Research Article

Research on a Good Life and Coordinated Development Based on Intelligent Communication and \( k \)-Means Algorithm

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Duetotherapiddevelopmentofsocietyandeconomy,peoplehavemoreandmoreurgentneedsforabetterlifeandcoordinated development between regions. However, research on people’s good life and coordinated development based on new era technologies such as intelligent communication is not sufficient. The future of smart communications technology will be all over the place, from television to mobile phones and the Internet, and ICT is making the world look new, helping hundreds of millions of people to live, work, and play in the most creative ways. At the same time, ICT is managing cities in innovative ways, especially in an increasingly integrated information society, exchanging information knowledge and communicating on the move. In order to understand the impact of intelligent communication on people’s good life and coordinated development research, this paper uses intelligent communication and \( k \)-means algorithm-based methods to study people’s good life and coordinated development and conducts questionnaire surveys and constructs corresponding evaluation indicators analysis. The results showed that 36% of the respondents were satisfied with the housing environment, 24% were relatively satisfied, 76% were satisfied with the greening environment, and 13% were relatively satisfied. 41% of people are satisfied with their health, and 32% are satisfied with their work status. This shows that people’s good life and coordinated development are inseparable from rapid economic development, but rapid economic development alone is far from enough because rapid economic development can improve people’s material living conditions, but not necessarily promote people’s life coordination in the spiritual world. Therefore, for people’s good life and coordinated development, the improvement of material economy and the construction of spiritual level are indispensable.

1. Introduction

What is the purpose of human development? This is a concern of many economists and social scientists. From “economic development” to “economic increase” and then to the comprehensive development of “social development,” this conceptual change reflects the continuous progress of human society [1, 2]. “Building a cohesive socialist society” is an important task of our country’s social development program, and the issue of the people’s good life is the primary task of this official program. There are five main issues concerning the good life of ordinary people: “employment,” “education,” “distribution,” “social security,” and “stability” [3]. Only by effectively addressing the direct and actual interests of the people can the healthy and rapid economic and social development be ensured to ensure that the quality of life of the people is harmonized with economic development.

Through the research on the good life and coordinated development of mankind, the most popular ideas at home and abroad are found in the book of the American economist Greensmith C entitled “The Rich Man’s Society”; the book began to introduce the concept of “good life.” In the Western society in the middle and late twentieth century, the boundary between economic growth and a better life became clearer and clearer [4, 5]. McIntosh of the Hoover Research Center in the United States is dedicated to researching social trends and has published many important research papers. This type of research is gradually divided into two categories: index research and health research quality [6]. Carelli pointed out in many of his books that the value of a good life should include social values, such as social equality, people’s
need for leisure, and physical balance. Economic value is just one of them. With the development of economy, many diseases have appeared in the society, such as poverty, pollution, waste of resources, and so on. Therefore, it is obviously absurd to rely on the actual development of world production to measure the success of a society [7].

Although many researches on a good life and coordinated development are sufficient, since most of the researches are relatively old, the research on a good life and coordinated development in the new era of intelligent communication technology is currently insufficient. Therefore, as far as this article is concerned, the main innovations are as follows: (1) the research on the good life and coordinated development based on the intelligent communication and k-means algorithm of the new era has made up for the deficiencies of the predecessors in this area. (2) This article describes the research on the relationship between the level of economic development and the quality of life of urban residents. Many previous studies have confused the concept of urban and rural residents. (3) This article combines the basic analysis method with the integration degree model, through a number of calculations, conducts high-level research on the systematic development of economic development and the quality of life of citizens, divides the level of integration, and determines the type of coordination and coordination at the current stage degree subtype.

This paper is structured as follows: (1) The first part introduces the background and significance of the topic selection of this article and the innovation of the research content of this article. (2) The second part introduces the intelligent communication and k-means algorithm and the flowchart of k-means algorithm. (3) The third part is based on the design of experiments for the good life and coordinated development of k-means algorithm based on intelligent communication, introduces the whole experiment process, constructs the evaluation index system, and introduces the statistical methods of experimental data. (4) The fourth part analyzes the results of research experiments based on smart communication and k-means algorithm’s good superiority and coordinated development, as well as the contribution of urban smart transportation information release system to a better life, smart home communication system design and remote control technology, smart research on the coordinated development of mobile logistics communication technology, the level of economic development, and the quality of life of residents; it is concluded that although the level of economic development and the quality of life of residents continue to improve, the rapid economic development has not significantly improved the quality of life of residents. (5) The fifth part, summary and outlook, summarizes the research content and results of this article and points out the work to be carried out next.

The purpose of this article is to promote people’s good life and coordinated development, improve material economy, and enrich the people’s spiritual world. This paper combines intelligent communication and k-means algorithm, based on the experimental design of the good life and coordinated development of intelligent communication k-means algorithm, constructs the entire experimental process, and proposes a new evaluation index system. It is expected to be able to a certain extent to promote coordinated development.

2. Good Life and Coordinated Development Research Method Based on Intelligent Communication and k-Means Algorithm

2.1. Vision of Coordinated Development and a Better Life.
In the report of the 19th National Congress of the Communist Party of China, the word “good life” frequently appeared up to 14 times. It has become a current hot vocabulary and is one of the important concepts of Xi Jinping’s thoughts on socialism with Chinese characteristics in the new era [7, 8]. Through the report of the 19th National Congress of the Communist Party of China, we have planned the focus, timetable, and road map for a better life and expounded and analyzed the rich connotation of a better life in multiple dimensions. Through the “five-in-one” of economy, politics, culture, society, and ecology, the layout [9], under the current market economy conditions, (i.e., our level of productivity) has been greatly improved, but money, commodities, rights, and so on, continue to flood the entire society. People are prone to increasingly inflated material desires under the economic wave and deviations in the value of life they pursue. The whole person has missed the meaning of life value and rational thinking about the good life in the world outlook, outlook on life, and values and lost the value meaning of torturing people in the world [10]. As the younger generation, we should constantly think about how to build the spiritual mansion of ourselves, our nation, and the country. We are also full of exploratory expectations and curiosity about correctly solving the problems of spiritual pursuit and achieving a better life. On the one hand, we continue to reflect on the current state of life and the meaning of life and put forward higher requirements for the yearning for a better life. As a subjective person, we have been fully demonstrated and interpreted; on the other hand, with the extreme expansion of material enjoyment, some people understand the good life as money worship and hedonism, and deviations and misunderstandings of values have appeared [2, 7]. This negative phenomenon is shocking and thought-provoking. It directly points to the value proposition that we torture our inner soul: what should be the great country we are proud of? What kind of ideal home should we yearn for? What kind of life is full of spiritual yearning for a better life? The author is also constantly exploring and thinking, and gradually my mind and attention are focused on exploring the spiritual yearning for a better life of people in the new era [11].

2.2. Based on the Research and Application of Intelligent Communication and k-Means Algorithm.
As we enter the era of big data, in view of the increasing amount of data, traditional query and statistics can no longer meet the demand. People are paying more attention to the analysis and sorting of massive data in order to find the data or data
sets they are interested in and discover the associations between the data, since people make scientific decisions to provide help [12, 13]. Cluster analysis is a widely used data mining tool that analyzes a set of given physical data sets and separates the physical data placed in multiple data sets. It is a method in data mining [14]. Cluster analysis refers to the analytical process of grouping a collection of physical or abstract objects into multiple classes consisting of similar objects. It is an important human act. The goal of cluster analysis is to collect data for classification on the basis of similarity. Clustering originates from many fields, including mathematics, computer science, statistics, biology, and economics. Many clustering techniques have been developed in different application areas, and these technical approaches are used to describe data, measure similarities between different data sources, and classify data sources into different clusters. With the advent of computers, many scientific research institutions and companies have begun to research technologies related to big data. In data mining, there are many algorithms that can be used to integrate algorithms [5]. Due to the large amount of data used for data mining and the complexity of big data, people are forced to continuously improve tracking performance and continue to research and discover algorithm efficiency. Continuous research is needed to find the efficiency of the algorithm so as to optimize the data mining tool that analyzes a set of given physical data sets and separate the physical data placed in multipledatasets. Among them, $k$-means algorithm is also called $k$-means algorithm, which is the most mature clustering algorithm. First, start to identify $k$ centroids, where $k$ is user-defined [12]. Next, recalculate and update the centroid of the collection according to the latest built-in collection and algorithm rules. Repeat the above operations, namely, data point allocation and cluster centroid refresh, until the cluster or cluster centroid no longer changes or changes within a certain minimum range; that is, the required value is reached [15].

The basic $k$-means algorithm is shown in Figure 1. In order to check the performance of the clustering algorithm, we need to use a data set for testing. The data can be downloaded through the website. This is a public data test set [16, 17]. Describe the results of the $k$-means plus algorithm to facilitate comparison. Table 1 is a common data set. For multiple runs of the data set, let $n$ be any set, and the ordered binary relation set $P$ is defined as a fuzzy subset belonging to $n$:

$$Q = \{(x, \delta_p(x))| x \in X\}. \quad (1)$$

Among them, $\delta_p: N \rightarrow [0,1]$ is called the membership function describing $Q$ to $X$. For the set $X$, the binary fuzzy relationship $P$ is an $N \times N$ fuzzy subset, which is defined as

$$\beta = \{(x, y), \delta_\beta(x, y)| (x, y) \in N \times N\}. \quad (2)$$

For the two algorithms to run multiple times at the same time, the center point is randomly selected each time, without guaranteeing that the initialization center point is the same; we get the test results as follows, where $\delta_\beta: N \times N \rightarrow [0, 1]$, there is a group $x$-dimensional hyperspace bodies, which are divided by the $x$-dimensional Euclidean space $R$ by orthogonal hyperplanes [18]. These hyperspace bodies are called the space elements of the Euclidean space. If an $x$-element array is used to measure the coordinates of the space elements, it can correspond to the points in the hyperspace coordinate system $Z$. If the hyperspace coordinate system $Z$ has the fuzzy relationship $\beta$ with reflexity and symmetry, it is called a neighbor relationship. Suppose the two spatial elements are point A and point B. Generally speaking, the membership function should have an inverse correlation with the distance between A and B; that is, the closer the distance, the higher the degree of membership [19]. The fuzzy proximity relationship defined in the hyperspace is

$$\delta_\beta(a, b) = \left\{ \begin{array}{ll} 1 & \text{if } |a - b| \leq x \leq 1 \\ 0 & \text{otherwise} \end{array} \right. \quad (3)$$

After many experiments, for the data set, the traditional clustering algorithm will appear multiple times in the data results, we might as well use it to express the performance of traditional $k$-means [20]. However, the performance of the $k$-means plus algorithm is not only stable, but sometimes better than $k$-means; the advantage will be basically the same as $k$-means, and there is only a small probability that it will be inferior to the traditional $k$-means algorithm [21]. Here is a preliminary experimental probability value, which is defined as follows:

$$\delta_k(a, b) = \frac{\delta_\beta(a, b)}{1 + k|f(a) - f(b)|}. \quad (5)$$

Among them, $\delta_\beta$ represents the number of elements in the current cluster, $\delta_k$ is the number of the largest category, and $\delta_k$ has a smaller number. What needs to be pointed out is that for the calculation of clustering degree and dispersion degree, this article is based on the calculation formula given in the case of knowing the theoretical result. Let $T = (A, f)$ be a part of the digital space $(Z, \beta)$ in the membership field; in actual situations, there are many paths from point $a$ to point $b$ in $T$. Let $Q$ denote the path starting at point $A$ and ending at point $b$. Its definition is expressed by the function as follows:

$$\mu(Q) = \mu(Q, a, b) = \min(\delta_k(c_1, c_2)) \quad (6)$$
Figure 1: The position of image segmentation in image engineering.

Figure 2: Flowchart of clustering algorithm based on partition.

Table 1: Common data sets.

| Data set | Number of samples | Data view         | Attributes | Number of classes |
|----------|-------------------|-------------------|------------|-------------------|
| MF       | 1800              | Mfeat-fou view    | 75         |                   |
|          |                   | Mfeat-fac view    | 200        |                   |
|          |                   | Mfeat-kar view    | 60         | 10                |
|          |                   | Mfeat-pix view    | 223        |                   |
|          |                   | Mfeat-zer view    | 45         |                   |
Suppose the fuzzy connection degree is represented by \( \delta_y \); then, its definition is represented by a function as follows:

\[
\delta_y(Q) = \max(\delta_y(Q))
\]  

(7)

The Agnes algorithm of this idea is not sensitive to the order of the data. No matter what order the data is in, the same clustering result will be obtained, as follows:

\[
\delta_y(a) = \begin{cases} 
  f(c) & \text{if } a \in A, \delta_y(a) \geq n \\
  0 & \text{otherwise}
\end{cases}
\]

(8)

Our analysis of this result must be that there was a problem during one or several merging processes. In the process of merging small clusters, there may be an Iris virginica type “mixed into” the Iris versicolor cluster [23]. In the calculation process of the entire fuzzy connectivity theory framework, the preprocessing method, the selection method of seed points, the definition method of fuzzy affinity, and the method of threshold segmentation are the key points. We take the proximity as follows:

\[
\delta_y(k, c) = \begin{cases} 
  1 & \text{if } \|k - c\| \leq 1 \\
  0 & \text{otherwise}
\end{cases}
\]

(9)

\[
\delta_y(k, c) = \frac{\delta_y(k, c)}{1 + k|f(k) - f(c)|}
\]

Once a group of elements are merged, the subsequent operations are performed on the newly generated clusters, and the results of the processing are not allowed to be deleted, resulting in the inability to exchange objects between the classes, and the satisfactory clustering effect will not be achieved [24]). Generate random solutions by executing (10):

\[
Y_{O+1i} = Y_{ki} + \beta \times 1(\lambda).
\]

(10)

In the formula, \( Y_{ki} \) represents the ith solution of the kth generation, and \( \beta \) is a step-length control parameter. If we can “discover” one or a small part of the data element and the cluster in the process of merging small clusters into large clusters, the other elements are not consistent with each other, and then the cluster is decomposed into some small clusters, and then merged, the result should be better [18, 25]. A new solution is generated by the following formula:

\[
Y_{O+1i} = Y_{ki} + \beta \times \left[ 1(\lambda) \right] (Y_{ki} - Y_{k, best}).
\]

(11)

Here, we will use the double error sum SSE in k-means. First, we use the k-means algorithm to find the SSE at the end of the algorithm [17]. As an advanced algorithm threshold, AgnesPlus is the closest to any built-in one. Before the two groups, first, determine whether the number of double error SSEs in each group is greater than the following number:

\[
Y_{O+1i} = Y_{ki} + r(Y_{ki} - Y_{ke}).
\]

(12)

\( r \) is the scaling factor, a random number in the interval [0, 1]; it obeys a uniform distribution, \( Y_{ki}, j \), and \( Y_{ki}, e \) represents the position of the kth generation, where

\[
\delta_y(a, b) = \delta_y(a, b)\left[ \omega_1 p_1 + \omega_2 p_2(f(a), f(b)) \right].
\]

(13)

\[
\omega_2 = 1 - \omega_1.
\]

Comprehensive formulae (13)-(14) can be obtained:

\[
\delta_y(a, b) = \delta_y(a, b)\left[ p_1(f(a), f(b)) + p_2(f(a), f(b)) \right].
\]

(15)

The k-means plus algorithm basically records the number of times each element is assigned to each cluster during and each iteration to maximize the collection results. Therefore, this algorithm is suitable for data sets with high repetitive values. Highly segmented data sets may not show significant optimization results. Therefore, such a set of data can basically achieve the desired effect after a small amount of repetition. Too little repetition will not result in too good optimization results for the following process.

3. Experimental of a Good Life and Coordinated Development Based on Intelligent Communication and k-Means Algorithm

3.1. Function of Constructing the Evaluation Index System. The evaluation index system for the coordinated development of the economic development level and the quality of life of urban residents needs to have the following functions:

1. Descriptive function, which can more objectively, profoundly, and dynamically reflect the status quo of various factors in the quality of life system of urban residents at the level of economic development.
2. A certain explanatory function, a set of more reasonable coordinated development indicators should not only measure the degree of coordination between the two, but also provide indicators that can help judge the cause.
3. Evaluation and prediction function: The role of this function is to help us understand the known and the prospective unknown, the principle of integrity. As a system, the index system should fully reflect the goals it should achieve while maintaining its integrity.
4. Goal orientation: The goal of the coordinated development of the economic development level and the quality of life of urban residents should be as follows: the coordinated development of the level of economic development and the subjective and objective aspects of the quality of life of urban residents.
5. Objective applicability and maneuverability: Objective applicability is reflected in the fact that when constructing the index system, attention should be paid to being realistic, objective, and credible, and loyal to the final evaluation goal.
The descriptive function is the objective description of the social situation; the explanatory function refers to the interpretation and coordination of development indicators; the evaluation and prediction function refers to the complete analysis of the event; the goal positioning refers to the design of the overall development goal; and objective applicability refers to formulating specific operations in accordance with objective conditions.

3.2. Communication Technology Based on Smart Home and Smart Transportation. At present, the communication technologies based on smart home and smart transportation mainly include network identity authentication technology, data encryption technology, security protocol, firewall technology, and network antivirus technology. The data encryption technology refers to the encryption key as a parameter, the input data (i.e., the plaintext) is converted into irregular ciphertext through the encryption function, and the receiver uses the decryption key and decryption function to restore it after receiving the ciphertext initial data.

3.3. Statistical Method. All data analysis in this article adopts SPSS22.0, statistical test adopts double-sided test, significance is defined as 0.05, and $p < 0.05$ is considered as significant difference. The statistical results are displayed as mean ± standard deviation ($x \pm SD$). When the test data obeys the normal distribution, the double t-test is used for comparison within the group, and the independent sample t-test is used for comparison between the groups. If the regular distribution is not sufficient, two independent samples and two related samples will be used for inspection.

4. Experimental Analysis of Good Life and Coordinated Development Based on Intelligent Communication and k-Means Algorithm

4.1. Contribution of Urban Intelligent Transportation Information Release System to a Better Life. Transportation is the lifeblood of urban development, and there has been an old saying among the people: “To get rich, build roads first.” Throughout the dynasties of various countries in the world, all prosperous metropolises have extensive and orderly transportation networks. Good traffic conditions directly affect people’s recognition of a better life, but every international metropolis is facing the test of increasingly severe traffic congestion. Although the infrastructure of modern cities is complete, elevated tunnels, and urban rail transit systems are developed, aging roads can greatly improve traffic performance by widening the road surface, but simple infrastructure hardware facilities still cannot guarantee the stable and efficient operation and operation of the transportation system. The so-called “intelligent transportation system” is essentially a new type of informationized, intelligent, and socialized transportation system formed by using high tech to transform the traditional transportation system. It can maximize the efficiency of transportation infrastructure and improve the quality of service. Table 2 shows the main theoretical research and technological development of intelligent transportation systems in China since the 1970s.

As can be seen from Table 2, at the technical level, from the mid-1970s to the early 1980s, the main experiment was to study urban traffic signal control. From the mid-1980s to the early 1990s, some large cities such as Beijing, Tianjin, and Shanghai introduced and digested urban signal control systems. At present, my country has listed the “Key Technology Development and Demonstration of Intelligent Transportation System” as a major project in the national science and technology research plan. The project includes 16 topics in four categories: common key technologies, key products and technology development, ITS project demonstration, and related basic research. The basis of the urban traffic information publishing system lies in the construction of FM subcarrier traffic information publishing technology. Since traffic data and FM broadcast programs use the same carrier frequency when transmitting, at the receiving end, the same radio frequency can be used for the amplification of traffic data and broadcast programs. Channels, including frequency conversion, intermediate amplifier and frequency discrimination circuits. At the receiver’s frequency discriminator output, the FM subcarrier separated from the composite signal is decoded, and then the traffic information data can be recovered. The specific channel circuit diagram is shown in Figure 3.

Multipath interference is a serious problem commonly faced by mobile reception. The so-called multipath interference refers to that in the propagation process of radio waves; in addition to the signals directly reaching the receiving antenna, there are reflected signals and diffracted signals from different paths. These signals will interfere with the direct useful signals. This interference is called multipath interference. When the car is receiving when the car is moving, due to the change of the car’s operating environment, the multipath interference caused by the blocking of the radio wave reflection by the building is very easy to appear at the building group. In the multichannel broadcasting, the multipath interference is easily in the FM signal. Produce intermodulation, reducing the signal-to-noise ratio of the stereo itself. The stereo signal itself will also cause serious interference in almost the entire range of the idle frequency band (53kHz~100kHz), making the increased multiplexed data signal unable to be used normally and increasing the bit error. The frequency spectrum of the FM multiplex release system under multipath interference is shown in Figure 4.

It can be seen from Figure 4 that in the case of interest, the signals of each frequency band do not infringe each other, are neat and orderly, and can be distinguished by a band-pass filter. However, in actual situations, due to multipath interference, the signals of each spectrum band will cross its own signal range, causing serious superimposed interference to the signals of other spectrum bands, and even overwhelm the normal signals of this frequency band: load wave multiplexing traffic information release system. The
main purpose is to overcome several key technologies of FM multiplexing information release to solve the problem of multipath interference, solve the problem of errors in data transmission, solve the problem of channel interference, and solve the problem of FM multiplexing load realization. The design of these key technologies is mainly distributed in the physical layer and the data link layer of the DARC protocol. So, we can study these two parts of the protocol and design and implement the system. Using the embedded system technology and DDS developed in recent years, we no longer
need to design a large number of components as in the past and use large-volume structures to realize hardware functions. Some functions are realized by software programs on the hardware, such as modulation signal generation, MSK modulation, level control, etc.

4.2. Mobile Logistics Communication Technology Based on Smart Phone. Since the 21st century, mobile communication technology has developed rapidly worldwide, and the development of wireless networks has brought tremendous changes to people's lifestyles. In recent years, the rapid development of e-commerce has led to the rapid development of the logistics industry in my country. Data collection based on the logistics industry, especially the collection of cargo waybill data in the express industry, is generally on-site, that is, far away from the data management center. This makes it difficult for the traditional wired network to meet the needs of enterprise development. How to achieve informatization in the logistics business process is an important factor that determines the level of its service. Mobile communication technology based on smart phones can enable people to know the location and information of logistics in real time, which is important to improve people's yearning for a better life and coordinated development of life. For an Android application, each Android application has a configuration file, which is mainly used to define the components of the application, the functions of the components, and some necessary conditions. The composition and work flowchart of the Android application is as follows.

It can be seen from Figure 5 that activity is the most basic part of an application. In an application, one is usually a separate screen. Each activity is an independent class that inherits from the activity base class. Switching between screens is actually the process of converting between classes. Service is a program that runs in the background of Android. It is a noninteractive, nondetermined runtime application component that runs in the background. The content provider provides a consistent data access interface to the outside world. Regardless of the storage method under Android, it can be encapsulated into a content provider to provide data to the outside world. The content receiver (Intent Receiver) is mainly used to respond to external events. It does not have a user interface, but the Broadcast Receiver allows the application to respond to certain external events. For the designed system, the specific unit table is shown in Table 3.

When the relevant information is entered in the EditText of the waybill creation interface and the “Save” button is clicked, the program will be triggered to insert the data in the EditText into the database. When the data is inserted successfully, the “Save Successful” dialog box will pop up and clear at the same time the data in the EditText box can be entered next time. The data flow diagram of the new system is shown in Figure 6.

It can be seen from Figure 6 that when the server receives the data submitted by the mobile terminal, it can be stored in the corresponding database of the server according to the data format and requirements. In order to ensure the security and accuracy of data transmission, the data to be transmitted is encrypted and verified. In addition, the client can download data from the server and other operations. The workflow of logistics data is as follows.

It can be seen from Figure 7 that the data storage operation on the server side refers to storing the data received by the data receiving module in the corresponding database of the server after being parsed. What the data receiving module receives is the file sent from the mobile phone. The data receiving module needs to parse the file, extract the data from the file, and insert it into the database of the machine.

4.3. Smart Home Communication System Design and Remote Control Technology. The continuous development of society promotes the improvement of people's living standards. The traditional complex, cumbersome, and inefficient way of life has been unable to meet people’s growing needs for quality of life, and a new, more efficient and convenient way of life has become the goal pursued by people. With people’s comfortable and fast life, smart homes connect to the network inside and outside the home through computers to promote real-time data exchange and ensure the effectiveness of information transmission. Through external terminal devices such as mobile phones and pads, people can view various environmental indicators of the family in real time and remotely access various electrical equipment in the family, saving a lot of unnecessary time. The structure diagram of the entire complete communication system is shown in Figure 8.

It can be seen from Figure 8 that the system in the above figure includes personal mobile terminal query control software, web terminal query control software, home server, home control center, ZigBee coordinator equipment, ZigBee terminal equipment, various sensor equipment, and other external equipment (electrical appliances, automatic curtains, relays, etc.). The structure diagram of the home gateway control center is shown in Figure 9.

The ZigBee communication network used in the home is a lightweight communication protocol system, so it cannot communicate with external networks. In order to realize the interconnection between the family’s internal network and the external Internet network, a protocol conversion device is needed. The purpose of the home gateway control center is to realize the functions of protocol conversion and information forwarding. The most basic functions of the smart home communication system include lighting control, home equipment control, home security, and environmental data collection. In addition, on the basis of the abovementioned functions, there should also be functions: equipment information management, equipment status monitoring, synchronization status, etc. According to the research on the smart home communication system, the function summary table as shown in Table 4 is summarized.

4.4. Level of Economic Development and the Quality of Life of Residents Develop in Harmony. Quality of life is a complex and multidimensional concept. At present, many countries and regions and some authoritative organizations have
formulated different quality of life indicator systems according to their needs. The scope of the system ranges from simple complex and from objective indicators to subjective indicators. For the combination of subjective and objective indicators, this paper constructs an evaluation index system for the quality of life of urban residents from five aspects: income and consumption levels, housing and infrastructure, social security and social security, medical conditions, and ecological environment, as shown in Table 5 below.

In order to comprehensively, objectively, and directly reflect the quality of life of urban residents at this stage, we conducted a survey on residents of a certain city and asked them about their basic living environment and health status, such as the current housing environment, greening environment, sanitary environment, and noise status. The mental life conditions such as work status and interpersonal relationship were investigated, and the results are shown in Figure 10:

It can be seen from Figure 10 that 36% of the respondents are satisfied with the housing environment, 24% are relatively satisfied, 76% are satisfied with the greening environment, and 13% are relatively satisfied. It can be seen that with the development of the economy, people are still...
very satisfied with the current living environment. As for the sanitary environment, the proportion of people who are satisfied reaches 45%. And the noise environment is 56%. This also shows that with the improvement of people's living conditions, the quality of people is gradually improving. As for the spiritual conditions, 41% of people are satisfied with their own health, 32% are satisfied with their work status, and 41% are satisfied with their interpersonal relationship. This shows that with the development of the times, although people's economic level and quality gradually improve, there is still a lot of room for improvement between life pressure and interpersonal relationships. The coordinated development status of a city’s economic development level and residents’ quality of life from 2016 to 2020 is analyzed, and the results are shown in Table 6.

It can be seen from Table 6 that the coordination of the city’s economic development level and the quality of life of residents in 2016 are in the primary coordinated development stage, from 2017 it has entered the intermediate coordinated development stage, and in 2020 it will enter the stage of good coordinated development. If this trend develops, the city's economic development level and residents' quality of life system will enter an advanced stage of good development in the next few years and will gradually
approach the stage of harmonious development. But in fact, this is just an ideal state. The premise of a steady increase in coordination is that the level of economic development and the quality of life of residents develop in accordance with the current trend, and the actual economic level will continue to develop at a high speed in the next few years, but the quality of life of residents is not. Facing a greater test, this makes it impossible for the coordination degree to develop at the speed and way people expect. Therefore, in the next ten years or even decades, the development of coordination will be very tortuous. The degree of coordination between the city’s economic development level and the residents’ quality of life system from 2016 to 2017 has gradually transitioned from the primary coordination stage to the intermediate coordination stage, and most of the coordinated development subtypes are lagging in the quality of economic development; by 2018, the coordinated development subtype is that the quality of life of residents lags behind. This change shows that although the level of economic development and the quality of life of residents have continued to

Table 4: Brief introduction of smart home communication system functions.

| Function category              | Function brief                                                                 |
|-------------------------------|-------------------------------------------------------------------------------|
| Lighting control              | According to user-defined needs, the home lighting is switched on and off.    |
| Home equipment control        | Realizes remote control of household equipment through relay.                 |
| Home security                 | Uses door magnetic sensors, human infrared sensor sensors, and smoke alarms to achieve home safety. |
| Environmental data collection | The information collected includes light intensity, household temperature and humidity, and the closing conditions of doors and windows. |
| Equipment information management | For the type, address, group number, and so on, of the terminal equipment that has been online. |
| Equipment status monitoring   | Detects the operating status of the internal equipment of the communication system and reflects the conditions of various equipment in real time. |
| Synchronization status        | Realizes the synchronization of the data status of each terminal node, coordinator, home gateway, and home server in the home communication system. |

Table 5: Coordination evaluation index of residents’ quality of life system.

| First level indicator                | Secondary indicators                                                                 |
|-------------------------------------|--------------------------------------------------------------------------------------|
| Income and consumption levels       | Disposable income per capita<br>Per capita consumption expenditure<br>Per capita housing area<br>Paved road area per capita<br>Unemployment rate<br>Insurance coverage<br>Number of hospitals<br>Number of doctors<br>Green area<br>Sewage treatment rate |
| Housing and infrastructure          |                                                                                       |
| Social security and social security |                                                                                       |
| Medical condition                   |                                                                                       |
| Ecosystem                           |                                                                                       |
grow, the rapid economic development has not significantly improved the quality of life of residents. How to coordinate the level of economic development and the improvement of the quality of life of residents and make them develop and progress together has become a difficult problem that must be overcome. Our ultimate goal is the sustainable development of the level of economic development and the quality of life of residents.

5. Conclusion

People’s good life and coordinated development are inseparable from rapid economic development, but rapid economic development alone is far from enough, because rapid economic development can improve people’s material living conditions, but they may not promote people, the harmony of life in the spiritual world. Therefore, for people’s good life and coordinated development, the improvement of material economy and the construction of spiritual level are indispensable. Although economic development has improved people’s material living standards, people’s spiritual world cannot be ignored. According to the data, people are not satisfied with the sanitation of the living environment. To a certain extent, this explains the incoordination of the current good life, and it also reflects the continuous improvement of the current spiritual pursuit. The advancement of science and technology, the emergence of urban intelligent transportation systems makes people travel more convenient, reduces the probability of traffic jams and traffic accidents, and can check road conditions from time to time. Mobile logistics communication technology based on smartphones can enable people to know their logistics and express delivery information without leaving their homes, making it easier to send and receive items. At the same time, smart home communication system design and remote-control technology make everything interconnected, and people can use mobile terminals to access control the use of all appliances in the home.

Data Availability

No data were used to support this study.

Conflicts of Interest

The author states that this article has no conflicts of interest.

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