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Original Paper

Design and Application of Exclusive Service App for Rural Elderly

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Fund Project

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Abstract

With the further advancement of rural development and the rapid development of mobile Internet, rural service apps have gradually become an important means of promoting rural economic development and improving farmers' production and living standards. At present, a number of service-type apps with wide applications in the field of rural services have emerged, such as "Planting Master", "Farming Network", "Rural Taobao", etc. However, these apps do not pay special attention to special groups, but only target the majority of young people and office workers. However, these apps do not pay special attention to special groups, but only target the majority of young people and office workers. In order to fill this gap, we have designed a software called Nong'e Tong, which is specially designed for the elderly and other special groups. The software has a simple and beautiful interface, and is easy to use. It not only provides a lot of special functions, but also can link the elderly's cell phone with their children's cell phones to check the health and safety of the elderly at any time. Compared to other software, the application has special features for seniors to ensure that they can use the application easily and quickly.

Keywords

interface design, PS design, Rural revitalization, Design of Agricultural Service APP

1. Introduction

1.1 Background of the Topic

With the acceleration of globalization and the rapid evolution of science and technology, mobile Internet has penetrated into all aspects of people's lives, bringing unprecedented changes and opportunities to all walks of life. Under this wave of change, rural areas are also no longer a blank area for information and services, but have ushered in new opportunities for development. The integration of rural development and mobile Internet provides new paths and possibilities for the growth of rural economy and the improvement of farmers' living standards.

As an important support for rural development, the rural service sector has received increasing attention in recent years. In particular, rural service-oriented mobile applications (Apps), with their convenience and wide coverage, have gradually become an important means to promote rural economic development and improve farmers' production and living standards. These rural service apps not only provide convenient life services for rural residents, but also promote the sharing of information and the optimal allocation of social resources in rural areas. For example, service-type apps such as "Planting Master", "Farmnet" and "Rural Taobao" meet farmers' needs for agricultural technology consultation and agricultural products trading through online and offline methods, greatly promoting the development of rural areas and improving the standard of production and life of farmers. Through the combination of online and offline methods, these apps have met farmers' needs for agricultural technology advice and agricultural products trading, greatly contributing to the prosperity of the rural economy.

However, although many mobile apps have emerged that are widely used in the rural service sector, most of these apps focus more on specific groups such as young people and office workers, and less on the needs of the rural elderly and other special groups. As an important part of the rural community, the rural elderly face inconvenience in accessing information and services in the digital era, which limits their opportunities to enjoy modern conveniences. Therefore, it is of great practical significance and social value to design a rural service app focusing on the elderly and other special groups to meet their needs for daily life and health concerns.

1.2 Brief Description of the Project

This study aims to design a rural service app for the elderly and other special groups to make up for the shortcomings of the existing rural service apps in terms of the needs of special groups. The app will focus on a friendly and simple interface to make it easy to use, while integrating a variety of special features, such as health and safety monitoring and cell phone linkage with their children, to ensure that the elderly can access the services they need easily and quickly. Through the app, older people will be able to enjoy the same convenient services as young people and office workers, improving their quality of life and sense of well-being. This will not only help to meet the needs of the elderly in their daily lives and health concerns, but will also contribute to the optimization and enhancement of overall services in rural areas.

2. Investigation and Research Work

In this section, we will review prior research and development work related to the aspects of rural service apps and mobile applications of interest to older adults. We will first present the current state of development of rural service apps and then focus on the design and practice of mobile apps exclusive to older adults.

2.1 Development of Rural Service Apps

With the continuous progress of mobile Internet technology, digital services in rural areas have gradually been emphasized. Various rural service Apps have emerged, providing farmers with diversified services, including agricultural technology consulting, agricultural product sales, rural tourism and so on. For example, the “Planting Master” app provides farmers with guidance on planting techniques to help them optimize crop yields. Similarly, Rural Taobao serves as a bridge between farmers and urban consumers, promoting the sale and distribution of agricultural products. These rural service apps have played a positive role in improving the rural economy and reducing information asymmetry.

However, most of the existing rural service apps focus more on young people and groups familiar with digital technology. This has to some extent neglected the needs of the rural elderly, an important segment of the population. Older people are usually less familiar with the use of mobile apps than younger people, and therefore require more user-friendly and intuitive interfaces as well as features that are specifically tailored to their needs.

2.2 Design of Mobile Applications Specific to the Eneneglderly

In recent years, a growing body of research and practice has focused on the needs of older adults in the mobile application domain. These studies have explored how to integrate features of interest to older adults in mobile applications to enhance their quality of life and social engagement. Some studies focus on health management for older adults, providing features such as health monitoring and medication reminders to help them better manage their health. Other studies look at the social needs of older people and design social platforms for older people to enable them to keep in touch with family and friends.

In addition, there are a number of special group service apps that have been developed for older adults. These apps often have a cleaner interface design and features that target the specific needs of older adults. For example, some apps can help seniors make doctor’s appointments, purchase medications, find nearby community events, and so on. All of these features contribute to the convenience and well-being of older adults.

However, despite all this research and practice, there are still many opportunities to further improve the design of senior-specific mobile apps. For example, how to balance feature richness and interface simplicity, how to better integrate the daily needs and concerns of older adults, and how to provide easy-to-understand operational instructions.

2.3 Research Objectives and Contributions

The main objective of this study is to design a mobile application for rural elderly and other special groups to fulfill their daily life and health concerns. We will innovate on the basis of existing rural service apps, focusing on the special characteristics of elderly people using mobile apps, while integrating functions related to their needs. Through the app, we hope to address the elderly's distress in information access, social interaction and health management, and enhance their quality of life and well-being.

In addition, our research will also explore how to link older people's cell phones with their children's cell phones so that children can stay informed about their parents' health and safety status. This type of linkage helps communication between older adults and their families and is a more reassuring way for children who care about their parents.

In this study, we will first conduct a user needs study to gain insight into the lives and health concerns of older adults in rural areas. Then, we will design a mobile application with a simple and beautiful interface, practical functions and easy to use, and verify its effectiveness in actual use. Through this study, we hope to provide valuable experiences and lessons for mobile application design for rural elderly and other special groups.

Overall, this study aims to fill the gaps in existing rural service apps for the elderly population and to provide rural elderly with mobile apps that suit their needs in order to improve their quality of life and well-being.

3. Interface Design Requirements Analysis and Determination of Function Points

This service app is a multifunctional application for any place, whether in the city or in the countryside, you will be able to use this app easily. The difference between this app and other apps lies in the fact that it offers a number of special services for different groups of users. Therefore through this App, the following basic points need to be achieved:

(1) Provide a convenient and easy-to-use interface for the elderly so that they can easily get started using the App.

(2) Provide doctor's appointment service to facilitate the care of health needs of the elderly and children.

(3) To have multiple service modes to meet the needs of different audience groups.

(4) Design a special mode for special groups, under which the page fonts and illustrations of the app will be adjusted accordingly and special functions such as voice broadcasting will be included.

In short, the app needs to be able to meet the various needs of special users and bring users a convenient and efficient experience.

4. Overall Design

4.1 General Design Principles

We used Photoshop and Adobe Experience Design to complete the page layout.

4.2 User Research

According to the users' habits, they usually browse the main interface after registering and logging in to understand the general functions of the software, and then click on the functions they want to enter for further operation. Users focus on the layout and appearance of the main interface, whether the buttons to access submenus in the main interface are highlighted and obvious, and whether the interaction effect between each page and users is smooth and easy to use.

4.3 Interface Design Program

When designing the interface of the mobile application for the rural elderly and other special groups, we adhere to the following three major principles to ensure that the user gets a friendly interface experience, thus providing a convenient and enjoyable process of use.

4.3.1 User Control

In order to meet the needs of the elderly and other special groups, the design of the interface must focus on user control. We will use large buttons and icons designed to overcome possible barriers to operation. This will make it easier for the user to click and perform actions, thus increasing accessibility and comfort of use. Our interface layout will follow the principle of simplicity and clarity in order to avoid overcrowding of page elements, which can cause user annoyance. By reducing the density of elements, we will ensure that users are able to quickly and accurately find the functions they need. Our navigation design will be intuitive to ensure that users can easily navigate through the different functions. We will use clear and easy to understand icons and labels to ensure that users do not get lost in the various pages of the application.

4.3.2 Interface Consistency

In order to provide a consistent user experience, we will keep interface elements and interactions consistent from page to page. We choose mild and non-harsh colors to guarantee the visual comfort of the interface. By using a uniform font and color scheme, we will enhance the overall consistency and professionalism of the interface. In order to minimize the learning cost for users, we will use similar interaction patterns in different functions. For example, the operation buttons on different pages will maintain a consistent layout and style to help users better adapt to the operation flow of the application.

4.3.3 Personalization and Customization

Personalization and customization options will be provided to meet the diverse needs of the elderly and other special groups. Users can customize the content displayed on the homepage according to their interests and needs. This feature will enable users to independently choose to see information related to, for example, health management or recommendations for social activities. In order to accommodate users' eyesight and preferences, we will allow users to adjust display settings such as font size, background brightness, etc. to ensure that the interface is more user-friendly for them.

With the above three principles of interface design solutions, we aim to create a simple, friendly and easy-to-use mobile application that meets the needs of the elderly and other special groups. This will help enable them to better enjoy the convenience of the digital age and enhance their quality of life.

5. Detailed System Design and Implementation

In this section, we will describe in detail the system design and implementation scheme of the mobile application for the rural elderly and other special groups. We will focus on the core functional modules of the application and the technical support it relies on.

5.1 Technical Framework Selection

In order to ensure the stability and performance of the application, we choose to adopt a modern technical framework for mobile application development. We will use cross-platform development frameworks such as Flutter or React Native to achieve the goal of covering both Android and iOS platforms.

5.2 User Authentication and Personalization

We will design user registration and login functionality based on cell phone number or email address so that older adults can easily access the app. After user login, we will collect basic information about the user, such as age, gender and interests, in order to make personalized content recommendations.

5.3 Home Page and Function Portal

The home page of the application will display personalized content recommendations and provide entrances for functions such as health monitoring and social interaction. We will use the bottom navigation bar to realize quick switching between different functions.

5.4 Health Monitoring Module

The health monitoring module will synchronize data with the user's health devices (e.g., bracelet, smartwatch). We will use Bluetooth technology to realize the data transfer between the device and the app. The user's health data will be stored in the cloud server so that it can be accessed and tracked at any time.

5.5 Social Interaction Module

In the social interaction module, users can view their friends' updates, make comments and likes. A real-time database will be used to manage the updating and synchronization of the dynamic information to ensure that users can instantly interact with their friends.

5.6 Personalization and Feedback

Users can adjust personalized settings such as font size, color theme, etc. according to their needs. We will also provide a feedback channel for users to report problems with the application or provide comments.

With the above system design and implementation plan, we will provide a stable, friendly and feature-rich platform for mobile applications for rural elderly and other special groups. This will help to fulfill their health management and social interaction needs and enhance their quality of life and

well-being.

6. Setting the Tone of the Interface

6.1 Page Layout Design

In the interface layout design of the rural service app “Nong’eTong”, we focus on the principle of simplicity and clarity to ensure that the elderly and other special groups can easily understand and use the application. The home page layout will focus on the most commonly used functions, such as health monitoring, community communication and life convenience. Through a reasonable ordering of page elements, they will be sorted according to the frequency and importance of use in order to reduce the complexity of user operation and improve user experience.

6.2 Introduction of Page Color Scheme

In terms of the interface color scheme, we use warm tones, such as light green, light blue and soft pink. These colors not only help to convey a warm and friendly atmosphere, but also contribute to the visual recognition of the elderly. To ensure the readability and usability of the interface, we avoided using colors that are too harsh or have too much contrast.

6.3 Page Jump Relationships

The page jump relationship is designed to maintain a smooth feeling for the user during the process. The main functions will be connected by clear navigation buttons or tabs, and users can easily switch from one functional module to another. Intuitive icons and labels will be used in order to make it easy for older people to understand the purpose and function of each page as well.

6.4 Interaction Form Design

To address the usage needs of the elderly and other special groups, the interaction form will focus on being easy to understand, intuitive and friendly. For example, large buttons and icons will be added to the interface for easy clicking. For input operations, such as text input or selection, we will provide clear guidance and feedback to avoid confusion and errors.

6.5 Interface Realization

In terms of interface realization, we fully consider the visual needs and usage habits of the elderly. After many rounds of user testing and optimization, the interface of Nong’eTong has achieved promising results. The results of user tests show that the elderly are very satisfied with the comprehensibility and usability of the interface. At the same time, we have been collecting feedback from users and making continuous improvements to the interface to ensure that the user experience is continuously optimized.

In conclusion, the interface design of Nong’eTong takes into full consideration the needs of the elderly and other special groups, featuring a simple, user-friendly interface and form of interaction, and providing convenient services and functions, aiming to make it easier for them to enjoy the conveniences brought by modern technology. We will continue to work on improvements to provide a better user experience.

Conclusion

The purpose of this paper is to design a rural service app focusing on the elderly and other special groups, in order to fill the gap of existing rural service apps in terms of the needs of special groups. By fully understanding the needs and habits of the elderly, we have successfully designed “Nong e Tong”, a mobile application interface for the elderly, and optimized its functional features and user experience to achieve satisfactory results.

In the design of “Nong’eTong”, we focused on the friendliness and simplicity of the interface to ensure that the elderly can easily get used to it. Through reasonable page layout, warm color scheme and intuitive interactive forms, we created an application environment suitable for the elderly. In particular, we combined special functions such as health monitoring and linking with children’s cell phones to further enhance the practicality and convenience of the application.

“Nong’eTong” provides a convenient and practical mobile application platform for the rural elderly, which is of positive significance in promoting rural revitalization and improving the quality of life of the elderly. By meeting the needs of special groups, our design enables the elderly to better enjoy the convenience brought by modern technology and improve their quality of life and sense of well-being.

In conclusion, the design of “Nong’eTong” has been thoroughly researched and user-tested, taking into full consideration the needs of the elderly and other special groups, and providing convenient services and functions through simple and friendly interfaces and interactive forms. We will continue to improve and optimize it to ensure that the user experience continues to improve, bringing more convenience and joy to the rural elderly.

8. Design Result Chart

Figure 1. Display of the Interface

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