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Analysis of the influencing factors of tourists in Siguniang Mountain Scenic area —— Empirical evidence from the Baidu Index

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Abstract: With the epidemic gradually under control, the policy of steady growth began to take effect, and China's economy gradually began to recover. Tourism, as an important component of our economy, is one of the important driving forces to promote our economic development. This paper takes Siguniang Mountain Scenic area as an example. In order to study the influencing factors of tourist volume of Siguniang Mountain, based on the 100 degree Index, the search index of "Siguniang Mountain", the search index of "Siguniang Mountain Guide" and the search index of "Siguniang Mountain altitude" from 2022 to 2023 are selected as explanatory variables, and the DATA is obtained from graphs by using GET DATA software. And through the use of SPSS software to carry out multiple regression analysis and test, so as to obtain significant influencing factors. Through the analysis results, reasonable and effective suggestions are put forward for related tourism departments. This study found that we can increase the number of tourists to "Siguniang Mountain" by optimizing the name search index, optimizing the search index of travel tips, highlighting the uniqueness of altitude, cross-channel marketing, continuous data analysis and monitoring, and other aspects. As there are many influencing factors in this experiment and not all of them have been taken into consideration, there are also certain deviations in the data. Therefore, further improvements can be made in future experiments.

Key words: Tourist volume, Baidu index, Siguniang Mountain

1. Introduction

Tourism not only promotes cultural exchange and communication, improves the city's image and recognition, but also promotes the economic growth of the region. The State Council on September 29, 2023, issued by the release of the tourism consumption potential several measures to promote the development of tourism quality in the content of the clearly mentioned in order to further meet the

needs of the people, play an important role of tourism economic development, so to improve the quality of tourism, rich quality tourism supply, tourism consumption potential fully release, so as to promote the development of tourism with high quality. Data from relevant departments show that during the double festival, domestic tourism travel 830 million, the average daily tourists increased 71.3% compared with the same period last year; domestic tourism revenue 753.43 billion yuan, the average daily tourism revenue increased 129.5% over the same period last year. Thus it can be seen that tourist attractions should improve the quality of tourism and promote the importance of economic development.

"Siguniang Mountain", located in Xiaojin County, Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province, is famous for its lofty snow-capped mountains, rich plant resources and diverse animal ecology. It is the museum of snow mountains, showing the magnificence and purity of snow and ice, and the showroom of ancient trees and plants, telling the tenacious and colorful life, and the animal ecological park, showing the harmony and vitality of nature. "Siguniang Mountain" consists of four peaks, among which the main peak is 6250 meters above sea level, which is one of the highest peaks in Sichuan province. The beauty and mystery of "Siguniang Mountain" attracts countless tourists to visit it.

This paper takes "Siguniang Mountain" tourist attraction as an example to analyze the search data and tourist volume of the tourist attraction. Internet search data can be used as an effective indicator to analyze the tourists' tourism attention. The accurate selection of keywords is crucial for the accurate analysis of tourist flow^[1]. Through multiple regression analysis of the relationship between factors and the number of tourists, and then from the perspective of various factors, to provide reasonable and effective improvement plans for the relevant management of scenic spots, and promote the economic development.

2. Research design

2.1 Subject investigated

"Siguniang Mountain", located in the eastern edge of the Hengduan Mountains in Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province, is the highest peak of Qionglai Mountain, which means the Great God Mountain. It is made up of four perennial snow-capped peaks, just like four beautiful white gauze girls, hence the name and known as the "Queen of Shu Mountain". It is not only a resort of natural scenery, but also known as the "outdoor paradise" because of its rich mountain sports tourism resources. Relying on the unique advantages of "Siguniang Mountain", Jinfeng Village and other villages have developed into a popular place for outdoor activities, with featured agricultural products, restaurants, inns, horses and outdoor companies, providing tourists with a rich outdoor experience. Whether it is mountaineering and exploration, or a taste of rural customs, "Siguniang Mountain" and its surrounding

villages are a rare choice^[2]. During the Mid-Autumn Festival and National Day holiday in 2023, Sichuan province received a total of 56,910,200 tourists, and the reception volume of "Siguniang Mountain" scenic area exceeded 2 million for the first time. Therefore, this paper takes "Siguniang Mountain" as an example.

2.2 Data sources

By observing the intensity of correlation with "Siguniang Mountain" in Baidu demand map, this paper selects the three keywords "Siguniang Mountain", "Strategy of Siguniang Mountain" and "Altitude of Siguniang Mountain". The data source of this paper is from entering the search keywords on the Baidu index, setting the time to "2022-12-20 to 2023-12-7", and then searching the index data extraction to obtain information. The number of tourists in "Siguniang Mountain" is the way of the official website to obtain the data.

2.3 Research technique

Multiple linear regression models were analyzed after determining the independent and dependent variables and setting the regression equation. The regression equations were then tested to significance using the test statistic. If the test passes, the regression model can be used for predict and the predicted value evaluated.

The expression of the multiple linear regression model is:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \varepsilon \quad (1)$$

Y means the number of tourists in "Siguniang Mountain", X_1 means the search index of "Siguniang Mountain", X_2 means the search index of "Siguniang Mountain Strategy", and X_3 means the search index of "Altitude of Siguniang Mountain". ε is the error term, β_0 is the regression constant term, β_1 , β_2 , and β_3 is the regression coefficient.

3. Empirical results and analyses

3.1 Data collection and analysis

In December 2022, the number of tourists is low, according to the data table in "Siguniang Mountain" search index is higher, but the actual tourism strategy and altitude search index is low, and in the outbreak of more severe environment, speculation "Siguniang Mountain" tourism quantity received the impact of the outbreak and reduced. But around January 2023, the number of tourists began to gradually recover, and the search index also increased.

3.2 Regression analysis was performed using the SPSS

Using SPSS software, enter the original data of the four items of name search index, strategy search

index, altitude search index and tourist number of "Siguniang Mountain", click analysis-regression-linear for linear regression analysis. The results are shown in Table1 and Table 2 below.

Table 1 Basic linear regression R-square

R	R ²	Adj. R ²	Standard Error	Debin Watson
.873a	0.763	0.761	2865.21673	2.053

From the data provided in Table 1, the fitting coefficient R²=0.763, the adjusted fit coefficient R²=0.761, indicating that the search index of predictor name, strategy search index and altitude search index explain 76.3% of the tourists of the dependent variable, so it has a good fitting ability. The D-W value (Debin Watson) is 2.053, and the residual sequence has no auto correlation, which is independent and meets the statistical modeling requirements.

In Table 2, it can be seen that the significance of the name search index of "Siguniang Mountain", the strategy search index and the altitude search index is less than 0.05, respectively, which can significantly affect the number of tourists. The "Siguniang Mountain" name search index and the altitude search index are positively correlated with the number of tourists, while the strategy search index is negatively correlated with the number of tourists. As can be see from Figure 4, the VIF values of these three independent variables are 5.539,1.299 and 5.404, which are less than 10, so there is no multicollinearity.

In conclusion, the resulting regression equation is:

$$y = 1.281x_1 - 8.507x_2 + 14.184x_3 - 2950.198 \quad (2)$$

Table 2 Main regression report

Model	Unstandardized coefficients		Standardization coefficient	t	Conspicuousness	Collinearity statistics		
	B	Standard error	Beta			Tolerance	VIF	
(Constant)	-2950.198	443.505		-6.652	0			
The number of y tourists	Name search index	1.281	0.272	0.289	4.704	0	0.181	5.539
	Strategy search index	-8.507	4.077	-0.062	-2.087	0.038	0.77	1.299
	Elevated search index	14.184	1.359	0.632	10.433	0	0.185	5.404

4. Conclusion

"Siguniang Mountain" scenic spot, with its unique natural scenery and rich tourism resources, has attracted the attention of countless tourists. However, in today's increasingly fierce competition in the tourism market, how to accurately grasp the influencing factors of the number of tourists, so as to formulate effective operation strategies, has become an urgent problem to solve by the scenic spot management. In this paper, "Siguniang Mountain" scenic spot, for example, through establishing a regression model established the "Siguniang Mountain" tourists and "Siguniang Mountain" name search index, strategy search index and altitude search index have significant relationship, through regression analysis discusses the relationship between the tourists and related search index, provide decision support for the scenic spot management.

4.1 The name search index of "Siguniang Mountain" is positively correlated with the number of tourists in "Siguniang Mountain"

In this regression analysis, it is found that the name search index of "Siguniang Mountain" is positively correlated with the number of tourists of "Siguniang Mountain". Therefore, it can be considered to enhance the tourism publicity of "Siguniang Mountain" attractions, so as to increase the tourist flow. This result fully illustrates the importance of web search in the tourism decision-making process. When tourists are interested in "Siguniang Mountain", they often get more information about the scenic spot through a search engine. Therefore, the management of the scenic spot should make full use of this feature, strengthen the tourism publicity, and improve the popularity and reputation of Siguniang Mountain. For example, exquisite pictures of scenic spots, detailed tourism strategies and tourist comments can be released on major tourism websites, social media platforms and other channels to attract the attention and interest of more potential tourists.

4.2 The search index of "Siguniang Mountain" strategy is negatively correlated with the number of tourists in "Siguniang Mountain"

At the same time "Siguniang Mountain" strategy search index and "Siguniang Mountain" tourists, shows that in certain cases tedious and complex tourism strategy will let tourists, such as bad tourism environment, distant travel, and so on, through the search strategy and negative feedback will make tourists to the tourism initiation timid, so as to give up travel. Studies have shown that there is a deep correlation between the attraction factors of mountain outdoor tourist destinations and their cultural environment, and both play a key role in determining tourist satisfaction^[3]. Therefore, the management of scenic spots should attach great importance to the construction of network word of mouth, timely respond to the concerns of tourists, and optimize the tourism environment and service quality. By improving tourism facilities, improving service quality, strengthening the management of scenic spots, improve the satisfaction and loyalty of tourists, so as to attract more tourists to visit.

4.3 The altitude search index of "Siguniang Mountain" is positively correlated with the number of tourists

In this study, the altitude search index of Sigunjiang Mountain is positively correlated with the number of tourists. It is also worth considering. One of the areas rich in mountain sports tourism resources is Siguniang Mountain, which can be used to attract more tourists interested in mountain climbing and other mountain sports tourism^[4]. Studies have shown that the geographical conditions of Siguniang Mountain are suitable for the construction of tourist attractions with rock climbing as the theme, and a series of projects such as low and medium level climbing experience area, extreme rock climbing area, viewing deck and tourist rest camp can be planned to set up^[5]. In view of this characteristic, the scenic spot management can further develop challenging sports tourism projects, such as mountaineering, hiking, rock climbing, etc., to meet the diversified needs of tourists. At the same time, it can also strengthen the cooperation with relevant sports organizations, hold various sports events and activities, and improve the popularity and influence of Sigunjiang Mountain in the field of sports tourism.

4.4 Limitations and deficiencies

But in the actual operation of scenic spots, to visit the number of tourists numerous factors, such as scenic spots using the management and service, weather, the surrounding hotel quantity and other important factors, this paper is not included, and the data part from the website part from baidu index, these conditions will affect the accuracy of the analysis results.

There are many factors affecting the number of tourists, such as the management and service of tourist attractions, weather and climate, and the number of surrounding hotels, and all these factors may have an important impact on the number of tourists. However, these factors were not included in this analysis due to limitations in data acquisition and processing. Future studies could further expand the range of factors affecting the number of visitors and improve the accuracy and comprehensiveness of the analysis.

Secondly, the data used in this paper mainly come from the official website and Baidu index. Although these data are representative to some extent, there may still be deviations or errors. For example, tourists may obtain relevant information about Siguniang Mountain through other search engines or channels, which is not included in the analysis scope of this paper. Therefore, future studies could further expand the data sources and improve the accuracy and reliability of the data.

In conclusion, this paper found a significant relationship between the number of tourists and the Internet search index through regression analysis. This discovery provides useful inspiration and decision support for the management of scenic spots. However, we should also recognize the limitations and shortcomings of studies and improve and refine in future studies. At the same time, the

management of the scenic spot should also comprehensively consider other factors and formulate scientific operation strategies to ensure the sustainable development of the scenic spot.

5. Propose

Based on the analysis results, this paper puts forward the following suggestions:

5.1 Strengthen the optimization of the name search index

Since the "Siguniang Mountain" name search index is positively correlated with the number of visitors, this means that optimizing the search results of this name can increase the interest and visits of visitors. You can consider providing more detailed and accurate information about Siguniang Mountain on relevant websites and tourism platforms, such as the features of scenic spots, historical background, and the latest tourism information, to improve its online visibility. The management of scenic spots should pay attention to the optimization of keywords on major search engines and tourism platforms to ensure that tourists can quickly find accurate and detailed information of scenic spots when they search for "Siguniang Mountain". In addition, you can consider working with well-known travel bloggers and Internet celebrities to improve the online visibility of Siguniang Mountain through their influence. This will not only attract the attention of more potential tourists, but also improve the visibility and reputation of the scenic spot.

5.2 Optimize the strategy search index

Although the "Siguniang Mountain" strategy search index is negatively correlated with the number of tourists, it does not mean that the optimization of this aspect should be reduced. Instead, we need to delve into the reasons, which may be that the existing strategies are of low quality, outdated information, or negative reviews. Therefore, the scenic spot management party should strengthen the review and update of the content of the strategy, to ensure that the tourists are provided with the latest, the most accurate and the most valuable travel guide. At the same time, special feedback channels for tourists can be set up to collect and deal with the feedback of tourists on the strategy in time, so as to continuously improve and optimize.

5.3 Highlight the uniqueness of the altitude

As a high-altitude scenic spot, Sigunjiang Mountain's unique geographical environment provides tourists with a rich tourism experience. According to the analysis results, the altitude search index is positively correlated with the number of tourists, indicating that tourists have a strong interest in the high altitude characteristics. Therefore, in the tourism promotion, we can make full use of this advantage to highlight the mountain scenery, characteristic activities and challenging experience of Sigunjiang Mountain. For example, a series of tourism products related to alpine hiking and viewing plateau scenery can be designed to attract tourists who like outdoor sports to experience them. Studies have also shown that mountaineering guides are also one of the main forces driving mountain tourism,

so we can provide the necessary training and support for mountaineering guides to improve their professional skills and service level to provide better services for mountaineering tourists^[6].

5.4 Cross-channel marketing

In addition to online optimization, cross-channel marketing strategies combining online and offline can also be considered. In the digital age, a single marketing channel can no longer meet the diversified needs of tourists. Therefore, the scenic spot management should combine online and offline marketing means to achieve multi-channel coverage. Online, social media, tourism forums, blogs and other platforms can be used to improve the visibility and exposure of "Siguniang Mountain"; Offline, various tourism activities, publicity activities and special commodity sales can be held to attract tourists to visit on the site. Through cross-channel marketing, online and offline interaction and complementary effect can be formed, and the tourism attraction of "Siguniang Mountain" can be further enhanced.

5.5 Continuous data analysis and monitoring

The tourism market is a dynamic and changing process, and the needs and preferences of tourists are also constantly evolving. Therefore, the management of the scenic spot should regularly collect and analyze the data related to "Siguniang Mountain", including the search index, tourist behavior, market trends, etc., so as to better understand the needs of tourists and market changes. Through data analysis and monitoring, marketing strategies can be adjusted and optimized in time to ensure to keep pace with the needs of tourists and achieve sustainable development.

To sum up, we should take comprehensive measures in view of the increase of tourists in Siguniang Mountain. First of all, strengthen the optimization of the name search index, so that it is easier for tourists to find the relevant information of "Siguniang Mountain" in the network search, and increase the exposure rate. Secondly, optimize the search index to provide detailed and practical travel suggestions to stimulate tourists' interest and yearning for "Siguniang Mountain". At the same time, we should highlight the uniqueness of the altitude of "Siguniang Mountain" and publicize it as a tourism highlight to attract more tourists who pursue natural wonders. In addition, the cross-channel marketing strategy is implemented, and social media, tourism websites and other channels are used to widely spread the beautiful scenery and tourism resources of "Siguniang Mountain". Finally, continuous data analysis and monitoring to deeply understand the needs of tourists and market changes, timely adjust strategies to ensure the sustainable development of "Siguniang Mountain" tourism. Through the comprehensive application of this series of measures, it will attract more tourists to appreciate its unique charm and further promote the prosperity and development of local tourism.

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Multiple Themes in James Joyce's *Araby*

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Abstract: *Araby*, composed by the famous Irish writer James Joyce, comes the third in his collection *Dubliners*, which contains fifteen short stories in total. This novel tells a story of a young boy who pursued eagerly for his love and who was encountered with disillusionment at last. The epoch of James Joyce witnessed the great transformation from realism to modernism, which resulted in an increasing rise in attention paid to the description of mental state of the residents. Joyce expressed his concerns about the society through his meticulous depictions of daily chores. By analyzing details in the story, the spiritual emptiness of people at that time can be clearly seen. Based on researches in the past and the structuralism theory of Tzvetan Todorov, this essay aims to clarify the narrative structure of the story and its themes of mental paralysis.

Key words: themes, *Araby*, James Joyce, classes, spiritual emptiness

1. Introduction

1. 1 Introduction of James Joyce

James Joyce (1882-1941) was born in Dublin, the capital of Ireland, and was one of the pioneers of the Western modernist literature. His birth took place in a Catholic family, and he died in Zurich, Switzerland. He left Ireland when he was young and lived on teaching and writing for the rest of his life.

He showed his talents in music, religious, philosophy, language and literature and began to practice the composition of poetry and prose. His father had a strong belief in nationalism, while his mother was a devout Catholic.

When he was born, Ireland, once a beautiful island country, was colonized by British army and was haunted by constant wars. He had a large family of younger brothers and sisters, but he, the most talented son, was his dad's favorite. His desire for books was always satisfied by his dad, who supported him with money squeezed every day. He was familiar with the works of continental writers, and he was

especially influenced by Ibsen. Gradually, he exhibited his special understanding of the spiritual world and he began to rebel against the religion of his family. After his graduation from university, he participated in the Irish Renaissance at that time. But he soon got out as he opposed its ideas. In the same year, under the economic pressure and the constraints of his family, he left Ireland and headed towards Europe, where he led a separated life.

Joyce was one of the greatest writers in Europe whose works and the application of "stream of consciousness" had a remarkable impact upon the world.

1.2 Introduction of *Dubliners*

Joyce's *Dubliners*, published in 1914, contains 15 short stories about the lives of the lower and middle class citizens. They are arranged in chronological order: "Childhood", "Adulthood" and "Old age". Many readers do not understand the essence of the *Dubliners* nowadays. As Joyce's only novel collection, it is a little premature for the simple reason that the writing style has rarely been used. That is, through the descriptions of the chores and small fractions, he analyzed human nature and revealed the mental state of residents.

He commenced this book in 1904. In a letter to the publisher Richards, he clearly stated his intention: "My purpose is to write my own chapter for the moral and spiritual history of my country Ireland." (Joyce, 1914) In fact, this later turned into the goal of his literary pursuit and he committed himself fully to it all his life. In his eyes, Ireland, under the double oppression and repression of the British Empire and the Catholic Church, was stagnant, and Dublin was the center of paralysis. Its residents were numb, depressed and degenerate.

Joyce once lamented: "When did I leave Dublin? You will find that my feelings for Dublin were unforgettable." (Joyce, 1914) This novel revealed the "emotional paralysis" in Dublin, and showed the emotional state of people. It also reflected Joyce's expectations and sympathy for the people in his hometown who were living in darkness.

Araby is the third chapter of the book. It tells the story about a little boy. After a long and anxious wait, the boy lost in the illusion of the girl's charm. But his love finally ended in his epiphany. In the story, the ubiquitous images were not fictionalized by Joyce, but were real, ordinary things that people were familiar with. With his keen eyes, Joyce was able to capture the rich implications and associations of these commonplace objects on the streets of Dublin. These objects became images through his brain, and were promptly applied to his works, rendering and revealing the basic themes of the story. They presented a vivid picture of Dubliners' life at that time, while offering readers a deeper sense of repression. It seemed as if readers, too, had gone through this spiritual journey of epiphany with the boy.

The boy was innocent and immature at the very beginning. He lived in the dead lane called North Richmond Street. As he was in his years of adolescence, he had a hazy feeling about love and admired his

neighbor's sister but he didn't know how to express his ecstasy.

One day the girl told him that the Araby was a good place to go, but she said that she can't go because her church had a retreat. The boy was eager to buy her a gift. When the day finally came, his uncle forgot about it and came home late. Then his trip was delayed by the train. Finally, when he arrived there, the hall was dark and most of the stalls were closed. Soon the market would turn off the lights, and the upper half of the hall was completely dark. He felt himself was a poor creature driven and mocked by vanity, and he felt helpless.

The use of symbols is worthy of the readers' speculation and exploration. One could not help marveling at the author's consummate use of symbolism when he grasped the ingenious meanings of various images.

1.3 Introduction of this paper

This dissertation is aimed to make clear what the novel *Araby* is about and what the themes are, for theme is the most important of all when reading a novel. It will also make clear what the deeper meaning the author tried to convey.

This essay divides the main theme into different parts, and a part will be further divided into branches, making it easy to understand.

In general, it has three main parts containing the aimlessness of the citizens, the secularization of religion, the growth and the epiphany of the boy. The aimlessness is supported by evidences from the novel itself and the historical facts learnt from the references and online passages. Secularization of religion, however, is identified through details in the novel and clues betrayed by the three books found in the room of the dead priest. The last part is the epiphany. It was the result of the boy's mental growth. So in this part, things about his growth are sure to be given and analyzed.

Also, there are some delightful comments about the time the boy arrived at Araby. It can be understood if one can imagine the condition of the clock. His growth led also to isolation and a sense of loneliness, which existed pervasively in the novel.

2. Literature Review

2.1 Domestic paper overview

In 2002, Zhang Lian pointed out that the three different moods of the "I" in *Araby* are based on a textual analysis, and he explored Joyce's narrative strategies and the tones applied in the story.

According to Meng Jiangling (2016), the description of city life has become significant when shape a figure and reveal people's mental crisis in Joyce's time. In his days, British novels were changing from traditional realism to modernism. In this story, through the boy's observation, Joyce presented the loneliness of the boy. And he aimed to understand the mental space and the imaginative space in *Araby*,

thinking that the spatial description can reveal Dubliners' hopelessness. Meanwhile, it reflects observation about modern life of Joyce.

Wang Xuechun (2007) found that Joyce devoted himself to the spiritually liberation of Irish people all through his life, whose early works showed his talents. This could also be seen from the application of writing methods, the special symbolizations, contrasts and comparisons. Wang also analyzed this story from three perspectives: the social status in Dublin, the living conditions of the residents, and the life of human beings. Li Lu (2013) found that in this short story, the process of disillusionment of dreams was showed clearly to readers. She discussed the settings, characters in the novel and analyzed its symbols. Through the analysis, her study revealed different themes and demonstrated the ways of how these elements were applied.

Deng Rui (2009) pointed out that in *Araby*, several slight gothic elements could be found in terms of its literary styles, techniques and theme. Although some parts of *Araby* appeared bright, grotesque imagery, and irrationality also existed, which could be viewed as gothic elements.

Wu Haiping (2006) thought that *Araby* was told from the third person point of view. It was a man, rather than a young boy, who recounted the experience. Through analyzing the story, he was attempted to explore the ironic view of the institutions and persons surrounding the boy.

2.2 Foreign research overview

Ms. Rokeya and A.K. Zunayet Ahammed (2017) found that the boy underwent a shattering epiphany, which ended with realization and maturation. They suggested that Joyce evinced how a young boy gains sharp insights into his life.

But in 1994, A. R. Coulthard found that the anomalous word "vanity" was identified with a religious meaning at that time, which, he thought, was the key to understand the story's themes. What's more, anguish and anger were merely emotional reactions, while the admission of vanity, reflecting the oppressive Catholicism, could be more severely judged.

Jacques Chuto (2016), however, investigated the poet Mangan in real life, and he assumed that this poet must be the resource of Mangan's sister in the story.

"Ten minutes to ten" would portend the moment that adulthood overtook the boy's childhood. Steven Doloff (2011) thought it a simple visual icon for a widely acknowledged theme in the story.

Araby was one of those short stories where traces of the colonization of Ireland by the Great Britain could be found easily. Since the context was set in Dublin, Pedram Maniee (2017) analyzed it under the condition of post-colonial history.

Michael Skau & Donald L. Cassidy (2010) stated that while romantic elements contributed mostly to the development of the story, Joyce was more alluding to an episode in history, when the Catholic Church was in domination.

Kenneth Sandbank (1981) had no attempt to argue with others, as Edward (1981) said in his controversial study that writers in the Middle East were viewed as prisoners of an institutionalized system of discourse. As a result, they were less likely to see Orientals as human beings.

Obviously, the sixpenny gate was for children, William Burto (1967) found, the boy was forced to enter by the shilling (or adult) turnstile. He came as a boy but entered as a man. He made, at least, a further step towards manhood.

3. The Aimlessness of the Residents

Interpreting the living situation of the boy from the mental perspective can provide readers with an evidence of the mind-numbing state of the Irish people living in the paralyzed center of Dublin. Revealing the complicated psychological transformations of the boy from perplexity and despair to spiritual epiphany at the same time can make people gain the insights into Joyce much easier.

The state of mind of this sort can be the result of the colonization. Similar to Scotland, Northern Ireland is now a part of the United Kingdom. Medieval Ireland consisted of kingdoms founded by the Gaels, who spoke Irish and believed in Catholicism. Northern Ireland had been a colony of the UK since the 16th century, with large numbers of immigrants from England and Scotland moving to Northern Ireland. Most of them were wealthy Protestants who pushed Northern Ireland's proto-Catholics to death.

In 1801, a political alliance between the UK and Ireland was formed. As the majority of Irish aborigines were Catholics, Catholicism and Christianity experienced a cruel religious war, which led to severe discriminations against the Irish in the British Empire. The House of Representatives was controlled by royalists, who drove Catholics away and viewed them as second-class citizens. In 1845, Irish agriculture became fragile and people lived on potatoes. In the meantime, however, an outbreak of potato mycosis in Ireland caused a crop failure, causing the Irish population to fall by a quarter within seven years.

Unfortunately, the British government was indifferent to the famine in Ireland. The local residents did strive for equality but usually in the wrong way. They were contained repeatedly by the British government and gave in afterwards.

In the novel, there was a blind North Richmond Street, which, in reality, was indeed blocked. The boys who played in it aimlessly stood for the common Irish who were struggling in the wrong way with nothing to be achieved. When it comes to the situation of Ireland at the juncture of the century, they were unable to get rid of the British rules, the Catholic influence, making them unable to return to the good old days. The Irish, Dubliners in particular, for all their intelligence, seemed to reach a dead end. No one had the courage or the strength to fight back, nor could they save themselves.

Another interpretation of the “Blind alley” in the text was “the shutters”, which also implied that the boy had a vague and hazy impression of the girl. When he looked through the shutters, he could not see clearly. What could only be seen was a rough outline of the girl. What's more, the Bazaar was described as a good place to visit. In spite of it, his uncle was utterly indifferent to his enthusiasm for the Bazaar.

Upon arrival, he was disappointed by the atmosphere and the coldness of the sales girl. The dreariness of the so-called splendid bazaar could be clearly felt. He noticed the British accent through the talks among a woman and two men, which was the symbol for the colonizing power of the Great Briton. It was the colonization that made the “splendid” Ireland a dull place. This made it rational for the numb and aimless residents to appear.

4. The Secularization of Religion

The background of the novel has directed not only the material aspects mentioned above, but can also influence the spiritual perspectives. By rendering and portraying the living background of the characters, Joyce not only aimed to subtly imply the themes and pushed the development of the plot forward, but also intended to reveal the stagnant soul of the city. The boy in the novel conducted a series of acts in the process of pursuing his love, which were closely related to his living environment.

Joyce began his story with a description of dark, damp houses and smelly gardens, which alluded to the spiritual emptiness, helplessness, strangeness and estrangement of people under the oppression of the Catholic Church and the British government. It also implied that the pursuit of romance and beauty in such an environment would fail inevitably.

In the middle of the story, there was a house which was formerly rented by a priest. The dead priest represented the down fall of the dominance of Roman Catholicism. The images in the late clergyman's apartment were interwoven into a depressing scene: piles of scattered newspapers, old books with yellowish covers, deserted gardens, scattered shrubs, rusty inflators, and a lone apple tree. A sense of desolation and a hazy nostalgia for books that had nurtured the spiritual world of the Irish loomed around the house. In this way, the reader can see clearly the spiritual emptiness of the residents.

The musty, enclosed space of the room offered no sense of the sacred religious atmosphere, and the incongruity of the adventure books suggested the decline of the church and its men. The fall and disintegration of the religion led to the gradual disappearance of spiritual guidance and a decadence of people's state of mind. Even though children still went to Christian Brother School, Joyce used “set the boys free” (Dubliners, 33) to describe the release of the kids, showing his distaste for Roman Catholicism, and offering the implication that the Catholic Church was a prison. People led rigid and unchanging lives as prisoners. This was in accordance with the condition of Northern Ireland in history, which was

depressing and suffocating.

As for the three books in his room, their contents indicated that the priest was indulged in both religious and non-religious topics, which means that he had had enough of the trepidation of the world and tried to seek for happiness in adventure books.

The first book was *The Devout Communicant*, also called *Pious Meditations and Aspirations for the Three Days Before and Three Days After Receiving the Holy Eucharist*. It is a Catholic religious manual written by Pacificus Baker (1695-1774) who was an English Franciscan priest. It is a religious tract noted for its lush, pious language. By mentioning this book, Joyce indicated that the priest had not given up his belief in religion completely.

And the next two books, *The Memoirs of Vidocq*, and *The Abbot*, are all non-religious books. *The Memoirs of Vidocq*, composed by Eugene Vidocq (1775-1857), tells the story of a private detective, soldier, and thief. It is a popular novel with the theme of deception.

The Abbot is a historical novel by Sir Walter Scott (1771-1832). It is a romantic novel exhibiting the life of Mary Queen of Scots in a sexual fashion. Roland Graeme, its main character, was a young man reared by his relatives. And he dreamt of meeting his girl and then had a knightly quest to the splendid mall in order to buy her a gift. Roland Graeme got deeply involved in romance and adventure. This book probably shows that the priest did have some desires as common people do. And by mentioning these books on the desk of priest, Joyce suggested that even the priest had been depressed with the severity of religious life and the drabness of Dublin's life, so he kept reading it in order to excite himself. Since a priest was supposed, at that time, to dedicate himself to God fully, his love with crime and romance novels suggested that he was neither pious nor sincere towards God.

In general, all these elements constitute a piece of wasteland, which is mostly used by modernists in their works to attack the traditional way of living and thinking.

5. The Growth and the Epiphany of the Boy

Epiphany, according to Joyce, is a sudden realization occurred during common periods of life, or at some significant moments of life. They reach conclusions through enlightenment of this sort, rather than by making inferences or reasoning. It is the moment when the brain is at its most vigorous. One may realize suddenly a lack of meaning of his life after a long period of struggle, just like the boy in *Araby*.

The book *Dubliners* was organized according to these epiphanies to reflect the dumbness of the residents. The themes of *Araby* were displayed through this technique. At the end of the novel, the protagonist suddenly realized his vain. This moment of awakening is called "epiphany" by Joyce.

In *Araby*, the epiphany of the boy was gradually formed as a result of his own growth.

As a novel about a lovelorn boy, most of it was not about his love affairs, but about the world around

him in his own eyes, the streets he lived in, the apartments the late priest rented, and dialogues between aunt and uncle. The novel opens with the word “blind” to describe the street where the teens lived, and the first paragraph contains a series of depressing descriptions. In the vision of all these materials, the author, directly or indirectly, alluded to one thing. That was the growing loneliness of the boy, whether he was in the rectory, playing in the streets, studying in the schools, or living in his uncle’s house. He felt the loneliness could not be separated. Joyce concealed the paralysis and numbness of the people’s mind under the repressed spatial description, and the social environment. He felt that nobody understood him, and his growth separated him from his playmates. His loneliness stems from his spatial experience, for instance, when the uncle was standing in the hall, he was not allowed to go into the front room or lie on the windowsill; at school, the daily life became monotonous, the teacher scolded him for being lazy in class; in the street, he withdrawn from his usual frolic with his friends, which he considered quite childish. At the market, he walked triumphantly through a crowd with an imagined chalice in his hand. After making a request to her pious and ignorant aunt to go to the Araby, he was hoped not to go against the law. Although he thought his aunt and uncle were benevolent, he knew that they did not truly understand him. Also, although he had been satisfied with his friends and school life, he became impatient with it, as he couldn’t find people or things that he felt connected to. In this way, he rejected the world around him, and the world around him also rejected him in return. By this means, he had a different kind of feeling, a mixture of loneliness and love. It was this feeling that he was proud of, despite his isolation. And, it was precisely this feeling that made him set his foot on the journey to the exotic markets to buy gifts for his girl. When his friends were still playing aimlessly outside in the streets, he was watching her from the attic. This indicated his growth, which was necessary for the epiphany to take place.

Mangan’s sister was referred to by the boy as a chalice when he was walking through the noisy lanes, and this object contained in it a great many implications at that time, especially religious ones. As chalice originated from the fairy tales and folklore, it was affected by Christian ideas, and was transformed into a Christian legend. It was that it was used to hold Jesus’s blood during his crucifixion. Under that sort of circumstances, it seemed that only the boy had a kind of religious belief while others were mostly emerged in their own physical lives. What’s more, the boy was a romantic hero to some degree, he found himself in ‘places the most hostile to romance’ (*Dubliners*, 36). In history, Ireland’s poetries were reduced to badly-sung popular poetry for the commons while ‘litanies’, which was originally a form of prayer, were debased in the market-place, used to advertise goods. The boy sang his own authentic form of litanies, which took the form of his loved one’s name: “Her name sprang to my lips in strange prayers and praises which I myself did not understand” (*Dubliners*, 36). As he was not influenced by the noisy conditions and had his own belief, he began to develop a sense of loneliness and

incongruity.

When he arrived at the destination, the expression of his disillusionment and despair was presented by the metaphor of the heavy space of the hall: "I find myself entering a hall with a Veranda half way up. Almost all the stalls were closed and most of the room was dark. I realized that there was a kind of silence, like the silence that filled the church after the service. I went timidly to the middle of the market. Two men were counting the money on a tray in front of the curtain. I listened to the sound of coins falling." (*Dubliners*, 36)

In his book *Understanding Fiction*, Warren (2004) explained the image: "Of course, this detail is exemplified by the biblical cashiers of the Temple of the Gospel of Mark in Jerusalem (11:15), and here it reminds us that the earthly filth has eroded the temple of love." The connection between the church and the bazaar was instantly established, indicating the sacred place was transformed into a profane business area. He was then bewildered by the sound of coins clashing in his ears and the multitude of shops in front of his eyes. He had to look at porcelain vases and floral tea sets to recall the purpose of the trip, while the conversations of three Englishmen confused him. From this could be seen the numb state of their mind and the degradation of the religion. At the beginning, he had many nice fantasies about the name Araby. Influenced by sexual and material desires, the almost religiously sacred love gradually collapsed. He felt that he was only a fool driven by the illusion, and the so-called "divine love" was simply vulnerable when faced with profane things. The illusory love shattered, his illusions returned to the reality.

Another thing that deserves our attention is the time when the boy arrived at the bazaar, which also carries with it implications of the boy's spiritual growth.

Near the end of the story, Joyce fixed the time of the boy's arrival at the bazaar at exactly 9:50 P.M., though other events in the story were only given approximate times. Ehrlich (1998) offered the solution to the puzzle that by having the boy specify "the lighted dial of a clock" showing "ten minutes to ten" (*Dubliners*, 37), Joyce was evoking, as part of an Irish Orientalist motif in the story, a "tradition of Arabic ciphers, which use letters of the alphabet and individual numbers as substitutes for each other" (326). He continued that if one regard 'ten' as a cipher in the Latin alphabet, he can obtain the letter 'J,' and for two tens he will get 'JJ,' James Joyce's initials (326).

But Steven Doloff (1999) was disagreed with Ehrlich's ideas, he thought the solution to this puzzle could be that the time references the main character, rather than the author. He pointed out that the readers are invited to imagine "the position of the hour and minute hands, which are perfectly superimposed" (326). While clock hands regularly meet twenty-four times during the course of a day, their particular occurrence at 9:50 P.M. at the end of story had a special meaning. If one choose to see the longer minute hand of the clock as representing adulthood and, so to speak, the shorter one as

childhood, then “ten minutes to ten” would portend the moment when adulthood overtook the childhood, eclipsed it, and finally left it behind, which was a simple visual icon for an acknowledged theme in the story.

It was proved by the behavior of the boy when he was entering the gate of the bazaar. He “could not find any sixpenny entrance and, fearing that the bazaar would be closed, and passed in quickly through a turnstile, handing a shilling to a weary-looking man” (*Dubliners*, 34). William Burto (1976) noted here the boy’ s inability to find a child’ s sixpenny entrance, so he forced himself to use the general-admission shilling turnstile into the bazaar and anticipates the similarly imposed “adult” perspective on himself.

Apart from these, a sharp contrast between reality and fantasy also contributed to the epiphany of the boy: the experience of his being with his aunt to the market brought the fantasy of him up to its peak, while his journey to the Araby brought his fantasy back to reality. To understand fully of this, Northrop Frye (1957) offered his theory of myths. It contains 4 parts, but the mythos of winter can be applied to the understanding of *Araby*. The mythos of winter, which can be revealed through the use of irony, describes a world that contains nothing but failures and depression. The main character is frequently defeated by setbacks in his life. He has the inclination of becoming a hero, but he was overwhelmed by tragic events and will never be able to obtain what he wants. In the story, the irony was used many times to show that the author was not satisfied with the stagnant society.

6. Conclusion

This essay makes clear of the themes in *Araby* and analyses each of them respectively. The title *Araby* could be seen as what pushed the whole plot forward. It was the first connection established between them and the end of their affairs. The novel itself was intended to be a description of spiritual world of Ireland. Residents in it became numb after years of struggles against the colonizers and showed no signs at that time of intending to revive.

The boy was the only different one who was eager to seek for what he desired. According to the structuralism theory proposed by Tzvetan Torodov (1969), a passage can be seen as a combination of multiple sentences. And sentences can be analyzed from various perspectives. In this respect, verbs or nouns that appear repeatedly are to be paid greater attention to than other common words. When it comes to *Araby*, one can easily find that the experience of the boy can be simplified into three verbs: search, find, and lose, which repeated several times in the whole story. That means the boy achieved nothing in the end, making the story a tragedy and the boy a tragic hero.

To sum up, *Araby* is about the love of a boy, but it indeed has a deeper meaning. By analyzing various events in the process of his growth, one can find the root of his pain and loneliness. This is what Joyce intended to tell residents in Ireland: the numbness and paralysis of society would eventually lead

to the disillusionment of the ideals of the young generation. The local people and even the whole country, without the vitality and vigor, would be doomed to collapse. This novel consists not only the enlightenment of the boy, but also shows the patriotism of the author, which may be one of the reasons why *Araby* can still remain popular nowadays.

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In the Age of Technological Prowess: Managing Green Transformation of Ningbo Maritime Logistics through Intelligent Technologies

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Abstract: This paper examines the role of intelligent technologies in driving the green transformation of maritime logistics in Ningbo. It identifies challenges related to technological investment and costs, non-technical factors, data security, and proposes corresponding solutions. By addressing these challenges, shipping companies can unlock the potential of intelligent technologies, leading to improved operational efficiency and reduced environmental impact.

Key words: Ningbo maritime logistics, green transformation, intelligent technology

1. Introduction

Maritime logistics serves as a vital pillar for the economic development of Ningbo, playing a crucial role in ensuring smooth supply chains and promoting foreign trade [1-2]. With a continuous 14-year

record of being the global leader in cargo throughput and the third-largest container port at the Ningbo-Zhoushan Port, the prosperous maritime logistics activities have brought significant economic dividends to the city. However, the carbon emissions, exhaust gases, wastewater, and waste discharge generated by related industries pose serious threats to the port environment and public health [3].

Furthermore, in 2023, the European Union formally included the shipping industry in the Emissions Trading System (ETS), and the transition period for the Carbon Border Adjustment Mechanism (CBAM) is less than two years. The International Maritime Organization (IMO) has also established a new target to reduce greenhouse gas emissions from maritime shipping by 80% by 2040. These developments highlight the importance of the green transformation of maritime logistics, not only for Ningbo but also for ecological conservation in China as a whole.

Ningbo has proposed achieving world-leading levels of intelligent, green, and safe port construction by 2025, accelerating green transformation efforts, and effectively addressing carbon reduction and pollution control. However, the large-scale maritime logistics activities have resulted in significant pollution and carbon emissions [4], severely impeding the goal of establishing an intelligent, green, and safe port in Ningbo by 2025. Therefore, achieving the green transformation of maritime logistics has become an urgent and critical task that Ningbo needs to tackle.

On the other hand, Ningbo has set its sights on new goals for the development of the digital economy. The advancement of intelligent technologies, such as artificial intelligence, big data analytics, low-cost information collection and transmission, cloud computing, and the internet of things, has become a crucial force driving economic and social development. Intelligent technologies can deeply integrate with key carbon-emitting sectors like electricity, industry, and construction, reducing energy and resource consumption. They also promote energy optimization, cost optimization, risk prediction, and decision control in traditional industries, ultimately achieving energy conservation, cost reduction, quality improvement, and efficiency enhancement. This pioneering experience provides a successful template for the green transformation of the maritime logistics industry in the city.

However, academic research on the application of intelligent technologies to drive the green transformation of maritime logistics in Ningbo is extremely limited. The theoretical development in this field significantly lags behind practice. In this context, it is crucial to address the pressing issue of how to effectively apply intelligent technologies to the green transformation of maritime logistics, accelerate carbon reduction and pollution control efforts, and achieve the goal of establishing an economic system based on green, low-carbon, and circular development as early as possible.

Therefore, this study aims to explore how intelligent technologies can be more efficiently applied in the maritime logistics industry within the context of digitalization, achieving the green transformation of maritime logistics, accelerate carbon reduction and pollution control efforts, and expedite the establishment of an economic system based on green, low-carbon, and circular development.

2. Current Challenges and Solutions

2.1. Technology investment and costs

Implementing intelligent technologies to drive the green transformation of maritime logistics in Ningbo involves significant technology investment and costs. Companies need to carefully evaluate the financial implications of adopting these technologies, especially for SMEs.

One major aspect of technology investment is the acquisition of hardware equipment. Upgrading or acquiring new hardware, such as sensors, data storage systems, and communication infrastructure, is essential for supporting intelligent technologies. However, this incurs costs related to purchasing, installation, and ongoing maintenance. Another crucial consideration is the implementation of software systems. Intelligent technologies require software for data analytics, optimization, and decision-making. Companies may need to invest in customized software development or purchase existing solutions, which can involve licensing fees, implementation costs, and ongoing maintenance expenses.

Additionally, talent training is necessary to effectively utilize intelligent technologies. Companies need to train their workforce in data analysis, artificial intelligence, and other relevant skills. This may involve organizing training programs, hiring specialized personnel, or partnering with external agencies, all of which come with associated costs. Integrating and implementing intelligent technologies into existing maritime logistics operations also requires careful planning and execution. Companies may need to invest in consultancy services or hire experts to ensure a smooth integration, which incurs professional service fees.

Furthermore, companies need to consider the scalability and future upgrades of their intelligent technology systems. As technology advances, investments may be required to keep pace with evolving technologies and industry requirements. Before making significant technology investments, companies should conduct a comprehensive cost-benefit analysis. This evaluation should consider the potential long-term benefits, such as reduced energy consumption, improved operational efficiency, and enhanced competitiveness, against the initial and ongoing costs of technology implementation. Furthermore, we call for research that considers the coupling coordination between technological

applications and green transformation [5].

By carefully considering these technology investment and cost factors, companies can make informed decisions about how to apply intelligent technologies to drive the green transformation of maritime logistics in Ningbo while balancing their financial considerations.

2.2. Non-technical factors

In addition to technical challenges, non-technical factors can also influence the effectiveness of using intelligent technologies to drive the green transformation of maritime logistics in Ningbo. Factors such as management capabilities, employee awareness, organizational structure, and business philosophy can all impact the successful application of technology. Without considering these factors adequately, even with the adoption of advanced intelligent technologies, the expected green transformation outcomes may not be achieved.

The management level of a company plays a crucial role in the implementation of intelligent technologies. Effective leadership and decision-making are necessary to guide the organization through the transformation process. Managers need to understand the potential benefits and costs associated with technology adoption and make informed choices accordingly. Employee awareness and engagement are essential for successful technology implementation. Organizations integrate sustainable practices by providing education and training to employees [6], enabling them to understand the advantages of intelligent technologies and their role in achieving green objectives. Without a supportive and knowledgeable workforce, the adoption of these technologies may face resistance or encounter difficulties in implementation.

The organizational structure and culture of a company can either facilitate or hinder the integration of intelligent technologies. A flexible and agile organizational structure that encourages collaboration and innovation is more likely to embrace and leverage these technologies effectively. On the other hand, a rigid and hierarchical structure may impede the adoption process. The business philosophy and strategic goals of a company also impact the approach to technology investment. Companies with a long-term vision and commitment to sustainability are more likely to allocate resources and prioritize investments in intelligent technologies. Conversely, companies focused solely on short-term financial gains may be reluctant to invest in these technologies, even if they offer potential long-term benefits.

To drive the green transformation of maritime logistics in Ningbo through intelligent technologies, it is crucial to consider and address these non-technical factors. Companies need to enhance their

management capabilities, promote employee awareness, adapt their organizational structure, and align their business philosophy with sustainability goals [7]. Only by doing so can they fully leverage the potential of intelligent technologies and achieve the desired green transformation outcomes.

2.3. Data Security

In the process of leveraging intelligent technologies to drive the green transformation of maritime logistics in Ningbo, a vast amount of data is collected, stored, and analyzed. This raises concerns regarding data security. Ensuring that data is not illegally accessed or misused is a crucial issue that companies must consider when implementing intelligent technologies.

With the collection and storage of sensitive data, such as customer information, logistics operations, and environmental impact assessments, there is an increased risk of data breaches and unauthorized access. Hackers and malicious actors may attempt to gain unauthorized access to valuable data for personal gain or to disrupt operations. This poses a significant threat to the integrity and confidentiality of the data. Furthermore, the misuse of data can have severe consequences for both individuals and organizations. Personal information may be used for identity theft or fraud, while business data can be exploited for competitive advantage or to manipulate markets. In the context of green transformation, inaccurate or manipulated data can also lead to false conclusions or misguided decisions, undermining the effectiveness of the transformation efforts.

To address these data security challenges, companies need to implement robust security measures. This includes employing encryption techniques to protect data in transit and at rest, implementing access controls to restrict unauthorized access, and regularly monitoring and auditing data systems for any suspicious activities. Additionally, companies should invest in employee training to raise awareness about data security best practices and establish clear policies and procedures for data handling and protection. Collaboration with cybersecurity experts and adherence to industry standards and regulations can further enhance data security. Regular vulnerability assessments and penetration testing can help identify potential weaknesses in data systems and proactively address them. Additionally, companies can consider adopting technologies such as blockchain, which offer enhanced security and transparency in data transactions [8].

By prioritizing data security and implementing comprehensive measures, companies can mitigate the risks associated with data collection and analysis in the context of intelligent technologies. This ensures that data remains secure, confidential, and protected from unauthorized access or misuse, enabling a safer and more effective green transformation of maritime logistics in Ningbo.

3. Conclusion

The green transformation of maritime logistics in Ningbo necessitates the effective utilization of intelligent technologies. However, several critical challenges and considerations must be addressed to ensure the success of this transformation. This paper has examined three key areas: technological investment and costs, non-technical factors, and data security. By exploring these challenges and proposing corresponding solutions, we can pave the way for a sustainable and efficient green transformation.

Firstly, technological investment and costs pose a significant hurdle. While intelligent technologies offer immense potential for optimizing operations and reducing environmental impact, the initial investment and ongoing maintenance costs can be substantial. To overcome this challenge, companies must carefully evaluate the long-term benefits and weigh them against the upfront costs. Implementing a comprehensive cost-benefit analysis, seeking government incentives or subsidies, and exploring collaborative partnerships can help mitigate financial barriers and facilitate the adoption of intelligent technologies.

Secondly, non-technical factors have a crucial influence on the success of the green transformation. Management capabilities, employee awareness, organizational structure, and business philosophy all play pivotal roles in driving the effective integration of intelligent technologies. Organizations must prioritize developing strong leadership and decision-making capabilities, fostering employee engagement and training programs, fostering a flexible and innovative organizational structure, and aligning business strategies with sustainability goals. By addressing these non-technical factors, companies can create an environment conducive to the successful implementation of intelligent technologies.

Lastly, data security is of paramount importance. With the collection, storage, and analysis of vast amounts of data, companies face the risk of data breaches and unauthorized access. To safeguard the integrity and confidentiality of data, companies must implement robust security measures. This includes encryption techniques, access controls, regular monitoring, and employee training. Collaboration with cybersecurity experts and adherence to industry standards can further enhance data security. By prioritizing data security, companies can ensure the safe and responsible use of data in driving the green transformation.

In conclusion, the green transformation of maritime logistics in Ningbo can be effectively driven by intelligent technologies. By addressing challenges related to technological investment and costs,

non-technical factors, and data security, companies can overcome barriers and unlock the full potential of these technologies. The successful implementation of intelligent technologies will lead to improved operational efficiency, reduced environmental impact, and a sustainable future for maritime logistics in Ningbo. It is imperative for companies, governments, and stakeholders to collaborate, invest, and prioritize these solutions to achieve a greener and more efficient maritime logistics industry.

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On Internet News Translation under Nord's Text Analysis Model ---Taking "Paris Olympics 2024: Locals ask if they're worth the trouble" Reported by BBC as an Example

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Abstract: With the progress and development of Internet technology, the cause of Internet news media is growing. With the pace of globalization, China and the world are constantly strengthening their exchanges and contacts. News reports help the general public to understand the current hot news, and the development of the Internet also makes news reports reappear in a new form, that is, network news reports. Based on Nord's text analysis model, this paper discusses the translation methods and strategies of online news texts. This paper aims to provide effective guidance and reference for the translation of online news texts, and hopes that translators can promote international cultural exchanges and contacts in the process of translating such texts.

Key words: Nord, Text analysis mode, Network news, Translation

1. Introduction

Nord is the second generation representative of German Functionalist School. Following the development of Reiss's text type theory, Nord further put forward her own text analysis model. Nord's Text Analysis Model is based on her book *Text Analysis Model in Translation: Theories, Methods and Teaching Applications*, which elaborates the theoretical basis of the Text Analysis Model in Translation, and explains the role and function of source text analysis in translation, then focuses on the basic elements of source text analysis, and finally discusses the application of the analysis model. ^[1]At the same time, Nord mainly analyzes a series of complex and related factors inside and outside the source text in her works. Translators' analysis of the source text plays a guiding role in translation. On the one hand, they can understand the purpose and function of the source text more clearly, so that translators can understand the source text more thoroughly; On the other hand, it can interpret the source text

more accurately, guide translators to adopt translation strategies suitable for the purpose and function of the source text, guide translation practice and improve translation quality.

The textual factors that Nord focuses on are mainly intra-textual factors and extra-textual factors. The factors outside the text include: sender, sender's intention, receiver's expectation, text medium, communication place, communication time, communication motivation and text function; The intra-textual factors include theme, content, presupposition, text composition, non-linguistic factors, vocabulary, sentence structure and suprasegmental features.^[2] Nord once said in her book: "She hopes to have a translation-oriented text analysis model to help translators solve some problems in the process of translation. This pattern has the following two characteristics: Firstly, it is very general and can be applied to all text analysis; Secondly, it is very specific and can analyze various translation problems. Among them, the factors outside and inside complement each other, forming a set of scientific and comprehensive text analysis mode. What kind of text belongs to and how the translator's comprehension ability will not affect the effectiveness of the text analysis model".^[3] However, her proposal of this model just confirms her own hope. This text analysis model is not only a detailed analysis model, but also adds elements of text analysis, so that this model can be used to analyze sentences and text constituent units above sentence level in texts.

2. Case analysis

The case analysis is selected from BBC, a report titled "Paris Olympics 2024: Locals ask if they're worth the trouble". The news mainly discussed from three perspectives, including the mayor of Paris, the chief of police, the citizens living in Paris. They discussed whether the opening of the Olympic Games in Paris has won the support of the majority of Parisians, and also expresses the confidence and determination of the Olympic athletes to the success of the games.

As network news, its main means is to convey information to the public in a timely manner through network media. With the development of the Internet, network media has also spread rapidly around the world, and it acts as a link and a way to enhance the soft power of a country's culture. Therefore, the translation of network news texts requires translators to realize cultural exchange and communication between countries on the basis of paying attention to the principles of news translation.

2.1. Extra-textual factors

The translator selects the sender's intention, the expectation of the recipient and the function of the text, and analyzes them from these three aspects, so as to realize the intention and purpose of the original news report, transmit the news information content to the readers, and help readers understand the in-depth report of relevant current events in the text, the follow-up events, and the attitudes and comments of people on the news and foreign media on the news in the report. In view of how to

translate the extra-textual factors into online news reports, the translator mainly starts from these three aspects in order to meet the needs and expectations of readers and achieve the purpose of online news translation. In this process, the translator should not only transmit the original information, but also pay attention to the readers' requirements and "tastes" in the translated text, so as to decide what translation methods and strategies to choose to meet the needs of the audience. [4] From the example of Wilke and Rosenberger (1994) took a leadership role in delving into the issue of the process that news translation is expected to involve before it is to be officially published in the target culture. After undergoing a study on a wide range of news collections by the Associated Press, they finally concluded that in when foreign news are translated and released in Germany, the texts were adapted to the specific journalistic style of the target language and culture. [5]

2.1. 1. Implementing sender's intention

The use of sender's intention in this network news report is mainly reflected in a large number of direct quotations. In the BBC's quotation of a large number of relevant figures in the original news reports, its role is mainly reflected in two aspects: on the one hand, it can enhance the authenticity and objectivity of the article; On the other hand, we can also express their true attitude and evaluation of this incident through the original words of the characters. Translators adopt literal translation and flexible transformation in the translation of direct speech in order to make the original content information more truly transmitted and introduced to readers.

Sample 1

SL: "How long is it before the police chief simply asks us Parisians to leave the city?" another inhabitant asked on social media.

TL:另一位居民在社交媒体上问道：“警察局长还要多久才要求我们巴黎人离开这座城市？”

Analysis: Direct speech is involved in this sentence. Its content expresses the strong will of the citizens of Paris in France to leave Paris and the view that the citizens are eager for the government to ask them to leave directly. The translator adopts literal translation, which directly and truly reveals the attitudes and viewpoints of the relevant characters in the original text, and retains the attitudes and emotions that citizens want to express.

2.1. 2. Achieving recipient expectations

In this news report, the recipient refers to the target text readers. In the process of reading, the target text readers mainly get the content information and understand the deep meaning expressed in the text. However, the translation methods that the translator can adopt in the translation can be free translation, compilation or parting, etc., in order to realize the deep transmission of the original information, Achieve the expected effect of the recipient.

Sample 2

SL: Are Parisians falling out of love with their own Olympic Games?

TL: 巴黎人是否对自己国家举办的奥运会失去了信心?

Analysis: This example is an interrogative sentence, which expresses the questions of the news media about the public and Parisians. In the process of translation, the translator adopts the translation method of free translation. The translator translate the phrase “falling out of” into “失去”, and the original meaning of this phrase is “giving up”, which is actually a free translation. The translator translates the word “love” into “confidence”, which makes the translation easier for readers to understand and accept after extending and expanding its meaning. At the same time, to a certain extent, it also It is in line with the reading expectations and reading habits of the target readers.

2.1.3. Implementing text functionality

There are three main functions of text: referential function, expressive function and appealing function. Among them, referential function is information function, which conveys the information of the source text, and it refers to the information function of the text, which conveys the information content of the original text. In this network news report, one of its main sub-functions is the informing function, which conveys the facts listed in the text to the target readers truly and accurately. ^[6]Terrance Henry (2009) and Christopher Augustin (2010) believe that the communicative function of text can make a comprehensive analysis of text from the perspective of text structure in a more systematic way^[7], which helps to grasp the core information of the text as a whole. Combining with examples, this paper analyzes why it is more beneficial to realize the communicative purpose of text from the perspective of discourse.^[8]Therefore, network news reports should start from the text and start from the function of the text, so as to study the function and purpose of the translated content.

Sample 3

SL: And an Odoxa opinion poll showed that nearly one in two Frangiliens-inhabitants of the Paris region-now thought the Games were a “bad thing”. The 44% negative rating was double what it was in 2021.

TL: 奥多克萨公司的一项民意调查显示, 近一半的法国人(巴黎地区的居民)现在都认为奥运会是一件“坏事”。对奥运会的负面评价达 44%, 是 2021 年的两倍。

Analysis: “As a text for the purpose of accurately and quickly conveying information, news reports are always based on facts, focusing on spreading news facts and speaking with facts”. ^[9]However, this sentence belongs to the typical text with information function in news reports. In the translation of expressing information function, the translator still adopts literal translation method, which is helpful to the authenticity of the original information transmission, and the translation of data information in the text is a manifestation of the authenticity of information.

2.2. Intra-textual factors

Intra-textual factors the translator mainly analyzes and studies the presupposition, vocabulary and sentences in the news report, and explores the translation strategies and methods adopted in the translation process. Nord thinks that the presupposition of text refers to the communicative level, that is, the presupposition that makes the speech go on, and it is also the presupposition that the speaker assumes existence and thinks the audience can accept it. In this news report, some presupposition are mainly related to political and historical events themselves and common platforms in daily life. At the lexical level, there are some proper nouns, names of people, places, etc., and there are also some four-character words to express emotions. At the sentence level, we can see that there are some long and difficult sentences and passive sentences in the news report, which are long and informative.

2.2. 1. Presupposition

The presupposition is that the information outside the language is not expressed in language, so the presupposition can not be intuitively reflected from the text. ^[10]In news reports, there are some assumptions that the recipients of the source text can understand and accept, but sometimes they may be unknown to the recipients of the target text. Therefore, in the process of translation, the translator needs to understand the presupposition of situational communication, try to make the target text easy for readers to accept and understand, and at the same time, the translator needs to supplement the background information appropriately to explain the content information expressed by the presupposition of the original text.

Sample 4

SL: But summer 2024 promises more of a clear-out than ever, not least because of the tempting deals being offered on Airbnb and other platforms. Rentals during the Games are up to four times normal rates, and it is hard to find a Parisian who is not at least considering the windfall.

TL:但 2024 年夏天的空房率将超过以往任何时候，尤其是因为爱彼迎（Airbnb 指全球民宿短租公寓预订平台）和其他平台上提供的超值优惠活动。奥运会期间的租金是平时正常价格的四倍，很难找到一个不爱这笔意外之财的巴黎人。

Sample 5

SL: There was always a solid corpus of French people who opposed the Games on the lift-wing grounds that they are a colossal waste of money and serve mainly the interests of the multinationals.

TL:一直以来，总有一大批持左翼立场（政治术语，左翼的支持者多认为社会存在不合理的不公平，且这类现象需要被减少或消除。）的法国人反对奥运会，他们的理由是奥运会浪费钱且认为奥运会主要为跨国公司的利益服务。

Analysis:In Examples 4 and 5, the translator is interested in the “Airbnb” and “the lift-wing grounds” is to supplement information, explaining that “Airbnb” refers to the global booking platform for short rent apartments of homestays, while “the lift-wing grounds” is a political term, and most supporters of

the left think that there are unreasonable unfairness in society, and this kind of phenomenon needs to be reduced or eliminated. Based on the translator's understanding of the communicative situation of the original text and the way of supplementing background information, the presupposition in the text can be clearly reproduced, and the communicative effect can be achieved at the same time.

2.2.2. Translated vocabulary

- Four-character grid:

In order to meet the needs of different audiences, international news topics are domesticated in different countries, and they are often distributed and broadcast from national and local perspectives.

^[11]In this news report, there are a large number of words expressing feelings in the original text, which are used by the translator in the translation to convey its emotional attitude, which is more in line with the language features and reading habits of the target readers.

Sample 6

SL: “Paris will be unbearable,” she adds. “Impossible to park; impossible to move around, impossible to do anything. Madame Hidalgo has wrecked Paris, and I want no part of the Games.”

TL:她补充道，“巴黎将令人难以忍受”，“无法停车；无法四处走动，无法做任何事情。伊达尔戈夫人毁了巴黎，我并不想参与其中。”

Sample 7

SL: Take transport. Mayor Hidalgo certainly set Olympic hearts racing with her dire warnings about lack of preparation.

TL:就拿交通工具来说吧。伊达尔戈市长对准备不足发出了可怕的警告，这无疑让奥运选手们心急如焚。

Analysis:In these two examples, after analyzing the original text to understand the emotional attitude expressed by the characters in the text, the translator translated the word “unbearable”, which originally meant “very unbearable to something” into “不堪忍受的”, the phrase “part of the Games” into “参与其中” according to the emotional attitude, and finally the translation of “心急如焚” was paraphrased into the idiom by understanding the situational context of the original text. The translation methods of the four-character case mentioned above are all in line with the language expression habits of the target text, and in news translation, they reflect their translation characteristics.

- Names of persons, places and institutions:

The transliteration of people's names and place names in English should be unified, and they all have their own conventional translation methods. In order to convey the original content information, translators only need to find relevant materials and apply the existing translation. However, when dealing with some specialized words and terms, the general method used is the untranslated method. Some uncertain and unpredictable factors that are most confusing and difficult to deal with in communication will no longer exist, effectively reducing “uncertainty” .^[12]

Sample 8

SL: First the city's own Mayor Anne Hidalgo said out of the blue that transport for next summer's Games would "not be ready in time".

TL:首先，巴黎市长安妮·伊达尔戈（Anne Hidalgo）突然表示，明年夏天奥运会的交通将“无法及时准备好”。

Sample 9

SL: It is hard not to agree with the veteran French athlete and IOC member Guy Drut when he says: "Believe me, the nearer we get to the actual Games, the more of these rows there are going to be."

TL:法国资深运动员、国际奥委会委员盖伊·德鲁特（Guy Drut）说的话很难不令人趋同，他说：“相信我，我们离真正的奥运会越近，这样的争议就会越多。”

Analysis:There are people in both of the above examples. For names, place names and organization names, transliteration is the usual translation method for names, while for organization names, the real meaning can be translated, which also has specific translation expressions for organization names in this example sentence. What translators need to do is to obtain their translations with the help of Internet resources and dictionaries.

2.2.3. Translate sentences

▪ Voice conversion:

Passive voice is often used in English, with objects as subjects. However, for Chinese, the voice is usually active and the subject is human. Therefore, in this process, the translator analyzes some passive sentences by analyzing the usage of voice in the original text. In the translation, the translator adopts a passive and active translation method, which makes the translation more in line with Chinese expression and writing.

Sample 10

SL: Then it was announced that far from buses and metros being free for competition ticket-holders-as promised in the Paris bid for the Games-fares will actually double for the six weeks of the Olympics and Paralympics.

TL:随后又宣布，公共汽车和地铁不仅不会像巴黎申办奥运会时所承诺的那样对比赛门票的持有者免费，反而会在为期六周的奥运会和残奥会期间翻倍。

Sample 11

SL: So should the organisers be worried? Probably not. Most of the concerns are either exaggerated or easily resolved. And what Games ever took place without mega-jitters in the months ahead?

TL:那么组织者应该担心吗？也许不必。大多数担忧要么夸夸其词了，要么就很容易解决。有哪一届奥运会在举行之前的几个月里没有出现过巨大的紧张感呢？

Analysis:In examples 10 and 11, it is obvious that there are passive sentences in the original text. However, there are generally four ways to translate passive sentences. The first is to transform them into

judgment sentences in Chinese, the second is to translate them into active sentences, the third is to translate them into ownerless sentences, and finally to translate them into passive sentences in Chinese, such as sentences with structures such as “为……所”. In the above two examples, the translator adopted the second method, translating it into an active sentence, without using the word “被”, which obviously expresses the voice. On the whole, it not only expresses the semantics of the original text, but also makes the sentences more fluent and natural, which conforms to the expression characteristics of online news report translation.

- Split and reorganize:

There are some long sentences in this report, which express a large amount of information and have complex sentence structure. This is also the typical stereotype of news reports—long, subordinate and closely connected.^[9]In this regard, the translator mainly adopts the translation method of disassembling and merging sentences to rearrange the sentence structure, so that the logical relationship between sentences can be clearly expressed, and the translated text can get rid of people's stereotype of news reports.

Sample 12

SL: Of course in any normal year Paris in July and August is already forsaken by a large part of its population, who prefer their second homes in the country or on the coast—that's why the city seems so pleasantly empty to visitors.

TL: 当然，在任何正常的年份里，七八月份的巴黎已经被大部分人抛弃了，他们更喜欢在乡下或海边的第二故乡居住，这也是为什么这座城市对游客来说显得如此空旷的原因。

Sample 13

SL: The transport ticket price controversy is also unlikely to turn Parisians off the Games—not least because the millions of Parisians who have monthly or yearly passes will be unaffected. The cost of all those extra Olympic buses and trains will be borne mainly by visitors—and who cares about them?

TL: 交通票价的争议也不太可能让巴黎人远离奥运会——尤其是因为数百万持有月票或年票的巴黎人不会受到影响。所有这些额外的奥运巴士和火车的费用将主要由游客来承担——谁会在乎他们呢？

Analysis:The analysis of the long and difficult sentences in the above two examples mainly focuses on the ambiguity of the subject referred to by the relative words in the attributive clauses, which requires the translator to read and understand repeatedly, disassemble the sentences and find their subjects. In addition, the translation of dashes in the text is also a point that translators should pay attention to. In the second long and difficult sentence, the translator skillfully uses dashes to explain the information of the original sentence clearly, and the logic of the sentence is more in line with the understanding of the target readers, which makes the translated text reported by the news media more vivid.

3. Conclusion

Under the background of globalization, the network news media reports have achieved effective exchanges and communication between different places, and at the same time, it is also conducive to understanding the cultures of different countries on the cultural level. This paper combines Nord' s text analysis model with network news text, on the one hand, it discusses the text characteristics of network news and the text functions of this type of text; On the other hand, it discusses the translation methods that should be selected for this type of text and the points that translators should focus on in the process of translation, so as to achieve the expected goals and effects for readers of online news translation.

To sum up, this study on the translation of online news texts based on Nord' s text analysis model has a certain guiding role for translators to translate such related texts, and can also help translators have a deeper understanding of the internal and external causes of online news texts and translate more comprehensive and appropriate news content.

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Application and Research on Interface Design of Digital Government Operating System

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Abstract: As the first year of the digital economy, everything is underground earth shading changes in 2023 With the rapid development of information technology, the digital economy is also gradually growing and expanding As a derivative of digitization, digital government operating systems are playing an increasingly important role in government management and public services Interface design, as an important component of digital government operating systems, has a critical impact on user experience and system availability Therefore, exploring the application and research of interface design for digital government operating systems by UI designers is of great significance in improving the quality and effectiveness of government services.

Key words: Interface design, Digital economy, Digital government operating system, Intelligence, Efficiency and compliance

1. Introduction

The digital government operation system is the infrastructure for the digital transformation of the government. Through the digital government operation system, the government can integrate various government resources and achieve the digitization, intelligence, and efficiency of government services. This helps to improve the efficiency of government work, optimize the experience of government services, and promote the development of the digital economy. The digital government operating system provides a favorable development environment for the digital economy. The digital government operating system provides strong policy support for the development of the digital economy by simplifying administrative processes, optimizing the business environment, and improving policy transparency. At the same time, the digital government operating system can also promote data sharing

and communication between the government and enterprises, promote the market-oriented allocation and value release of data elements, and further promote the development of the digital economy. The development of the digital economy has also posed new challenges and requirements for digital government operating systems. With the rapid development of the digital economy, the government needs to be more flexible and efficient in responding to various problems and challenges to adapt to economic changes. The digital government operation system needs continuous innovation and improvement, improving its own level of digitization and intelligence to meet the diverse needs of the government and enterprises.

The interface design of the digital government operating system should follow the principles of users being able to feel intuitive and clear information in a friendly manner, easy to learn and operate, and easy to integrate new work content. A well-designed interface can provide clear navigation and information architecture, allowing users to quickly find the information and features they need, and increasing work efficiency with half the effort. In addition, interface design should also pay attention to color matching, font selection, and icon design, in order to create a comfortable and professional user interface to improve government processing efficiency.

2. Information architecture in the interface design of digital government operating systems

Information architecture is the core of interface design for digital government operating systems. A good information architecture should clearly display the hierarchical structure and classification of information, enabling users to quickly find the information they need. At the same time, information architecture should also have sufficient flexibility and scalability to adapt to constantly changing information content and user needs. Different types of government information require reasonable and compliant hierarchical differentiation, in order to enable government officials to save time and costs in their operations.

2.1 Characteristics of Information Architecture in Interface Design

It is a design for organizing, categorizing, and navigating information content, aimed at helping users quickly find the information they need and improving usage efficiency.

2.1.1 Clear hierarchy

The information architecture should have a clear hierarchical structure, making the information content organized and easy to understand. By establishing a reasonable hierarchical relationship, users can quickly locate the desired content.

2.1.2 Clear navigation

A good information architecture should provide clear and concise navigation, allowing users to easily navigate to other related pages. The navigation design should be concise and clear, easy to understand and operate.

2.1.3 Easy to search

For a large amount of information content, providing efficient search functionality is necessary. The information architecture should consider the implementation of search functionality to enable users to quickly find target content.

2.1.4 Personalized experience

Based on user needs and habits, the information architecture can be personalized and adjusted to improve the user experience. Meet personalized user needs through customized recommendations, filtering, and other functions.

2.1.5 Responsive design

With the popularity of mobile devices, information architecture should consider responsive design to adapt to different screen sizes and resolutions of devices. Ensure a good user experience on different devices. Issues such as small screen size and bad interface design can also make learning more cognitively demanding ^[1]

2.2 Color Matching and Application of Color Psychology in Interface Design of Digital Government Operating System

Color matching is one of the key factors in the interface design of digital government operating systems. Different colors can convey different emotions and meanings, which have a significant impact on the user experience. When choosing colors, consideration should be given to the image of government agencies and the public's cognitive habits, so that users can quickly recognize and remember the system interface. In color psychology, blue represents peace and stability, symbolizes the blue sea and sky, and can easily create a relaxed and joyful mood.

2.2.1 Color psychology is the study of the impact of colors on human emotions and behavior.

Different colors can trigger different psychological feelings, for example, red can stimulate enthusiasm, and blue can make people feel calm. Therefore, in interface design, the appropriate use of colors can have a positive impact on the user's emotions and behavior. For example, the interface design of shopping websites often uses red to stimulate consumer desire to purchase, while the interface of medical websites tends to use a peaceful blue tone to alleviate patient anxiety.

The principles of color psychology can help designers better understand and meet user needs. By conducting color preference surveys on users, designers can more accurately grasp the psychological needs of the target user group, and thus design interfaces that better meet user expectations. For example, young users may prefer bright and lively colors, while mature users may prefer low-key and steady tones.

Color psychology can also help designers solve problems encountered in interface design. For example, adjusting color contrast can improve the user's reading experience; By adjusting color

saturation, certain information elements can be highlighted or hidden, making the interface more concise and clear.

In summary, color psychology plays a crucial role in interface design. By deeply understanding the principles of color psychology, designers can better grasp user needs and create interface designs that better meet user psychological expectations. This can not only enhance user experience, but also enhance the competitiveness of products or services. Therefore, for designers and practitioners in related industries, mastering knowledge of color psychology is crucial. Future interface design will pay more attention to user experience and emotional needs, and color psychology will play an increasingly important role in this process. With the continuous progress of technology and the changing needs of users, we look forward to seeing more creative and user-friendly interface design works.

2.2.2 The Definition and Classification of Color Tendency

Color orientation refers to the feeling and impression that colors give people, including emotional, cultural, and personal preferences of colors. According to the properties of colors, such as hue, brightness, and saturation, color tendencies can be divided into several types: warm, calm, bright, and dim. Besides, in the interface design of digital government operating systems, color orientation has a significant impact on user experience and system efficiency. Different color tendencies can elicit different emotional responses from users. For example, warm tones can bring a comfortable and friendly feeling, while cool tones can bring a calm and composed feeling. Therefore, a reasonable color orientation design can improve user satisfaction and work efficiency. Additionally, in order to better illustrate the color orientation practice of digital government operating system interface design, this article selects some successful cases for analysis. For example, in the interface design of the digital government operation system of a certain city's tax department, blue and white are used as the main colors, giving people a calm and professional feeling, which is in line with the characteristics of tax work. In addition, some government departments have adopted a combination of warm and gray tones to make the interface more warm and comfortable, in line with the characteristics of government work. The main color tone of flags from different countries also affects the main color tone of government operating systems. The VISA visa system in the United States uses flag blue as the basic color, while Chinese government websites generally use Chinese red as the basic color.

2.2.3 Optimization suggestions for color orientation in the interface design of digital government operating systems

Based on the above analysis, this article proposes the following optimization suggestions: Firstly, appropriate color tendencies should be selected according to different usage scenarios and user groups; Secondly, attention should be paid to the coordination and aesthetics of color matching; Finally, attention should be paid to the correlation between color orientation and information content to avoid

interfering with users' acquisition and understanding of information. China's digital government operating system, as the urban brain, relies on colors that make people appear calm and composed as the main visual color to ensure the stable and sustainable development of digital government services. In China, government software is mostly blue in color.

In Summary, the color orientation in the interface design of digital government operating systems is one of the important factors that affect user experience and system efficiency. By designing and optimizing reasonable color preferences, user satisfaction and work efficiency can be improved. In the future, it is necessary to further strengthen the research and practical exploration of color orientation in the interface design of digital government operating systems, in order to promote the sustainable development of digital government. Research the relationship between interface color and operator vision, investigate and analyze the visual needs of operators for PC end government data interfaces, find color design methods for PC end government data interfaces to improve visual fatigue symptoms, and guide later design practices.

3. Font selection and Icon design

3.1 Font selection

Different fonts can convey different emotions and meanings, which have a significant impact on the user experience. When choosing a font, consideration should be given to the readability and aesthetics of the text, as well as the image of government agencies and public cognitive habits, in order to create a comfortable and professional user interface.

There is a close relationship between font copyright and interface design. In interface design, font is one of the important visual elements for conveying information. In the field of visual communication, text design is also highly valued. Text is not only a visual symbol, but also carries the responsibility of cultural dissemination. Beautiful and attractive text design can resonate with viewers. However, many fonts belong to the category of intellectual property and are protected by copyright law. Therefore, designers and developers must consider font copyright issues when designing interfaces.

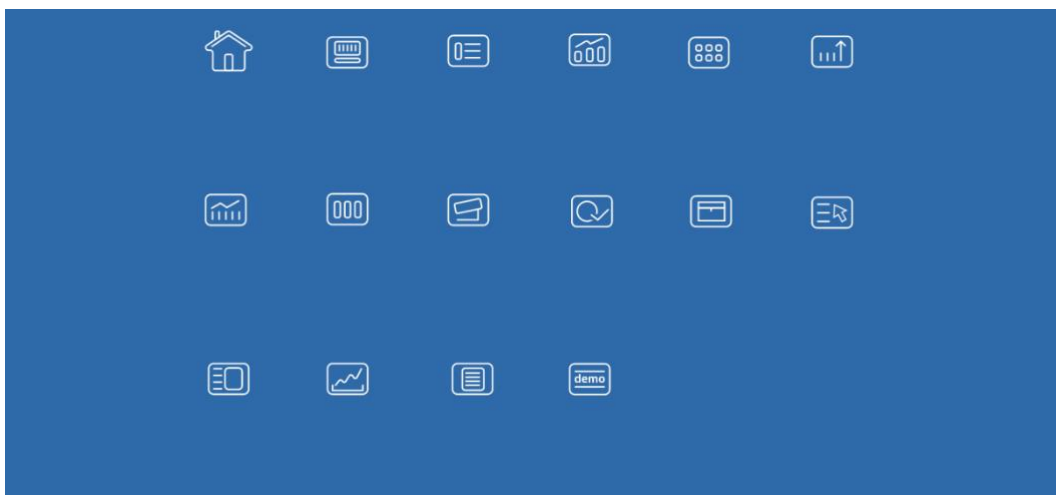
Firstly, for commercial projects, using copyrighted fonts requires obtaining commercial publishing authorization for the font. This means that designers or businesses need to pay a certain fee to the font copyright owner to obtain the right to use the font. If copyrighted fonts are used without authorization, it may constitute infringement and require corresponding legal liability. Secondly, for personal or non commercial projects, caution should also be exercised when using copyrighted fonts. Even for personal learning, research, and appreciation purposes, it is necessary to comply with the provisions of copyright law and not use copyrighted fonts arbitrarily.

To avoid font copyright disputes, designers and developers can choose to use open-source fonts or free fonts. These fonts are exempt from copyright fees and can be freely used in commercial or non-commercial projects. Of course, the use of these fonts also requires compliance with corresponding license regulations to ensure that they do not infringe any intellectual property rights.

In short, when designing interfaces, designers and developers need to fully consider the issue of font copyright. Respecting copyright laws, complying with relevant regulations, and using legal fonts are important aspects of interface design, and are also necessary conditions for maintaining a good design ecosystem.

3.2 Icon design

Good icon design can intuitively express the meaning and function of information, enabling users to quickly understand and operate. In icon design, attention should be paid to the easy recognition and consistency of icons to avoid confusion and misoperation by users.



Picture 1: Icon schematic

Icons play a crucial role in interface design. As one of the core elements of visual communication design, icons can convey information in a concise and clear way, guide users to operate, and improve the user experience.

Firstly, icons can effectively express abstract concepts or operations, replacing lengthy textual descriptions with visual graphics. In interface design, using icons can simplify design elements, reduce user cognitive burden, and enable users to understand interface content more quickly.

Secondly, the design style and style of icons should be consistent with the overall interface design. The design of icons needs to coordinate with other elements in the interface to ensure a harmonious and unified overall visual effect. Meanwhile, the design of icons also needs to consider their recognizability and aesthetics. A concise, intuitive, and aesthetically pleasing icon can attract users' attention and enhance their user experience.

In addition, the design of icons also needs to consider their adaptability to different platforms and screen resolutions. Designers need to make appropriate adjustments and optimizations based on different platforms and screen sizes to ensure that icons maintain good recognizability and clarity in different environments.

In summary, icons play a crucial role in interface design. By utilizing icons appropriately, designers can enhance user experience, reduce cognitive burden on users, and make the interface more concise, intuitive, and user-friendly. Therefore, in interface design, designers need to fully consider the use of icons to create an excellent user experience.

4.The interface design trend of digital government operating systems is mainly reflected in the following aspects:

4.1 Mobility

With the popularization of mobile devices, the interface design of digital government operating systems will pay more attention to the needs and experience of mobile users. The future digital government operating system will be more adaptable to the characteristics of mobile devices, providing a more concise, intuitive, and user-friendly mobile interface design. In the process of UI designers carrying out their work, it is also important to pay attention to the compatibility and compatibility between the computer and mobile ends, in order to prevent potential problems and make government work more convenient and efficient.

4.2 Intelligence

With the development of artificial intelligence technology, the interface design of digital government operating systems will become more intelligent. The future digital government operating system will utilize artificial intelligence technology to analyze user needs and behaviors, provide more personalized and intelligent services, and improve user satisfaction. As the direct audience of government social media, the public has high expectations and requirements for government social media, which are different from other media. They often hope to obtain effective information in the shortest possible time.

4.3 Cloud based

With the development of cloud computing technology, the interface design of digital government operating systems will become more cloud based. The future digital government operating system will utilize cloud computing technology to achieve cloud services such as data sharing, collaborative office, and online services, improving the efficiency and quality of government services.

4.4 Multimedia

With the development of multimedia technology, the interface design of digital government operating systems will become more multimedia oriented. The future digital government operating

system will utilize multimedia technology to provide richer, more intuitive, and more vivid multimedia services and interaction methods, improving user experience and government service effectiveness.

4.5 Security

The interface design of digital government operating systems will place greater emphasis on security. The future digital government operating system will adopt more advanced security technologies to ensure the security of user information and data, and improve user trust and satisfaction with digital government.

5.The Relationship between Interface Design and Large Model Technology of Three Digital Government Operating Systems

A large model refers to a large-scale pre trained language model with strong natural language processing and generalization capabilities, which can be applied in various fields, including digital government. In the interface design of digital government operating systems, large models can be used in the following aspects:

5.1 Intelligent Recommendation:

Through large models, digital government operating systems can analyze user behavior and needs, intelligently recommend relevant policies, services, and information, and improve user experience and government service efficiency.

5.2 Intelligent Q&A:

Large models can be applied in intelligent Q&A systems to help users quickly obtain the necessary information and answer questions. In digital government operating systems, intelligent question answering can improve user trust and satisfaction with government services. Intelligent Q&A will combine psychology to analyze and answer the user's psychology; Combining sociology to analyze and classify user behavior, ultimately serving users to answer questions and clarify doubts.

5.3 Automated Office:

Through large models, digital government operating systems can achieve automated office work, improving the efficiency and quality of government services. For example, functions such as automatic classification, automatic summarization, and automatic translation can accelerate the process of government work.

5.4 Personalized Services:

Through large models, digital government operating systems can analyze user preferences and needs, providing personalized services. For example, recommending relevant policies and services based on user preferences and needs to improve user satisfaction.

5.5 Data Mining and Analysis:

Big models can be used in data mining and analysis to help government agencies deeply explore the value of data and provide support for policy making and decision-making.

6. Future development prospects of interface design for digital government operating systems

6.1 Continuous improvement of user experience

With the increasing demand for government services from users, the interface design of digital government operating systems will pay more attention to user experience. This includes more intuitive interface design, more user-friendly interaction methods, more intelligent service recommendations, etc., to improve user satisfaction and government service efficiency.

6.2 Data driven decision support

Through the collection and analysis of user behavior data, the interface design of the digital government operating system will achieve personalized recommendations and intelligent warning functions, providing data support for government decision-making, and improving the accuracy and scientificity of government services.

6.3 Responsive and mobile design

With the popularization of mobile Internet, the interface design of digital government operating system will pay more attention to mobile terminal and responsive design, meet the user's use needs in different devices and scenarios, and improve the convenience and inclusiveness of government services.

6.4 Enhanced Interactivity and Sociality

The interface design of future digital government operating systems will pay more attention to user interaction and social needs, such as introducing social media functions, online evaluation systems, etc., to increase user participation and transparency of government services.

6.5 Integration of Artificial Intelligence Technology

The development of artificial intelligence technology will bring more possibilities to the interface design of digital government operating systems. For example, using natural language processing technology to achieve intelligent question answering, speech recognition technology to achieve barrier free communication, etc., to improve the intelligence level of government services.

6.6 Digital Privacy and User Data Security

The digital government's digital governance needs to prioritize the handling of digital privacy and user data security issues, strengthen the protection of data storage by the government, and establish a national level data bureau to ensure data circulation and transactions. Therefore, it is crucial for digital government operating systems to ensure user privacy and data security.

6.7 Prediction of Technological Development Trends

With the rapid development of technologies such as artificial intelligence, the Internet of Things, and big data, future technologies will pay more attention to intelligence, personalization, and interconnectivity. Interface designers need to closely monitor the development trends of these technologies and predict their potential application scenarios and impacts in the future. For example, artificial intelligence will play a more important role in product design, enabling products to more intelligently adapt to user habits and needs. At the same time, the popularization of the Internet of Things will make it possible for products to be interconnected, bringing users a more convenient user experience.

6.8 Insight into changes in user needs

User needs are the core of design. In order to accurately predict changes in user needs, designers need to have a deep understanding of the user's lifestyle and behavior patterns, and discover their potential needs through user research, market research, and other means. Meanwhile, with the rapid development of society, the values and consumption concepts of users are constantly changing. Interface designers need to keenly capture these changes and integrate them into their designs.

6.9 Proposal of Innovative Solutions

Based on predictions of future technologies and insights into changes in user needs, designers need to propose innovative solutions. These solutions may involve multiple aspects such as product functional design, interaction methods, and interface appearance. For example, using artificial intelligence technology, designers can create more personalized product experiences for users; Through the Internet and the Internet of Things technology, intelligent linkage between products can be realized to bring users a more convenient use experience. Responding to the national call, we deepened the construction of "Internet plus government service", gave full play to the function of the Internet as a powerful engine for improving the quality of government service, and actively built government service platforms in various provinces and cities across the country, truly implementing the integration of Internet high-tech and government service^[5].

6.10 Future oriented design framework construction

In order to implement innovative solutions, designers need to build a future oriented design framework. This framework should include multiple aspects such as design principles, design processes, and design tools. In terms of design principles, interface designers need to emphasize concepts such as innovation, user centricity, and sustainable development; In the design process, it is necessary to focus on user research, conceptual design, prototype production, testing and evaluation, and other aspects; In terms of design tools, advanced technological means such as design software and 3D modeling are needed to assist the design process.

In short, with the continuous progress of technology and the increasing demand for applications, the interface design of digital government operating systems will develop towards a more humanized, intelligent (Figure 3), convenient, and interactive direction, in order to better serve the people and improve the level of government governance. Faced with constantly evolving technology and user needs, designers need to constantly innovate and progress. By predicting technological development trends, gaining insight into changes in user needs, this enabled us to identify users' perceptions of user interface (UI) as well as identifying the most user friendly UI design ^[6], proposing innovative solutions, and building a future oriented design framework, we can better cope with future challenges and opportunities. Future designs will place greater emphasis on intelligence, personalization, and connectivity, bringing users a better user experience. At the same time, we also need to constantly learn and explore new design concepts and technical means to promote the progress and development of design.

7. Conclusion

The interface design of digital government operating systems has made significant progress in the application and research of the 1920s. During this period, the application fields of interface design for digital government operating systems continued to expand, involving multiple aspects such as government management, public services, and urban planning. Meanwhile, with the continuous innovation of technology and the diversification of user needs, research on interface design has become more in-depth and refined. Our findings establish a dynamic relationship between information seeking and goals, asking designers to rethink their rules of thumb in the mobile government administration context ^[7]

In terms of application, with the popularization of online government services in China, the development of mobile government apps is rapid. A large number of government apps neglect usability during development, only proposing design requirements for government affairs from the perspective of government function division and office processes. Their service categories and processing processes are difficult to meet the psychological expectations of the public, and poor user experience directly leads to weak promotion, resulting in huge resource waste ^[8]. Therefore, the interface design of digital government operating systems should focus on user experience and interactivity. By adopting a concise and clear interface layout, intuitive operational processes, and personalized service recommendations, the convenience and satisfaction of government services have been improved. In addition, the popularity of mobile devices and smart terminals has also promoted the mobility and responsive design of interface design, meeting the needs of users in different scenarios.

In terms of research, interface design focuses more on the application of data-driven and artificial intelligence technologies. By collecting and analyzing user behavior data, personalized

recommendations, intelligent warnings, and other functions have been achieved, providing data support for government decision-making. At the same time, the integration of artificial intelligence technology has also improved the intelligence level of government services, such as the application of intelligent question answering, speech recognition and other technologies, improving the efficiency and accuracy of government services.

In summary, the interface design of digital government operating systems in the 1920s made significant progress in application and research, promoting the digital transformation of government services and the improvement of government governance level. In the future, with the continuous innovation of technology and the diversification of user needs, the interface design of digital government operating systems will continue to develop towards a more humanized, intelligent, convenient, and interactive direction, providing the people with better quality and efficient government services.

The update and replacement of artificial intelligence models will drive the innovative development of interface design for digital government operating systems, from flat to three-dimensional, from CHATGPT to MIDJOURNEY and then to SORA (from text generation to image generation and then to dynamic video generation). Traditional interface design tends to be two-dimensional, while future interface design will have a visual effect that combines three-dimensional dynamics, combined with sound effects, allowing information to enter the user's senses through multiple channels. The use of generative artificial intelligence technology to participate in the construction of digital government has important historical significance and practical value in promoting the modernization of national governance. The natural language understanding and generation ability, text generation ability, and knowledge updating ability of generative artificial intelligence such as ChatGPT play an important value function in improving the level and efficiency of digital government construction. However, at the same time, the participation of generative artificial intelligence in digital government construction poses risks of government and public data leakage, government authority shifting towards technological capital, and deep information forgery.

In the future, a qualified interface designer should possess the logic of an engineer, the imagination of an artist, and the insight of a designer, leveraging high-tech capabilities to produce excellent interface designs for digital government operating systems.

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