensor data fusion," *Information*, vol. 11, no. 5, p. 267, 2020.
- [25] N. Yokoya, C. Grohnfeldt, and J. Chanussot, "Hyperspectral and Multispectral Data Fusion: a comparative review of the recent literature," *IEEE Geoscience and Remote Sensing Magazine*, vol. 5, no. 2, pp. 29–56, 2017.
- [26] B. Hou, W. Huanfang, and X. Guojie, "Study on the influencing factors of crowdsourcing logistics under sharing economy[]]," *Management Review*, vol. 31, no. 8, p. 219, 2019.
- [27] V. V. Saikumar, M. Reddy, and K. Narayanan, "Enhancement of the data fusion and sensor selection in cloud computing [J]," *International Journal of Engineering & Technology*, vol. 7, no. 2, p. 313, 2018.
- [28] Z. Huang, Y. Zhang, Q. Li et al., "Joint analysis and weighted synthesis sparsity priors for simultaneous denoising and destriping optical remote sensing images," *IEEE Transactions* on *Geoscience and Remote Sensing*, vol. 58, no. 10, pp. 6958–6982, 2020.
- [29] L. You, H. Jiang, J. Hu, and Q. Li, "GPU-Accelerated Faster Mean Shift with Euclidean Distance metrics[J]," Error! Hyperlink reference not valid, 2021.