THE MANAGEMENT MECHANISM OF POINTS-BASED ELDERLY CARE SERVICE FOR LOW-INCOME PEOPLE IN CHINA: AN INNOVATIVE & SOCIAL EXCHANGE APPROACH

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A dissertation submitted in partial fulfillment of the requirements for the degree of

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DECLARATION

I, Tan Youmo, hereby certify that the work embodied in this dissertation entitled "The Management Mechanism of Points-based Elderly Care Service for Low-income people in China: an Innovative & Social Exchange Approach" is result of original research and has not been submitted for a higher degree to any other university or institution.

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ABSTRACT

Title : The Management Mechanism of Points-based Elderly Care Service for Low-income People in China: An Innovative & Social Exchange Approach

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Elderly care services represent a new cultural paradigm, a lifestyle shift, an avenue for economic development, and a reflection of the values of modern civilization. These services offer a variety of support designed to assist older individuals in daily living and enhance their well-being. To improve the quality of life for the elderly and ensure the sustainability of care systems, a points-based elderly care service model was introduced, enabling points to be exchanged for care services within the community.

This research aimed to identify factors influencing a points-based management mechanism's potential success and develop practical recommendations for creating a sustainable framework for such a model. A mixed-methods approach was employed, combining quantitative analysis through a questionnaire survey (512 responses) and qualitative insights from in-depth interviews with 10 participants, including low-income individuals, caregivers, university instructors, and government officials. Structural Equation Modeling (SEM) using SPSSAU was applied to analyze the data.

The findings revealed: 1) Social Exchange of Points (SEP) significantly and positively impacted the Potential Success of the Points-based Management Mechanism (PSPMM); 2) Social Exchange of Points (SEP) significantly and positively influenced Diffusion of Innovations (DOI); 3) DOI had a significant positive impact on PSPMM; 4) DOI served as a crucial mediating variable in the relationship between

SEP and PSPMM, with a mediating effect accounting for 86.57% of the total impact, alongside a smaller but positive direct effect.

These results highlighted DOI's importance in transmitting SEP's effects on PSPMM, suggesting the need to strengthen innovative mechanisms within the points-based elderly care service system to ensure sustainable development.

Keywords: social exchange, diffusion of innovations, management mechanism, mediating effect, elderly care service

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Tan Youmo

Date: 05/10/2024

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CHAPTER 1
INTRODUCTION

1.1 Background of the Problem

With the rapid development of China's social economy, population aging has also entered a period of rapid development. The population of China was 1,425,549,875 as of Friday, September 29, 2023 (Worldometer, 2023). However, the seventh national population census (2020) forecasted that by the end of 2020, the national population over 60 years old would reach 264 million, accounting for 18.7% of the total population and is expected to reach 355 million by 2030 or 25% of the total population. World Health Organization also mentions that by 2050 China's population aged 60 and above will account for 35% of the total population, making it the country with the most severe aging population.

Currently, almost all provinces int China have entered an aging society. Among them, the proportion of elderly population in 10 provinces has exceeded 20% and is entering a moderately aging society. The seventh national census data shows that the average population of each household is only 2.62 people, the family size has further shrunk, the family structure is undergoing unprecedented changes, and family elderly care has encountered great challenges. In addition to the huge size of the elderly population and the accelerated aging rate, China's population aging also has the characteristic of "getting old before getting rich", which makes aging and elderly care issues become basic issues that affect China's social development at present and in the future (Sheng Libo, 2022). The situation of elderly care is becoming increasingly severe.

Facing the severe situation of China's aging population, the Central Committee of the Communist Party of China made the strategic decision of "actively responding to the aging population and accelerating the construction of the elderly care service system" at the 19th National Congress, focused on the new stage of development based on the reality of China's economic and social development and aimed to achieve a happier, more valuable, and more dignified life for billions of elderly people. The government must

actively respond to the aging population from a macro perspective, mobilize all forces, and form a consensus that frequently criticizes the challenges of elderly care.

In the new era, elderly care is a new culture, a new way of life, a new way of economic development, and a manifestation of the value of a new civilization (Wang Yuanyuan, 2022). China Statistical yearbook (2022) divides the nationwide residents living in Urban and Rural into five groups based on their disposable income per capita: low-income households, lower-middle-income households, middle-income households, higher-middle-income households, and high-income households showed as Table 1.1. From the Table 1.1, all Urban residents in each group have disposable income per capita higher than Rural residents. However, the average of disposable income per capita of low-income households (8,332.8 yuan), lower-middle-income households (18,445.5 yuan) and middle-income households (29,053.3 yuan) are far lower than the Nationwide average (35,128.1 yuan) as shown in Table 1.1.

Table 1.1

Nationwide Disposable Income Per Capita of Households by Income Quintile Unit: yuan)

Group	All residents (average)	Urban residents	Rural residents
Nationwide	35,128.1	47,411.9	18,930.9
Low-income households	8,332.8	16,745.5	4,855.9
Lower-middle-income households	18,445.5	30,132.6	11,585.8
Middle-income households	29,053.3	42,498.0	16,546.4
Higher-middle-income households	44,948.9	59,005.2	23,167.3
High-income households	83,535.8	102,595.8	43,081.5

Source: China Statistical Yearbook (2022)

In July 2023, the Ministry of Human Resources and Social Security of China announced that the monthly minimum standard wage evaluated on the local cost of living was 2,000 yuan. The government would ensure that basic living expenses such as expense on food, housing, medical care, and transportation could meet the minimum living needs. However, the disposable income per capita of low-income households is only 8,332.8

yuan or 694.4 yuan monthly. Obviously, their figures are far below from the minimum wage standards (694.4 yuan vs 2,000 yuan).

The government therefore initiate a minimum living security. It refers to a type of social security system in which the state provides certain cash assistance to the residents whose income per capita is lower than the minimum living standard. All family members living together whose income per capita is lower than the minimum living security standard have the right to get basic material assistance from the local government. China's Minimum Living Security Regulations declares that the minimum living security standards for 2023 are as follows: 1) the minimum living guarantee standard for urban residents is 780 yuan/month/person; 2) the minimum living guarantee standard for rural residents is 755 yuan/month/person; 3) the basic living standard for urban extremely impoverished individuals is 1,295 yuan/month/person; 4) the basic living standard for rural extremely impoverished individuals is 982 yuan/month/person.

Furthermore, the Chinese government has recently initiate programs for elderly care security. They have implemented a unified national pension insurance system, expanded the coverage of pension insurance, improved the treatment level of rural residents' pension insurance, encouraged, and supported the development of the elderly care service industry, including the construction of elderly care institutions such as nursing homes and day care centers, providing elderly care service, and gradually increasing the level of pension. Elderly care service refers to a range of support and assistance provided to older people to help them with their daily living, promote their well-being, and improve their quality of life. Elderly care service can include the following: personal care, medical care, companionship, home care, mobility support, memory care, respite care, palliative and hospice care. Some of the efforts include addressing the issue of population aging, improving the quality of life for the elderly, and ensuring the sustainable development of the elderly care security system.

According to China Statistical Yearbook (2022), the number of people participating in basic pension insurance in China at the end of 2021 is 1,028.714 million people. Among them, 480.74 million are urban and enterprises’ employees, and 547.974 million are urban and rural residents. The difference between the two resident types is that

urban and enterprise employees' pension insurance is purchased by their respective departments, units, and enterprises, while urban and rural residents' pension insurance is purchased by themselves. However, there is a huge difference in the pension per capita received by urban and enterprises' employees and urban and rural residents. The retired employees of urban and enterprises can receive a pension per capita of 42,928.9 yuan, while urban and rural residents can only receive a pension per capita of 2,291.3 yuan, as shown in Table 1.2. That is to say, the pension per capita for urban and rural residents with a total population of 163.133 million is only 2,291.3 yuan. For urban and rural residents, this small amount of pension is indeed unable to meet their elderly care needs.

Table 1.2

Number of People Participating in Basic Pension Insurance and Pension Per Capita in China at the End of 2021 (Unit: Million People)

Total Number of Participants in Pension Insurance	Resident Types		Number of People (Million People)	Total Pension Expenditure (100 Million Yuan)	Pension per Capital Received (Yuan)
1,028.714	Urban & Enterprises Employees	Total Employees	**480.74**		
		On duty Employees	349.17		
		Retirement	131.57	56481.5	42928.9
	Urban & Rural Residents	Total Residents	**547.974**		
		Not receive Pension	385.841		
		Receive Pension	162.133	3715.0	**2291.3**

Source: China Statistical Yearbook (2022)

Based on the aforementioned facts, this research proposes the points-based management mechanism to solve the problem of insufficient pension funds for the elderly and the low-income people. The points-based management mechanism is an innovative elderly care service model. This is a new model. Elderly people over 60 can get a certain number of free points. Points as digital virtual currency managed on cellphone can be collected and can be used to buy elderly care service without expiration date. The care-givers will provide service and get 1 point per hour while the care-receivers will need to pay 1 point per hour to receive service. This research aims to explore the long-term

mechanism of socialized elderly care services through “points-based elderly care” and provide reference for the formulation and improvement of the elderly care service policy system and social security system in China.

1.2 Significance of the Research

Aging is not only a social issue, but also a key issue related to the future development of humanity. China is in the process of rapid population aging, which has an impact on the well-being of citizens, the harmony and stability of society and the overall development of the country. Therefore, finding the optimal solution among insufficient elderly care resources, limited elderly care costs, and the increasingly diverse elderly care needs is a daunting task (Lin Bao, 2021). The Chinese government has been committed to promote balanced regional development and reducing urban-rural disparities. Through measures such as implementing poverty alleviation policies, supporting rural economic development, and promoting infrastructure construction and industrial transfer in the central and western regions, China has made some progress in reducing the income gap between regions and populations. However, these gaps still exist and further efforts are needed to achieve more balanced and sustainable development. Furthermore, many elderly people in China currently do not have the ability to purchase the elderly care service they need, especially the low-income people. Based on the reflection of the above fact, the significance of this research are as follows:

1) propose the virtual currency of points-based and constructs the points-based elderly care service model. The purpose is to solve the current difficulties with future services to make up for the insufficient investment in previous elderly care funds.

2) promote the innovative diffusion of points based on the social exchange of points. The main theories of this research will be diffusion of innovations and social exchange theory.

3) ensure the stability of pension funds through social exchange of points. Points-based elderly care service is a virtual currency that has monetary functions granted by the government and can purchase elderly care service from society. The virtual currency of points can compensate for the insufficient investment of government in pension funds.

4) ensure the demand and supply of elderly care service through innovative diffusion of points. The elderly who get points can buy the services from society, which will increase the demand of elderly care service. Low-income people who provide elderly care service for elderly people can achieve points, which will increase the effective supply of the elderly care service.

5) solve the current elderly care issues through innovative and social exchange of points. It is a supplementary measure for China's elderly care service security system.

1.3 Research Question

What influences the potential success in the management mechanism of points-based elderly care service in China?

1.4 Objective

The specific research objectives are as follows:

1) to identify what factors would affect to the potential success of points-based management mechanism.

2) to develop practical recommendations on how to construct a sustainable management mechanism of points-based elderly care service.

1.5 Scope of the Research

In this research, the scope would be classified as follows:

1) Scope of Area

Study only on low-income people in China.

2) Scope of Population

For quantitative research, the questionnaires will be sent out to the low-income people in China.

For qualitative research, low-income people, caregivers, instructors from university, and government officers will get interviewed.

3) Scope of Content

The following concepts and theories will be used in this research：

- Diffusion of innovations theory
- Social exchange theory
- Potential success of points-based elderly care service

4) Scope of Time

This research will start in September 2023 and finish in August 2024.

1.6 Expected Results

1) The research will create a new points-based elderly care service model.
2) The result will encourage the Low-income to participate the program to earn points and get elderly care service when they need.
3) The government would use the result to improve their plan for the elderly care service in China.

1.7 Definition

The low-income people refer to the people who have the average annual income per capita of households is lower than nationwide level.

The elderly caregivers refer to workers who provide daily care and elderly care that are not related to nursing issue or medical condition.

Elderly care service refers to provide various support and care for elderly people to meet their daily needs and improve their quality of life, including: Personal Care, Medical Care, Companionship, Home Care, Mobility Support, Memory Care, Respite Care, Palliative and Hospice Care.

Points-based elderly care service is a kind of digital virtual currency that can only be used to purchase elderly care service and professionally managed through mobile APP. Points-based elderly care service is a new model for the elderly who is over 60 years

old. Points as digital virtual currency managed by special application on cellphone can be collected to get elderly care service without expiration date. Every people over 60 can get a certain number of free basic points. The elderly over 60 can be care-givers or care-receivers while the younger can only be care-givers. The care-givers will provide service and get 1 point per hour while the care-receivers will need to pay 1 point per hour to receive service.

Management mechanism of points-based elderly care service is an innovative management mechanism that proposes a digital and virtual currency of points-based elderly care service. It involves integrating points as a means of payment, reward, or incentive in the elderly care ecosystem.

Diffusion of innovations is a theory proposed by American scholar Everett M. Rogers, which aims to make members of society accept new ideas, things, products, and services through specific communication channels. There are five aspects of the innovation attributes: Relative Advantage, Compatibility, Complexity, Trialability, and Observability.

Social exchange is a theory founded by Holmes in 1950s. The main viewpoints is that All human behavior is an exchange for a certain return and the resources exchanged can be economic or social or both. The social relationships formed during the exchange process are a type of exchange relationship. Social exchange based on social compensation in mutual assistance elderly care always exists.

CHAPTER 2
LITERATURE REVIEW

Theories and concepts related to this research were collected from textbooks, articles, journals, websites and related dissertation. The outline of this chapter could be elaborated as follows:

2.1 Points-based Elderly Care Service

2.2 Theories and Concepts Relevant to Social Exchange

2.3 Theories and Concepts Relevant to Diffusion of Innovations

2.4 Theories and Concepts Relevant to Potential Success of Management Mechanism

2.5 Conceptual Framework, Operational Definition, Hypothesis and Explanation of Hypothesis

2.1 Points-based Elderly Care Service

2.1.1 The Development History of Elderly Care Service in China

It is a solemn commitment of the Chinese government to provide elderly care service security for the elderly people. The development history of the elderly care service in China has always been accompanied by the proposition and exploration of enabling every elderly person to enjoy their old age in peace. There are three stages for the development history of elderly care service in China, showed as follows.

The first stage, from the establishment of New China to the early stages of Reform and Opening up (1949-1992). The multi-child model with an average of 3-5 children has promoted the function of family elderly care, allowing the family elderly care model that has lasted for thousands of years to still achieve absolute dominance, while institutional elderly care model and unit elderly care model have made up for the shortcomings of traditional family elderly care. In 1950, China began to establish a social welfare system. In the context of limited financial resources, a relief type and low-level welfare system was formed, with the nation being responsible and the government taking

care of it. The nation is only responsible for the support of elderly people living alone in urban and rural areas. Subsequently, under the planned economy system, the number of beneficiaries continued to increase, forming a welfare system framework consisting of welfare for unit employees, urban orphans and widows, and rural five guarantees.

The second stage, from the accelerated development and improvement of the socialist market economy to the first proposal of elderly care service (1993-2012). Home elderly care and community elderly care have emerged and flourished according to the times, and are developing in parallel with institutional elderly care and unit elderly care. Over the past 20 years, China has entered an aging society, and addressing population aging has gradually become a national issue. The main contradiction in society is concentrated in the contradiction between the growing material and cultural needs of the people and backward social production. The contradiction between the demand and supply of elderly care service has become a hot topic of social discussion.

The first Law on the Protection of the Rights and Interests of the Elderly was born during this period and reaffirmed the important role of family elderly care. Multiple departments of China advocate vigorously developing the community elderly care service industry, requiring the provision of centralized living, daily elderly care and other services, and gradually extending to home elderly care service to meet the diversified needs of the elderly people. The construction concept of the social elderly care service system based on "Home elderly care + community elderly care + institutional elderly care" has been elevated to the top-level design of China and included in the overall plan for national economic and social development.

The third stage has been ongoing since 2013. A comprehensive model of elderly care service with Chinese characteristics, including home elderly care, community elderly care, institutional elderly care, medical care combined with elderly care, and smart elderly care, is formed. China has made systematic arrangements for the medium and long-term plan to address population aging, and in 2020, actively addressing the rise of population aging has become a national strategy. In 2022, the opinions of the State Council on promoting the development of elderly care service pointed out that the Party Central Committee and the State Council attach great importance to elderly care service, and

continue to improve the elderly care service system based on home, community, institution, and combination of medical care to ensure that everyone can enjoy basic elderly care service and effectively meet the diversified needs of the elderly.

Nowadays, the aging population has become an increasingly important issue for more and more countries. In the process of rapid development of population aging, while ensuring sustained, stable and rapid economic and social development, how to better meet people's quality of life in their later years has become a common challenge faced by some major aging countries in the world. Among them, the issue of providing elderly care service to the elderly people is currently the most direct and major challenge. Wang (2019) mentioned that from domestic and international experience, Western countries tended to choose socialized elderly care service, while Eastern countries tended to choose family based elderly care service.

However, with the development of society and changes in family structure, as well as the increasing demand for services quality and level among the elderly people, neither socialized nor family based elderly care service can effectively meet the multifaceted and multi-level elderly care service needs of the elderly.

Therefore, how to build and develop a good elderly care service system and serve the elderly care service market, and better meet the wishes and needs of elderly people for home care, remains a huge research field with significant academic and practical significance.

2.1.2 Elderly Care Service Policies of China in the Past Decade

Implementing an active response to population aging is a systematic project that requires overall, systematic, and forward-looking institutional arrangements from a top-level design. Under the guidance of top-level design, China’s laws related to the elderly have been continuously improved.

The "Law of the People's Republic of China on the Protection of Rights and Interests of the Elderly" was promulgated and implemented in 1996. With the intensification of China's aging trend and rapid economic and social development, this specialized law was revised twice in 2009 and 2013. The local level has also introduced

policies and regulations with local characteristics in terms of the construction of the social elderly care service system, respect for the elderly, and love for the elderly. After years of accumulation and development, our country has basically formed a legal and regulatory system for the protection of the rights and interests of the elderly, including laws, administrative regulations, local regulations, and departmental rules.

In 2013, the "Decision of the Central Committee of the Communist Party of China on Several Major Issues Concerning Comprehensively Deepening Reform" clearly stated that "actively respond to the aging of the population, accelerate the establishment of a social elderly care service system and the development of the elderly services industry, and by 2020, we must fully build a fully functional, moderately scaled, and An elderly care service system covering both urban and rural areas." This shows that actively responding to population aging has become a basic, overall and long-term development strategy for China. In September 2013, the "Several Opinions of the State Council on Accelerating the Development of the elderly care service Industry" further proposed the comprehensive establishment of a elderly care service system based on home, community-based, and institutional support, and made comprehensive recommendations for the development of China's elderly care service industry. layout.

In May 2016, General Secretary Xi Jinping clearly stated that we must adhere to the combination of party committee leadership, government leadership, social participation, and national action, adhere to the combination of responding to population aging and promoting economic and social development, and adhere to the combination of meeting the needs of the elderly and solving the aging problem. In October 2016, the "Healthy China 2030" Planning Outline was released. In the same year, the “13th Five-Year Plan” outline included “actively responding to population aging” as a separate chapter.

At the beginning of 2017, the "Notice of the Ministry of Civil Affairs on Accelerating the Reform of Delegating Administration, Delegating Power, Delegating Power and Delegating Power to Delegation, Combining Delegation and Regulation, and Optimizing services Reform" in the elderly care service industry was proposed in the social field.

In 2019, the Central Committee of the Communist Party of China and the State Council issued the “National Mid- and Long-term Plan for Actively Responding to Population Aging”, which provides specific response measures. And in April 2019, the “Opinions of the General Office of the State Council on Promoting the Development of Elderly Care Service” further proposed goals to ensure that by 2022, on the basis of ensuring that everyone has access to basic elderly care service, the diversified and multi-level elderly care service needs of the elderly can be effectively met.

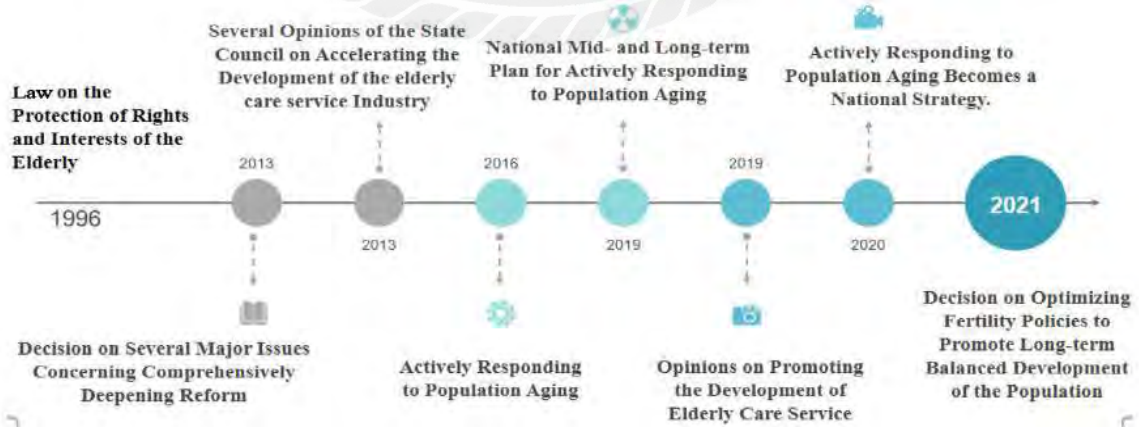
In October 2020, the Fifth Plenary Session of the 19th Central Committee of the Communist Party of China further elevated actively responding to population aging to a national strategy. And the “14th Five-Year Plan” released in March 2021 will actively respond to the national strategy of population aging and make more specific target plans.

In July 2021, the Central Committee of the Communist Party of China and the State Council issued the "Decision on Optimizing Fertility Policies to Promote Long-term Balanced Development of the Population", focusing on "one old and one young", and clearly proposed to establish and improve a population services system and promote long-term balanced development of the population.

It can be seen that the top-level design framework of China’s elderly care service and elderly care system has been initially constructed. The infographic on China’s elderly care service policies over the past decade is shown below.

Figure 2.1

The Infographic on China’s Elderly Care Service Policies Over the Past Decade



Source: Researcher (2024)

2.1.3 Elderly Care Service

Elderly care service refer to providing various support and care for elderly people to meet their daily needs and improve their quality of life. These services aim to help elderly people maintain independence, provide a safe living environment, meet medical and social needs, and provide support for daily life. elderly care service can include the following: Personal Care, Medical Care, Companionship, Home Care, Mobility Support, Memory Care, Respite Care, Palliative and Hospice Care. Currently, many scholars have conducted extensive normative and empirical research on issues such as elderly care service. These studies provide multidimensional insights into the connotation, composition, problems, and countermeasures of elderly care service. This also provides a reference for understanding the basic content and practical progress of points-based elderly care service.

Wang Shiquan (2008); Liu Jinhua (2009); Yang Cuiying & Zheng Chunrong (2014) defined elderly care service from broad and narrow perspectives. In a broad sense, it includes three major strategies: safe elderly care, healthy elderly care, and enjoying the elderly. They stated that elderly care service involves policy measures and facilities provided by the state and society to promote virtues, stabilize life, maintain health, and enrich the spiritual and cultural life of the elderly. They described "elderly care" as a state of life for those over 60 retired from social labor, a "leisure and recuperation state".

Xi Heng et al. (2014) defined elderly care service from a narrow perspective and divided it into different service dimensions. They also distinguished between elderly care industry (non-profit undertakings provided by the government for safe, healthy, and enjoyable elderly care) and elderly care industry (private profit-making activities meeting multi-level and diversified needs of the elderly). Elderly care industry belongs to public goods and services highlighting government responsibility, while elderly care industry is an industrial concept for market-oriented services.

In summary, elderly care service has gained prominence due to the increasing aging population globally. Scholars have investigated various aspects of organizational structures, strategies, and practices to ensure the provision of effective and quality care for the elderly. And elderly care service demonstrates a growing awareness of the need for

person-centered, technologically integrated, and ethically sound approaches. Future research is likely to focus on innovative models, best practices, and the continuous improvement of organizational strategies to meet the evolving challenges and opportunities in elderly care.

2.1.4 Points-based Elderly Care Service in some countries

1) In Japan. According to existing academic literature, the points-based elderly care model first appeared in Japan in the 1980s, and gradually developed and improved into an important part of Japan's long-term care insurance system. This model is considered to be an effective way to promote the social participation of the elderly.

In Japan's points-based elderly care model, points mainly refer to the points that the elderly can earn by participating in various community services, caring for others and volunteering. The accumulated points can be used to redeem various pension services, such as home care, day care centers, and can also be used to obtain some living discounts and subsidies, such as transportation subsidies, shopping discounts. Japan's points-based elderly care model is not only beneficial to the physical and mental health of the elderly, but also reduces the government's pension burden.

Zhen Wang et al. (2019) pointed out that Japan has implemented a pension model based on the points system since the 1980s, encouraging the elderly to participate in community services and volunteer activities to accumulate points in order to obtain corresponding pension services. Kise & Abe (2018) also introduced in detail the pension points system based on social participation implemented in Japan since the 1990s. Goto & Miyamoto (2020) further analyzed the specific implementation of the points pension model in Japan's long-term care insurance system.

2) In Belgium. The points-based elderly care model first appeared in Belgium in the 1990s. Belgium encourages the elderly to participate in community services and volunteer activities, accumulate corresponding points, and obtain pension services and benefits. In Belgium, points in the elderly care context are often referred to as "time credits" or "voluntary credits." These points are earned by individuals who participate in volunteer activities that support the elderly and contribute to community well-being. This model is considered to be an effective way to promote the active participation of the

elderly in society.

Meunen et al. (2019) analyze the points-based elderly care models in Belgium and the Netherlands in detail in this article, pointing out that Belgium is a pioneer. Nyssens & Brolis (2020) mentioned in this article that Belgium has implemented the elderly care model based on community participation points since the 1990s.

3) In China. The concept of "pension points" was piloted in Beijing, Shanghai, Wuhan and other cities in 2003, encouraging the elderly to participate in community services and volunteer activities to earn points. In 2012, the State Council promulgated the "12th Five-Year Plan for the Development of Modern Service Industries", incorporating the points-based elderly care model into the national development plan. Subsequently, more and more local governments began to promote and implement the points-based elderly care system. In 2020, the State Council issued the "14th Five-Year Plan for the Development of Modern Service Industries", officially listing the points-based elderly care system as a national promotion project.

Regarding the points-based elderly care service model, Xinxiang City in Henan Province is the most successful. Li Wei (2018) mentions that the points-based elderly care system in Xinxiang City, Henan Province, is a system led by the government, with points as a link, relying on the Xinxiang City Home-based Elderly Care Management Service Center, and supported by Internet technology. The Xinxiang City Home-based Elderly Care Management Service Center regards the elderly as bargaining chips and important elderly care resources, cooperates with enterprises, and integrates resources from different industries into community home-based elderly care service through shared responsibilities and mutual benefit and win-win results, so as to realize the market-oriented operation mechanism of the integrated development of elderly care service.

This is a points-based elderly care service system that operates according to market rules. Enterprises are for profit, and the elderly are the chips and resources used by the local government to mobilize enterprises to participate in elderly care cooperation. For this purpose, a "cross-industry alliance" has also been established. The main ways to obtain points are to join the cross-industry alliance network points and points obtained by consumption in the cross-industry alliance. In addition, points can be obtained by

participating in learning activities at the local senior university, or participating in public welfare and volunteer services. Elderly people in Xinxiang can use the "points + cash" method to redeem corresponding services and products at designated community home-based elderly care service outlets.

The points-based elderly care system launched by Xinxiang City has achieved certain results in solving the elderly care problems of local elderly people, but because it is tied to profit-making enterprises, the elderly in Xinxiang City are not very enthusiastic about participating in the points-based elderly care system, and its effectiveness is greatly reduced.

2.1.5 Elderly Care Service Model

The comprehensive research on the aging problem in China really began in the period of large-scale population migration and mobility in the 1980s. After more than 40 years of development, the classification standard of the elderly care service model has been established. There are different opinions among the scholars of China on the classification of elderly care models, but there are mainly three classification methods, namely, classification based on the support capacity for elderly care service, the delivery location of elderly care service, and the degree of technical integration of elderly care service.

1) From the Perspective of elderly care funds

According to the support funds for elderly care, elderly care models can be divided into family elderly care model, social elderly care model, and mixed elderly care model. Mu Guangzong (2000) proposed a classification method based on "support for elderly care", dividing the elderly care model into family elderly care model, social elderly care model, and self elderly care model. Among them, self retirement was a way for elderly people to provide retirement resources independently of their children and society.

This classification method has a single dimension, clear definition, and is highly recognized by the academic community. But there are two points worth discussing, that is, it is difficult to balance the proportion of elderly care resources. With the continuous development of the national economy, China's basic pension insurance system has

become increasingly perfect. The coverage rate of urban and rural basic pension insurance has significantly increased compared to 2000, and most elderly people can enjoy basic pension insurance.

However, Li Shaoguang (2000) pointed out that "the source of elderly care for the elderly people was the payment of contributions from 'new' and 'middle aged', that is, the current contribution, which belongs to the use of others' money for elderly care . Therefore, Chen Saiquan (2000) further proposed that "defining the concept of elderly care solely from the perspective of economic support makes it difficult to distinguish the large number of mixed elderly care model that exist in real life".

Due to the fact that elderly people are also part of their families, self care still belongs to family care. Only through further division of family elderly care can there be so-called "self elderly care", "spouse elderly care", "children elderly care", and "other relatives elderly care". Therefore, based on this, Zhu Dongmei (2008) divided the elderly care model into family elderly care model and social elderly care model according to the supply side of services required for elderly care.

Cao Xingchuan (2007) and He Yun (2008) pointed out that China's elderly care model was mainly divided into family elderly care model and social elderly care model, while the new types of "home based elderly care" and "community care" mainly belong to hybrid elderly care model. Hybrid elderly care is a mode where families and society jointly share the resources of elderly care. With the acceleration of China's socialized elderly care process, the proportion of hybrid elderly care model in China will become increasingly high. For example, an institution that provides elderly care service and is paid for by the family. Home-based elderly care where the state provides subsidies for some families in need and family members provide other elderly care materials. Community home-based elderly care service, such as government purchased services with the participation of family members, all belong to a hybrid elderly care model.

2) From the Perspective of the place of elderly care service

According to the places of elderly care service, the elderly care model is divided into home elderly care model, community elderly care model, and institutional elderly care model. Yang Zongchuan (2000); Jiang Ling (2007); Hu Hongwei et al. (2015); and

Ge Ailing & Feng Zhanlian (2019) generally believed that the current elderly care models in China mainly included home elderly care model, institutional elderly care model, and community elderly care model. Among them, home elderly care was the most widely used elderly care model in China, and institutional elderly care focused on solving the problem of supply and demand imbalance, while community elderly care was a more ideal elderly care model in the future.

Dong Hongya (2018) believed that the integration of medical care and elderly care was a product of people actively responding to population aging, and its biggest feature was that the integration of medical care and elderly care focuses on the entire life cycle of the elderly. It could effectively integrate medical and health resources and elderly care service resources by combining social elderly care, medical care, and case management, reduced the hospitalization rate of the elderly and slow down. The integration of medical care and elderly care can be divided into three categories: firstly, the establishment of medical institutions within elderly care institutions; secondly, the establishment of elderly care institutions within medical institutions; and thirdly, the cooperation between elderly care institutions and medical institutions. Although the types of medical and elderly care integration vary, regardless of the form, the integration of medical care and elderly care relies on the specific space of elderly care institutions or hospitals, and is essentially still an institutional elderly care model.

3) From the Perspective of the subject of elderly care service

Su Dan (2018); Yang Fang (2019); Gao Ping & Sun Lingjuan (2019) had divided elderly care model into traditional elderly care model (home elderly care, community elderly care, institutional elderly care, and combination of medical care and elderly care) and new elderly care model (Internet plus elderly care s, smart elderly care).

Due to the degradation of traditional family function, fewer children and the mobility of children, it is more and more difficult for family members to bear the care responsibility of the elderly at home, and the services cost of home model and institutional model is too expensive. The lack of professionals makes it difficult to improve the services quality (Su Zhenfang, 2014); for community model, due to insufficient capital investment, there is a serious lack of elderly care facilities and nursing staff, advocating

voluntary mutual care, and it is difficult to rely on enthusiasm in front of the elderly who are old and disabled (Gan Mandang et al. 2014).

The focus of medical model is to pay attention to the hospital's involvement in the medical security of the elderly, but it also lacks the security of professional medical talents, while the time bank elderly care model has not been popularized and applied due to complex operation and difficult management (Yang Zhenzhen, 2016). The points-based elderly care service model has also been preliminarily explored in some communities.

Xinxiang city in Henan combines points with consumption points, and uses 12349 telephone services platform to combine banks, insurance companies and businesses, so that the elderly can get points for saving money in banks, shopping and providing services to the elderly, and can be used for various consumption (Sun Yanchuan, 2015). Ningbo in Zhejiang and Dongguan in Guangdong follow the principle that those who have the ability to work can obtain points after providing services for the elderly, but it is difficult to continue because of operational difficulties such as point access and the lack of long-term mechanism (Dong Xiaofang, 2012).

In summary, the existing elderly care service model can not meet the demand. Through literature review, it is found that the current situation in China is that a variety of elderly care models coexist, and every model plays an important role, but they also face different problems.

2.2 Theories and Concepts Relevant to Social Exchange

2.2.1 Meaning of Social Exchange Theory

The theory of social exchange formed in the late 1950s, initially by George C. Homans and spread widely in the 1960s in the US. Main representatives include Homans (1961), Blau (1964) and Emerson (1976).

Homans, a founder, in "Social Behavior: Its Elementary Forms" (1961), saw social behavior as an exchange analyzed by rewards and costs. He said individuals interact based on expected rewards, governed by reinforcement and reciprocity. Interpersonal communication is like an economic model, with people weighing costs and benefits,

choosing for maximum gain. Trust is experience-based and increases with expected returns. Reciprocity is a result and means to maintain relationships.

Blau in "Exchange and Power in Social Life" (1964) established a framework. He said social exchange involves not only material but also social rewards like approval. He emphasized power from unequal resource distribution. Social exchange in interpersonal communication is based on interests and power. Fair returns increase trust and stability. Perceived benefits, whether material or emotional, are the driving force. Reciprocal support consolidates social relations.

Emerson expanded on Blau's concepts, especially power and dependency. His "Power - Dependence Theory" says power is determined by dependency. Interpersonal communication is based on mutual dependence. High trust balances power. Perceived benefits affect power and dependency. Mutual support is key for exchange relationship continuation.

The theory says each party has something the other wants. Resources exchanged can be economic (tangible) or social (intangible). Blau said rewarding social outcomes lack material price. Researchers summarized four dimensions: Interpersonal Interactions, Interpersonal Trust, Perceived Benefits, and Reciprocal Support.

1) Interpersonal Interactions refer to the exchanges between individuals within a social structure, where both tangible (e.g., resources, points) and intangible (e.g., social recognition, gratitude) rewards are exchanged. These interactions are driven by the need to gain something of value, which can reinforce social bonds, shape power dynamics, and contribute to the overall functioning of a community or system.

2) Interpersonal Trust is the confidence that individuals have in each other within a social exchange, believing that their contributions and efforts will be reciprocated fairly in the future. Trust is crucial in reducing perceived risks, stabilizing power imbalances, and ensuring that exchanges within a system are sustained over time, particularly when future benefits are anticipated.

3) Perceived Benefits refer to the individual assessment of the rewards or advantages expected from engaging in a social exchange. These benefits can be tangible,

such as points or material rewards, or intangible, such as social approval or emotional satisfaction. The perception of these benefits motivates individuals to participate in exchanges and influences their decisions to continue or withdraw from interactions.

4) Reciprocal Support is the mutual exchange of resources, services, or recognition within a social relationship, where each party provides something of value with the expectation of receiving something in return. This support underpins the stability of social exchanges, encouraging ongoing cooperation and fostering trust and interdependence among participants.

2.2.2 Interpersonal Interactions

1) Definition of Interpersonal Interactions

Taylor & Rupp (2016) said that interpersonal interactions are the reciprocal exchanges between individuals that include verbal and non-verbal communication, social support, and the development of trust and mutual respect.

Ashkanasy & Daus (2020) described interpersonal interactions as the exchanges between individuals that involve emotional expressions, social support, and conflict resolution, contributing to the emotional climate of the organization.

Colquitt et al. (2021) stated that interpersonal interactions are the exchanges between individuals that involve communication, mutual support, and cooperation, which are essential for effective teamwork and organizational functioning.

Ehrhart & Scott (2021) described interpersonal interactions as the social exchanges that occur between individuals in the workplace, involving communication, cooperation, and the establishment of social bonds that influence organizational outcomes.

Overall, interpersonal interactions involve multiple elements including communication, influence, relationship building, support, cooperation, and emotional expressions, which have significant impacts on individual and organizational outcomes such as attitudes, behaviors, work environment, and job performance.

2) Literature Relevant to Interpersonal Interactions

Jones & Rittman (2016) described and explained the emotional and motivational aspects of organizational interactions from a psychological research and theory-derived perspective using a specific model.

Pulles & Hartman (2017) pointed out that interpersonal interactions between boundary spanning individuals are fundamental to the development of interorganizational interactions, and they examined the effects of likeability on commodity prices and a partner's willingness to collaborate.

Wu et al. (2022) from a social perspective and based on social exchange and social capital theories, studied the connections of interpersonal interaction on creative performance and the moderating effect of goal orientation. They divided relevant aspects into different categories and found certain effects and moderations.

In social exchange theory, interpersonal Interactions is an important variable involving the communication and interaction styles between individuals. Individuals can receive support, feedback and learning opportunities through human interaction, improving personal development and professional achievement.

2.2.3 Interpersonal Trust

1) Definition of Interpersonal Trust

Robinson (1996) defines interpersonal trust as the expectation that another person will act in ways that are beneficial or at least not detrimental, based on past interactions and the existing relationship.

Dyer & Chu (2000) define it as one party's confidence that the other party in the exchange relationship will not exploit its vulnerabilities.

Patterson (2015) highlight that interpersonal trust is the firm belief in the reliability, truth, or ability of another person, fostering open communication, cooperation, and the willingness to be vulnerable.

Maes (2020) state that interpersonal trust is the belief in the reliability, integrity, and competence of another individual within the context of a relationship, influencing cooperation and social cohesion in organizations.

Johnson & Luthans (2021) describe interpersonal trust in an organizational context as the willingness to be vulnerable to another party based on the confidence that they will act in beneficial or non-detrimental ways.

Interpersonal trust is generally described as a state or expectation based on various factors. These definitions highlight different aspects but all center around the relationship between individuals and the element of trust within that relationship.

2) Literature Relevant to Interpersonal Trust

Uzzi (1997) state that quality of social exchanges and strength of social ties are crucial for generating trust. Business literature describes trust as a psychological state with strong expectations.

Nunkoo & Ramkissoon (2012) consider trust and power as core concepts in social exchanges. They test a community support model based on social exchange theory, finding that support depends on residents' trust in government actors and perceived benefits, while trust is predicted by residents' perceived benefits, costs, and power levels.

Chiaburu & Harrison (2013), Albrecht & Travaglione (2017) show that interpersonal trust is related to job satisfaction, organizational commitment, job performance, employee engagement, and organizational citizenship behavior.

Holste & Fields (2013), Ranaweera & Jayawardhena (2014) and Hughes et al. (2018) find that high trust can lead to more sharing of tacit knowledge and better organizational performance, enhance service quality and satisfaction and influence organizational innovation through leadership and team composition.

Subedi et al. (2023) using social exchange theory, investigated the determinants of political trust from the perspective of hotel employees and its influence on government support during the COVID-19 pandemic. 350 surveys were collected and analyzed. Interpersonal trust was not a determinant, but other factors were. Political trust is important for government support.

In summary, interpersonal trust is a core element in establishing and maintaining cooperative relationships. A high level of interpersonal trust helps promote good cooperation and coordinated development among team members, improving the

performance and effectiveness of teams and organizations, and establishing a fair and equitable working environment, thereby achieving better organizational performance and employee satisfaction.

2.2.4 Perceived Benefits

1) Definition of Perceived Benefits

Edmondson (1999) defines perceived benefits as the anticipated positive outcomes of taking interpersonal risks in a team environment, which promote psychological safety and learning behaviors.

Govindarajan & Gupta (2001) describe perceived benefits as the anticipated advantages of global strategic initiatives, influencing the willingness of organizational members to support and engage in global operations, emphasizing the global strategy context.

Grant (2007) asserts that perceived benefits are the expected positive outcomes that motivate individuals to engage in prosocial behaviors and contribute to the welfare of others within organizations, highlighting prosocial motivation.

Robbins & Judge (2019) describe perceived benefits as the anticipated rewards and positive outcomes from engaging in specific organizational behaviors and practices, influencing employee engagement and performance.

According to the above scholars' opinions, perceived benefits is the anticipated positive outcomes that individuals expect to gain from engaging in various activities or initiatives, and is the positive outcomes or rewards that individuals expect to receive from engaging in a social exchange relationship. These benefits can be tangible or intangible and can vary depending on the specific context of the exchange.

2) Literature Relevant to Perceived Benefits

Bordia et al. (2006) under the framework of social exchange theory, the impact of evaluation apprehension and perceived benefits of knowledge sharing on employees' intentions in interpersonal and database contexts was studied. Evaluation apprehension was negatively correlated in both contexts, and perceived benefits were only positively correlated in the database context. In the database context, evaluation apprehension was

higher and sharing intention was lower. The negative effects of evaluation apprehension were worse when perceived benefits were low.

Shin et al. (2022) based on social exchange theory (SET), studied how the perceived social benefits from social network community (SNC) activities affect members' commitment through satisfaction, and how members' trust moderates this relationship. Analyzing Facebook user data, it was found that perceived benefits and trust are significant, and trust plays a moderating role. This research contributes to related literature and discusses its implications and limitations.

Alves & Mainardes (2017) studied how trust, other perceived benefits, and self-efficacy influence consumer value co-creation. A model was tested on a sample of 362 diverse consumers using certain services. Data was processed with specific software. The results indicated that the most influential factors, in order of significance, were self-efficacy perception, benefits in relationships with others, and trust in the company.

Mansour et al. (2022) examined how the training benefits perceived by employees affect their affective organizational commitment in National Jordanian banks through the mediating role of individual readiness for change. It was found that employees' perceptions of training benefits positively influence their commitment, individual readiness for change is influenced by these perceptions and in turn affects commitment, and readiness for change mediates the relationship.

The research above shows that individuals' perceived benefits from participating in social exchange relationships directly influence their behavior. When individuals perceive that participating in social exchange relationships can bring actual benefits, rewards, or rewards, they are more motivated to participate in and invest in exchange relationships, thus promoting cooperation and reciprocity.

2.2.5 Reciprocal Support

1) Definition of Reciprocal Support

Emerson (1976) mention that reciprocal support is the dynamic process of give-and-take between individuals within an organization, where the expectation of future reciprocation strengthens social bonds and organizational stability."

Lawler & Thye (1999) mention that reciprocal support is the mutual exchange of resources and support, grounded in the social exchange theory, which enhances trust and commitment among organizational members."

Putnam & Nicotera (2009) mention that reciprocal support involves the exchange of communicative and practical support among organizational members, which is essential for effective teamwork and communication climate."

Worline (2017) mention that reciprocal support is the mutual exchange of help and resources among employees, fostering a culture of care and resilience within the organization."

In summary, reciprocal support refers to the mutual exchange of assistance, resources, or emotional support between individuals in a social relationship. It involves a mutual give-and-take dynamic where individuals provide support to others with the expectation of receiving support in return.

2) Literature Relevant to Reciprocal Support

Chua et al. (2008) also show in their research that economic resource ties, informational support and career guidance tend to play a stronger role in motivating cognition-based trust. Therefore, along with affective trust, reciprocal support also influences cognitive trust for caregivers and services providers.

Chan & Li (2010) study that the principle of reciprocity in organizations provides a resource exchange model that satisfies both the seeking and sharing parties of knowledge dissemination.

Christian et al. (2015) examine the relationship between reciprocal support and organizational citizenship behavior (OCB), with a focus on the mediating role of work engagement. The results indicate that reciprocal support directly enhances OCB and that this relationship is partially mediated by increased levels of work engagement.

Gagné et al. (2017) and Hobfoll et al. (2018) both explore the significance of reciprocal support in the workplace, particularly within healthcare settings. Gagné et al. find that reciprocal support enhances job satisfaction and organizational commitment among healthcare professionals, underscoring the value of supportive relationships in

fostering a positive work environment. Similarly, Hobfoll et al. highlight that reciprocal support serves as a buffer against workplace stressors, reducing the likelihood of burnout and promoting employee resilience. Together, these studies emphasize the critical role of supportive relationships in enhancing employee well-being and organizational effectiveness.

The research above finds that reciprocal support positively influences work-life balance, which in turn enhances employee retention rates. Reciprocal support can enhance cooperation and collaboration among employees, improving job satisfaction and organizational commitment.

The summary of research framework in social exchange of points is shown below.

Table 2.1

The Results of the Synthesis of Social Exchange of Points

Factors	Year	Author	The main points
Interpersonal Interactions	2016	Jones & Rittman	Emotional and motivational aspects of interpersonal interactions in organizations can be explained by the motivation ande xperience and display of emotion model.
	2017	Pulles & Hartman	Interpersonal interactions between boundary-spanning individuals have a fundamental role in the development of interorganizational interactions, particularly affecting commodity prices and collaboration.
	2022	Wu et al.	Interpersonal interactions, in the form of expressive and instrumental relations, affect creative performance, with the moderating effect of goal orientation.
Interpersonal Trust	1997	Uzzi	Trust is a key component of social exchange and is important for generating cooperation and support.
	2012	Nunkoo & Ramkissoon	Trust is influenced by perceived benefits, costs, and power dynamics between actors. Stronger trust leads to greater support and cooperation.
	2013	Chiaburu & Harrison	Higher interpersonal trust among coworkers is associated with increased job satisfaction, commitment, performance, and reduced turnover and deviance.

	2013	Holste & Fields	Interpersonal trust promotes the sharing of tacit knowledge, which enhances organizational performance.
	2017	Albrecht & Travaglione	Interpersonal trust predicts higher employee engagement, which in turn fosters organizational citizenship behaviors.
	2018	Hughes et al.	Interpersonal trust facilitates greater team innovation, especially in diverse teams, by fostering a trusting environment.
Perceived Benefits	2006	Bordia et al.	Perceived benefits of knowledge sharing (such as enhanced reputation) were positively associated with employees' intentions to share knowledge in a database context, but not in an interpersonal context.
	2017	Alves & Wagner	Perceived benefits, both in the relationship with the company and with other consumers, influence consumer co-creation of value.
	2022	Shin et al.	Perceived social benefit from social networking community activities influences members' affective commitment to the community.
	2022	Mansour et al.	Employees' perceived benefits of training, including job-, career-, and personal-related benefits, positively impact their affective organizational commitment through individual readiness for change.
Reciprocal Support	2008	Chua et al.	Reciprocal support positively influences cognitive-based trust, in addition to affective trust, by providing economic resources, information, and career guidance.
	2010	Chan & Li.	Reciprocity provides a mutually beneficial resource exchange model for knowledge dissemination in organizations.
	2015	Christian et al.	Reciprocal support directly enhances organizational citizenship behavior, partially mediated by increased work engagement.
	2017	Gagné et al.	Reciprocal support significantly enhances job satisfaction and organizational commitment in healthcare settings.

2.3 Theories and Concepts Relevant to Diffusion of Innovations

2.3.1 Meaning of Diffusion of Innovations Theory

Diffusion of Innovations Theory is a theory proposed by American scholar M. Rogers in 1962, which aims to make members of society accept new ideas, things, products, and services through specific communication channels (Rogers, 2016). He

believes that innovation is not a new thing that appears objectively, but rather that this viewpoint, method, or thing is considered new in people's subjective consciousness, which is a form of innovation (Dong Fang, 2010). When deciding whether to adopt innovation, people will go through five stages: cognition, persuasion, decision-making, implementation, and confirmation. Due to the different time periods when individuals or organizations adopt innovation, innovation adopters are further divided into five types: innovators, early adopters, early majority, late majority, and laggards. Generally speaking, individuals who hold leadership positions or possess a more adventurous spirit are more likely to engage in innovative adoption behavior more quickly.

Rogers believes that "even if a new idea has obvious advantages, it is difficult "because the decision to adopt innovation is influenced by various factors such as innovation attributes, communication channels, time, and social system.

The innovation attribute, as the most critical element, includes five aspects: Relative Advantage, Compatibility, Complexity, Trialability, and Observability. The result of diffusion of innovations is whether it is adopted and implemented, that is, whether individuals or organizations adopt innovation when acquiring a certain type of innovation (Oldenburg et al., 1999).

The diffusion of innovations theory not only analyzes the reasons for innovation dissemination, but also analyzes the dynamic evolution of innovation methods, channels, time, and social systems. Scholars have conducted extensive research on diffusion of innovations theory in various fields such as management, sociology, political science, economics, anthropology, and communication, and have confirmed the effectiveness of using this theory for research (Greenhalgh et al., 2009).

In the process of elderly care service, the application of the points-based elderly care service model with virtual currency function is similar to the dissemination and diffusion of innovative resources in real life. Therefore, this research introduces the diffusion of innovations theory to study the adoption and use process of the points-based elderly care service model, in order to evaluate the influencing factors of the diffusion of innovations of the points-based elderly care service model.

Diffusion of innovations is a process that must meet the following requirements: an innovation spreads among members of a certain social system through specific communication channels within a certain period of time. Obviously, the four major elements of diffusion of innovations are innovation, communication channels, time, and social system. These factors can be reflected in all innovation research and innovation promotion plans. When a viewpoint, method, or object is considered new by a person or group, it is an innovation. The definition of innovation has little to do with whether it is objectively new or whether it is used for the first time. The individual's response to it determines whether it belongs to innovation, and if people believe it is novel, it is innovation. Novelty does not necessarily mean applying new knowledge. Some people may have known about an innovation for a long time, but have not shown a liking or liking attitude, and it is impossible to refuse or adopt it. The novelty of an innovation may be determined by its knowledge, persuasiveness, and whether people adopt it. The attributes of innovation and users' perception of it determine the speed at which innovation is adopted.

1) Relative Advantage refers to the idea that an innovation is considered superior to what it replaces. The dimension of relative advantage is generally measured by the economy, but it is also related to factors such as social reputation, convenience, and satisfaction. The relative advantage is related to how much advantage the adopter believes it has. People believe that the greater its advantage, the faster it spreads.

2) Compatibility refers to the degree of consistency between an innovation and the values, past experiences, and needs of potential users. The diffusion speed of innovations that are compatible with social values is much faster.

3) Complexity refers to the difficulty of using or understanding an innovation. Some innovations appear very simple and easy to use for members of a social system, while others are adopted slowly due to their complexity.

4) Trialability refers to the possibility that an innovation can be tried to some extent. New ideas that can be tested are easier to adopt than those that cannot be seen.

5) Observability refers to whether an innovation has visibility. The easier it is to see the effectiveness of innovation, the easier it is for people to adopt it. Its visibility will

encourage peers to discuss the innovation, as friends and neighbors often need to exchange information similar to innovation evaluations.

Therefore, innovations that users feel have obvious advantages are compatible, testable, visual and uncomplicated, which will spread much faster than other innovations.

2.3.2 Relative Advantage

1) Definition of Relative Advantage

Rogers (1962) defines relative advantage as the degree to which an innovation is perceived as better than the idea it supersedes, measured in terms of economic profitability, social prestige, or other benefits, emphasizing perceived improvements over existing solutions.

Davis (1989) ties relative advantage to technology acceptance, defining it as the degree to which an innovation is perceived as providing greater benefits than existing options, influencing acceptance and use, including performance, productivity, and convenience improvements.

Moore (1991) highlights market dynamics, defining relative advantage as the degree to which a new technology or product provides more value compared to existing options, driving early adoption and market penetration.

Christensen (1997) highlights market disruption, defining relative advantage as the perceived superiority of an innovation over existing products or processes, which can disrupt markets and establish new industry standards.

Venkatesh & Davis (2000) include this in the Technology Acceptance Model 2, defining relative advantage as the degree to which using an innovation is perceived as being better than using its precursor, affecting users' behavioral intentions and actual use.

Thompson & Martin (2005) tie relative advantage to competitive positioning, defining it as the perceived benefit of an innovation in comparison to existing solutions, determining its competitive edge and adoption rate within the market.

In summary, relative advantage means the degree to which an innovation is superior to the old innovation it replaces. It focuses on the extent to which this innovation

is perceived as better, more beneficial, or more advantageous than the current options available to potential adopters.

2) Literature Relevant to Relative Advantage

Hsbollah et al. (2009), Nor et al. (2010), and Jwaifell & Gasaymeh (2013) explored key attributes influencing technology adoption in different contexts. Hsbollah et al. identified relative advantage, trialability, and academic specialization as significant for lecturers adopting e-learning. Nor et al. found that relative advantage, compatibility, and trialability shaped students' attitudes toward Internet banking, affecting their intention to use it. Jwaifell & Gasaymeh linked teachers' use of interactive whiteboards to relative advantage, compatibility, simplicity, trialability, and observability. Together, these studies highlight the critical role of these attributes in adopting educational and financial technologies.

Khalil (2019) studied the adoption of a telemonitoring solution called myDiabby in French diabetes services. The research found that both technology-related factors (such as relative benefits, compatibility, ease of use, trialability, and visibility) and environmental factors (such as the demographic situation of healthcare providers, access to healthcare in rural areas, and the economic and political situation) influenced the adoption and spread of the telemonitoring system. This shows the complex interplay of multiple factors in the adoption of healthcare technology in a specific context.

Min et al. (2021) and Menzli et al. (2022) explored technology adoption through the Diffusion of Innovation Theory. Min et al. found that factors like relative advantage, compatibility, complexity, observability, and social influence significantly shape consumer attitudes and intentions toward the Uber mobile app. Similarly, Menzli et al. identified that relative advantage, observability, and complexity positively influence the adoption of Open Educational Resources, noting complex interactions among trialability, complexity, and compatibility. Together, these studies emphasize the critical role of various attributes in adopting mobile applications and educational resources.

Mathijssen et al. (2023) examined the applicability of four attributes from Rogers' theory (relative advantage, compatibility, complexity, and observability) in the context of home telecare adoption. They found that these attributes strongly affected adoption,

explaining 61% of the variance. This shows the importance of these attributes in understanding the adoption of a specific healthcare-related innovation.

In summary, relative advantage is considered an important driver of innovation adoption because it is directly related to individual motivations and benefits of adopting an innovation. Individuals are more likely to adopt innovations with clear advantages because they can lead to clear improvements and benefits.

2.3.3 Compatibility

1) Definition of Compatibility

Rogers (1962) defines compatibility as the degree to which an innovation is perceived as consistent with existing values, past experiences, and needs of potential adopters, suggesting that greater compatibility increases the likelihood of adoption.

Davis (1989) ties compatibility to user acceptance by defining it as the degree to which an innovation fits with the potential adopter's existing values, needs, and experiences, affecting its acceptance and use.

Moore (1991) focuses on minimizing disruption, defining compatibility as the extent to which a new product or service fits into the current lifestyle or work habits of the adopter, facilitating easier adoption.

Christensen (1997) highlights market acceptance, defining compatibility as the degree to which an innovation is perceived as congruent with the potential adopter's current needs, values, and practices, which can enhance or hinder its market acceptance.

Venkatesh & Davis (2000) include this in the Technology Acceptance Model 2, defining compatibility as the extent to which using an innovation is perceived as consistent with the potential adopter's existing values, previous experiences, and current needs, affecting behavioral intentions and actual use.

Thompson & Martin (2005) tie compatibility to systems and cultural norms by defining it as the perceived fit of an innovation with current systems, processes, and cultural norms within an organization, determining its ease of adoption and integration.

In summary, compatibility refers to the degree to which an innovation is perceived as consistent, compatible, or congruent with the existing values, needs, experiences, and practices of potential adopters within a social system.

2) Literature Relevant to Compatibility

Carter and Belanger (2005) found that higher perceived compatibility increases intentions to adopt e-government initiatives, with citizens more likely to engage when these initiatives align with their lifestyles. Similarly, Pullen (2012) concluded that relative advantage, compatibility, and complexity significantly influence care providers' willingness to adopt shared electronic health records. Together, these studies highlight the essential role of compatibility in technology adoption within governmental and healthcare settings.

Reyes-Mercado (2017) analyzes the cognitive factors, innovation attributes, and their impact on the adoption of solar renewable energy technologies for urban households in Mexico. Compatibility with social values is important for the adoption of a solar heater, while triability and relative advantage have little influence on attitude formation.

Mamun (2018) explored the attributes influencing innovation adoption and its impact on the performance of Malaysian manufacturing SMEs, finding that factors like relative advantage, compatibility, complexity, trialability, and observability significantly affect adoption. Similarly, Keller et al. (2018) examined integrated multimodal mobility platforms and identified perceived advantage and personal compatibility as the strongest predictors of adoption intention, followed by innovativeness and technology security. Together, these studies highlight the importance of perceived benefits and compatibility in driving technology adoption across different sectors.

Moon (2020) and Nordhoff et al. (2021) studied factors affecting the adoption of innovative transportation technologies. Moon found that compatibility, relative advantage, and observability significantly influence attitudes toward electric vehicles (EVs), while complexity and trialability are less impactful. This suggests that EV marketing should highlight benefits and compatibility. Similarly, Nordhoff et al. identified compatibility with existing travel practices as the primary predictor for using automated shuttles.

Together, these studies underscore the importance of compatibility and perceived benefits in adopting new transportation technologies.

In short, compatibility involves technical compatibility, value compatibility, cultural compatibility and other aspects. Individuals are more likely to adopt an innovation when it is consistent with an individual's existing values, experiences, knowledge, and processes.

2.3.4 Low Complexity

1) Definition of Low Complexity

Rogers (1962) defines complexity as the perceived difficulty of understanding and using an innovation, suggesting that innovations seen as complex may face resistance due to the effort required to learn and implement them.

Davis (1989) ties complexity to the perceived difficulty of learning and using an innovation, including technical sophistication, required training, and potential for errors.

Moore (1991) describes complexity as the level of intricacy and difficulty associated with implementing an innovation, including technical requirements, integration challenges, and potential disruptions to existing systems.

Christensen (1997) discusses complexity as the perceived difficulty in understanding and using an innovation compared to existing solutions, affecting its market acceptance and disruptiveness.

Venkatesh & Davis (2000) emphasize that complexity affects users' willingness to adopt and use an innovation based on its perceived difficulty in understanding and operation.

Thompson & Martin (2005) define complexity as the level of intricacy and difficulty associated with implementing an innovation within organizational contexts, including technical requirements, training needs, and potential disruptions.

In this research, low complexity refers to the degree to which an innovation is perceived as simple, easy to understand, and implement by potential adopters.

2) Literature Relevant to Low Complexity

Carter and Belanger (2005) found that e-government initiatives depend on citizens' willingness to adopt web-enabled services, noting that perceived complexity did not significantly influence intentions among university students. Similarly, Rahimi et al. (2009) highlighted that physicians and nurses expect high relative advantage and low complexity in computerized provider order entry systems, suggesting the need for designs that enhance benefits and decision-making. Together, these studies emphasize the importance of perceived complexity and relative advantage in technology adoption.

Makse & Volden (2011) proposed that policy attributes such as relative advantage over predecessors, complexity, and compatibility with past practices affect the likelihood of adoption of criminal justice policy innovations. Policy attributes also determine the relevance of spatial adoption patterns and learning mechanisms to the policy's diffusion.

Ali et al. (2019) determined the factors influencing customer adoption of takaful products in Pakistan using five attributes of the diffusion innovation theory and two additional constructs. The findings report that complexity has a negative impact on adoption, while relative advantage, compatibility, trialability, observability, religiosity, and consumer awareness show a positive and significant influence.

Moon (2020) found that perceived complexity does not significantly affect attitudes toward electric vehicle adoption. In contrast, Sayginer and Ercan (2020) identified relative advantage, compatibility, complexity, and top management support as key factors in companies' adoption of cloud computing, emphasizing the importance of complexity and management support for effective adoption. Together, these studies illustrate that the impact of perceived complexity on technology adoption varies by context and type of innovation.

In summary, complexity is one of the important factors affecting innovation adoption. When an innovation is perceived as too complex or difficult to understand, individuals are more likely to have negative attitudes toward it and be less willing to adopt it. Therefore, reducing the complexity of an innovation can reduce the cognitive load of individuals and promote the adoption of the innovation.

2.3.5 Trialability

1) Definition of Trialability

Rogers (1962) defines trialability as the degree to which an innovation can be experimented with on a limited basis before full adoption, making it easier for potential users to assess its benefits and drawbacks.

Davis (1989) highlights trialability as the ease with which potential users can experiment with an innovation, assessing its benefits and drawbacks in a risk-free environment.

Moore (1991) describes trialability as the ease with which potential adopters can try out an innovation before committing to full adoption, reducing uncertainty and assessing fit with their needs.

Christensen (1997) describes trialability as the ease of experimenting with an innovation in a real-world setting, assessing performance and suitability before commitment.

Venkatesh & Davis (2000) see trialability as the extent to which users can experiment with an innovation on a limited basis, facilitating evaluation before adoption.

Thompson & Martin (2005) see trialability as the ease with which an innovation can be tested or piloted within organizational contexts, enabling assessment before full-scale adoption.

In summary, trialability means the degree to which this innovation can be tried on a limited basis before full adoption, and the ability of individuals or organizations to try out an innovation on a small scale to assess its compatibility, benefits, and feasibility.

2) Literature Relevant to Trialability

Yunus (2014) studied the influence of Diffusion of Innovations factors—relative advantage, compatibility, and trialability—on mobile banking adoption through consumer attitudes. The results showed that relative advantage and trialability positively impact both consumer attitudes and the intention to use mobile banking, while compatibility does not

significantly affect the intention. Overall, consumer attitudes are crucial for fostering a positive intention to use mobile banking.

Moon (2020) proposed that the trialability of electric vehicles does not have a significant impact on attitude. However, trialability has the highest average among the five perceived innovation characteristics, suggesting that the possibility of test-driving electric vehicles is considered significant.

Xu et al. (2023) expanded the diffusion of innovations theory by examining AI adoption in the workplace, highlighting the impact of technology threat on employee attitudes. They found that while relative advantage, compatibility, and observability promote positive attitudes, ease of use and trialability do not significantly affect them. Trialability influences attitudes only among previously positive employees, while observability and the threat of AI are more significant for those with negative attitudes.

Farzin et al. (2023) combined theories and Perceived Risk to identify factors influencing the acceptance of fully automated AVs. Using data from 641 Tehran residents, structural equation modeling validated the integration. Perceived Risk was negative. Among the Unified Theory variables, Performance Expectancy is the most influential and Effort Expectancy the least. Trialability and Observability from the Diffusion of Innovation have nearly equal effects.

In summary, trialability is one of the important factors that promote innovation adoption. When individuals can try out and experience a new innovation with limited risk and cost, they are more likely to adopt the innovation.

2.3.6 Observability

1) Definition of Observability

Rogers (1962) describes observability as the degree to which the results of an innovation are visible to others. Innovations that yield tangible and easily observable outcomes are more likely to be adopted as potential adopters can witness their benefits firsthand.

Davis (1989) proposed that observability represents the degree to which the outcomes of an innovation are visible and easily detectable by potential adopters.

Observable benefits increase the likelihood of adoption by providing social proof and reducing uncertainty."

Moore (1991) describes observability as the extent to which the outcomes of an innovation are readily apparent and visible to potential adopters. This visibility facilitates the diffusion process as it provides social proof and reinforces the benefits of adoption.

Christensen (1997) proposed that observability is the degree to which the results of an innovation are visible and easily discernible by potential adopters. Observable outcomes provide social proof and increase confidence in the innovation's value.

Venkatesh & Davis (2000) note that observability is the extent to which the outcomes of an innovation are visible and easily perceived by potential users, facilitating the assessment of its usefulness and benefits.

Thompson & Martin (2005) add that observability represents the extent to which the outcomes of an innovation are visible and measurable within organizational contexts, providing evidence of its effectiveness and benefits.

In summary, the concept of observability in the context of innovation adoption refers to the degree to which the results or outcomes of an innovation are visible and readily apparent to potential adopters. The visibility of an innovation's outcomes facilitates the diffusion process and allows potential adopters to witness the benefits firsthand, thereby increasing the likelihood of adoption.

2) Literature Relevant to Observability

Ibrahim & Sadiq (2012) based on the Diffusion of Innovation theory, a study was conducted on 330 actual mobile banking users in Saudi Arabia. It was found that relative advantage, compatibility, and observability have a positive impact on adoption. Trialability and complexity have no significant impact, and perceived risk has a negative influence. This provides practical implications for the banking industry in Saudi Arabia.

Ezra & Monsurat (2015) discussed the diffusion of innovations theory and emphasized the Theory of Perceived Attributes of innovation. Studies found that variables such as profitability, understandability, personal compatibility, observability, and testability increase the potential for adoption of an innovation.

Moon (2020) concluded that electric vehicles' greater relative advantage and observability foster a positive attitude toward their adoption. Similarly, Warner et al. (2020) examined adopter stages and perceptions regarding water conservation innovations in Florida, finding that compatibility, trialability, and relative advantage significantly predicted overall adoption. Complexity and observability were influential among more innovative individuals, while different characteristics predicted adoption among less innovative users. Together, these studies underscore the importance of relative advantage and compatibility in driving adoption across various innovative technologies.

Keo et al. (2021) showed that observability is a significant element driving the dissemination of innovation. Observability enables individuals to obtain information and experiences about innovations, affecting their attitudes and behaviors and increasing the adoption and diffusion rate. It can be enhanced through creative design, display, and promotion.

Based on the results above, observability play a significant role in the diffusion of elderly care service models.

The summary of the research framework in diffusion of innovations is shown below.

Table 2.2

The Results of the Synthesis of Diffusion of Innovations

Year	Author	Factors of compositions					Total
		Relative advantage	Compatibility	Low Complexity	Trialability	Observability	
1962	Rogers	√	√	√	√	√	5
1994	Strutton et al.	√				√	2
2002	Völlink et al.	√	√				2
2005	Carter & Belanger		√	√			2
2009	Mohamad et al.	√			√		2
2009	Rahimi et al.	√		√			2
2010	Nor et al.	√	√	√	√	√	5

2011	Makse & Volden.		√	√			2
2012	Pullen	√	√	√			3
2012	Al-Jabri & Sohail.	√	√		√	√	4
2013	Jwaifell & Gasaymeh	√	√	√	√	√	5
2014	Yunus	√	√		√		3
2015	Ezra & Monsurat.	√	√	√	√	√	5
2017	Reyes-Mercado	√			√		2
2017	Ax & Greve		√				1
2018	Mamun	√	√	√	√	√	5
2018	Keller et al.	√	√			√	3
2019	Khalil	√	√	√	√	√	5
2019	Ali et al.	√	√	√	√	√	5
2020	Moon	√	√	√	√	√	5
2020	Gharaibeh et al.	√	√	√	√	√	5
2020	Sayginer & Ercan	√	√	√			3
2020	Warner et al.	√	√		√	√	4
2021	Keo et al.					√	1
2021	Nordhoff et al.		√		√		2
2021	Min et al.	√	√	√		√	4
2022	Menzli et al.	√	√	√	√		4
2023	Mathijssen & Wendela	√	√	√		√	4
2023	Xu et al.				√	√	2
2023	Farzin et al.				√	√	2

2.4 Theories and Concepts Relevant to Potential Success of Management Mechanism

2.4.1 Meaning of Potential Success of Management Mechanism

The points-based management mechanism presents a novel and innovative model in the field of elderly care services, and its potential success holds rich possibilities and development prospects. In this research, potential success means that although this model has many elements and positive signs of success, it has not yet been fully realized or fully demonstrated and is still in the process of development and growth.

From the perspective of actual operation, the points-based management mechanism has built a bridge between the supply and demand of elderly care services through an innovative points exchange method. In terms of service supply, it has the

potential to integrate various types of elderly care resources and promote the improvement of service quality, enabling different types of service providers to better collaborate under this mechanism and provide more comprehensive and high-quality services for the elderly, such as realizing the organic integration and optimization of services in multiple fields such as medical care and living care. At the level of meeting the needs of the elderly, social exchange of points gives them more choices. Whether it is the personalized demand for health management or the pursuit of a rich cultural life, it is possible to be realized through points, and at the same time, it can also relieve the economic pressure of elderly care to a certain extent and create a more comfortable and autonomous elderly care life experience for the elderly.

One of the key driving factors for this potential success is the innovative diffusion of points. As this model spreads and is promoted in society, more and more elderly people, service providers, and relevant social forces begin to recognize and participate in it. It may trigger a series of chain reactions, such as attracting more social resources to invest in elderly care services, promoting the continuous improvement and optimization of the service model, and then promoting the healthy development of the entire points-based elderly care ecosystem. However, this process requires time and the joint efforts of all parties, and it needs to continuously adapt to market demands and social changes for adjustment and improvement, but its potential positive impact and the possibility of success are huge, providing an innovative and development potential way to solve the problem of elderly care services.

Many scholars have defined potential success. The following are some of the classic definitions of potential success given by some scholars. Collins (2001) asserts that potential success is the organization's ability to transform from "good" to "great", relying on sustained innovation, leadership, and effective resource management. Amabile (2018) defines potential success as an organization ' s ability to identify new growth opportunities and maintain competitiveness in a rapidly changing market environment by fostering innovation and creativity, leading to long-term sustainability. Watkins (2021) defines potential success as a leader's ability to quickly adapt to new roles during transitions and steer the organization toward its desired outcomes, ensuring alignment

with organizational objectives. Ton (2022) describes potential success as an organization's ability to enhance service quality and customer satisfaction by improving employee experience, job satisfaction, and engagement.

Based on the research above, potential success refers to the likelihood or capacity of achieving a desired outcome in the future. The potential success of the points-based elderly care service model can be analyzed from the following dimensions, such as sustainability, effectiveness and satisfaction. Sustainability ensures that the management mechanism can operate stably in the long term, and resources are utilized and protected rationally. Effectiveness ensures that the mechanism can effectively achieve established goals and provide practical benefits and assistance to the elderly people. Satisfaction ensures that the elderly people have a high degree of satisfaction with the services, with positive feedback, indicating their recognition of the management mechanism. Here is a detailed explanation of why these dimensions are chosen rather than others.

1) Sustainability: Sustainability is an important dimension because a successful points-based elderly care service model needs to be operationally sustainable in the long term. This ensures that the model can continue to provide high-quality services, adapt to changing circumstances, and meet the evolving needs of the elderly.

2) Effectiveness: Effectiveness refers to the ability of the model to achieve its intended goals and outcomes. It considers whether the model effectively encourages the low-income people to participate in the points-based elderly care service.The management mechanism of points-based elderly care service should be effective in improving the quality of life of the elderly, meeting their needs, and achieving positive results.

3) Satisfaction: Satisfaction is a key indicator of the potential success of the points-based elderly care service model. It measures the level of contentment and happiness experienced by the elderly and their families with the services provided. High satisfaction leads to greater trust, loyalty, and word-of-mouth referrals. Meanwhile, a high level of satisfaction indicates that the model meets the expectations and needs of low-income people, which is an important indicator of success.

These dimensions are selected because they cover key aspects of the potential success of the points-based elderly care service model. Sustainability ensures the long-

term viability of the model, effectiveness measures the achievement of desired results, and satisfaction indicates meeting the expectations of the low-income people. By considering these dimensions, a comprehensive evaluation of the potential success of points-based model can be conducted. They collectively assess the model's ability to meet the needs of the elderly, deliver quality services, achieve intended outcomes, and ensure its ongoing viability and the engagement of the low-income people.

2.4.2 Sustainability

1) Definition of Sustainability

Drucker (1954) proposed that sustainability involves market orientation and organizational innovation, focusing on capturing market dynamics, breaking traditions, and ensuring high-quality talent management and strategic execution to achieve long-term growth and stability.

Porter (1980) considered that sustainability is about maintaining competitive advantage over the long term through continuous innovation, adapting to market changes, and improving operations and product quality to stay ahead in a competitive environment.

Lovins (1994) emphasizes that when meeting current needs, it is necessary to ensure that the ability of future generations to meet their own needs is not compromised by efficiently using resources and minimizing waste. This requires innovation and improvement in multiple aspects such as technology, management, and behavior to achieve the optimal utilization of resources and sustainability.

Sachs (2015) recognized that sustainability requires meeting the various needs of the present while ensuring that future generations can also have the ability to meet their needs. This involves not only aspects such as resources and the environment but also social stability, fairness, and other aspects to achieve sustainable development and progress.

Sustainability involves balancing long-term economic, social, and environmental goals by continuously adapting, innovating, and responsibly managing resources to ensure that both current and future needs are met while creating value for all stakeholders.

2) Literature Relevant to Sustainability

Alves & Alves (2015) proposed a production management model combining lean manufacturing and sustainability principles through company cultural transformation. The goal is to increase productivity, enhance customer satisfaction, and respond quickly to market changes. Implementation should be gradual and work with workforce development and organizational transformation for sustainable improvement.

Lin et al. (2019) pointed out the impact of lacking a long-term care mechanism and the importance of having one. A five-dimensional, twenty-criteria definition was used for the long-term ageing health care system. The DANP-mV model was used to analyze the situation in Taiwan, identify issues, and develop a continuous improvement strategy for sustainable development.

Berta et al. (2019) aimed to understand the sustainability and dissemination of evidence-based practice innovations in healthcare. A post-implementation study was conducted to understand factors affecting the sustainability of changes in resident and staff outcomes.

Abbas (2020) investigated the link between total quality management (TQM) and corporate sustainability (CS) and the role of knowledge management (KM). TQM has a significant positive impact on CS and KM partially mediates. Abbas also studied the relationship between TQM and corporate green performance and the mediation role of corporate social responsibility.

Guo et al. (2020) investigated sustainable quality control of the plant-wide production process. A mechanism was established and applied in a large heavy truck enterprise, showing effectiveness and practicality for continuous improvement and sustainable development.

In conclusion, sustainability is a crucial topic in management. Researchers offer guidance and recommendations by exploring strategies and practices for social and economic sustainability. However, further research is needed on implementation effectiveness, challenges, and opportunities in different organizational contexts.

2.4.3 Effectiveness

1) Definition of Effectiveness

Drucker (1954) proposed that effectiveness refers to achieving the organization's objectives and goals in a manner that is consistent with its mission and strategic direction. It involves making the right decisions, allocating resources efficiently, and achieving desired outcomes.

McGregor (1960) proposed that effectiveness is about creating an organizational culture that promotes employee engagement, motivation, and commitment. It focuses on aligning individual goals with organizational objectives to enhance performance.

Peters & Waterman (1982) proposed that effectiveness involves creating high-performing teams and empowering employees to take ownership of their work. It emphasizes decentralization, employee involvement, and a focus on customer satisfaction.

Porter (1985) proposed that effectiveness involves creating a sustainable competitive advantage by delivering unique value to customers. It focuses on differentiation, cost leadership, and strategic positioning in the marketplace.

Christensen (1997) stated effectiveness is about disrupting existing markets and creating new growth opportunities through innovation. It involves identifying unmet customer needs and developing disruptive technologies or business models to address it.

Collins (2001) mentioned that effectiveness is about achieving sustained success and greatness by relentlessly pursuing the organization's core values and purpose. It involves disciplined execution, continuous improvement, and a commitment to excellence.

Sinek (2009) proposed that effectiveness is about inspiring people to act and achieving results through purpose-driven leadership. It involves communicating a compelling vision, building trust, and creating a culture of collaboration and accountability.

In summary, Effectiveness refers to the extent to which goals, objectives, or desired outcomes are achieved. It focuses on producing the intended results and delivering value in line with the organization's purpose and mission.

2) Literature Relevant to Effectiveness

Milne-Ives et al. (2020) aimed to evaluate conversational agents in healthcare and determine user preferences. A systematic search of multiple databases since 2008 found

mostly positive or mixed results for effectiveness, usability, and satisfaction, but user qualitative perceptions were more varied.

Notanubun (2021) examined the influence on organizational performance in a specific department in Indonesia. It was shown that certain behaviors and effectiveness have a strong combined effect, and internal reforms can improve performance despite some issues.

In short, effectiveness is a crucial variable in organizational management. This Research provides insights into how specific management practices and mechanisms contribute to operational efficiency, strategic alignment, and overall organizational performance.

2.4.4 Satisfaction

1) Definition of Satisfaction

Sasser et al. (1978) define satisfaction as the customer's overall evaluation of a product or service based on their experiences and perceptions, focusing on meeting customer needs, providing value, and building trust and loyalty.

Berry (1985) describes satisfaction as the extent to which a product or service meets or exceeds customer expectations, emphasizing the delivery of quality services, building strong customer relationships, and creating value.

Johnson & Fornell (1991) define satisfaction as the result of a customer's cognitive and affective evaluation of their consumption experience, involving the need to meet or exceed customer expectations, provide reliable services and deliver value.

Hart (1993) views satisfaction as the degree of excellence perceived by customers in product or service delivery, involving the need to meet or exceed customer expectations while providing consistent, reliable, and responsive services.

Rust et al. (1995) define satisfaction as the customer's emotional response or affective state resulting from their evaluation of their consumption experience, highlighting the importance of meeting or exceeding customer expectations, providing personalized services, and building strong emotional connections.

Smith & Bolton (2002) describe satisfaction as the emotional response or affective state resulting from a customer's evaluation of their consumption experience, emphasizing the need to meet or exceed customer expectations, provide personalized services, and build strong emotional connections.

In summary, satisfaction means the level of contentment, fulfillment, or positive experience that individuals or customers derive from a product or services, and reflects the extent to which expectations, needs, and desires are met or exceeded.

2) Literature Relevant to Satisfaction

Ogbari & Borishade (2015) examine the relationship between total quality management and customer satisfaction in services industries. Findings show a strong connection between them and suggest top management needs to do more to establish them as policies.

Zhu et al. (2015) explore the influence of employee participation mechanisms on the satisfaction of the new generation of employees in the Chinese manufacturing industry. Participation in management, supervision, and decision-making has a positive effect on work satisfaction, and participation intention plays a moderating role.

Trivellas et al. (2015) analyze the role of employees' general competencies in the connection between knowledge sharing culture and job satisfaction in accounting firm services. Empirical findings confirm the mediating effect of general competencies. Adeiza et al. (2022) also investigate the mediating mechanism of customer satisfaction on customer relationship management and customer loyalty in Nigerian consolidated banks.

Chuang et al. (2020) introduce and test a conceptual framework for private human services contract outcomes. Communication quality, trust, and flexibility are linked to satisfaction, while interdependence, flexibility, and asset specificity are associated with longer-term commitment.

Shi et al. (2021) construct a satisfaction model for community-based senior care considering the elderly's psychological perspective and four dimensions. Aim is to improve community care satisfaction.

Xu & Zhu (2021) explore the impact mechanism of citizen participation on citizen

satisfaction in a smart city. Citizen participation directly and indirectly impacts citizen satisfaction through perceived quality and value.

Based on the research above, satisfaction is a variable within organizational management mechanisms and has been a focal point in academic literature. It is multifaceted and reflects its importance in understanding and enhancing workplace dynamics and influencing various outcomes.

The summary of the research framework about potential success of points-based management mechanism is shown below.

Table 2.3

The Results of the Synthesis of Potential Success of Points-based Management Mechanism

Factors	Year	Author	The main points
Sustainability	2015	Alves & Alves	Integrating lean manufacturing principles with sustainability through cultural transformation can lead to sustainable productivity responsiveness improvements.
	2019	Berta & Cranley	Adaptation of evidence-based practices is relevant to their sustainability and spread.
	2019	Lin et al.	Long-term care systems need sufficient funds and continuous improvement to be sustainable.
	2020	Abbas	Total quality management has a positive impact on corporate sustainability, and knowledge management can mediate this relationship.
	2020	Abbas	Total quality management can improve corporate green performance, with corporate social responsibility mediating this relationship.
	2020	Guo et al.	Sustainable quality control mechanisms involving prevention, in-process control, and feedback can lead to continuous quality improvement and sustainable enterprise development.
Effectiveness	2020	Milne-Ives et al.	Conversational agents in healthcare generally show positive or mixed evidence for their effectiveness and usability, though user perceptions are more mixed.
	2021	Notanubun	Organizational citizenship behavior and leadership effectiveness simultaneously impact organizational performance.
Satisf actio	2015	Ogbari & Borishade	Total quality management and organizational reputation positively impact customer satisfaction in services industries.

Factors	Year	Author	The main points
	2015	Trivellas & Akrivouli	General competencies mediate the relationship between knowledge sharing culture and job satisfaction.
	2020	Chuang & McBeath	Relational factors like communication, trust, and flexibility are associated with contract satisfaction.
	2021	Xu & Zhu	Citizen participation, perceived quality, and perceived value influence citizen satisfaction in smart cities.
	2021	Shi et al.	Satisfaction models for elderly care should consider basic living needs, living environment, personal traits, and livability.
	2022	Zhou et al.	Factors like age, education, and health status affect satisfaction with digital health services transformation.
	2022	Adeiza et al.	Customer satisfaction mediates the relationship between customer relationship management and customer loyalty.

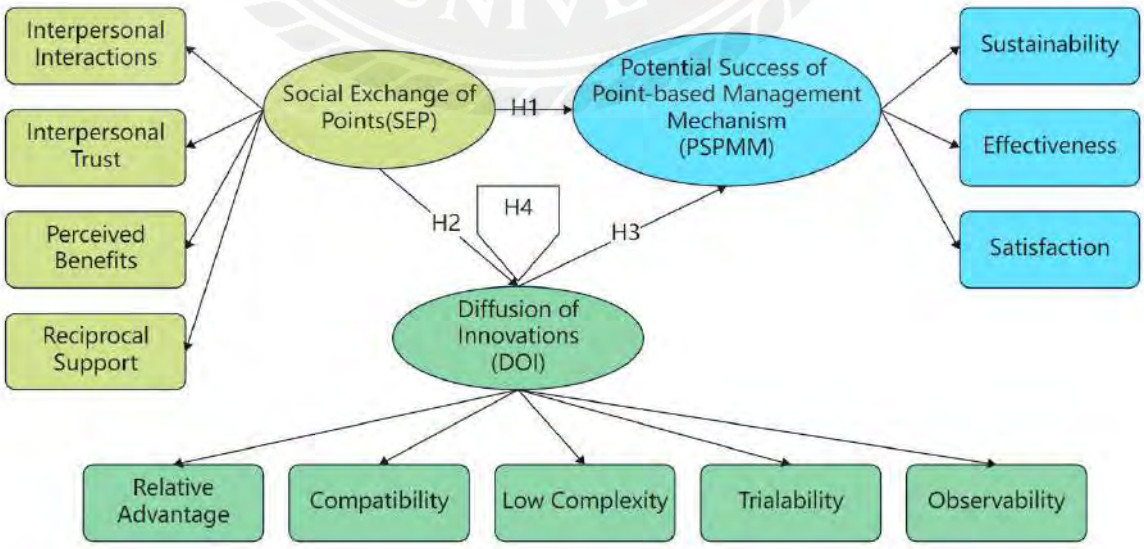
2.5 Conceptual Framework, Operational Definition, Hypothesis and Explanation of Hypothesis

2.5.1 Conceptual Framework

The conceptual framework for this research will be as follows:

Figure 2.1

Conceptual Framework



2.5.2 Operational Definition

Interpersonal Interactions refer to the exchange of verbal and non-verbal communication, accompany, emotional expressions and social behaviors among people. This exchange can mainly be a non-economic exchange, such as emotional support, friendship, and mutual understand.

Interpersonal Trust refers to the belief, confidence or reliance on the reliability, honesty, intentions and goodwill of another person or group in social interactions. It involves the expectation that the other person will act in a trustworthy and dependable manner, keep promises, share relevant information, thereby strengthening the bond between them.

Perceived Benefits refers to the subjective evaluations made by individuals based on their own perceptions, experiences, and beliefs about the advantages or positive outcomes they expect to gain from a specific course of a behavior, services or system，such as the improvements in their quality of life, health, social connections, and overall well-being.

Reciprocal Support refers to a give-and-take dynamic where individuals provide assistance, resources, emotional support, or other forms of help to each other in a mutually beneficial manner. It involves a sense of mutual exchange and cooperation, where both parties contribute to each other's well-being or needs.

Relative Advantage refers to the degree to which a new services or system is superior to an existing one, or a new innovation is perceived as better than the existing alternatives. It is generally measured by the economy and non-economy such as low-cost, high cost-effectiveness, free points, mutual-assistance, social reputation, and convenience.

Compatibility refers to the ability or tendency of different services systems or entities to work effectively together, coexist peacefully without conflict, hindrance, or disruption to achieve common goals or functions.

Low Complexity refers to a relatively simple or straightforward nature of the level of simplicity, ease, or minimal cognitive effort required to understand, use, or operate services or system.

Trialability refers to the ease with which the behavior, services or system can be tried, tested, or evaluated on a limited scale before full adoption or implementation, which encompasses the concept of being able to experience or experiment with something before making a commitment or a final decision.

Observability refers to the degree that the results of the services, system or innovation can be easily observed, perceived, measured, or visible to others. Observable benefits can include improved efficiency, cost savings, enhanced productivity, better user experience, or any other positive outcomes that are visible to the potential adopter.

Sustainability refers to the ability of a behavior, services or system to be maintained or continued over the long term while minimizing negative impacts on the environment, society, and economy. It encompasses balancing the needs of different people and the broader community, so as to contribute to the long-term success.

Effectiveness refers to the degree to which the behavior, services or system achieves its intended goals or objectives in a given context or environment. It involves solving problems, providing client-centered care, optimizing resource allocation, delivering high-quality services.

Satisfaction refers to the subjective assessment that encompasses feelings of happiness, expectations, contentment or fulfillment are met by the perceived performance of the services, experience, or interaction.

2.5.3 Hypothesis and Explanation of Hypothesis

From the above framework, a number of hypothesis can be listed as follows:

Hypothesis 1 The social exchange of points (SEP) has a direct positive impact on the potential success of points-based management mechanism (PSPMM).

Meaning

The hypothesis suggests that that the social exchange of points directly and positively influences the potential for success of the points-based management mechanism.

Reason

Social exchange within points-based elderly care service involves interpersonal interactions between caregivers and the elderly. These interactions may include providing care, support, information and emotional connection. When social exchange is positive, with caregivers providing high-quality care, showing empathy, and meeting the needs of the elderly, it can contribute to the potential success of the management mechanism.

Theory or Supporting research

Zimmerman (2012) studies that interaction plays a critical role in the learning process because it can contribute to the success of course and examine the relationship between learner-content interaction and course grade to determine if this interaction type is a contributing success factor. Findings indicate that learners who spent more time interacting with others achieve higher grades and success than those who spent less time.

Baker (2013) focuses on how personal support from the college environment influences the success of academic performance of African American and Latino college students attending selective colleges. The results indicate that the influence of faculty, specifically support from faculty of color, is important for the success of African American and Latino students at selective colleges.

Sablina et al. (2018) investigate perceived benefits as the measurement of learning success and gain deeper understanding of learners' perceived benefits based on retrospective reflection. The findings indicate that after finishing MOOCs, learners have received tangible and intangible benefits that in general justified their expectations.

Fareed et al. (2022) formulated hypotheses and tested the mediating role of trust (TS) and job satisfaction (JS) in linking transformational leadership (TFL) to project success (PS). The results showed that TS, JS, and TFL significantly impacted project success. Moreover, we found that TS and JS mediate the relationship between TFL and PS. These findings highlight the importance of trust and job satisfaction as mechanisms that translate TFL into the success of projects for organizations.

Hypothesis 2 The social exchange of innovative points (SEP) has a direct positive impact on the diffusion of innovations (DOI) of points.

Meaning

The hypothesis indicates that the degree of innovations in social exchange of points will affect the diffusion of points-based elderly care service among society and low-income people.

Reason

The innovative features of points-based elderly care service, such as the relative advantage of free distribution to the elderly, and low-income people being able to earn points and use them to purchase elderly care service by helping the elderly, will promote the diffusion of social exchange of points from the level of innovation in the new idea, services, and mutual assistance.

Theory or Supporting research

Westphal & Zajac (1997) aim to reconcile traditional sociological views by social exchange theory, develop and test the argument that CEO-directors may experience a reversal in the basis for generalized social exchange with other top managers from deference and support to independence and control. The evidence shows that a social exchange perspective can explain the diffusion of these changes better than more conventional perspectives on network diffusion that emphasize imitation or learning.

Ojha et al. (2022) recognize the importance of innovation speed to service innovation and introduce the concept of capacity for social exchange (CSE) in buyer-supplier relationships and explores how CSE affects knowledge sharing and innovation speed within a supply chain organization. The findings show that CSE facilitates knowledge sharing; knowledge sharing is positively related to innovation speed; and the relationship between CSE and innovation speed is fully mediated by knowledge sharing.

Hypothesis 3 The diffusion of innovations (DOI) of points has a direct and positive impact on the potential success of points-based management mechanism (PSPMM).

Meaning

The hypothesis indicates that Diffusion of Innovative points can enhance the potential success in the management mechanism of points-based elderly care service. This

implies that the successful adoption and implementation of innovative ideas or services contribute to the effectiveness and positive outcomes of the management mechanism.

Reason

Diffusion of innovations within points-based elderly care service involves the introduction and adoption of new ideas or services that improve the quality, efficiency, or effectiveness of elderly care service. The diffusion of innovations lead to positive outcomes such as reduced costs, increased accessibility, improved quality of elderly care, or enhanced coordination among caregivers and services providers.

Theory or Supporting research

Rogers (1962) mentioned that innovations with which the intended users can experiment on a limited basis are adopted and assimilated more easily. The more an innovation is tried, the faster it rate of adoption which means trialability is positively connected with the rate of adoption. During this stage, re-invention can take place. That is, an innovation may be changed and modified by the potential adopter and increased re-innovation may create faster adoption of the innovation.

Bradford & Florin (2003) draws upon Diffusion of Innovation (DOI) theory and Information Systems Success (IS) theory to develop and test a model of ERP implementation success. Results reveal that top management support and training are positively related to user satisfaction, while perceived complexity of ERP and competitive pressure show a negative relationship. Consensus in organizational objectives and competitive pressure are positively associated with perceived organizational performance. Post hoc analysis identifies user satisfaction as a moderator between certain DOI characteristics and organizational performance. This leads to the proposal of a new model of ERP implementation for future research.

Hypothesis 4 Diffusion of innovations (DOI) significantly mediates the relationship between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM).

Meaning

The hypothesis indicates that The diffusion of innovation can accelerate the acceptance of the social exchange of points-based elderly care service by low-income people, then promote the successful construction of the points-based management mechanism.

Reason

The various innovative attributes of points are also more easily recognized by low-income people, and encourage them to adopt and participate in the points-based elderly care service, thereby successfully implementing this management mechanism.

Theory or Supporting research

Motohashi et al. (2012) created a structural model of adoption-diffusion, using the perceived ease-of-use and usefulness of TAM (Technology Acceptance Model) as mediating variables, and a structural model of adoption-diffusion, with the rate of use and the variety of use as mediating variables. Under the adoption-diffusion model, they found that trialability, household innovativeness and perceived risk were the determinants of user satisfaction with IPTV, and perceived ease-of-use, the mediating factor. Under the use- diffusion model, complementarity and communication were shown to be the determinants of users' satisfaction with IPTV, and variety of use, the mediating factor. They also found that consumers' intentions to re-use IPTV was strongly influenced by its relative advantages and perceived risks .

Sung & Kim (2021) examine how change management affects organizational innovation through innovative behavior in the public sector. They analyze four change management elements (organizational goals, transformational leadership, participation and communication, education and training) as independent variables, with organizational innovation as the dependent variable and innovative behavior as the mediator. The research finds that change management positively impacts innovative behavior and organizational innovation. Innovative behavior mediates this relationship, with participation and communication having the most significant effect on both innovative behavior and organizational innovation.

Jegerson et al. (2024) investigated the internal factors that influence the adoption of cryptocurrencies for remittance transactions in the United Arab Emirates (UAE) by examining the relationships between behavioral intention (Bl) and perceived risk (PR), as well as the mediating effect of consumer innovation(CI). The authors developed a structural model using scales from the literature. The results revealed that Cl mediates the relationship between PR and BI. Also, Cl enhances intentions to use cryptocurrencies for remittance transactions. However, PR has a negative impact on Bl. This article focuses on the mediating impact of CI on intentions to employ cryptocurrency instruments for international money transfers.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Research Design

This research will use quantitative research as a major methodology and use Qualitative research to support the result from the major research. To fulfill the objectives of this research, documentary research will be utilized. Questionnaire and in-depth interview are deemed as the most appropriate tools as detailed as follows:

3.1.1 The Documentary Research

Documentary research will be studied by collecting document from many sources such as textbook, journal, article, dissertation, thesis, internet, and databases. All document will be analyzed and synthesized with theories, concepts, and related research to generate conceptual framework and hypothesis.

3.1.2 The Questionnaire Survey

Through multi-stage sampling, questionnaire will be created and sent to the selected samples. SPSSAU will be used to conduct reliability and validity tests, descriptive statistical analysis, and correlation analysis between variables. The sample scale data from SPSS software is imported into SPSSAU to verify the fit of the hypothesis model. The proposed hypothesis is validated based on the model parameters, and the path coefficient and correlation significance between each observed variable and latent variable are obtained to determine the influencing factors of low-income people' participation in elderly care service.

3.1.3 The Interview

Low-income people, caregivers, instructors from university and government officers will be interviewed to collect their opinions on the research. The results from the interview will be used to improve the sustainability, efficiency and satisfactory of this management mechanism.

3.2 Population and Sample

3.2.1 Population

This research will use purposive technique to study on low-income people who have the average disposable income per capita of households lower than nationwide average. Therefore, only 3 households (Low-income, Lower-middle-income and Middle-income Households) will be selected as shown in Table 3.1.

Table 3.1
Target Groups for Research (Unit: Yuan)

Group	Average of Disposable Income Per Capita
Nationwide	35,128.10
Low-income Households	8,332.80
Lower-middle-income Households	18,445.50
Middle-income Households	29,053.30

Source: China Statistical Yearbook (2022)

The population will be selected through multi-stage sampling based on the following criteria. Firstly, use stratified technique to divine 31 provinces (excluding Hong Kong, Macao, and Taiwan) into 4 regions as shown in Table 3.2.

Table 3.2
Numbers of Selected Provinces for Research

Region	Numbers of Provinces	Percentage (%)	Equal Distribution 31/6 ≈ 5.17	Numbers of Selected Provinces
Western	12	38.7	12/5.17 ≈ 2.32	2
Eastern	10	32.3	10/5.17 ≈ 1.94	2
Central	6	19.3	6/5.17 ≈ 1.16	1
Northeastern	3	9.7	3/5.17 ≈ 0.58	1
Total	31	100	6	6

Source: Researcher (2024)

Secondly, from 4 regions in first step, apply proportion sampling and purposive sampling to get 6 provinces which has the lowest disposable income per capita. They are Gansu and Guizhou from Western, Hebei and Hainan from Eastern, Henan from Central

and Heilongjiang from Northeastern which has the lowest disposable income per capita in each region.

Thirdly, from 6 provinces from second step, select 6 counties with the lowest disposable income per capita. The selected 6 counties will be Dangchang from Gansu, Hezhang from Guizhou, Xinhe from Hebei, Baisha from Hainan, Fugou from Henan, Lanxi from Heilongjiang as shown in Table 3.3.

Table 3.3

Selected Counties for Research

Provinces and Regions		Disposable Income Per Capita *(Unit:yuan)*	Province with the Lowest Disposable Income per Capita	County with the Lowest Disposable Income per capita
Western Region	Qinghai	25,919.5	**Gansu**	**Dangchang (9320 yuan)**
	Gansu	**22,066.0**		
	Sichuan	29,080.1		
	Guangxi	26,726.7		
	Chongqing	33,802.6		
	Neimenggu	34,108.4		
	Guizhou	**23,996.2**	**Guizhou**	**Hezhang (17,460 yuan)**
	Xizang	24,949.9		
	Yunnan	25,666.2		
	Shaanxi	28,568.0		
	Xinjiang	26,075.0		
	Ningxia	27,904.5		
Eastern Region	Fujian	40,659.3	**Hebei**	**Xinhe (15,501 yuan)**
	Hebei	**29,383.0**		
	Shandong	35,705.1		
	Guangdong	44,993.0		
	Zhejiang	57,540.5		
	Tianjin	47,449.4	**Hainan**	**Baisha**
	Hainan	**30,456.8**		

Provinces and Regions		Disposable Income Per Capita *(Unit:yuan)*	Province with the Lowest Disposable Income per Capita	County with the Lowest Disposable Income per capita
	Jiangsu	47,498.3		**(22,477 yuan)**
	Shanghai	78,026.6		
	Beijing	75,002.2		
Central Region	Shanxi	27,425.9	**Henan**	**Fugou (17,300 yuan)**
	Jiangxi	30,609.9		
	Hunan	31,992.7		
	Anhui	30,904.3		
	Hubei	30,829.3		
	Henan	**26,811.2**		
Northeastern Region	Liaoning	35,111.7	**Heilongjiang**	**Lanxi (17180 yuan)**
	Jilin	27,769.8		
	Heilongjiang	**27,159.0**		

Source: China Statistical Yearbook (2022)

However, the population is still unknown since there are no statistics on the number of people based on Disposable Income Per Capita for each region, province, and county.

3.2.2 Sample for Research

1) Quantitative Research

Since the population is unknown, the sample size can be calculated by Cochran formula as follows:

$$n = \frac{Z^2 pq}{e^2}$$

where:

n is sample size

Z is standard normal deviation set at 95% confidence level (1.96)

e is the desired level of precision (i.e. the margin of error = 0.05)

p is the (estimated) proportion of the population (50%)

q is 1 - p

Therefore, n will be

$$n = \frac{(1.96)^2 \text{ x } 0.5 \text{ x } 0.5}{(0.05)^2}$$

$$n = 384 \approx 400$$

More than 80 questionnaires will be sent out to each province. A total of 480 questionnaires will be distributed to ensure that a minimum of questionnaires (400 questionnaires) will be returned to researcher.

2) Qualitative Research

Low-income people, caregivers, instructors from university and government officers, a total of 10 interviewees, will get interviewed.

Four low-income people will be selected for interviews. Through a well-designed interview outline, their opinions towards participating in points-based model will be further understood.

Similarly, two elderly caregivers will be selected from local communities and elderly care institutions to understand their work situation and difficulties, as well as their opinions and attitudes towards elderly care issues.

Furthermore, two university instructors in the field of elderly care service, and two government officers will be selected as interviewees to understand their opinions on the current elderly care situation, as well as to further communicate and exchange views on the construction of the elderly care security system, the implementation of elderly care policies, and measures to address elderly care issues.

3.3 Research Tools

3.3.1 Questionnaire

Questionnaire was separated into 5 parts as follows:

Part 1: General information of the respondents

The basic information of the respondents includes gender, age, marital status, education level, province, resident type, number of the elderly, monthly income, and purchased insurance.

Part 2: Understanding the current situation of the elderly care service

This part will testify if all factors will currently affect to potential success of points-based elderly care service Model. The answers will be rating scale separated into 5 levels as follows:

Level	Score
Strongly Agree	5
Agree	4
Neutral	3
Disagree	2
Strongly Disagree	1

The meaning of each score would be

Score 5 means respondents strongly agree with the statement

Score 4 means respondents agree with the statement

Score 3 means respondents neither agree nor disagree with the statement

Score 2 means respondents disagree with the statement

Score 1 means respondents strongly disagree with the statement

The interpretation of the score would be Best (1981, p. 182)

Mean	Significance Level
1.00 - 1.80	Strongly Disagree
1.81 - 2.60	Disagree
2.61 - 3.40	Neutral
3.41 - 4.20	Agree
4.21 - 5.00	Strongly Agree

Part 3: The rating scale of the opinions and attitudes that low-income people and experts towards elderly care service.

Part 4: The rating scale of the opinions on potential success of points-based elderly care service.

Part 5: Recommendation

It is open-ended question to seek respondents' suggestions and implementation strategies for the successful implementation of points-based management mechanism.

3.3.2 Interview

Interview form will be created based on conceptual framework to seek opinion of the respondents and record the answers on the spot. Interview can overcome the unanswered questions in the questionnaire and provide an opportunity to explore deeper, especially for respondents with fewer educational opportunities.

3.4 Data Collection Strategy and Procedure

3.4.1 Questionnaire

1) Review literature to define conceptual framework.

2) Create a questionnaire to come along with the research objectives.

3) Using IOC (Item Objective Congruence Index) to check Content Validity and seek comments from the following 5 specialists

1. Dr. Prachya Wongwaree
2. Associate Prof. and Dr. Zhou Kunshun
3. Associate Prof. Li Zhenlian
4. Associate Prof. Lu Caixiu
5. Associate Prof. Li Qiaowen

$$IOC = \frac{\Sigma R}{n}$$

where IOC = Index of item-objective congruence value

R = Score from experts

ΣR = Total score from all experts

n = number of experts

Criteria to verify score is

+1 means "the measurement item is congruence with objective of study"

0 means "the measurement item is undecided with objective of study"

-1 means "the measurement item is inconsistent with objective of study"

IOC needs to be between 0.5 - 1.00 for Every question.

1) Find mean of the IOC and use the following judgment

Means between 0.5 - 1.00 means "the measurement is passing the criteria from experts"

Means below 0.5 means "the measurement needs to make change or correction"

Less than 0 means "the measurement is failing the qualify from experts"

2) Take questionnaire to do a try-out at 30 and check on the reliability.

The formula of Cronbach's alpha coefficient is

$$\alpha = \left[\frac{n}{(n-1)}\right]\left[1 - \frac{\Sigma_{i=0}^{n} / S_i^2}{S_t^2}\right]$$

where α = a coefficient of reliability

n = the number of informants

$\sum_{i=0}^{n}$ = the variance of the sum of informants

S_i^2 = the ratio of the variance of each informant

S_t^2 = the ratio of inter-informants' variance

3) The update of questionnaire will be used to distribute to the real case.

3.4.2 Interview

The following steps will be completed.

Firstly, develop an in-depth interview form and consult with the advisor to get questions to be appropriately decomposed into specific levels and elements.

Secondly, make appointment with selected interviewees. Send the form to the interviewees before interview. Ask the interviewees to sign consent form prio to make an interview. Follow all steps described in interview form.

Thirdly, prepare other equipment such as recorder and camera for interview.

3.4.3 Data Collection

The following steps will be exercised.

1) Request a letter from Management Department for a permission to distribute the questionnaire.

2) Send the questionnaire together with the letter above to target groups via mailing and email.

3) Retrieve the questionnaire. The questionnaires distributed through online surveys will be collected through the APP of Questionnaire Star while the paper questionnaire will be collected on the spot.

4) Establish a database. The database from online and paper questionnaires will be merged and generated into an SPSSAU database to form a complete statistical analysis database. The data analysis will be proceeded accordingly.

3.5 Data Analysis

Data Analysis is based on the e previously established database. To analyze quantitative data, the following steps would be applied:

1) Analyze general information of the respondents by Frequency and Percentage.

2) Analyze points-based elderly care influencing to factors by Mean and Standard Deviation (SD).

3) Analyze the relationship between independent and dependent variables by Confirmatory Factor Analysis (CFA) and Correlation Coefficient or Pearson Correlation (r).

4) Analyze the factors affecting low-income people' participation in points-based elderly care service using Structural Equation Modeling (SEM) by SPSSAU.

3.6 Research Ethics

The researcher already attained the research ethics training and get a Certification Number: 2991175， on the web-based course of Protecting Human Research Participants Online Training SBE from PHRP Online Training, Inc. This research already received an approval from the Office of the Human Research Ethics Committee, Panyapiwat Institute of Management with the Reference Number: **PIM-REC 024/2567**.

3.7 Research Reporting

The reporting for this research is separated into 5 chapters as follows:

Chapter 1 Introduction

Chapter 2 Literature Review

Chapter 3 Methodology

Chapter 4 Research Result

Chapter 5 Research Conclusion, Discussion and Recommendation

CHAPTER 4
RESEARCH RESULTS

This research has three objectives. The first is to conduct a descriptive analysis of the survey subjects. The second is to conduct a SEM analysis and test the model of the research hypothesis. The third is to analyze and test the mediating variables in the model.

4.1 Questionnaire Design

This chapter presents the research's findings based on the data collected. It focuses on the relationship between **Social Exchange of Points (SEP), Diffusion of Innovations (DOI),** and **Potential Success of Points-based Management Mechanism (PSPMM)**. The data analysis was conducted using descriptive analysis and structural equation modeling (SEM) with the SPSSAU.

In order to ensure the reliability and validity of the scale, this research designed the scale carefully based on various observation variables to ensure the logic and rationality of the questionnaire. This survey questionnaire is divided into 5 parts as follows:

The first Part is **Personal Information**, including gender, age, marital status, education level, location, resident identification, number of elderly people, monthly income and insurance.

The second Part is the scale of **Social Exchange of Points**, questions No. 1-5 represents the dimension of interpersonal interaction, 6-10 represents the dimension of interpersonal trust, 11-15 represents the dimension of perceived benefits, 16-20 represents reciprocal support.

The third Part is the scale of **Diffusion of Innovations**, questions No. 21-25 represents the dimension of relative advantage, 26-30 represents the dimension of compatibility, 31-35 represents low complexity, 36-40 represents trialability, 41-45 represents observability.

The fourth Part is the scale of **Potential Success of Points-based Management Mechanism**, questions No. 46-50 represents the dimension of sustainability, 51-55 represents the dimension of effectiveness, 56-60 represents the dimension of satisfaction.

The last Part is **Recommendation**.

4.2 Descriptive Analysis of Empirical Research on Survey Subjects

4.2.1 Personal Characteristics of the Sample

The questionnaire was distributed to low-income people by the human resources management department of local government. A total of 600 questionnaires were sent and 512 questionnaires were collected, with a recovery rate of 85%. Since this paper studied the influencing factors of low-income people's willingness to participate in points-based elderly care service model, and after preliminary investigation, the low-income people who were distributed with the questionnaire all came from places with low economic development in China, namely Dangchang County in Gansu Province, Hezhang County in Guizhou Province, Lanxi County in Heilongjiang Province, Fugou County in Henan Province, Xinhe County in Hebei Province, and Baisha County in Hainan Province. This section would use SPSSAU to import the data of 512 valid samples and conduct descriptive statistical analysis on the basic information in the first part of the questionnaire.

This research conducted descriptive statistics on gender, marital status, education level, age, province, resident identification, number of elder people, average monthly income and insurance of low-income people. The results were shown in Table 4.1 below.

Table 4.1

Percentage of all demographic variables (n=512)

Variables		Total of respondents	Percentage
Gender	Male	157	30.66
	Female	355	69.34
Age	21-30	69	13.48
	31-40	296	57.81
	41-50	132	25.78
	Above 51	15	2.93
Marital Status	Single	197	38.48
	Married	247	48.24
	Divorced	43	8.40
	Separated	25	4.88
Education	Under bachelor's degree	332	64.84
	Bachelor's degree or even	180	35.16
	Postgraduate	0	0
Province	Hainan	89	17.38
	Hebei	85	16.60
	Henan	87	16.99
	Guizhou	80	15.63
	Gansu	88	17.19
	Heilongjiang	83	16.21
Resident Identification	Urban	160	31.25
	Rural	352	68.75
Number of elderly people	0	87	16.99%
	1-2	311	60.74%
	3 or more	114	22.27%
Average monthly income	Below 1000	127	24.80%
	1001-2000	182	35.55%
	2001-3000	203	39.65%
Insurance	Endowment Insurance	156	30.5%
	Medical Insurance	401	78.3%

Variables		Total of respondents	Percentage
	No Insurance	57	11.1%
	Others	128	25.0%

Source: Researcher (2024)

From the results in the table 4.1, most of the respondents in this survey were women, with 355 people accounting for 69.34% of the total number, and there were 157 men, accounting for 30.66%.

In term of age, 296 people were aged from 20-40 years old accounting for 57.8%, followed by 132 people aged 40-60 accounting for 25.8%.

This research found that the number of respondents with a high school degree or below was as high as 332 people, accounting for 64.8%, and the number of respondents with a college degree was 180, accounting for 35.2%.

Among the respondents, the number of married people was 247 people, accounting for 48.2%, and the number of unmarried people was 197, accounting for 38.5%. Most of them live in rural, with 352 people, accounting for 68.7%, while there were 160 people living in urban, accounting for 31.3%.

In term of number of elderly people, 311 households had 1-2 elderly people over 60 years old in the family accounting for 60.74%. 114 households had 3 or more elderly people in the family accounting for 22.27%. Only 87 households had no elderly people over 60 years old accounting for 16.99%.

In term of the average monthly income, 203 people or 39.6% had the income of 2001-3000. 182 people or 35.6% had the income of 1001-2000 while 127 people or 24.8% had the income less than 1,000 yuan.

Lastly, for Insurance, 401 people or 78.3%. had medical insurance. 156 people or 30.5% had Endowment Insurance. 128 people or 25.0% purchased other insurance while 57 people or 11.1% had no insurance.

4.2.2 Distribution of Factor on Social Exchange of Points (SEP)

This section presented the informants' perceptions of social exchange of points, which comprised four dimensions of interpersonal interactions, interpersonal trust, perceived benefits and reciprocal support, and there were twenty questions.

Table 4.2

Analysis of Interpersonal Interactions

Statement		$\overline{X}$	SD.	Level	Rank No.
1	When you meet elderly people, you always show them your respect and concern for them.	4.21	1.01	Strongly Agree	3
2	You are willing to support elderly people when they need help.	4.27	0.91	Strongly Agree	1
3	You always talk with the elderly to relieve their boredom when you are free.	3.90	1.00	Agree	4
4	You are willing to explain to others of how to get the points.	3.56	1.04	Agree	5
5	You always feel distressed or worried when seeing elderly people who need care.	4.25	0.88	Strongly Agree	2
	Total	4.04	0.97	Agree	

From Table 4.2, the average score of mean was 4.04, ranging from 3.56 to 4.27, indicating agree and strongly agree level. The average SD was 0.97， which showed that low-income people had relatively concentrated attitudes towards interpersonal interactions.

Table 4.3

Analysis of Interpersonal Trust

Statement		$\overline{X}$	SD.	Level	Rank No.
1	You will always do what you promise to the elderly.	4.25	0.84	Strongly Agree	2
2	The elderly will trust you more when you provide quality services to them.	4.25	0.88	Strongly Agree	2
3	Trust can be built when people are honest and reliable.	4.25	0.89	Strongly Agree	2
4	The more reliable information you share, the more trust you gain.	4.06	1.00	Agree	5
5	Trust will strengthen bond between people.	4.38	0.77	Strongly Agree	1
	Total	4.24	0.87	Strongly Agree	

From Table 4.3, the average score of mean was 4.24, indicating agree and strong agree level. The average standard deviation (SD) was 0.87， which showed that low-income people had relatively concentrated attitudes towards interpersonal trust.

Table 4.4

Analysis of Perceived Benefits

Statement		$\overline{X}$	SD.	Level	Rank No.
1	The points can make you have more chances to buy the services you need.	3.96	0.96	Agree	2
2	You understand that you can only get points when you provide services to the elderly.	3.64	0.98	Agree	5
3	You can use points to purchase care service, and it will help you to reduce pension burden.	3.90	0.92	Agree	4
4	People around you will appreciate you when you give services to the elderly.	4.10	0.83	Agree	1
5	The points that can be used as the pension funds will provide you a reliable support.	3.92	0.92	Agree	3
	Total	3.90	0.92	Agree	

From Table 4.4, the average score of mean was 3.90, ranging from 3.64 to 4.10, indicating agree level. The average score of standard deviation (SD) was 0.92， which showed low-income people had relatively concentrated attitudes to perceived benefits.

Table 4.5

Analysis of Reciprocal Support

Statement		$\overline{X}$	SD.	Level	Rank No.
1	You are willing to provide help and support to the elderly when they are in need.	4.25	0.83	Strongly Agree	3
2	You expect to get something in return from the elderly for a smile when you help them.	4.09	0.90	Agree	5
3	You help people, and they will help you when you are in trouble.	4.12	0.87	Agree	4
4	The more you get help from the people around you, the more you want to return to them.	4.27	0.82	Strongly Agree	2
5	Mutual trust and support will make your life better.	4.36	0.79	Strongly Agree	1
	Total	4.22	0.84	Strongly Agree	

From Table 4.5, the average score of mean was 4.22, indicating agree and strong agree level. The average score of standard deviation (SD) was 0.84， which showed that low-income people had relatively concentrated attitudes towards reciprocal support.

4.2.3 Distribution of Factor on Diffusion of Innovations (DOI)

Table 4.6

Analysis on relative advantage

Statement		$\overline{X}$	SD.	Level	Rank No.
1	Distributing the free points to the elderly is a good idea.	4.06	0.94	Agree	3
2	Care services you receive can make you realize the support from society.	4.24	0.83	Strongly Agree	1
3	It is fair to get points by helping the elderly and save the points for your future elderly life.	4.05	0.91	Agree	4
4	It will be useful when you can use points to buy care service without spending money.	4.00	0.92	Agree	5
5	It is convenient to be able to check your accumulated points via the cellphone.	4.18	0.89	Strongly Agree	2
	Total	4.17	0.83	Agree	

From Table 4.6, the average score of mean was 4.17, indicating agree and strongly agree level. The average scores of standard deviation (SD) was 0.83， which showed that low-income people had relatively concentrated attitudes towards relative advantage.

Table 4.7

Analysis of Compatibility

Statement		$\overline{X}$	SD.	Level	Rank No.
1	The model can provide an additional option to the existing pension model.	4.14	0.88	Strongly Agree	2
2	Points can add new elements and opportunities to the existing security.	4.15	0.87	Strongly Agree	1
3	Points are suitable for your current economic and family situation to a certain extent.	3.96	0.96	Agree	5
4	Points are indeed a solution to the elderly problems when funds are insufficient.	4.09	0.90	Agree	3
5	Points can alleviate some of the difficulties and problems of the current aging population.	4.02	0.93	Agree	4
	Total	4.07	0.91	Agree	

From Table 4.7, the average score of mean was 4.07, ranging from 3.96 to 4.15, indicating agree and strongly agree level. The average scores of SD was 0.91. It showed that low-income people had relatively concentrated attitudes towards compatibility.

Table 4.8

Analysis on Low Complexity

Statement		$\overline{X}$	SD.	Level	Rank No.
1	The model of points-based elderly care service is easy to understand.	3.77	0.97	Agree	5
2	The operation process of this model is simple and easy to understand.	3.80	0.93	Agree	4
3	The model does not require too much skills and knowledge to master quickly.	3.81	0.94	Agree	3
4	It is very convenient to use and accumulate the point via application by scanning method.	3.95	0.92	Agree	1
5	You can easily educate others how to use and accumulate points.	3.86	0.93	Agree	2
	Total	3.84	0.94	Agree	

From Table 4.8, the average score of mean was 3.84, and ranges from 3.77 to 3.95, indicating agree level. The average scores of standard deviation (SD) was 0.94. It showed that low-income people had relatively concentrated attitudes towards low complexity.

Table 4.9

Analysis on Trialability

Statement		$\overline{X}$	SD.	Level	Rank No.
1	Trying the model before using it will give you the positive impact on the elderly life.	4.08	0.86	Agree	1
2	You are willing to participate and experience the model to feel its actual effect.	4.03	0.91	Agree	3
3	Directly participating in the new model can personally test whether it is suitable for your pension needs.	4.05	0.87	Agree	2
4	The model can help you to fulfill something you do not have for your future.	4.02	0.90	Agree	5
5	The model provides you with a platform that can be tested and give you different choice.	4.03	0.88	Agree	3
	Total	4.04	0.87	Agree	

From Table 4.9, the average score of mean was 4.04, and ranges from 4.02 to 4.08, indicating agree level. The average scores of standard deviation (SD) was 0.87, which showed that low-income people had relatively concentrated attitudes towards trialability.

Table 4.10

Analysis on Observability

Statement		$\overline{X}$	SD.	Level	Rank No.
1	Points can improve the quality of elderly life.	3.92	0.92	Agree	5
2	Points can help to save your cost of living.	3.93	0.93	Agree	4
3	Points can enhance the current insurance model to make you gain better life.	3.96	0.94	Agree	2
4	The more people to join the program, the more success of the model.	3.93	0.93	Agree	4
5	You are willing to introduce the benefits of points to others.	3.97	0.89	Agree	1
	Total	3.94	0.92	Agree	

From Table 4.10, the average score of mean was 3.94, and it ranges from 3.92 to 3.97, indicating agree level. The average standard deviation (SD) was 0.92. The findings revealed that respondents generally agreed with the observability.

4.2.4 Distribution of Factor on Potential Success of Points-based Management Mechanism (PSPMM)

Table 4.11

Analysis on Sustainability

Statement		$\overline{X}$	SD.	Level	Rank No.
1	The points can be used to buy service, and will become a stable source of pension funds.	3.92	0.93	Agree	5
2	The model is a reliable mechanism and will continuously provide support for the elderly.	4.00	0.90	Agree	4
3	The model will continuously improve the pension security for the elderly.	4.03	0.89	Agree	2
4	The model can meet many people's needs, and will be sustainable.	4.03	0.90	Agree	2
5	The model can really improve your pension security capabilities, and is worth promoting.	4.06	0.89	Agree	1
	Total	4.01	0.90	Agree	

Table 4.11 shows that the average score of mean was 4.01, ranging from 3.92 to 4.06, indicating agree level. The average score of standard deviation (SD) was 0.90, which suggested that the low-income people agreed the dimension of sustainability.

Table 4.12

Analysis on Effectiveness

Statement		$\overline{X}$	SD.	Level	Rank No.
1	I can accept the model, and it will effectively solve the problem of elderly care funds.	3.92	0.93	Agree	5
2	When the model is promoted, it will provide practical support to the elderly.	4.01	0.91	Agree	1
3	The model has a financial support, and it can effectively guarantee the quality of elderly life.	3.97	0.93	Agree	4
4	You can use point to exchange for services, and it will bring positive changes to your life.	4.00	0.91	Agree	3
5	More people and organizations join the model, the services operation will be more effective.	4.01	0.90	Agree	1
	Total	3.98	0.92	Agree	

Table 4.12 showed that the average score of mean was 3.98, ranging from 3.92 to 4.01, indicating agree level. The average score of standard deviation (SD) was 0.92, which suggested that the low-income people agreed the dimension of effectiveness.

Table 4.13

Analysis on Satisfaction

Statement		$\overline{X}$	SD.	Level	Rank No.
1	You will be happy when you can services the elderly and earn the points at the same time.	4.20	0.88	Strongly Agree	3
2	You feel very fulfilled when the elderly appreciate your services.	4.28	0.83	Strongly Agree	1
3	You satisfy when you use points to exchange for services and save medical expense.	4.26	0.87	Strongly Agree	2
4	Accumulating points without expired date to exchange for the care services will satisfy you.	4.10	0.91	Agree	4
5	The model of points-based elderly care service is stable and reliable, and it will satisfy you.	4.06	0.94	Agree	5
	Total	4.18	0.88	Strongly Agree	

Table 4.13 showed the average score of mean was 4.18, ranging from 4.06 to 4.28, indicating agree and strongly agree level. The average score of standard deviation (SD) was 0.88, which suggested the low-income people agreed the dimension of satisfaction.

4.3 Reliability and Validity Analysis of the Formal Questionnaire

The scale used in this research is designed according to the research purpose and requirements. SPSSAU is used to test the reliability and validity of the scale of the questionnaire. The reliability test is measured using Cronbach's coefficient. The validity test is based on KMO value statistics and Bartlett's sphere test. Confirmatory factor analysis (CFA) is used to further test the structural validity, convergent validity, and discriminant validity of the scale.

4.3.1 Reliability Analysis of the Questionnaire

Reliability analysis is used to study the reliability and accuracy of answers to quantitative data (especially attitude scale questions). The specific analysis steps are as follows:

Firstly: analyze the α coefficient. If this value is higher than 0.8, it means that the reliability is high; if this value is between 0.7 and 0.8, it means that the reliability is good; if this value is between 0.6 and 0.7, it means that the reliability is acceptable; if this value is less than 0.6, it means that the reliability is poor.

Secondly: If the CITC (Corrected Total Correlation) value is lower than 0.3, consider deleting the item.

Thirdly: If the value of "α coefficient of item deleted" is significantly higher than the α coefficient, consider deleting the item and reanalyzing it.

Finally: Summarize the analysis.

As mentioned above, the reliability analysis of the questionnaire is conducted. After data processing using SPSSAU, the overall reliability of the scale and the reliability coefficients of each variable in the questionnaire are shown as follows. The reliability test results of the questionnaire scale of SEP are shown in Table 4.14 below.

Table 4.14

Reliability Test Results of the Questionnaire Scale of Social Exchange of Points (SEP)

Cronbach's Reliability Analysis			
Variables	Corrected Total Correlation (CITC)	α with Deleted Items	Cronbach α
A1a	0.464	0.878	0.882
A1b	0.604	0.873	
A1c	0.588	0.873	
A1d	0.460	0.878	
A1e	0.590	0.874	
A2a	0.472	0.883	
A2b	0.497	0.883	
A2c	0.666	0.871	
A2d	0.623	0.872	
A2e	0.652	0.873	
A3a	0.595	0.873	
A3b	0.434	0.886	
A3c	0.449	0.885	
A3d	0.612	0.873	
A3e	0.610	0.873	
A4a	0.603	0.873	
A4b	0.594	0.883	
A4c	0.525	0.885	
A4d	0.637	0.872	
A4e	0.631	0.873	
Note: Standardized Cronbach α = 0.885			

From the table 4.14, the reliability coefficient value was 0.882, which was greater than 0.8. It indicated that the reliability quality of the research data was very high. Regarding the “α with deleted item”, after any item was deleted, the reliability coefficient would not increase significantly, so it meant that the item should not be deleted. Regarding the "CITC value", the CITC values of the analysis items were all greater than 0.4, indicating that there was a good correlation between the analysis items, and also indicating that the reliability level was good and could be used for further analysis.

The reliability test results of the questionnaire scale of DOI were shown in Table 4.15 below.

Table 4.15

Reliability Test Results of the Questionnaire Scale of Diffusion of Innovations (DOI)

Cronbach's Reliability Analysis			
Variables	Corrected Total Correlation (CITC)	α with Deleted Items	Cronbach α
B1a	0.591	0.927	0.930
B1b	0.611	0.927	
B1c	0.431	0.931	
B1d	0.418	0.931	
B1e	0.667	0.926	
B2a	0.697	0.925	
B2b	0.725	0.925	
B2c	0.694	0.925	
B2d	0.422	0.931	
B2e	0.423	0.931	
B3a	0.652	0.926	
B3b	0.649	0.926	
B3c	0.675	0.926	
B3d	0.656	0.926	
B3e	0.689	0.925	
B4a	0.446	0.930	
B4b	0.572	0.930	
B4c	0.718	0.925	
B4d	0.718	0.925	
B4e	0.709	0.925	
B5a	0.734	0.925	
B5b	0.505	0.931	
B5c	0.415	0.931	
B5d	0.721	0.925	
B5e	0.703	0.925	
Note: Standardized Cronbach α = 0.930			

From the table 4.15, the reliability coefficient was 0.930, which was greater than 0.9, indicating that the reliability quality of the research data was very high. Regarding the "α with deleted items", after any item was deleted, the reliability coefficient would not increase significantly, so it meant that the item should not be deleted. Regarding the "CITC value", the CITC values of the analysis items were all greater than 0.4, indicating that there was a good correlation between the analysis items, and also indicating that the reliability level was good and could be used for further analysis. The reliability test results of the questionnaire scale of PSPMM are shown in Table 4.16 below.

Table 4.16

Reliability Test Results of the Questionnaire Scale of Potential Success of Points-based Management Mechanism (PSPMM)

Cronbach's Reliability Analysis			
Variables	Corrected Total Correlation (CITC)	α with Deleted Items	Cronbach α
C1a	0.620	0.898	0.904
C1b	0.439	0.903	
C1c	0.419	0.903	
C1d	0.639	0.897	
C1e	0.606	0.898	
C2a	0.601	0.898	
C2b	0.635	0.897	
C2c	0.495	0.901	
C2d	0.444	0.902	
C2e	0.635	0.897	
C3a	0.579	0.899	
C3b	0.555	0.899	
C3c	0.467	0.902	
C3d	0.471	0.902	
C3e	0.561	0.899	
Note: Standardized Cronbach α = 0.977			

From the table 4.16, the reliability coefficient was 0.904, which was greater than 0.9, indicating that the reliability quality of the research data was very high. Regarding the “α with deleted items”, after any item was deleted, the reliability coefficient would not increase significantly, so it meant that the item should not be deleted. Regarding the "CITC value", the CITC values of the analysis items were all greater than 0.4, indicating that there was a good correlation between the analysis items, and also indicating that the reliability level was good and could be used for further analysis.

4.3.2 Validity Analysis of the Questionnaire

Validity research is used to analyze whether the research items are reasonable and meaningful. Validity analysis uses factor analysis, a data analysis method, to conduct a comprehensive analysis through KMO value, commonality, variance explanation rate value, factor loading coefficient value and other indicators to verify the validity level of

the data. KMO value is used to judge the suitability of information extraction, commonality value is used to exclude unreasonable research items, variance explanation rate value is used to illustrate the level of information extraction, and factor loading coefficient is used to measure the correspondence between factors (dimensions) and items. It is necessary to combine the factor loading coefficient to confirm whether the correspondence between factors (dimensions) and research items is consistent with expectations. If it is consistent, it means that it has validity. Otherwise it needs to be readjusted. When the absolute value of the factor loading coefficient is greater than 0.4, it means that the options and factors have a corresponding relationship.

The specific steps are as follows:

Firstly, analyze the KMO value; if this value is higher than 0.8, it means that the research data is very suitable for extracting information (from the side, it reflects that the validity is very good); if this value is between 0.7~0.8, it means that the research data is suitable for extracting information (from the side, it reflects that the validity is good); if this value is between 0.6~0.7, it means that the research data is relatively suitable for extracting information (from the side, it reflects that the validity is average); if this value is less than 0.6, it means that the data is not suitable for extracting information (from the side, it reflects that the validity is average).

Secondly, then analyze the correspondence between the items and factors; if the correspondence is consistent with the research psychological prediction If the correlation coefficients are basically consistent, the validity is good.

Thirdly, if the validity is not good; or the correspondence between factors and items is seriously inconsistent with expectations, or the commonality value corresponding to a certain analysis item is lower than 0.4 (sometimes 0.5 is used as the standard); then the item can be considered for deletion.

Fourthly, there are common criteria for deleting items; one is that the commonality value is lower than 0.4 (sometimes 0.5 is used as the standard); the other is that there is a serious deviation in the correspondence between the analysis item and the factor.

Fifthly, repeat the above 1~4 steps for a total of 4 steps; until KMO meets the standard; and the correspondence between items and factors is basically consistent with expectations, it finally indicates good validity.

The validity analysis of Social Exchange of Points (SEP), Diffusion of Innovations (DOI) and Potential Success of Points-based Management Mechanism (PSPMM) will be conducted as follows.

Table 4.17

Validity Analysis Results of SEP in Exploratory Factor Analysis

Validity Analysis Results					
Variable	Factor loading coefficient				Commonality (Common Factor Variance)
	Factor1	Factor2	Factor3	Factor4	
A1a	0.209	0.052	0.771	0.117	0.654
A1b	0.444	0.002	0.695	0.059	0.684
A1c	0.315	0.031	0.812	0.128	0.775
A1d	0.283	-0.035	0.604	0.420	0.623
A1e	0.578	-0.032	0.455	0.041	0.543
A2a	0.734	0.018	0.104	0.275	0.625
A2b	0.794	0.060	0.032	0.220	0.684
A2c	0.765	0.049	0.244	-0.033	0.649
A2d	0.713	0.064	0.197	0.171	0.579
A2e	0.794	0.052	0.169	-0.086	0.669
A3a	0.006	0.710	0.146	0.383	0.673
A3b	-0.045	0.710	0.040	0.336	0.621
A3c	-0.038	0.767	0.021	0.243	0.649
A3d	0.013	0.736	0.159	0.219	0.615
A3e	0.034	0.721	0.134	0.356	0.665
A4a	0.026	-0.047	0.270	0.721	0.596
A4b	0.067	0.030	-0.011	0.763	0.588
A4c	0.018	0.040	-0.102	0.803	0.657
A4d	0.182	-0.011	0.215	0.797	0.714
A4e	0.291	0.044	0.178	0.795	0.750
Variance explanation % (before rotation)	7.225	3.494	1.352	0.941	-
Cumulative variance explanation % (before rotation)	36.127%	17.468%	6.761%	4.703%	-
Eigenvalue (after rotation)	36.127%	53.596%	60.357%	65.060%	-
Variance explanation % (after rotation)	5.840	3.510	2.674	0.987	-

Cumulative variance explanation % (after rotation)	29.200%	17.551%	13.372%	14.936%	-
Variance explanation % (before rotation)	29.200%	46.751%	60.123%	65.060%	-
KMO	0.903				-
Bartlett's sphere	5641.535				-
df	190				-
p	0.000				-
Note: If the numbers in the table are colored: blue means the absolute value of the load coefficient is greater than 0.4, and red means the commonality is less than 0.4.					

From the table 4.17, the commonality values corresponding to all research items were higher than 0.4, indicating that the information of the research items could be effectively extracted. The KMO value was 0.903, which was greater than 0.8. In addition, the variance explanation rates of the four factors were respectively 29.200%, 17.551%, 13372%, and 14.936%, and the cumulative variance explanation rate after rotation was 65.060%>50%. The absolute value of the factor loading coefficient was greater than 0.4, indicating that there was a corresponding relationship between the options and the factors, that was, the factors and the research items were valid.

Table 4.18

Validity Analysis Results of DOI in Exploratory Factor Analysis

Validity Analysis Results						
Variable	Factor loading coefficient					Commonality (Common Factor Variance)
	Factor1	Factor2	Factor3	Factor4	Factor5	
B1a	-0.017	0.730	0.376	0.128	0.066	0.695
B1b	-0.003	0.719	0.304	0.235	0.087	0.672
B1c	0.050	0.819	-0.060	0.053	0.019	0.680
B1d	0.014	0.822	-0.028	0.045	-0.114	0.693
B1e	0.036	0.767	0.186	0.330	0.258	0.800
B2a	0.766	0.015	0.254	0.369	0.009	0.788
B2b	0.763	0.042	0.191	0.456	0.065	0.832
B2c	0.639	0.023	0.364	0.429	-0.035	0.727
B2d	0.868	0.006	0.007	-0.004	0.201	0.793
B2e	0.869	-0.015	0.051	-0.027	-0.147	0.780
B3a	0.030	0.241	0.814	0.273	0.031	0.797
B3b	-0.022	0.295	0.833	0.235	0.034	0.837
B3c	-0.009	0.315	0.797	0.279	0.026	0.813

B3d	-0.019	0.379	0.518	0.421	0.348	0.710
B3e	-0.013	0.297	0.646	0.469	0.096	0.734
B4a	0.014	0.016	0.031	0.801	0.394	0.798
B4b	0.032	0.028	0.010	0.822	0.366	0.811
B4c	0.064	0.336	0.305	0.762	0.016	0.792
B4d	-0.009	0.382	0.300	0.794	-0.029	0.866
B4e	0.027	0.344	0.294	0.784	0.002	0.820
B5a	-0.016	0.415	0.531	0.022	0.561	0.769
B5b	0.038	-0.036	-0.000	-0.022	0.877	0.773
B5c	0.056	-0.023	-0.013	-0.016	0.890	0.797
B5d	-0.001	0.385	0.504	0.058	0.573	0.733
B5e	-0.025	0.374	0.483	0.079	0.588	0.726
Variance explanation % (before rotation)	10.928	5.761	1.177	0.818	0.553	-
Cumulative variance explanation % (before rotation)	43.712%	23.045%	4.709%	3.270%	2.211%	-
Eigenvalue (after rotation)	43.712%	66.757%	71.466%	74.736%	76.947%	-
Variance explanation % (after rotation)	5.746	4.534	4.225	4.135	0.597	-
Cumulative variance explanation % (after rotation)	22.982%	18.136%	16.898%	16.541%	12.389%	-
Variance explanation % (before rotation)	22.982%	41.118%	58.016%	74.558%	76.947%	-
KMO	0.950					-
Bartlett's sphere	11617.748					-
df	300					-
p	0.000					-

Note: If the numbers in the table are colored: blue means the absolute value of the load coefficient is greater than 0.4, and red means the commonality is less than 0.4.

The commonality values corresponding to all research items were higher than 0.4, indicating that the information could be effectively extracted. The KMO value was 0.950, which was greater than 0.6, and the data could be effectively extracted. The variance explanation rates of the five factors were respectively 22.982%, 18.136%, 16.898%, 16.541%, 12.389%, and the cumulative variance explanation rate after rotation was 76.947%>50%, which meant that the information could be effectively extracted.

Table 4.19

Validity Analysis Results of PSPMM in Exploratory Factor Analysis

Validity Analysis Results				
Variable	Factor loading coefficient			Commonality (Common Factor Variance)
	Factor1	Factor2	Factor3	
C1a	0.886	0.023	0.098	0.795
C1b	0.895	0.019	0.025	0.802
C1c	0.881	0.059	0.023	0.782
C1d	0.882	0.041	0.043	0.782
C1e	0.874	-0.019	0.062	0.768
C2a	0.009	0.888	0.118	0.802
C2b	0.022	0.904	0.054	0.821
C2c	0.010	0.919	0.007	0.848
C2d	-0.035	0.901	-0.015	0.815
C2e	0.014	0.876	0.143	0.788
C3a	0.748	-0.044	0.504	0.816
C3b	0.683	-0.027	0.627	0.861
C3c	0.012	0.676	0.536	0.744
C3d	-0.020	0.714	0.556	0.819
C3e	0.712	-0.034	0.521	0.780
Variance explanation % (before rotation)	7.850	6.368	0.716	-
Cumulative variance explanation % (before rotation)	39.251%	31.841%	3.579%	-
Eigenvalue (after rotation)	39.251%	71.092%	78.485%	-
Variance explanation % (after rotation)	7.439	5.658	1.141	-
Cumulative variance explanation % (after rotation)	37.194%	28.290%	15.707%	-
Variance explanation % (before rotation)	37.194%	65.484%	78.485%	-
KMO	0.942			-
Bartlett's sphere	9448.268			-
df	190			-
p	0.000			-

Note: If the numbers in the table are colored: blue means the absolute value of the load coefficient is greater than 0.4, and red means the commonality is less than 0.4.

From the table 4.19, the commonality values corresponding to all research items were higher than 0.4, indicating that the information of the research items could be effectively extracted. The KMO value was 0.942, which was greater than 0.6, and the data could be effectively extracted. In addition, the variance explanation rates of the three factors were respectively 37.194%, 28.290% and 15.707%, and the cumulative variance explanation rate after rotation was 78.485%>50%. This meant that the information of the research items could be effectively extracted.

In summary, the reliability and validity of the scale in the questionnaire were good and met the research requirements.

4.4 Confirmatory Factor Analysis

4.4.1 Model Setting and Identification

Based on the research results of the references of social exchange theory and innovation diffusion theory collected and referring to some mature scale structures, this research constructed a model diagram. The model diagram initially set up three dimensions, namely SEP (Social Exchange of Points), DOI (Diffusion of Innovations) and PSPMM (Potential Success of Management Mechanism).

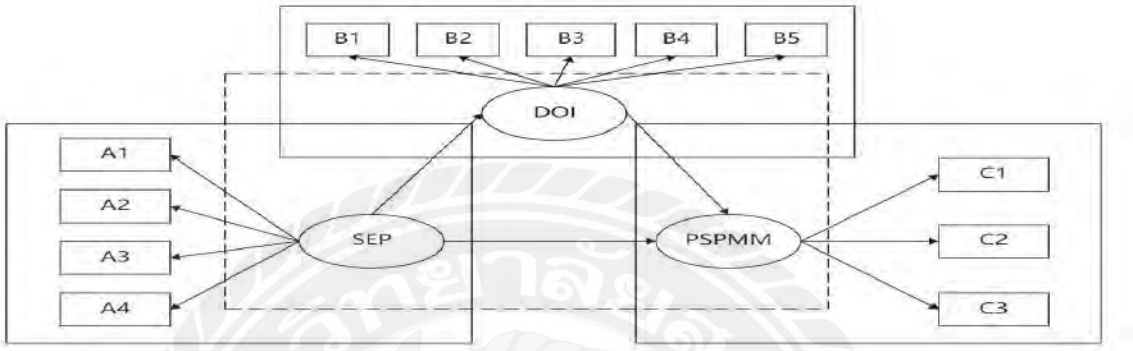
The three variables of SEP, DOI and PSPMM are collectively referred to as second-order factors. Among them, SEP consists of four latent variables, namely A1: Interpersonal Interaction, A2: Interpersonal Trust, A3: Perceived Benefits and A4: Reciprocal Support. DOI consists of five latent variables, namely B1: Relative Advantage, B2: Compatibility, B3: Low Complexity, B4: Trialability and B5: Observability. PSPMM consists of three latent variables, namely C1: Sustainability, C2: Effectiveness and C3: Satisfaction.

These 12 latent variables are collectively referred to as first-order factors. Each first-order factor has 5 items as measurement variables, so there are a total of 60 Likert scale items to measure these 12 latent variables. The preset model structure of this research is: A1-A4 items measure SEP, B1-B5 items measure DOI, and C1-C3 items measure PSPMM.

The specific model diagram is shown in Figure 4.1. The dotted box is the structural relationships between variables, and the three implementation boxes are the measurement relationships between SEP, DOI and PSPMM and the latent variables.

Figure 4.1

Model Diagram of Second-order Factors



4.4.2 Model Parameter Estimation of Social Exchange of Points (SEP)

4.4.2.1 Estimation of Factor Loading Coefficients

Table 4.20

Factor Loading Coefficients and Significance Tests of SEP

Factor (Latent Variable)	Measurement Item (Manifest Variable)	(Coef.)	(Std. Error)	*z* (CR)	*p*	(Std. Estimate)	SMC
A1	A1e	1.000	-	-	-	0.632	0.400
A1	A1d	1.124	0.080	14.119	0.000	0.784	0.615
A1	A1c	1.240	0.087	14.235	0.000	0.794	0.630
A1	A1b	1.000	0.085	11.760	0.000	0.616	0.379
A1	A1a	0.967	0.074	13.019	0.000	0.701	0.491
A2	A2e	1.000	-	-	-	0.716	0.513
A2	A2d	1.201	0.067	17.857	0.000	0.820	0.672
A2	A2c	1.257	0.068	18.493	0.000	0.849	0.722
A2	A2b	1.313	0.077	17.055	0.000	0.782	0.612
A2	A2a	1.035	0.059	17.429	0.000	0.800	0.640
A3	A3e	1.000	-	-	-	0.806	0.650
A3	A3d	0.929	0.052	17.790	0.000	0.729	0.532
A3	A3c	0.978	0.047	20.660	0.000	0.818	0.670
A3	A3b	0.822	0.044	18.872	0.000	0.764	0.583
A3	A3a	0.976	0.047	20.709	0.000	0.820	0.672

A4	A4e	1.000	-	-	-	0.734	0.539
A4	A4d	1.025	0.066	15.467	0.000	0.693	0.480
A4	A4c	1.140	0.063	18.038	0.000	0.801	0.642
A4	A4b	1.161	0.060	19.470	0.000	0.862	0.743
A4	A4a	1.101	0.057	19.213	0.000	0.851	0.724
SEP	A1	1.000	-	-	-	0.801	0.642
SEP	A2	1.069	0.094	11.432	0.000	0.913	0.833
SEP	A3	1.254	0.107	11.674	0.000	0.832	0.692
SEP	A4	1.079	0.093	11.561	0.000	0.907	0.822
Note: A dash '-' indicates that the item is a reference item.							

For each measurement relationship, the absolute values of the standardized load system were greater than 0.6 and showed significance, which meant that there was a good measurement relationship.

4.4.2.2 Estimation of Measurement Residuals

Table 4.21

Estimation of Measurement Residuals of SEP

Variable	(Coef.)	(Std. Error)	*z*	*p*	(Std. Estimate)
A1e	0.609	0.042	14.425	0.000	0.600
A1d	0.321	0.026	12.163	0.000	0.385
A1c	0.366	0.031	11.902	0.000	0.370
A1b	0.665	0.046	14.557	0.000	0.621
A1a	0.393	0.029	13.703	0.000	0.509
A2e	0.339	0.023	14.516	0.000	0.487
A2d	0.252	0.019	13.088	0.000	0.328
A2c	0.218	0.018	12.300	0.000	0.278
A2b	0.390	0.028	13.762	0.000	0.388
A2a	0.216	0.016	13.480	0.000	0.360
A3e	0.318	0.025	12.967	0.000	0.350
A3d	0.450	0.032	14.162	0.000	0.468
A3c	0.280	0.022	12.690	0.000	0.330
A3b	0.286	0.021	13.729	0.000	0.417
A3a	0.275	0.022	12.653	0.000	0.328
A4e	0.316	0.022	14.388	0.000	0.461
A4d	0.420	0.028	14.729	0.000	0.520
A4c	0.267	0.020	13.506	0.000	0.358

Variable	(Coef.)	(Std. Error)	*z*	*p*	(Std. Estimate)
A4b	0.172	0.014	11.954	0.000	0.257
A4a	0.171	0.014	12.328	0.000	0.276
A1	0.145	0.023	6.409	0.000	0.358
A2	0.060	0.011	5.348	0.000	0.167
A3	0.182	0.023	8.028	0.000	0.308
A4	0.066	0.012	5.675	0.000	0.178
SEP	0.260	0.040	6.494	0.000	1.000

The measurement residuals and regression residuals of CFA were shown in Table 4.21. It was generally required that the standard error of the residual estimate was positive and reached the significance level ($p<0.05$). The standard errors in column 3 were all positive and the p values were all less than 0.05, indicating that the parameters were significant.

4.4.2.3 Evaluation of Model Fitting

In order to further verify whether the various factors of the scale and the corresponding items are consistent with the theoretical relationship, confirmatory factor analysis will be conducted from the perspectives of structural validity, convergent validity and discriminant validity.

1) Structural Validity

In structural validity, the chi-square freedom ratio parameter is used as an indicator to measure the overall model fitting: if its value is between 1 and 3, it is ideal, and if it is between 3 and 5, the model is generally acceptable. RMSEA is an indicator to evaluate the model's misfit. If it is close to 0, it means that the fit is good, otherwise, it is poor. It is generally believed that RMSEA less than 0.05 means that the model fitting is good, and less than 0.08 is acceptable. The values of GFI (Goodness of Fit Index), CFI (Comparative Fit Index), TLI (Tucker-Lewis Coefficient) are between 0 and 1. The closer to 1, the higher the model fitting. When its value is greater than 0.9, it can be considered that the model fitting is ideal. Table 4-22 shows the overall model fitting coefficient.

Table 4.22

Compliance of Model Fitting Indicators for the Structural Validity

Common Indicators	$\chi 2$	*df*	*p*	$\chi 2/df$	GFI	RMSEA	RMR	CFI	NFI	NNFI
Judgment Criteria	-	-	>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
Value	737.121	166	0.000	4.440	0.872	0.082	0.047	0.916	0.894	0.903
Other Indicators	TLI	AGFI	IFI	PGFI	PNFI	PCFI	SRMR	RMSEA 90% CI		
Judgment Criteria	>0.9	>0.9	>0.9	>0.5	>0.5	>0.5	<0.1	-		
Value	0.903	0.838	0.916	0.689	0.781	0.800	0.059	0.076 ~ 0.088		
Note： Default Model: $\chi 2(190)=3573.862$, $p=1.000$										

Model fit indicators were used to analyze the overall model fit validity. There were many model fit indicators, and it was usually difficult to meet all the indicators. It was recommended to use several common indicators, including chi-square freedom ratio, GFI, RMSEA, RMR, CFI, NFI, and NNFI. From the table 4.22, the $\chi 2/df$ =4.440, which was less than 5 and was acceptable; RMSEA=0.082<0.10; RMR=0.047<0.05; Most of other fitting indexes were all above 0.9 or near 0.9, indicating that the structural validity of the model was good and met the research conditions.

2) Convergent Validity

Convergent validity is used to examine whether the observed variables contained in the same latent variable are at the same level. Observed variables at the same level will show higher factor loadings on the latent variable, and these observed variables will also show higher correlations. Convergent validity can be measured from three aspects: factor loading, average variance extracted (AVE) and composite reliability (CR). Generally, factor loadings above 0.50 are qualified, and above 0.70 are good. The larger the AVE value, the smaller the relative measurement error, and the AVE value is generally greater than 0.50. If the composite reliability value is above 0.70, it means that the construction reliability of the measurement model is good.

The convergent validity of the scale in this research is shown in Table 4.23.

Table 4.23

Convergent Validity Test of Scale

Factor	Average variance extracted AVE	Combined reliability CR
A1	0.503	0.834
A2	0.632	0.895
A3	0.621	0.891
A4	0.625	0.892

Confirmatory factor analysis (CFA) was conducted on a total of 4 factors and 20 analysis items. AVE values corresponding to 4 factors were all greater than 0.5, and CR values were all higher than 0.7, which meant that the data of this analysis had good aggregation (convergence) validity.

3) Discriminant Validity

Discriminant validity refers to the significant difference or low correlation between the observed variables included in the latent variable and the observed variables included in other latent variables. That is, the items of a certain latent variable can not only express the content of the variable, but also express the content of the variable. There are no crossovers with measures of other latent variables in the model. The test of discriminant validity is to compare the square root of AVE with the correlation coefficients of other variables. When the square root of AVE is larger than the correlation coefficients of other potential variables, it indicates that there is a significant difference between the two variables, and the overall validity is good.

Table 4.24

Discriminant Validity Test

	A1	A2	A3	A4
A1	0.709			
A2	0.669	0.795		
A3	0.573	0.668	0.788	
A4	0.620	0.757	0.720	0.791

Note: The blue numbers on the diagonal line are the square roots of AVE

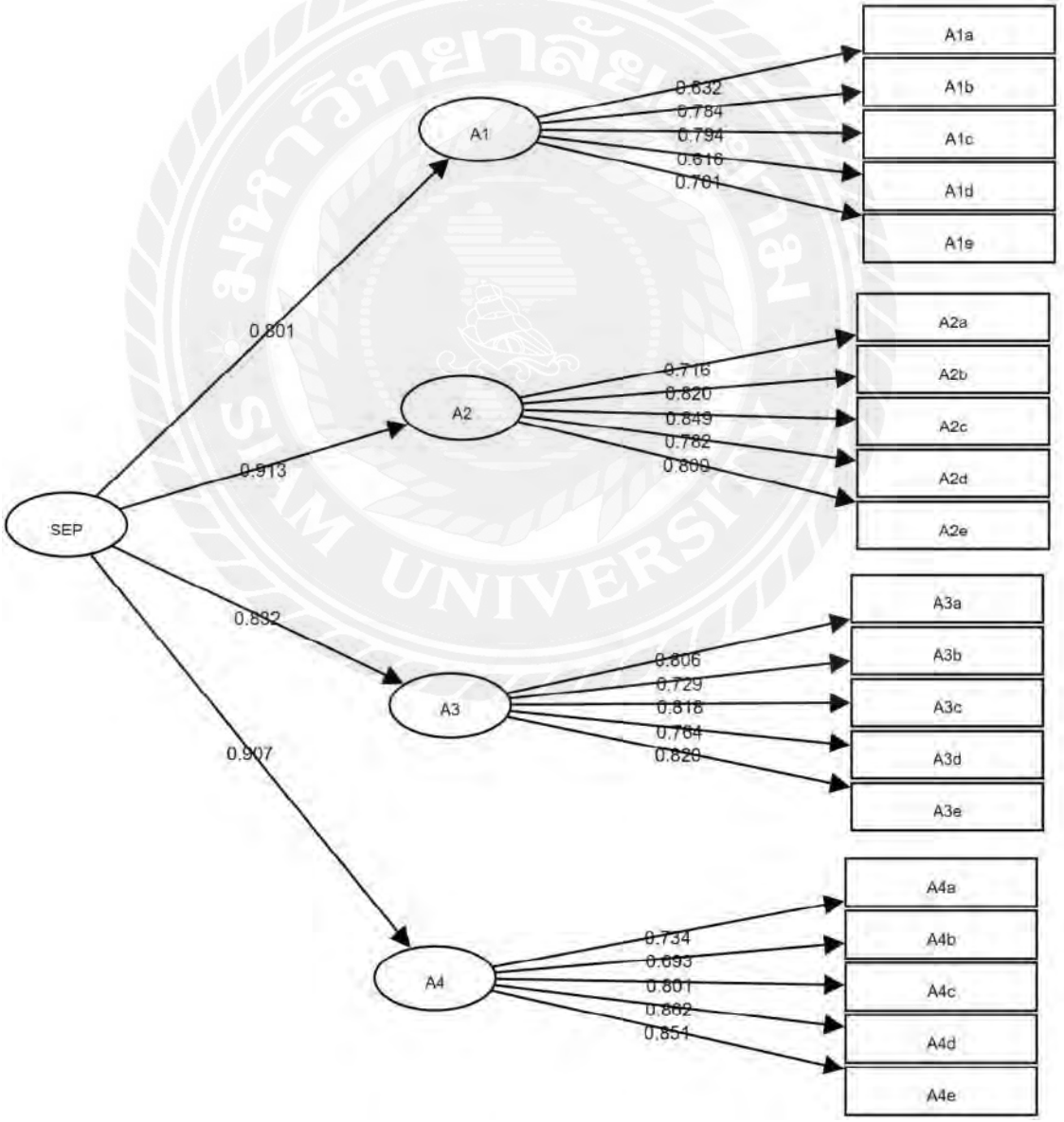
For the analysis of discriminant validity, for A1, its AVE square root value was 0.709, which was greater than the maximum absolute value of the correlation coefficient between factors, 0.669. For A2, its AVE square root value is 0.795, which was greater

than the maximum absolute value of the correlation coefficient between factors, 0.747. For A3, its AVE square root value was 0.788, which was greater than the maximum absolute value of the correlation coefficient between factors, 0.737. For A4, its AVE square root value was 0.774, which was greater than the maximum absolute value of the correlation coefficient between factors, 0.747. These meant that it had good discriminant validity.

4.4.2.4 Model Diagram

Figure 4.2

Model Result Diagram of SEP



4.4.3 Model Parameter Estimation of Diffusion of Innovations (DOI)

4.4.3.1 Estimation of Factor Loading Coefficients

Table 4.25

Factor Loading Coefficients and Significance Tests of DOI

Factor (Latent Variable)	Measurement Item (Manifest Variable)	(Coef.)	(Std. Error)	*z* (CR)	*p*	(Std. Estimate)	SMC
B1	B1e	1.000	-	-	-	0.765	0.585
B1	B1d	0.897	0.049	18.279	0.000	0.770	0.593
B1	B1c	1.078	0.053	20.490	0.000	0.847	0.718
B1	B1b	1.057	0.053	19.874	0.000	0.826	0.682
B1	B1a	0.969	0.052	18.574	0.000	0.780	0.609
B2	B2e	1.000	-	-	-	0.849	0.721
B2	B2d	1.008	0.039	25.862	0.000	0.867	0.752
B2	B2c	1.117	0.042	26.352	0.000	0.876	0.768
B2	B2b	1.044	0.040	26.182	0.000	0.873	0.763
B2	B2a	1.070	0.042	25.374	0.000	0.858	0.737
B3	B3e	1.000	-	-	-	0.830	0.688
B3	B3d	0.995	0.041	24.191	0.000	0.864	0.747
B3	B3c	1.018	0.041	24.658	0.000	0.875	0.765
B3	B3b	0.853	0.044	19.560	0.000	0.750	0.563
B3	B3a	0.963	0.042	22.776	0.000	0.832	0.692
B4	B4e	1.000	-	-	-	0.825	0.680
B4	B4d	1.117	0.045	24.704	0.000	0.871	0.759
B4	B4c	1.085	0.043	25.402	0.000	0.886	0.786
B4	B4b	1.158	0.044	26.590	0.000	0.911	0.829
B4	B4a	1.066	0.044	24.101	0.000	0.858	0.737
B5	B5e	1.000	-	-	-	0.904	0.817
B5	B5d	0.997	0.031	32.347	0.000	0.899	0.809
B5	B5c	1.024	0.031	33.519	0.000	0.911	0.831
B5	B5b	0.951	0.033	28.849	0.000	0.858	0.736
B5	B5a	0.889	0.033	27.152	0.000	0.835	0.697
DOI	B1	1.000	-	-	-	0.922	0.851
DOI	B2	1.070	0.059	18.196	0.000	0.942	0.888
DOI	B3	1.067	0.064	16.664	0.000	0.872	0.760
DOI	B4	0.989	0.057	17.351	0.000	0.918	0.842
DOI	B5	1.211	0.062	19.582	0.000	0.957	0.915

Note: A dash '-' indicates that the item is a reference item.

For each measurement relationship, the absolute values of the standardized load system were greater than 0.6 and showed significance, which meant that there was a good measurement relationship.

4.4.3.2 Estimation of Measurement Residuals

Table 4.26

Estimation of Measurement Residuals of DOI

Variable	(Coef.)	(Std. Error)	*z*	*p*	(Std. Estimate)
B1e	0.363	0.025	14.273	0.000	0.415
B1d	0.282	0.020	14.213	0.000	0.407
B1c	0.233	0.018	12.832	0.000	0.282
B1b	0.266	0.020	13.340	0.000	0.318
B1a	0.307	0.022	14.085	0.000	0.391
B2e	0.217	0.016	13.904	0.000	0.279
B2d	0.187	0.014	13.530	0.000	0.248
B2c	0.211	0.016	13.305	0.000	0.232
B2b	0.190	0.014	13.386	0.000	0.237
B2a	0.229	0.017	13.730	0.000	0.263
B3e	0.295	0.022	13.529	0.000	0.312
B3d	0.218	0.017	12.675	0.000	0.253
B3c	0.207	0.017	12.327	0.000	0.235
B3b	0.367	0.025	14.568	0.000	0.437
B3a	0.268	0.020	13.484	0.000	0.308
B4e	0.237	0.017	14.321	0.000	0.320
B4d	0.199	0.015	13.491	0.000	0.241
B4c	0.162	0.012	13.081	0.000	0.214
B4b	0.139	0.011	12.113	0.000	0.171
B4a	0.205	0.015	13.782	0.000	0.263
B5e	0.156	0.012	13.036	0.000	0.183
B5d	0.163	0.012	13.197	0.000	0.191
B5c	0.149	0.012	12.739	0.000	0.169
B5b	0.225	0.016	14.162	0.000	0.264
B5a	0.239	0.016	14.489	0.000	0.303
B1	0.076	0.011	6.693	0.000	0.149
B2	0.063	0.009	6.985	0.000	0.112
B3	0.156	0.017	9.008	0.000	0.240
B4	0.080	0.010	8.204	0.000	0.158
B5	0.059	0.009	6.339	0.000	0.085
DOI	0.434	0.047	9.288	0.000	1.000

The measurement residuals and regression residuals of this confirmatory factor analysis were shown in Table 4.26. It was generally required that the standard error of the residual estimate was positive and reached the significance level ($p<0.05$). The standard errors in column 3 were all positive and the p values were all less than 0.05, indicating that the parameters were significant.

4.4.3.3 Evaluation of Model Fitting

In order to further verify whether various factors of the scale and the corresponding items were consistent with the theoretical relationship designed, confirmatory factor analysis would be conducted from the perspectives of structural validity, convergent validity, discriminant validity.

1) Structural Validity

Table 4.27

Compliance of Model Fitting Indicators for the Structural Validity

Common Indicators	$\chi2$	*df*	*p*	$\chi2/df$	GFI	RMSEA	RMR	CFI	NFI	NNFI
Judgment Criteria	-	-	>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
Value	1294.113	270	0.000	4.793	0.825	0.086	0.035	0.924	0.906	0.916
Other Indicators	TLI	AGFI	IFI	PGFI	PNFI	PCFI	SRMR	RMSEA 90% CI		
Judgment Criteria	>0.9	>0.9	>0.9	>0.5	>0.5	>0.5	<0.1	-		
Value	0.916	0.790	0.924	0.686	0.815	0.832	0.043	0.081 ~ 0.091		
Note： *Default Model:* $\chi2(300)=13769.639$, $p=1.000$										

From the table 4.27, the $\chi2/df$ =4.793, which was less than 5 and was acceptable; RMSEA=0.086<0.10; RMR=0.035<0.05; Most of other fitting indexes were all above 0.9 or near 0.9, indicating that the structural validity of the model was good and met the research conditions.

2) Convergent Validity

Table 4.28

Convergent Validity Test of Scale

Factor	Average variance extracted AVE	Combined reliability CR
B1	0.637	0.898
B2	0.748	0.937
B3	0.691	0.918
B4	0.758	0.940
B5	0.778	0.946

Confirmatory factor analysis (CFA) was conducted on a total of 5 factors and 25 analysis items. From the above table, the AVE values corresponding to the 5 factors were all greater than 0.5, and the CR values were all higher than 0.7, which meant that the data of this analysis had good aggregation (convergence) validity.

3) Discriminant Validity

Table 4.29

Discriminant Validity Test

	B1	B2	B3	B4	B5
B1	0.798				
B2	0.766	0.865			
B3	0.715	0.744	0.831		
B4	0.757	0.810	0.761	0.871	
B5	0.789	0.828	0.830	0.850	0.882

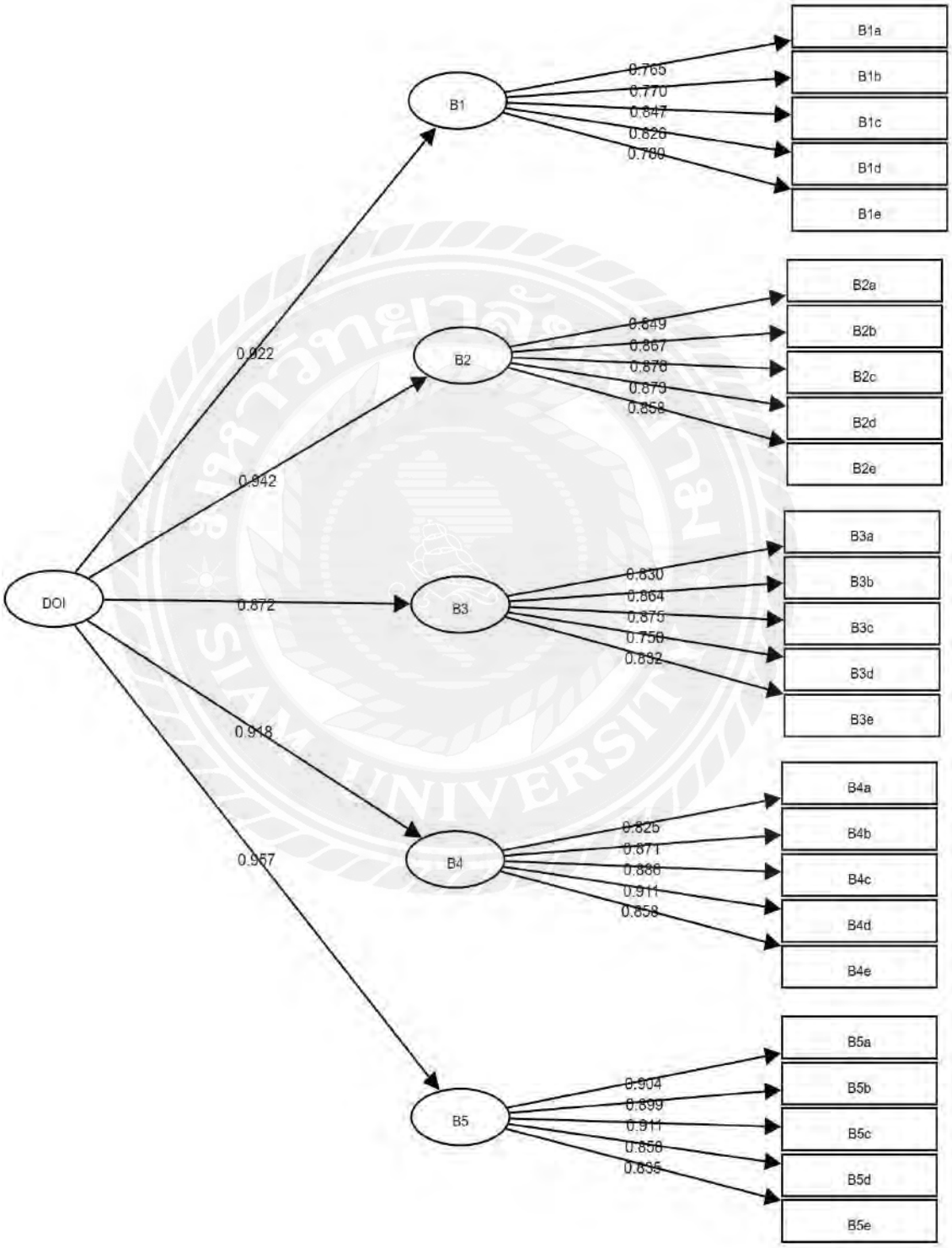
Note: The blue numbers on the diagonal line are the square roots of AVE

For the analysis of discriminant validity, for B1, its AVE was 0.798, greater than the maximum value of the absolute value of the correlation coefficient between factors, 0.766, which meant that it had good discriminant validity. For B2, its AVE was 0.860, greater than the maximum value of 0.828, which meant that it had good discriminant validity. For B3, its AVE was 0.831, greater than the maximum value of 0.830, which meant that it had good discriminant validity. For B4, its AVE was 0.871, greater than the maximum value of the absolute value of the correlation coefficient between factors, 0.850, which meant that it had good discriminant validity. For B5, its AVE was 0.882, greater than the maximum value 0.850, which meant that it had good discriminant validity.

4.4.2.4 Model Diagram

Figure 4.3

Model Result Diagram of DOI



4.4.4 Model Parameter Estimation of Potential Success of Points-based Management Mechanism (PSPMM)

4.4.4.1 Estimation of Factor Loading Coefficients

Table 4.30

Factor Loading Coefficients and Significance Tests of PSPMM

Factor (latent variable)	Measurement item(manifest variable)	(Coef.)	(Std. Error)	*z* (CR)	*p*	(Std. Estimate)	SMC
C1	C1a	1.000	-	-	-	0.859	0.737
C1	C1b	0.987	0.037	27.005	0.000	0.875	0.766
C1	C1c	0.997	0.036	27.915	0.000	0.890	0.792
C1	C1d	1.005	0.036	27.905	0.000	0.890	0.792
C1	C1e	0.962	0.037	26.224	0.000	0.862	0.742
C2	C2a	1.000	-	-	-	0.837	0.700
C2	C2b	1.060	0.038	27.932	0.000	0.913	0.834
C2	C2c	1.111	0.038	28.992	0.000	0.931	0.867
C2	C2d	1.070	0.038	28.040	0.000	0.915	0.837
C2	C2e	1.030	0.038	26.930	0.000	0.895	0.801
C3	C3a	1.000	-	-	-	0.884	0.782
C3	C3b	1.036	0.035	29.706	0.000	0.893	0.797
C3	C3c	1.008	0.037	27.092	0.000	0.855	0.731
C3	C3d	1.005	0.035	28.760	0.000	0.880	0.774
C3	C3e	0.932	0.037	25.499	0.000	0.829	0.688
PSPMM	C1	1.000	-	-	-	0.961	0.923
PSPMM	C2	0.979	0.044	22.243	0.000	0.963	0.927
PSPMM	C3	0.859	0.040	21.633	0.000	0.886	0.784
Note: A dash '-' indicates that the item is a reference item.							

For each measurement relationship, the absolute values of the standardized load system were greater than 0.6 and showed significance. It meant there was a good measurement relationship.

4.4.4.2 Estimation of Measurement Residuals

Table 4.31

Estimation of Measurement Residuals of PSPMM

Variable	(Coef.)	(Std. Error)	*z*	*p*	(Std. Estimate)
C1a	0.227	0.016	13.999	0.000	0.263
C1b	0.189	0.014	13.662	0.000	0.234
C1c	0.166	0.013	13.267	0.000	0.208
C1d	0.169	0.013	13.271	0.000	0.208
C1e	0.204	0.015	13.942	0.000	0.258
C2a	0.260	0.018	14.706	0.000	0.300
C2b	0.136	0.010	13.193	0.000	0.166
C2c	0.115	0.009	12.337	0.000	0.133
C2d	0.135	0.010	13.120	0.000	0.163
C2e	0.160	0.012	13.748	0.000	0.199
C3a	0.154	0.012	12.873	0.000	0.218
C3b	0.151	0.012	12.576	0.000	0.203
C3c	0.206	0.015	13.642	0.000	0.269
C3d	0.163	0.013	13.021	0.000	0.226
C3e	0.218	0.015	14.094	0.000	0.312
C1	0.049	0.009	5.470	0.000	0.077
C2	0.044	0.008	5.512	0.000	0.073
C3	0.119	0.012	9.634	0.000	0.216
PSPMM	0.587	0.051	11.440	0.000	1.000

The measurement residuals and regression residuals of CFA were shown above. The standard error of residual estimate was positive and reached the significance level ($p<0.05$). The standard errors in column 3 in this table were all positive and the p values were all less than 0.05, indicating that the parameters were significant.

4.4.4.3 Evaluation of Model Fitting

In order to further verify whether the various factors of the scale and corresponding items were consistent with theoretical relationship, CFA would be conducted from the perspectives of structural validity, convergent validity, and discriminant validity.

1) Structural Validity

Table 4-32

Compliance of Model Fitting Indicators for the Structural Validity

Common Indicators	χ2	*df*	*p*	χ2/*df*	GFI	RMSEA	RMR	CFI	NFI	NNFI
Judgment Criteria	-	-	>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
Value	732.210	148	0.000	4.947	0.866	0.088	0.030	0.947	0.935	0.939
Other Indicators	TLI	AGFI	IFI	PGFI	PNFI	PCFI	SRMR	RMSEA 90% CI		
Judgment Criteria	>0.9	>0.9	>0.9	>0.5	>0.5	>0.5	<0.1	-		
Value	0.939	0.827	0.947	0.674	0.809	0.820	0.038	0.082 ~ 0.094		
Note： Default Model, χ2(171)=11240.867, *p*=1.000										

From the table above, the χ2/*df* =4.947, which was less than 5 and was acceptable; RMSEA=0.088<0.10; RMR=0.030<0.05; Most of other fitting indexes were all above 0.9, indicating that structural validity of the model was good and met the research conditions.

2) Convergent Validity

Table 4.33

Convergent Validity Test of Scale

Factor	Average variance extracted AVE	Combined reliability CR
C1	0.766	0.942
C2	0.808	0.954
C3	0.747	0.937

From the above table, the AVE values corresponding to the C1-C3 factors were all greater than 0.5, and the CR values were all higher than 0.8, which meant that the data of this analysis had good aggregation (convergence) validity.

3) Discriminant Validity

Table 4.34

Discriminant Validity Test

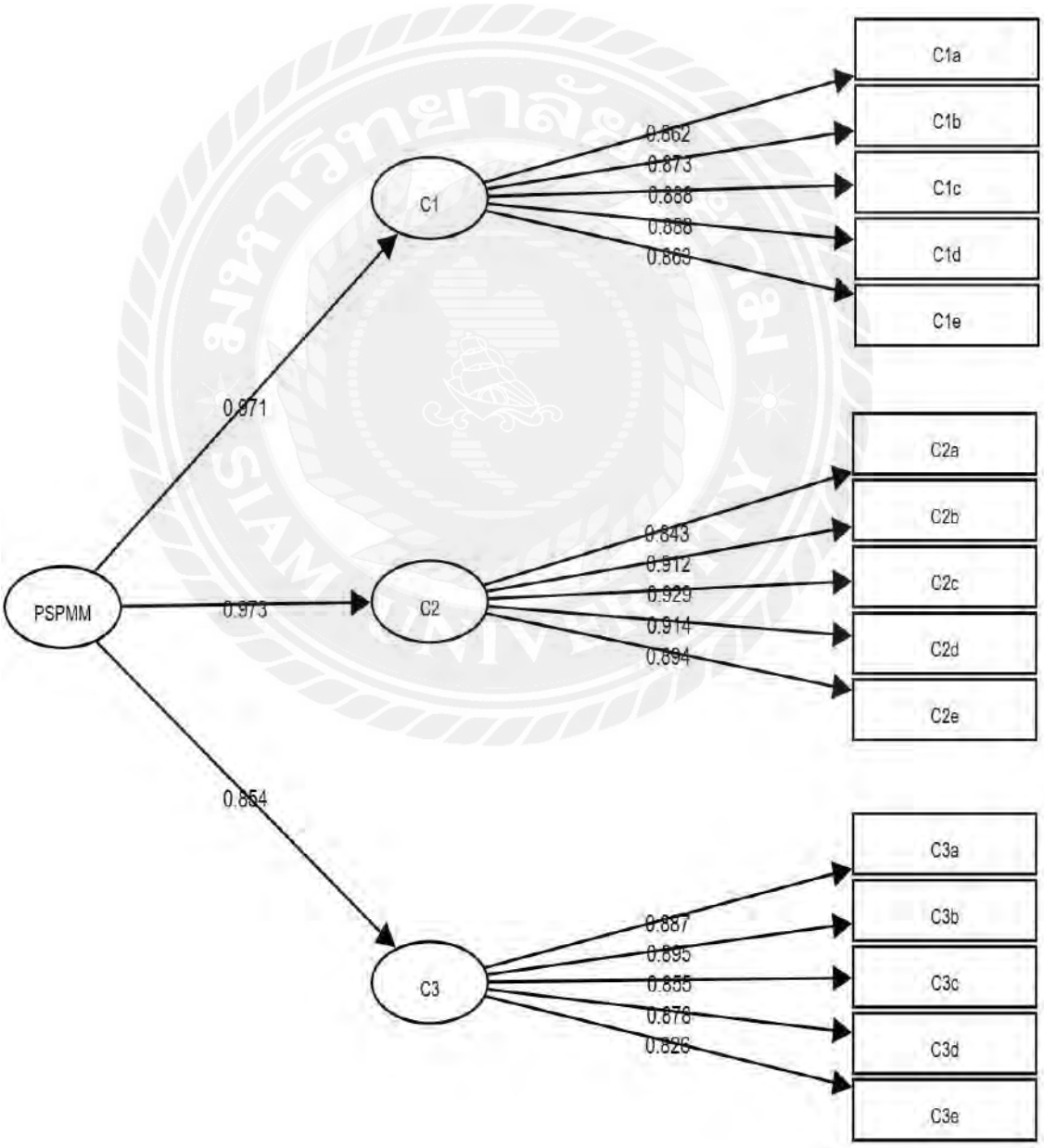
	C1	C2	C3
C1	0.875		
C2	0.805	0.899	
C3	0.781	0.790	0.868

For the discriminant validity analysis, for C1, its AVE was 0.875, greater than the maximum absolute value 0.805, which meant that it had good discriminant validity. For C2, its AVE was 0.899, greater than the maximum absolute value 0.805, which meant that it had good discriminant validity. For C3, its AVE was 0.868, greater than the maximum absolute value 0.790, which meant that it had good discriminant validity.

4.4.4.4 Model Diagram

Figure 4.4

Model Result Diagram of PSPMM



4.5 Fitting and Evaluation of Structural Equation Modeling

4.5.1 The Establishment of Structural Equation Modeling

Structural Equation Modeling (SEM) is a statistical analysis method used to test multiple hypothesis tests between observed variables and latent variables by using collected data to test hypotheses or conceptual framework based on literature and basic theories. This section will construct a structural equation modeling of the influencing factors of the potential success of the points-based management mechanism, and conduct a fitting test on the hypothetical model proposed in this research in combination with the scale data. The influence relationships between the variables in the model of this research include: SEP→PSPMM, SEP→DOI, DOI→PSPMM.

4.5.2 Parameter Estimation and Testing of Structural Equation Modeling

In the structural equation modeling, we mainly focus on the path coefficients between latent variable factors. The model regression coefficients and significance tests are shown in Table 4-34. The first three rows in the table are the structural model relationships between factors. The path coefficients (standardized regression coefficients) of SEP→PSPMM, SEP→DOI, DOI→PSPMM are 0.829, 0.803, and 0.945 respectively. The path influence relationships are statistically significant ($p<0.05$), and the hypothesis of positive influence between factors proposed when setting the model is established.

Table 4.35

Regression Coefficients and Significance Test of the Model

Model Regression Coefficient							
X	→	Y	Unstandardized regression coefficients	*SE*	*z* (CR)	*p*	Standardized regression coefficients
SEP	→	A1	1.000	-	-	-	0.765
SEP	→	A2	1.043	0.104	10.051	0.000	0.875
SEP	→	A3	1.418	0.131	10.812	0.000	0.835
SEP	→	A4	1.396	0.124	11.253	0.000	0.968
SEP	→	DOI	0.257	0.078	3.296	0.001	0.803
SEP	→	PSPMM	1.277	0.084	13.292	0.001	0.829
DOI	→	B1	1.000	-	-	-	0.946
DOI	→	B2	4.727	1.387	3.408	0.001	0.920
DOI	→	B3	4.559	1.344	3.392	0.001	0.820

Model Regression Coefficient							
X	→	Y	Unstandardized regression coefficients	*SE*	*z* (CR)	*p*	Standardized regression coefficients
DOI	→	B4	4.939	1.448	3.412	0.001	0.929
DOI	→	B5	5.354	1.568	3.415	0.001	0.915
DOI	→	PSPMM	5.544	1.637	3.386	0.001	0.945
PSPMM	→	C1	1.000	-	-	-	0.973
PSPMM	→	C2	1.009	0.047	21.252	0.000	0.971
PSPMM	→	C3	0.455	0.050	9.181	0.000	0.855
A1	→	A1e	0.279	0.081	3.431	0.001	0.672
A1	→	A1d	0.296	0.081	3.637	0.000	0.683
A1	→	A1c	0.796	0.087	9.144	0.000	0.788
A1	→	A1b	1.141	0.091	12.544	0.000	0.787
A1	→	A1a	1.000	-	-	-	0.652
C1	→	C1e	0.974	0.041	23.601	0.000	0.842
C1	→	C1d	0.320	0.053	6.058	0.000	0.669
C1	→	C1c	1.042	0.040	25.918	0.000	0.891
C1	→	C1b	1.050	0.041	25.551	0.000	0.884
C1	→	C1a	1.000	-	-	-	0.830
C2	→	C2e	0.433	0.052	8.362	0.000	0.767
C2	→	C2d	0.413	0.053	7.865	0.000	0.746
C2	→	C2c	1.067	0.042	25.424	0.000	0.888
C2	→	C2b	1.043	0.041	25.560	0.000	0.891
C2	→	C2a	1.000	-	-	-	0.827
C3	→	C3a	1.000	-	-	-	0.822
C3	→	C3e	1.827	0.192	9.517	0.000	0.816
C3	→	C3d	0.410	0.116	3.535	0.000	0.672
C3	→	C3c	1.959	0.202	9.701	0.000	0.879
C3	→	C3b	1.905	0.198	9.646	0.000	0.858
A2	→	A2e	1.166	0.079	14.763	0.000	0.776
A2	→	A2d	0.340	0.084	4.043	0.000	0.691
A2	→	A2c	1.330	0.086	15.532	0.000	0.831
A2	→	A2b	1.279	0.086	14.920	0.000	0.787
A2	→	A2a	1.000	-	-	-	0.652
A3	→	A3e	0.466	0.060	7.786	0.000	0.774
A3	→	A3d	0.332	0.061	5.492	0.000	0.765
A3	→	A3c	0.532	0.060	8.909	0.000	0.826
A3	→	A3b	0.867	0.062	14.035	0.000	0.664
A3	→	A3a	1.000	-	-	-	0.813
A4	→	A4e	1.022	0.056	18.224	0.000	0.786

Model Regression Coefficient							
X	→	Y	Unstandardized regression coefficients	*SE*	*z* (CR)	*p*	Standardized regression coefficients
A4	→	A4d	0.201	0.070	2.882	0.004	0.634
A4	→	A4c	1.040	0.059	17.557	0.000	0.760
A4	→	A4b	0.982	0.062	15.913	0.000	0.697
A4	→	A4a	1.000	-	-	-	0.767
B1	→	B1e	4.491	1.317	3.410	0.001	0.766
B1	→	B1d	4.833	1.415	3.415	0.001	0.794
B1	→	B1c	0.962	0.404	2.382	0.017	0.652
B1	→	B1b	0.978	0.405	2.415	0.016	0.656
B1	→	B1a	1.000	-	-	-	0.659
B2	→	B2e	1.060	0.046	22.895	0.000	0.840
B2	→	B2d	0.288	0.058	4.960	0.000	0.724
B2	→	B2c	1.085	0.047	23.227	0.000	0.848
B2	→	B2b	1.059	0.044	24.300	0.000	0.873
B2	→	B2a	1.000	-	-	-	0.825
B3	→	B3e	0.233	0.057	4.074	0.000	0.690
B3	→	B3d	0.232	0.055	4.184	0.000	0.695
B3	→	B3c	0.399	0.056	7.138	0.000	0.728
B3	→	B3b	1.051	0.049	21.358	0.000	0.862
B3	→	B3a	1.000	-	-	-	0.845
B4	→	B4e	1.016	0.041	24.975	0.000	0.860
B4	→	B4d	0.280	0.057	4.961	0.000	0.723
B4	→	B4c	1.035	0.041	25.366	0.000	0.868
B4	→	B4b	1.000	0.042	23.875	0.000	0.838
B4	→	B4a	1.000	-	-	-	0.847
B5	→	B5e	0.408	0.051	8.052	0.000	0.754
B5	→	B5d	0.374	0.051	7.382	0.000	0.727
B5	→	B5c	0.337	0.051	6.547	0.000	0.792
B5	→	B5b	1.003	0.035	28.655	0.000	0.900
B5	→	B5a	1.000	-	-	-	0.888
Note: → indicates regression influence relationship or measurement relationship							
Note: The horizontal bar '-' indicates that the item is a reference item							

The results in the last 60 rows were measurement model relationships. In this research, most path coefficients were greater than 0.6, indicating that all measurement relationships were significant and statistically significant ($p<0.05$.), which also indicated that the intrinsic quality of the model was good.

4.5.3 Evaluation of the Fitting of the Structural Equation Modeling

The model fitting index is shown in Table 4.35.

Table 4-36

Model Fitting Indicators

Common Indicators	χ2	*df*	*p*	χ2/*df*	GFI	RMSEA	RMR	CFI	NFI	NNFI
Judgment Criteria	-	-	>0.05	<3	>0.9	<0.10	<0.05	>0.9	>0.9	>0.9
Value	3126.018	1695	0.000	1.844	0.826	0.041	0.029	0.914	0.831	0.910
Other Indicators	TLI	AGFI	IFI	PGFI	PNFI	PCFI	SRMR	RMSEA 90% CI		
Judgment Criteria	>0.9	>0.9	>0.9	>0.5	>0.5	>0.5	<0.1	-		
Value	0.910	0.813	0.915	0.765	0.795	0.875	0.047	0.038 ~ 0.043		
Note： Default Model, χ2(1770)=18442.649, *p*=1.000										

Several common indicators, including $\chi 2/df=1.844<3$, RMSEA=0.041<0.10, RMR=0.029<0.05, GFI, CFI, and NNFI, TLI, IFI all meet the standards, GFI, NFI and AGFI were close to 0.9, and most common indicators met the fitting standards, indicating that the overall model fitting validity was good. It was generally believed that the model fitted well, and the model set according to the theory was adapted to the actual sample data.

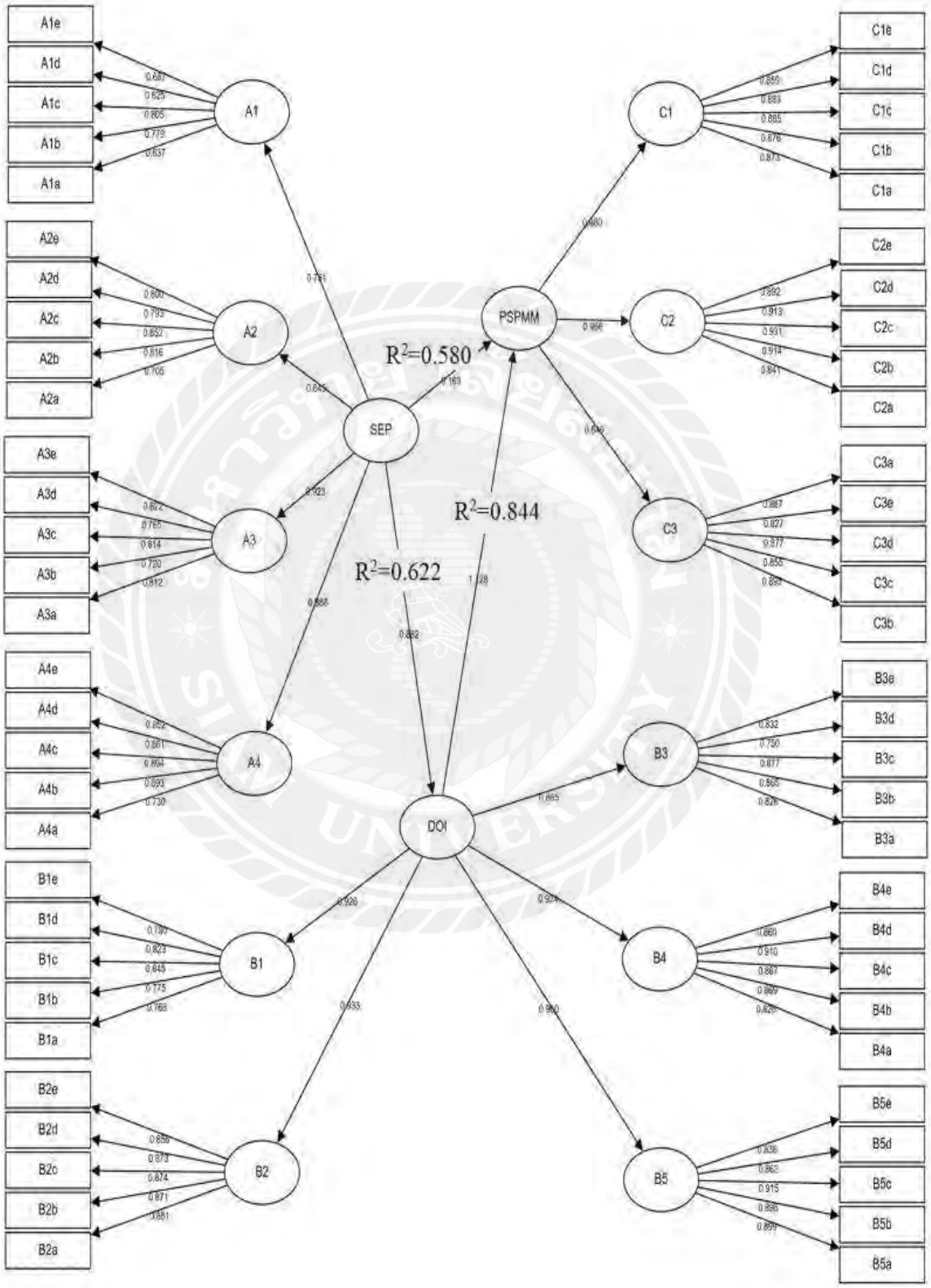
4.5.4 Path Diagram of Structural Equation Modeling

Most commonly used fitting indicators meet the standards or basically meet the standards. The estimated values of each parameter reach the significance level, and the measurement errors are all positive and significant, indicating that the model fits well. The coefficients of the three influencing relationship paths are statistically significant ($p<0.05$). The hypothesis of a positive influencing relationship between factors proposed during model setting is established.

The structural equation modeling path diagram (including parameters) of this research is shown in Figure 4.5.

Figure 4.5

Path Diagram of the Structural Equation Modeling of this Research



4.5.5 Results of Structural Equation Modeling

In this research, the data of the three variables SEP, DOI and PSPMM, that is, the sum of the items in each dimension, belong to explicit variables. According to relevant theories and literature, SEP directly affects PSPMM. In addition, SEP indirectly affects PSPMM through DOI. According to relevant theories and literature, SEP will directly and positively affect PSPMM. In addition, SEP will indirectly affect PSPMM through DOI. From the path diagram, we can see that the whole model includes three paths that directly affect the relationship. The first is SEP → PSPMM, the second is SEP → DOI, and the third is DOI → PSPMM.

The principle of path analysis is regression analysis. The p value of regression coefficient significance test is used as the basis for judging whether the path coefficient is statistically significant. Standard regression coefficients are usually used to express the influence relationship between two variables. Here it is directly called the standard path coefficient.

Table 4.37

The Regression Coefficients of the Model

X	→	Y	Unstandardized Path Coefficients	*SE*	*z* (CR)	*p*	Standardized Path Coefficients
SEP	→	DOI	0.907	0.031	29.013	0.000	0.789
SEP		PSPMM	0.119	0.033	3.600	0.000	0.102
DOI	→	PSPMM	0.847	0.029	29.477	0.000	0.836
Note: → indicates path influence relationship							

From the table above, when SEP affects DOI, the standardized path coefficient value was 0.789>0, and this path showed significance at the 0.01 level (z=29.013, p=0.000<0.01). This showed that SEP would have a significant positive impact on DOI.

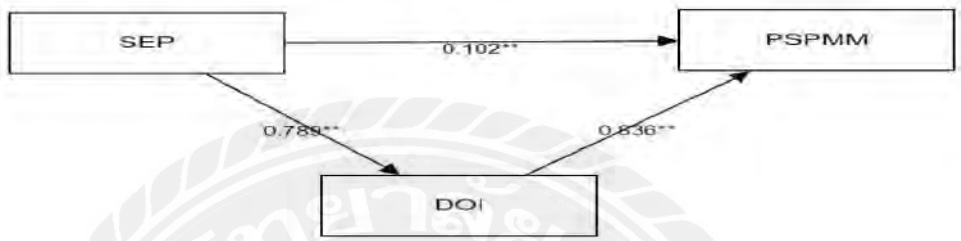
When SEP affects PSPMM, the standardized path coefficient value was 0.102>0, and this path showed significance at the 0.01 level (z=3.600, p=0.000<0.01). This showed that SEP would have a significant positive impact on PSPMM.

When DOI affects PSPMM, the standardized path coefficient value was 0.836>0, and this path showed significance at the 0.01 level (z=29.477, p=0.000<0.01). This showed that DOI would have a significant positive impact on PSPMM.

The model diagram was shown in Figure 4.6 below.

Figure 4.6

Model Diagram of the Result



The results of hypothesis testing for the structural equation modeling in this research were detailed in Table 4.38 below.

Table 4.38

Hypotheses Testing

	Hypotheses	
H1	The social exchange of points (SEP) has a direct positive impact on the potential success of the points-based management mechanism (PSPMM).	√
H2	The innovative social exchange of points (SEP) has a direct and positive impact on the diffusion of innovations (DOI) about points.	√
H3	The diffusion of innovations (DOI) about points has a direct and positive impact on the potential success of the points-based management mechanism (PSPMM).	√

Note: (√) accepted hypothesis, (×) rejected hypothesis

4.6 Mediation Effect Analysis

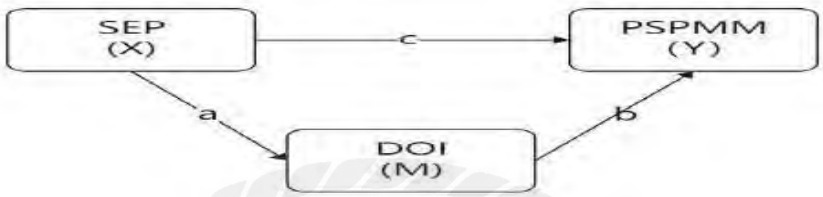
4.6.1 Mediation Effect Model

According to the research design, Social Exchange of Points (SEP) was the independent variable X, Diffusion of Innovations (DOI) was the mediating variable M,

and Potential Success of Points-based Management Mechanism (PSPMM) was the dependent variable Y. All of them were quantitative data, forming a simple mediating effect.

Figure 4.7

Path Diagram of the Preset Model of Mediation Effect



4.6.2 Result Analysis of Mediation Effect

1) Test the Total Effect c（X→Y）

The parameter estimation and test of the three regression models of the mediation effect shown below presented the results of the three regression models of the mediation effect. The second column was the total effect regression equation result of X→Y, the third column was the regression equation of the first half of the mediation path of X→M, and the fourth column was the regression equation of the second half of the mediation path and direct effect of M→Y.

Table 4.39

Parameter Estimation and Test of Three Regression Models of Mediating Effect

	PSPMM	DOI	PSPMM
Constant	0.454**(3.270)	0.281*(2.160)	0.216*(2.542)
SEP	0.888**(26.525)	0.907**(28.949)	0.119**(3.594)
DOI			0.847**(29.391)
Sample Size	512	512	512
R^2	0.580	0.622	0.844
Adjust R^2	0.579	0.621	0.844
F	*F* (1,510)=703.573, *p*=0.000	*F* (1,510)=838.066, *p*=0.000	*F* (2,509)=1378.838, *p*=0.000
* $p<0.05$ ** $p<0.01$. t value is in brackets.			

The regression coefficient of SEP on PSPMM from the second column was 0.888, which was significant at the level of a=0.01, that was, the total effect was significant, and the argument was based on the mediating effect. From the table above, the mediation effect analysis involved a total of 3 models, which were as follows:

PSPMM=0.454+0.888*SEP

DOI=0.281+0.907*SEP

PSPMM=0.216+0.119*SEP+0.847*DOI

2) Test the First Half Path Coefficient a （X→M）and the Second Half Path Coefficient b （M→Y）

Test the path coefficients a and b in the first and second half. The regression coefficient of SEP on DOI is 0.907, which was significant at the a=0.01 level (marked **), that was, the path coefficient a in the first half was significant; from the fourth column, DOI The regression coefficient for PSPMM was 0.847, which was significant at the a=0.01 level, that was, the path coefficient b in the second half was significant. At this time, a and b were significant at the same time, indicating the existence of a mediating effect, and the Bootstrap CI of ab should be reported.

Table 4.40

Mediation Effect Test

Item	c Total Effect	a	b	a*b Mediation Effect	a*b (Boot SE)	a*b (*z*)	a*b (*p*)	a*b (95% BootCI)	c' Direct Effect Test	Test Results
SEM=>DOI =>PSPMM	0.888**	0.907**	0.847**	0.769	0.032	24.028	0.000	0.596 ~ 0.722	0.119**	Partial Mediation
* p<0.05 ** p<0.01										
Bootstrap type: percentile bootstrap method										

From Table 4.40, the mediating effect ab=0.907×0.847=0.769, and the 95% CI of ab was [0.596, 0.722]. This interval did not include 0, which indicated that a mediating effect existed.

4.6.3 Mediation Effect Test

Table 4.41

Results of Total Effect, Mediating Effect, Direct Effect, and Effect Proportion

Item	Test Results	c Total Effect	a*b Mediation Effect	c' Direct Effect	Effect Ratio Calculation Formula	Effect Proportion
SEM=>DOI=>PSPMM	Partial mediation	0.888	0.769	0.119	a * b / c	86.574%

The results of the total effect, mediating effect, direct effect and effect proportion of this research were shown in Table 4.42. In column 5 (direct effect c), the regression coefficient of SEP on PSPMM was 0.119, which was significant at the a=0.01 level. The mediation effect ab=0.769 was positive, and the direct effect c'= 0.119, also a positive number, and the two directions were the same, indicating that the mediation effect was a partial mediation effect, and the proportion of the mediation effect to the total effect was ab/c=0.769/0.888=86.574%.

The results of the above analysis showed that Hypothesis 4 was valid.

Table 4.42

Hypotheses Testing

	Hypotheses	
H4	Diffusion of innovations (DOI) significantly mediates the relationship between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM).	√

Note: (√) accepted hypothesis (×) rejected hypothesis

4.7 Interview Design

4.7.1 Interview Outline Design

Through interviews, researchers can understand the attitudes and opinions of the research subjects on the research issues from different perspectives and levels, so as to further verify the research results of the questionnaire. Interview is an effective

supplement to questionnaire surveys. By comparing interview and questionnaire data, it can be tested whether there are contradictory or conflicting results, can help researchers to find problems, make corrections based on actual conditions, and obtain more accurate and reliable research conclusions.

This interview outline was divided into 6 parts as follows:

The first part was related to the personal information. The second part was the opinion on social exchange of points. The third part was the opinion on diffusion of innovations. The fourth part was the opinion on Potential Success of Points-based Management Mechanism. The fifth part was the opinion on the Relationships among Social Exchange of Points, Diffusion of Innovations and Potential Success of Points-based Management Mechanism. The last Part was recommendation.

4.7.2 Interview Data Collection

A total of 10 people get interviewed in this research: 4 low-income people, 2 elderly caregivers, 2 university instructors or experts, 2 government officers. The results of the participants information are shown in Tables 4.43 below.

Table 4.43

Basic Participants Information of the Interviewees

Variables	Frequency	Percentage(%)
Gender		
Male	6	60.0
Female	4	40.0
Age		
21-30	0	0
31-40	1	10.0
41-50	8	80.0
Above 51	1	10.0
Marital Status		
single	1	10.0
married	9	90.0
divorced	0	0
separated	0	0
Education Level		

Variables	Frequency	Percentage(%)
Under bachelor degree	4	40.0
bachelor degree	4	40.0
Master degree or even	2	20.0
Resident Identification		
urban	6	60.0
rural	4	40.0
Number of aged 60 and above		
0	1	10.0
1-2	7	70.0
3 and above	2	20.0
Average Monthly Income		
Below 1,000	1	10.0
1,001 - 2,000	3	30.0
2,001 - 3,000	3	30.0
Above 3,000	3	30.0
Insurance		
Endowment Insurance	7	70.0
Medical Insurance	10	100.0
No Insurance	0	0
Others	2	20.0

Source: Researcher (2024)

The survey data of 10 interviewees revealed that the majority were male (60%) and aged between 40-60 years (80%), with a high prevalence of marriage (90%). Educational attainment was evenly split between those with and without a bachelor's degree (40% each), and 60% reside in urban areas. Most households had 1-2 people aged 60 and above (70%). Income distribution showed equal representation in the ranges of 1,001-2,000, 2,001-3,000, and above 3,000 monthly (30% each). In terms of insurance, all individuals had medical insurance, 70% had endowment insurance, and 20% had other types of insurance, indicating overlapping coverage. This demographic highlighted a middle-aged, married, and relatively well-educated urban population with diverse income levels and comprehensive insurance coverage.

4.7.3 Analysis of Interview Results

1) Can you describe if the interpersonal interactions (Various interactions among different individuals) are related to the social exchange of points?

The data from in-depth interview confirmed the results of the questionnaire survey. All interviewees were agreed that interpersonal interactions were related to the social exchange of points. Interviewee No. 4 said that "Points really boost interactions, like helping each other out and volunteering in the community. This not only improves life for everyone but also helps with sharing resources." Moreover, the interpersonal interactions could expand their social circles, made new friends and established mutual assistance and cooperation relationships by participating in community activities, volunteer services. This was inline with interviewee No.9 who said that "Interpersonal interactions offer a lot of benefits in the elderly care credit system, like emotional support, sharing information, and providing services and assistance."

2) Can you describe if the interpersonal trust (Confidence in another people) is related to the social exchange of points?

All the interviewees agreed that interpersonal trust was linked to how points were exchanged socially. Trust in communication was really important for this exchange. Interviewee No. 5 mentioned that "It helps to reduce uncertainty and risk, encouraging people to share resources, cooperate, and support each other." Interviewee No. 9 pointed out that "Trust among seniors is a way of responding together to social interactions. It also reflects their individual feelings about using social resources, and it's a key part of how social exchanges work." When there's a high level of trust in the community, it made the elderly care points system run smoothly.

3) Can you describe if the perceived benefit (the perception of the positive consequences that are caused by a specific action) is related to the social exchange of points?

All interviewees believed that perceived benefits were related to the social exchange of points. The perceptible benefits not only included material aspects, but also spiritual aspects, which could motivate individuals to actively participate in activities related to elderly care points, improved their quality of life, promoted social exchange, and were important aspects for evaluating the effectiveness of the elderly care service

system. Interviewee No.1 and 2 believed that “Participating in the social exchange of points not only provides material rewards, but also spiritual satisfaction, happiness, achievement, and the realization of self-worth. ” Perceived benefits could make participants more active, affecting points and services received. Interviewee No.10 also believed that “Perceived benefits not only motivate elderly people to participate in elderly care and volunteer services, but also improved their quality of life and social value, promoting the implementation and popularization of elderly care services.”

4) Can you describe if the reciprocal support is related to the social exchange of points?

All interviewees believed that reciprocal support played an important role in the social exchange of points and was the core and foundation of the points system. Through mutual assistance and support, elderly people could jointly tackle challenges in the elderly care process, enhanced community cohesion and solidarity, and achieved effective allocation and utilization of resources. Mutual support not only brought material support, but also enhanced spiritual satisfaction and happiness, promoted emotional communication and mental health. Interviewee No.8 said that “The social exchange of points is based on mutual support.” Interviewee No.9 believed that “Reciprocal support refers to cooperation and support between two or more parties, ultimately resulting in benefits for both or more parties.”

5) Could you please explain about the relative advantage of the points-based elderly care services model from the perspective of innovation diffusion?

From the responses of all interviewees, the relative advantage of the points-based elderly care service model were mainly reflected in the following aspects. Interviewee No.3 mentioned that “I can choose service content based on my actual needs and interests.” Interviewee No.1 mentioned that “Through participating in community activities and volunteering, we have made many like-minded friends and established deep friendships.” Interviewee No.10 pointed out that “The points-based elderly care model can diversify the economic sources of elderly care and promote our active participation in social activities.” The points-based elderly care service model encouraged elderly people to participate in beneficial activities to earn points, providing elderly care services in a more economical and sustainable way, reducing the economic burden on the elderly. Interviewee No.7

pointed out that “Through point rewards, elderly people are more likely to try and continue using various elderly care services, ensuring the effective allocation of elderly care resources.”

6) Could you please explain about the compatibility of the points-based elderly care services model from the perspective of innovation diffusion?

Based on the opinions of the interviewees, the points-based elderly care service model exhibited high compatibility in terms of culture and values, existing systems and community resources, technology, social resources, policies, and psychology. This not only helped it to be widely accepted and adopted, but also facilitated its effective operation in different environments and backgrounds.

The points-based elderly care service model integrated the traditional Chinese values of respecting and honoring the elderly, and this cultural compatibility made it easier for the elderly to accept. Interviewee No.1 pointed out that “This model is not only an innovation of pension model, but also the inheritance and development of traditional pension culture.” The points-based elderly care service model could effectively integrate with the existing elderly care service system, social security system, and community resources. Interviewee No.7 mentioned that “The points system can be integrated into existing elderly care services, such as day care centers and community activities, without the need to completely change the existing service model.” The points-based elderly care service model was in line with the policy goals promoted by the government, such as increasing the social participation of the elderly and promoting healthy aging. Interviewee No.10 pointed out that “Combining the points-based model with current community volunteer service activities is beneficial for promoting this model on a larger scale.”

7) Could you please explain about the low complexity of the points-based elderly care services model from the perspective of innovation diffusion?

From the perspective of innovation diffusion, the low complexity of the points-based elderly care service model was mainly reflected in its intuitive and understandable points system, flexible and diverse points acquisition methods, as well as a sound support system and friendly service team. These characteristics enabled the points-based elderly care model to be quickly understood and accepted by the elderly, promoting its promotion and popularization among the elderly population. Interviewee No.7 emphasized that “The

design of the points-based elderly care service model is simple and intuitive, and easy for the elderly to understand and operate." Interviewee No.5 added that "The low difficulty in operation and understanding makes it easier for the elderly to accept and use the points-based elderly care model, which helps to promote it among the elderly population." Interviewee No.10 pointed out that "The points-based elderly care model should be convenient, easy, and understandable in application and practical operation to ensure that the elderly are willing to accept and use it."

8) Could you please explain about the trialability of the points-based elderly care services model from the perspective of innovation diffusion?

All interviewees believed that the trialability of the points-based elderly care service model was reflected in its multiple key characteristics. First of all, the low threshold and low risk made it easy for the elderly to try this model without bearing heavy financial burden. Interviewee No.6 believed that "This model provides flexibility and personalized services, allowing elderly people to choose activities and services to participate in based on their personal interests and needs." Interviewee No.9 mentioned that "The widespread support from the government and community will increase the confidence and participation of the elderly in the new model." The demonstration effect and word-of-mouth dissemination further promoted the acceptance of the model, and when elderly people see others' successful experiences, they are more willing to try. In addition, Interviewee No.6 believed that "The points-based elderly care service model allows for gradual participation and provides easy exit features, which reduces psychological barriers."

9) Could you please explain about the observability of the points-based elderly care services model from the perspective of innovation diffusion?

All interviewees believed that from the perspective of innovation diffusion, the observability of the points-based elderly care service model was reflected in its obvious achievements and visible effects. Interviewee No.7 mentioned that "Elderly people can clearly see their points records through mobile applications, which enhances their sense of trust and willingness to participate in a transparent way." Secondly, the successful cases and social impact in the points-based elderly care model had significantly improved its observability. Interviewee No.2 and interviewee No.5 thought that "Successful cases, such

as elderly people significantly improving their quality of life through points, can spread within the community and motivate more people to try."

10) Do you think sustainability can prove the potential success of points-based elderly care services model? Why?

Based on the responses from multiple interviewees, sustainability was widely recognized as a key factor in proving the potential success of the points-based elderly care service model. Interviewee No.2 pointed out that "Long-term stable service supply is the foundation for the potential success of the model." The points-based elderly care model enhanced the trust of the elderly by continuously providing high-quality elderly care services, thereby promoting the long-term success of the model. Interviewee No.7 and 8 believed that "the sustainability of the model is reflected in its long-term impact, resource optimization, and adaptability." Interviewee No.9 emphasized that "The points-based elderly care model can succeed in China because it is in line with China's national conditions. So it will be sustainable." He pointed out that China had a vast elderly care population and a diverse group structure, which was in line with the diversity of points-based services.

11) Do you think effectiveness can prove the potential success of points-based elderly care services model? Why?

From the responses of multiple interviewees, effectiveness was widely recognized as an important factor in proving the potential success of the points-based elderly care service model. Interviewee No.2 believed that "The points-based elderly care service model proves its effectiveness by meeting the actual needs of the elderly and improving their quality of life." Elderly people could earn points to exchange for elderly care services such as home services and health management, in order to meet their needs and improve their quality of life. Interviewee No.8 pointed out that "Effectiveness is one of the key factors in measuring the potential success of the points-based elderly care service model."

12) Do you think satisfaction can prove the potential success of points-based elderly care services model? Why?

From all interviewees' opinions, satisfaction was widely regarded as an important indicator. The satisfaction of elderly people reflected their recognition of service content,

quality, and attitude, proving the success of the model in meeting needs and improving quality of life. Interviewee No.3 emphasized that “High satisfaction represents a comprehensive recognition of the service experience and points rules, indicating that users are willing to continue using or recommending to others, thus proving the potential success of the points-based elderly care model.” Interviewee No.7 believed that “Satisfaction is one of the important indicators for measuring the potential success of the points-based elderly care service model. Satisfaction directly reflects service quality, promotes service acceptance and participation, and improves the quality of life and well-being of the elderly.” Interviewee No.9 stated that “Satisfaction is diverse, but the satisfaction of each item in turn proves the effectiveness of the service model.”

13) Do you believe that social exchange of points has significant and positive impact on the potential success in the management mechanism of points? Why?

From the opinions of interviewees, the social exchange of points had a significant positive impact on the potential success of the points-based elderly care model. Interviewee No.2 believed that “This point is really good. My income is not high, but I can earn some points by running errands for the elderly and then buy some services I need. It is really good.” Interviewee No.4 pointed out that “The exchange of points is so useful for people with low incomes like us. These points can allow me to exchange for some care services when I need them.” Interviewee No.8 emphasized that “The social exchange of points has promoted the success of the points-based model through enhancing social networks, promoting mutual assistance, improving service utilization, increasing community cohesion, promoting healthy behavior, and improving quality of life.” Interviewee No.9 stated that “the social exchange of points forms a win-win relationship through the contributions of the elderly to society and the feedback from society to the elderly, thereby promoting the potential success of the points-based elderly care model.”

14) Do you believe that social exchange of points has a significant relationship with diffusion of innovations? Why?

From the opinions collected from various interviewees, there was indeed a significant relationship between the social exchange of elderly care points and the diffusion of innovation. Interviewee No.1 believed that “The social exchange mechanism of points provides motivation for elderly people to participate in elderly care services, and

promotes the diffusion of this innovative model through word-of-mouth dissemination and demonstration effects." Interviewee No.7 emphasized that "From a professional perspective, this point exchange is definitely conducive to the spread of points. Through the exchange of points, everyone's enthusiasm for participating in elderly care services will be high. For example, someone who is good at chatting with the elderly can exchange points for the services they need, which will attract more people to join in, and the points will spread." Interviewee No.9 believed that "We have to admit that point exchange can indeed spread points. Those who may not be interested in points will be tempted to participate when they see others get benefits through exchange. In this way, the spread of points will become wider and wider."

15) Do you believe that diffusion of innovations has significant and positive impact on the potential success in the management mechanism of points? Why?

Based on the collected opinions from various interviewees, the diffusion of innovation did have a significant positive impact on the potential success of the points-based elderly care model. Interviewee No.6 emphasized that "More people know about points, more people participate, this mechanism is more successful." Interviewee No.10 pointed out that "The spread of points is very important to the points pension management mechanism. Everyone knows that points can bring benefits to themselves. After everyone helps each other, the points management mechanism will get better and better. This is the benefit brought by the spread of points."

16) Do you believe that diffusion of innovations significantly mediates the relationship between social exchange of points and potential success of points-based management mechanism？ Why?

Based on the collected opinions from various interviewees, diffusion of innovation did mediate the relationship between social exchange of points and potential success of points-based management mechanism. Interviewer 3 said that "This point diffusion is crucial. With point exchange, everyone will actively participate, and point diffusion plays a bridging role in the middle. It lets more people know that point exchange can provide support for the elderly, thereby promoting the success of the entire point-based elderly care management mechanism." Interviewer 5 said that "For our points-based elderly care

management mechanism to succeed, point diffusion is indispensable. It spreads the benefits of point exchange and gets everyone to take action. Only through point diffusion can more people participate in the action of providing for the elderly, so that our mechanism can really play a role." Interviewer 8 said that "Point diffusion is like a catalyst, playing a vital role between point exchange and the success of points. It makes the scope of point exchange wider and the impact greater, and ultimately promotes the success of the points. Without point diffusion, all this would be difficult to achieve."

17) Recommendation

Different interviewees' suggestions for the points-based elderly care services model mainly focus on the following aspects:

Strengthening publicity and education was a widely recognized suggestion. Interviewee No. 1 and 2 mentioned that "through multi-channel promotion and education, increasing public awareness and understanding of points-based elderly care services can enhance the trust and willingness of new users to participate."

Optimizing the integral mechanism was also considered an important way to enhance the attractiveness of the model. Interviewee No.3 suggested that "increasing the channels for obtaining points and enriching redemption options to meet the diverse needs of the elderly." Meanwhile, interviewee No.5 mentioned that "designing attractive point reward mechanisms and diverse service content can effectively motivate elderly people to participate."

Strengthening cooperation networks and focusing on personalized needs were also key recommendations. Interviewee No.10 mentioned "cooperation with the government, non-profit organizations, and businesses can form a strong promotion network." Interviewee No. 6 suggested "conducting market research to understand the needs of the elderly and providing personalized service options to improve service satisfaction."

The application of technology and policy support were considered necessary conditions to ensure the potential success of the points-based elderly care model. Interviewee No.5 suggested "using modern technology to improve the convenience and

efficiency of the model, while also seeking policy support from the government and social organizations." Interviewee No.9 mentioned that "by leveraging the power of big data technology and cultivating professional talents, the science and effectiveness of the model can be enhanced." Interviewee No.10 suggested that "linking personal credit scores with points and expanding the application scope of credit-based pension through a comprehensive personal credit system is not only beneficial for social harmony and development, but also helps to increase public attention to personal credit records."

In summary, by strengthening publicity and education, optimizing the points-based mechanism, paying attention to personalized needs, and utilizing technology and policy support, the attractiveness and sustainability of the points-based model could be effectively enhanced. The above suggestions provided comprehensive improvement directions from the perspectives of different interviewees.

4.8 Combination of the Results in Questionnaire and In-depth Interview

This section aimed to combine the results of the questionnaire survey and in-depth interviews to deeply analyze various aspects of the points-based elderly care service model and provide a basis for further improving the model. Through statistical analysis of the questionnaire data and in-depth interpretation of the interview content, more comprehensive understanding of the implementation, advantages, challenges and future development direction of the points-based model among different groups of people could be visualized.

For the relationship between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM), the standardized path coefficient value was $0.102>0$, $R^2=0.580$, and this path showed significance at the 0.01 level ($z=4.589$, $p=0.000<0.01$), consequently indicating that there was a significant positive covariance correlation between SEP and PSPMM. It agreed with the interview of interviewees No. 2 who said that "this point is really good! My income is not high, but I can earn some points by running errands for the elderly and then buy some services I need. It is really good."

For the relationship between social exchange of points (SEP) and the diffusion of innovations (DOI), the standardized path coefficient value was 0.789>0, R^2=0.622, and this path showed significance at the 0.01 level (z=21.943, p=0.000<0.01), which showed that SEP had a significant positive impact on DOI. It was correspondent to the interview of interviewees No. 7 who said that "this point exchange is definitely conducive to the spread of points. For example, someone who is good at chatting with the elderly can exchange points for the services they need, which will attract more people to join in, and the points will spread."

For the relationship between diffusion of innovations (DOI) and the potential success of points-based management mechanism (PSPMM), the standardized path coefficient value was 0.836>0, R^2=0.844, and this path showed significance at the 0.01 level (z=36.813, p=0.000<0.01), consequently indicating that DOI had a significant positive impact on PSPMM. It was correspondent to the interview of interviewees No. 10 who said that "the spread of points is very important to the points pension management mechanism. Everyone knows that points can bring benefits to themselves. After everyone helps each other, the points management mechanism will get better and better. This is the benefit brought by the spread of points."

The mediating variable of Diffusion of Innovations (DOI) played an important role in the relationship between Social Exchange of Points (SEP) and Potential Success of Management Mechanism (PSPMM), with an effect value of 0.769 and a positive direction. The direct effect was 0.119, which was also positive. The mediating effect accounts for 86.574% of the total effect, which showed that most of the impact of Social Exchange of Points (SEP) on Potential Success of Management Mechanism (PSPMM) was transmitted through the mediating variable, but there was still a part that had a direct effect. It was in line with the interview of interviewer No.5 said: "for points-based elderly care management mechanism to succeed, point's diffusion is indispensable. It spreads the benefits of point exchange and gets everyone to take action. Only through point diffusion can more people participate in the action of providing for the elderly, so that our mechanism can really play a role."

The questionnaire and interview results confirmed each other in many aspects. The high scores of interpersonal trust and reciprocal support of social exchange of points in the questionnaire were consistent with the importance of interpersonal trust and reciprocal support in the points-based system emphasized in the interview. Similarly, the high scores of relative advantages and compatibility of innovation diffusion in the questionnaire also echoed the description of the relative advantages and compatibility of the points-based service model in the interview.

For suggestions on the points-based service model, both the questionnaire and interview results emphasized the importance of strengthening publicity and education, optimizing the points-based management mechanism and paying attention to personalized needs. This indicated that when promoting and improving the points-based elderly care service model, we should focus on these aspects to improve the public's awareness and understanding of the model and enhance its attractiveness and sustainability.

The role of innovation diffusion in the elderly care points-based service model was reflected in both the questionnaire and interview results. The factors such as trialability and observability in the questionnaire were interrelated with the mediating role of innovation diffusion in the interview, indicating that innovation diffusion was of great significance for expanding the influence and acceptance of points-based elderly care services.

CHAPTER 5
RESEARCH CONCLUSION, DISCUSSION AND RECOMMENDATION

This chapter is divided into three parts.

5.1 Research Conclusion

5.1.1 Conclusion from Quantitative Research

5.1.2 Conclusion from Qualitative Research

5.2 Discussion

5.3 Recommendation

5.4 Research Limitations and Further Research

5.1 Research Conclusion

5.1.1 Conclusion from Quantitative Research

A total of 600 questionnaires were issued and distributed to low-income people, and 512 complete questionnaires were collected. SPSSAU was used to analyze the data.

5.1.1.1 Personal Information of Informants

This research conducted descriptive statistics on the gender, age, marital status, education level, province, resident identification, number of elder people, average monthly income, and insurance of low-income people. Most of contestants were women, aged 20-40, married, hold a high school degree or below, lived in the rural, had 1-2 elderly people over 60 years old in the family, average monthly income of 2,001-3,000 yuan. They hold medical, endowment and other insurance, while some have no insurance.

5.1.1.2 Distribution of Factors

1) Social Exchange of Points

Among four observed variables, interpersonal trust ($\overline{X}$=4.30, S.D=0.81) and reciprocal support (x = 4.26, S.D. = 0.80) got the highest average mean and S.D at the level of Strongly agree, followed by interpersonal interactions and perceived benefits at the level of agree.

2) Diffusion of Innovations

Among five observed variables, relative advantage ($\overline{X}$=4.17, S.D=0.83) and compatibility (x = 4.15, S.D. = 0.82) got the highest average mean and S.D at the level of agree, followed by low complexity, trialability and observability at the level of agree.

3) Potential Success of Points-based Management Mechanism

Among three observed variables, satisfaction ($\overline{X}$=4.25, S.D=0.81) got the highest average mean and S.D at the level of Strongly agree, followed by sustainability and effectiveness at the level of agree.

5.1.1.3 Reliability and Validity Analysis

For the reliability analysis, the reliability coefficient of social exchange of points (SEP) is 0.882, diffusion of innovations (DOI) is 0.930, potential success of points-based management mechanism (PSPMM) is 0.904, which are all greater than 0.8, indicating that the reliability quality of the research data is very high.

For the validity analysis, the KMO value of social exchange of points (SEP) is 0.903, diffusion of innovations (DOI) is 0.950, potential success of points-based management mechanism (PSPMM) is 0.942, which are all greater than 0.8, indicating that the research data is very suitable for extracting information, reflecting good validity.

5.1.1.4 Confirmatory Factor Analysis

Regarding the measurement relationship, the absolute values of the standardized load system are greater than 0.6 and show significance, which means that there is a good measurement relationship. The standard error of the residual estimate is positive and reaches the significance level ($p<0.05$). The standard errors are all positive and the p values are all less than 0.05, indicating that the parameters are significant.

1) Model Parameter Estimation of Social Exchange of Points (SEP)

For the structural validity, the $\chi 2/df$ =4.440, which is less than 5 and is acceptable; RMSEA=0.082<0.10; RMR=0.047<0.05; Most of other fitting indexes are all above 0.9 or near 0.9, indicating that the structural validity of the model is good and meets the research conditions.

For the convergent validity, the AVE values corresponding to the 4 factors are all greater than 0.5, and the CR values are all higher than 0.7, which means that the data of this analysis has good aggregation (convergence) validity.

For the discriminant validity, the AVE square root value of the four factors are all greater than the maximum absolute value of the correlation coefficient between factors, which means that they have good discriminant validity.

2) Model Parameter Estimation of Diffusion of Innovations (DOI)

For the structural validity, the $\chi 2/df$ =4.793, which is less than 5 and is acceptable; RMSEA=0.086<0.10; RMR=0.035<0.05; Most of other fitting indexes are all above 0.9 or near 0.9, indicating that the structural validity of the model is good and meets the research conditions.

For the convergent validity, the AVE values corresponding to the 5 factors are all greater than 0.5, and the CR values are all higher than 0.7, which means that the data of this analysis has good aggregation (convergence) validity.

For the discriminant validity, the AVE square root values of the five factors are all greater than the maximum absolute value of the correlation coefficient between factors, which means that they have good discriminant validity.

3) Model Parameter Estimation of Potential Success of Points-based Management Mechanism (PSPMM)

For the structural validity, the $\chi 2/df$ =4.947, which is less than 5 and is acceptable; RMSEA=0.083<0.10; RMR=0.035<0.05; Most of other fitting indexes are all above 0.9, indicating that the structural validity of the model is good and meets the research conditions.

For the convergent validity, the AVE values corresponding to the 4 factors are all greater than 0.5, and the CR values are all higher than 0.7, which means that the data of this analysis has good aggregation (convergence) validity.

For the discriminant validity, the AVE square root value of the four factors are all greater than the maximum absolute value of the correlation coefficient between factors, which means that they have good discriminant validity.

5.1.1.5 Fitting and Evaluation of Structural Equation Modeling

Based on the regression coefficients and significance test of the model, most path coefficients are greater than 0.6, indicating that all measurement relationships are significant and statistically significant ($p<0.05$), which also indicates that the intrinsic quality of the model is good. The model fitting index, including $\chi 2/df=1.844<3$, RMSEA=0.041<0.10, RMR=0.029<0.05, GFI, CFI, and NNFI, TLI, IFI all meet the standards, GFI, NFI and AGFI are close to 0.9, and most common indicators meet the fitting standards, indicating that the overall model fitting validity is good. It is generally believed that the model fits well, and the model set according to the theory is adapted to the actual sample data.

5.1.2 Conclusion from Qualitative Research

In-depth interview with 4 low-income people, 2 caregivers, 2 instructors from university and 2 government officers would be conducted. The result can be concluded as follows:

The research on the points-based management mechanism has yielded valuable insights through the analysis of interview results. The findings clearly demonstrate the significance and potential of this innovative model in addressing the challenges of elderly care service.

Interpersonal interactions, interpersonal trust, perceived benefits and reciprocal support are all closely related to the social exchange of points. These factors not only enhance the quality of life for the elderly but also contribute to effective resource allocation and community building.

From the perspective of innovation diffusion, the points-based management mechanism shows several positive characteristics. Its relative advantage lies in providing personalized service choices, diversifying economic sources for elderly care, and improving service utilization and quality. The model's compatibility with culture, existing systems, and policies makes it easily accepted and integrated into different environments. Its low complexity ensures that it is accessible and understandable for the elderly. The trialability, observability, and instant feedback mechanisms further enhance its attraction and promote its adoption.

Sustainability, effectiveness, and satisfaction are crucial indicators for the potential success of the model. Long-term stable service supply, meeting the actual needs of the elderly, and ensuring user satisfaction are all essential elements for the model's success. Social exchange of points has a significant positive impact on the potential success of the model by stimulating participation, enhancing service flexibility, and promoting community cooperation. Additionally, there is a clear relationship between social exchange of points and diffusion of innovations, which helps spread this innovative model and increase its acceptance.

In summary, all the in-depth interview results confirmed the results of the questionnaire survey. In other words, Social Exchange of Points (SEP) has a positive impact on Potential Success of Points-based Management Mechanism (PSPMM), and Diffusion of Innovations (DOI) plays an accelerating mediating role between social exchange of points and potential success of points-based management mechanism.

5.2 Discussion

There are four hypotheses in this research specifying the relationship between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM), while diffusion of innovations (DOI) significantly mediates the relationship between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM). Based on the findings of this research, the detailed responses to the four hypotheses are as follows.

5.2.1 The Significance Effect Between SEP and PSPMM

In the covariance relationship (correlation relationship) between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM), the standardized path coefficient value is 0.102>0, R^2=0.580, and this path shows significance at the 0.01 level (z=4.589, p=0.000<0.01), consequently indicating that there is a significant positive covariance correlation between SEP and PSPMM. This is in line with the opinion of social exchange theory and correspondent to concept of interpersonal interactions.

This harmonizes with Sablina et al. (2018) who investigate the perceived benefits as the measurement of learning success and gain deeper understanding of learners' perceived benefits based on retrospective reflection, and Fareed et al. (2022) who found that trust, job satisfaction, and leadership significantly impacted project success, and trust and job satisfaction mediate the relationship between leadership and project success, which highlight the importance of trust and job satisfaction as mechanisms that translate TFL into the success of projects for organizations.

It agrees with the interview of interviewees No. 2 who said that “this point is really good! My income is not high, but I can earn some points by running errands for the elderly and then buy some services I need. It is really good.” and interviewees No. 4 who said that “this point exchange is so useful for people with low incomes like us! These points can allow me to exchange for some medical services when I need them. With this point management mechanism, I feel that my life is a little more secure, and I can also contribute to the elderly care, which is great.”

Therefore, the research showed that the social exchange of points (SEP) has a direct positive impact on the success of the points-based management mechanism (PSPMM).

5.2.2 The Significance Effect Between SEP and DOI

In the covariance relationship (correlation relationship) between social exchange of points (SEP) and the diffusion of innovations (DOI), the standardized path coefficient value is 0.789>0, R^2=0.622, and this path shows significance at the 0.01 level (z=21.943, p=0.000<0.01), which shows that SEP has a significant positive impact on DOI.

This harmonizes with diffusion of innovations theory and correspondent to concept of relative advantage. The theory of innovation diffusion explained that the dissemination of new ideas, technologies, or practices in social systems is a gradual process influenced by multiple factors (Everett M. Rogers, 1962) and is supported by relative advantage which is one of the important factors driving diffusion of innovation (Khalil, 2019). In addition, Ojha et al. (2022) recognizes the importance of innovation speed to service innovation, introduce the concept of capacity for social exchange (CSE) in buyer-supplier relationships, which reflects CSE facilitates knowledge sharing; knowledge sharing is positively related to innovation speed; and the relationship between CSE and innovation speed is fully mediated by knowledge sharing.

It is correspondent to the interview of interviewees No. 7 who said that “this point exchange is definitely conducive to the spread of points. For example, someone who is good at chatting with the elderly can exchange points for the services they need, which will attract more people to join in, and the points will spread.”” and interviewees No. 9 who said that “We have to admit that point exchange can indeed spread points. Those who may not be interested in points will be tempted to participate when they see others get benefits through exchange. In this way, the spread of points will become wider and wider, and the support for the elderly will be more powerful.”

Therefore, the research showed that the innovative social exchange of points (SEP) has a direct and positive impact on the diffusion of innovations (DOI) about points.

5.2.3 The Significance Effect Between DOI and PSPMM

In the covariance relationship (correlation relationship) between diffusion of innovations (DOI) and the potential success of points-based management mechanism (PSPMM), the standardized path coefficient value is 0.836>0, R^2=0.844, and this path shows significance at the 0.01 level (z=36.813, p=0.000<0.01), consequently indicating that DOI has a significant positive impact on PSPMM.

It is line with Rogers (1962) who mentioned that innovations with which the intended users can experiment on a limited basis are adopted and assimilated more easily, and the more an innovation is tried, the faster it rate of adoption which means trialability is positively connected with the rate of adoption, and Bradford & Florin (2003) who

draws upon Diffusion of Innovation (DOI) theory and Information Systems Success (IS) theory to develop and test a model of ERP implementation success, and results reveal that top management support and training are positively related to user satisfaction.

It is correspondent to the interview of interviewees No. 6 who said that “Hey, look! More people know about points, more people participate, this mechanism is more successful.” and interviewees No. 10 who said that “the spread of points is very important to the points pension management mechanism. Everyone knows that points can bring benefits to themselves. After everyone helps each other, the points management mechanism will get better and better. This is the benefit brought by the spread of points.”

Therefore, the research showed that the diffusion of innovations (DOI) about points has a direct and positive impact on the potential success of the points-based management mechanism (PSPMM).

5.2.4 The Mediating Effect on DOI

Based on the result of the mediation effect test, the total effect is 0.888, mediating effect is 0.769, direct effect is 0.119. The regression coefficient of SEP on PSPMM is 0.119, which is significant at the a=0.01 level. The mediation effect ab=0.769 is positive, and the direct effect c'= 0.119, also a positive number, and the two directions are the same, indicating that the mediation effect is a partial mediation effect, and the proportion of the mediation effect to the total effect is ab/c=0.769/0.888=86.574%. It shows that diffusion of innovations (DOI) significantly mediates the relationship between social exchange of points (SEP) and the potential success of the points-based management mechanism (PSPMM). The mediation analysis reveals that DOI accounts for a substantial portion of the effect of SEP on PSPMM. Specifically, the mediation effect value (0.769) and the proportion of the mediation effect to the total effect (86.574%) indicate that DOI significantly contributes to the overall impact of SEP on PSPMM.

It is correspondent to Motohashi et al. (2012) who found that trialability, household innovativeness and perceived risk were the determinants of user satisfaction with IPTV, and perceived ease-of-use, the mediating factor, Sung & Kim (2021) who found that change management positively impacts innovative behavior and organizational innovation, and innovative behavior mediates this relationship, and Jegerson et al. (2024)

who examined the relationships between behavioral intention (Bl) and perceived risk (PR), as well as the mediating effect of consumer innovation(CI) revealed that Cl mediates the relationship between PR and BI.

It is in line with the interview of interviewees No. 3 who said that: “this point diffusion is crucial. You see, with point exchange, everyone will actively participate, and point diffusion plays a bridging role in the middle. It lets more people know that point exchange can provide support for the elderly, thereby promoting the success of the entire point-based elderly care management mechanism.” and interviewer 5 said: “for points-based elderly care management mechanism to succeed, point’s diffusion is indispensable. It spreads the benefits of point exchange and gets everyone to take action. Only through point diffusion can more people participate in the action of providing for the elderly, so that our mechanism can really play a role.”

Therefore, the research showed that diffusion of innovations (DOI) significantly mediates the relationship between social exchange of points (SEP) and the potential success of points-based management mechanism (PSPMM).

5.2.5 Discussion of the Findings

5.2.5.1 Impact of Social Exchange (SEP to PSPMM)

1) Deep Role of Trust and Reciprocity

The results show that trust and reciprocity in social exchange play a vital role in the potential success of points-based management mechanism. This means that the degree of trust of low-income people in the points-based management mechanism and their expectations of the rewards they will get from participating in the point system are key factors in determining whether the mechanism can succeed. Trust here means that low-income people believe that interpersonal interactions and exchange are trustworthy, believe in the fairness and reliability of the points-based management mechanism, and believe that the time and energy they invest can be exchanged for actual benefits. Reciprocity is reflected in the willingness of low-income people to actively participate in the points-based management mechanism because they believe that the elderly care service they provide are rewarding and that this reward is fair.

This finding can be linked to the concept of the "trust-reciprocity cycle" in social exchange theory, that is, trust can enhance reciprocal behavior, and reciprocal behavior in turn enhances trust. Specifically, when low-income people believe that the points-based management mechanism is fair and beneficial, they are more willing to invest time and energy, which in turn enhances their trust and dependence on the points-based management mechanism, consequently forming a positive cycle. This trust-reciprocity cycle is of great significance to the continued potential success of the points-based management mechanism.

2) Perceived Benefits of Participants

In addition to trust and reciprocity, the perceived benefits of social exchange are also important factors affecting the potential success of the points-based management mechanism, and finally form the psychological identification of low-income people with the points-based management mechanism. **Psychological identification refers to the sense of belonging and value identification of low-income people with the points-based management mechanism.** When low-income people can perceive the benefits brought to them by the points-based management mechanism and can change their retirement life, they will psychologically identify with the concept of the points-based management mechanism and regard it as part of their social life. They are more likely to actively participate in and support this mechanism. The establishment of this psychological identification depends not only on the rationality of the system design, but also on the effectiveness of social publicity and community interaction. If low-income people feel that the operation of the points-based management mechanism is transparent, fair, and can meet their needs, they will be more willing to become active supporters of this system.

3) Dependence on Social Networks

Social exchange not only occurs between individuals and institutions, but also involves interactions and exchanges between social networks among low-income people. Studies have shown that interactions and support between low-income people also affect the potential success of the points-based management mechanism. If low-income people establish new social connections through participating in the points-based management

mechanism and gain emotional support and practical help from it, their dependence on and participation in the system will be significantly improved. This influence extended through social networks further strengthens the effect of the points-based management mechanism.

5.2.5.2 Role of Diffusion of Innovations (SEP to DOI, DOI to PSPMM)

Research shows that social exchange behavior can promote the spread of innovative ideas of points in the community, which is an important part of the diffusion of innovations theory. Social exchange of points (SEP) not only directly affects the potential success of the points-based management mechanism (PSPMM), but also indirectly promotes the success of the points-based management mechanism by affecting the diffusion of innovations (DOI) of points. This shows that among low-income groups, new ideas of points need to be widely accepted and adopted through effective communication paths and methods. In the specific implementation process, special attention should be paid to the key elements of innovative diffusion of points, such as the medium of information dissemination and the understanding and acceptance of innovation by participants. In the community, if some influential elderly people or community leaders have a positive attitude towards the points-based management mechanism and publicly support it, other low-income people and elderly people are more likely to follow their footsteps and participate in it.

The innovative diffusion of points not only involves the spread of innovative ideas of points, but also includes the adaptation and acceptance of innovation by low-income people. In this research, the positive impact of DOI on PSPMM shows that the adaptability and acceptance of the points-based management mechanism by low-income groups directly affect the potential success of the system. Adaptability involves how low-income people adjust their behaviors and habits to meet the requirements of the points-based management mechanism, while acceptance reflects their attitudes and expectations towards the points-based management mechanism. The research found that SEP affects PSPMM through DOI, and the success of innovation diffusion of points depends largely on the low complexity, trialability and observability of the points-based management mechanism. Low complexity means that the points-based management mechanism is easy

to understand and operate, which is particularly important for low-income groups. Complex system design may cause low-income people to give up using it because they feel confused or overwhelmed. Innovations with high trialability are more likely to be accepted by the target group because the elderly can gradually adapt to the new system through the trial stage and reduce their fear of the unknown. Innovations with high observability are more likely to be accepted and spread because people can intuitively see the benefits of participating in the system, which will stimulate their interest and encourage them to participate. For the points-based management mechanism, it is crucial to demonstrate the actual benefits and positive impacts it brings.

In general, the three factors of low complexity, trialability and observability work together to effectively promote the diffusion of innovations of the points among low-income groups. The interaction of these factors not only improves the acceptance and participation of the points-based management mechanism, but also provides a solid foundation for the potential success of the points-based management mechanism.

5.2.5.3 Discussion of the Mediating Effect

1) The Importance of Mediating Variables

In the relationship between SEP and PSPMM, the role of DOI as a mediating variable is very significant. The research shows that the effect of SEP indirectly affecting PSPMM through DOI accounts for 86.574% of the total effect. This strong mediating effect shows that innovation diffusion plays a vital role in the potential success of the points-based management mechanism. The impact of SEP on the points-based management mechanism is largely achieved by promoting innovative diffusion, which shows that when promoting the points-based management mechanism, how to effectively disseminate and promote new ideas is crucial. This mediating effect also reveals the focus that needs to be paid attention to in the process of innovative diffusion of the points-based management mechanism, not only to ensure the rationality and operability of the mechanism itself, but also to formulate effective communication strategies to ensure that new ideas can be understood, accepted, and implemented by the elderly people.

2) Comparison of Direct and Indirect Effects

Although the impact of SEP on PSPMM is mainly achieved through DOI, the research also shows that SEP also has a direct effect on PSPMM, with an effect value of 0.119. This direct effect may reflect the contribution of direct trust and reciprocity in social exchange theory to the potential success of the points-based management mechanism. Although this direct effect is smaller than the indirect effect, it shows that some factors in social exchange, such as trust and perceived benefits, can directly enhance the support and participation of low-income people in the points-based management mechanism. The importance of this direct effect lies in that the potential success of the points-based management mechanism not only depends on the diffusion of innovations, but also needs to enhance the success rate of the mechanism through direct social exchange channels such as building trust and enhancing perceived benefits, directly improving the trust and willingness of low-income people in the points-based management mechanism.

5.2.5.4 Practical Significance of the Research Results

The results of this research provide multiple insights for policy making. First, trust, reciprocity and psychological identification of perceived benefits in social exchange are key factors for the potential success of the points-based management mechanism. Therefore, when constructing and promoting the points-based management mechanism, it is necessary to focus on the cultivation and strengthening of these social exchange factors. Secondly, the role of innovative diffusion shows that when promoting the points-based management mechanism, we cannot rely solely on the design of the system itself, but must also pay attention to how to effectively spread these innovations to the target group.

Although this research reveals the impact of social exchange and innovative diffusion on the potential success of the points-based management mechanism, future research needs to further explore other possible influencing factors, such as policy environment, cultural differences, and technology application. The universality and long-term impact of the research results can also be verified through larger samples and longer-term longitudinal studies.

5.3 Recommendation

The second specific research objective of this dissertation is to develop practical recommendations on how to construct a sustainable management mechanism of points-based elderly care service. The following are some suggestions on how to build a sustainable points-based elderly care service management mechanism for reference.

5.3.1 Recommendation for Government

1) Strengthen the cultivation and promotion of social exchange factors

Establish a trust mechanism: In the process of promoting and implementing the points-based management mechanism, the government should focus on establishing a trust mechanism. Through open and transparent rules for obtaining and exchanging points, the low-income people will trust that their investment can be fairly rewarded. At the same time, strengthen the supervision of the operation of the mechanism to ensure its fairness and reliability, and enhance the trust of low-income people in the mechanism.

Promote mutual interaction: Design measures to encourage reciprocal behavior, such as setting up mutual assistance tasks or activities, so that participants can also obtain corresponding points rewards while providing elderly care services or helping others. This can promote mutual assistance and cooperation among low-income people, further strengthen the trust-reciprocity cycle, and improve their enthusiasm for participation and recognition of the points-based management mechanism.

Enhance the publicity of benefit perception: Strengthen the publicity and display of the benefits brought by the points-based management mechanism. Through case sharing, results display and other methods, low-income people can have a clearer understanding of how participating in the mechanism can improve their lives and enhance their psychological recognition and sense of belonging to the mechanism. For example, regularly hold a report meeting on the results of the points-based management mechanism to show the actual services or items that participants have exchanged for points, and the effect of these services on their quality of life.

2) Optimize innovation diffusion strategy to promote the development of points-based management mechanism

Targeted communication strategy: Develop targeted communication strategy based on the innovative characteristics of the points-based management mechanism. Considering the understanding and acceptance of innovation by information dissemination media and participants, various channels can be used for publicity in the community, such as community bulletin boards, community radio, social media groups, etc. At the same time, use easy-to-understand language and methods to explain the principles and advantages of the mechanism to improve the effectiveness of information dissemination.

Play the role of key figures: Pay attention to the role of influential elderly people or community leaders in the community, encourage them to actively participate in and support the points-based management mechanism, and publicly express their positive attitude towards the mechanism. Through their demonstration effect, drive other low-income people and the elderly to participate. For example, these key figures can be invited to participate in the pilot experience of the points-based management mechanism, and share their feelings and experiences to increase the willingness of other people to participate.

Optimize the ease of use of mechanism design: In the design and improvement of the points-based management mechanism, always emphasize low complexity, trialability and observability. Simplify the operation process, reduce the difficulty of understanding, and make it easy for low-income people to participate. Provide a certain trial period or pilot project to allow the elderly to gradually adapt to the mechanism in practice. At the same time, timely display the results of the mechanism and the benefits obtained by participants, enhance observability, and attract more people to participate and accept innovation. For example, design a simple and clear guide to points acquisition and redemption, present it to participants in the form of pictures and texts; regularly publish the points ranking list or outstanding participant cases, so that everyone can intuitively see the benefits of participating in the mechanism.

3) Formulate Clear Policies for the Points-based Management Mechanism

The points-based management mechanism requires government policy support. The government can guide the design and implementation of the points-based management mechanism by formulating and publishing a detailed policy framework,

including a detailed explanation of the basic concepts, goals, operating procedures, and evaluation criteria of the points-based management mechanism, clarifying the way to obtain points, the rules for using points, and the management and supervision mechanism of points. By clarifying these details, the uncertainty in the implementation of the system can be effectively reduced, and the public's recognition of the policy and willingness to participate can be improved. The government regularly publishes progress reports on the system operation of the points-based management mechanism, openly and transparently displaying the operating results and improvement measures of the points-based management mechanism. This kind of information disclosure helps to enhance the public's sense of trust and ensure the effective implementation of the policy.

4) Provide Appropriate Financial Support and Resource Guarantees

The government's financial support is an important guarantee for the smooth operation of the points-based management mechanism. Although the point is a virtual currency and are distributed to the elderly free of charge, the infrastructure construction of the points-based management mechanism, such as the information platform and management system, requires financial support to ensure the long-term stable operation of the system. Therefore, the government needs to provide sufficient financial subsidies for the operation of the points-based management mechanism, especially in the initial stage, to reduce the operating costs of the points-based management mechanism and ensure its smooth promotion. In order to prevent resource imbalances between regions and groups, the government must also formulate relevant policies to ensure the fair distribution of points. For example, through special funds or subsidies, support the construction of the points-based management mechanism in relatively backward economic areas to ensure that the elderly in all regions can fairly enjoy the benefits brought by the points-based elderly care service.

5) Establish a Cross Regional Coordinated Development Mechanism Based on Social Exchange of Points

Under the current points-based management mechanism, differences exist in economic development levels and the distribution of elderly care resources among different regions. Establishing a cross regional coordinated development mechanism

based on social exchange of points, which allows the elderly to use their points across different regions, can greatly improve the allocation efficiency of elderly care resources. Some economically developed regions may have more high quality medical and elderly care service resources. Elderly people in less developed regions, if they have accumulated a certain amount of points, can use these points to enjoy specific elderly care services in developed regions. Meanwhile, this mechanism can promote the coordinated development among regions in terms of the elderly care industry, service standards, and personnel training. The government can achieve this mechanism by establishing a unified national points platform and coordinating policy differences among different regions. This will not only help solve the problem of imbalance in elderly care services among regions but also improve the overall elderly care service level in China, thus promoting regional coordinated development at the macro level.

5.3.2 Recommendation for Organizations

1) Collaborate with government departments

Actively communicate and coordinate with government departments to strive for policy support and resource investment in terms of financial subsidies, tax incentives, and venue provision to provide guarantees for the operation of the points-based management mechanism and the development of elderly care services. At the same time, actively participate in the formulation and implementation of relevant government policies to provide suggestions and references for improving the elderly care service policy system. Cooperate with government departments to carry out elderly care service planning and layout, incorporate the points-based management mechanism into the construction of the local elderly care service system, and achieve organic integration and coordinated development with other elderly care service models. Jointly promote the construction of elderly care service facilities, talent training, information management, and other aspects to improve the overall level of elderly care service.

2) Integrate Resources from all Sectors of Society and Jointly Support Elderly Care Service

Social organizations should give full play to their own advantages, integrate resources from all sectors of society, and jointly provide support for elderly care service.

Cooperate with enterprises to carry out public welfare donations, volunteer services and other activities to raise funds and materials for the points-based management mechanism. At the same time, attract enterprises to participate in the development of the elderly care service industry and jointly explore innovative elderly care service models and products. Join forces with other social organizations, such as charities and volunteer organizations, to jointly carry out elderly care service projects and activities. We can expand the coverage and influence of elderly care services by cooperating to hold public welfare activities for elderly care services and carry out joint relief, and provide more help and support for low-income people.

3) Develop Personalized Customized Packages for the Elderly People

Based on big data analysis of multi-dimensional information such as the living habits, health conditions, economic capabilities, and personal preferences of the elderly, organizations can develop personalized customized packages for the points-based elderly care service. For elderly people who like traveling and are in relatively good health, packages that include travel-related services, such as travel insurance, scenic area ticket exchanges, and characteristic elderly care service at tourist destinations and basic health care service can be launched; for elderly people with chronic diseases, packages that include regular medical examinations, medicine exchanges, and rehabilitation care services can be provided. Such personalized customized packages can better meet the diverse needs of the elderly, improve their satisfaction and participation in the points-based elderly care service, and improve resource utilization efficiency.

5.3.3 Recommendation for Low-income People

1) Actively Participate in the Social Exchange of Points

Low-income people should actively participate in elderly care service activities under the points-based management mechanism and establish good interpersonal relationships with other participants. In the interaction with others, show sincerity and trustworthiness to enhance mutual trust. After receiving help from others, express gratitude in time and return the other party when appropriate to form a good reciprocal cycle. Understand the value of various elderly care services and point exchange rules in the points-based model, clarify how they can obtain points and how to exchange points for

services that best meet their needs. Compare the points required for different service projects and point acquisition ability, and formulate a reasonable exchange plan.

2) Enhance Service Awareness, Expand Social Networks, and Make Rational Use of Elderly Care Service Resources

Low-income people should realize the dominant position in elderly care services and actively participate in the planning and implementation of elderly care services. Actively learn elderly care service knowledge and skills to improve self-care ability. At the same time, contribute to the mutual assistance service under the points-based management mechanism. Actively participate in social activities organized by the community, meet more like-minded friends, and expand your social circle. During the activities, take the initiative to communicate and interact with others, share life experiences and elderly care experiences, and jointly explore how to better use the points-based management mechanism to improve the quality of elderly life.

3) Establish Mutual Assistance Groups Among Low-income People

Among low-income people, mutual assistance groups for the points-based elderly care service can be established. Low-income people can earn points according to their skills and specialties. The people who are good at handicrafts can teach other people handicrafts, and those who are good at cooking can provide meals for the elderly with limited mobility in the community. These activities can all earn points. These points can be used to exchange for services provided by other community members. This kind of mutual assistance group can strengthen the connection and interaction among the elderly in the community, reduce their dependence on external resources.

5.4 Research Limitations and Further Research

5.4.1 Limitations of Sample Selection

The research subjects of this research are low-income people, and the samples are selected from relatively undeveloped areas. This sample selection may limit the external validity of the research results because there are significant differences between different regions in terms of economy, social culture, policy support. In economically developed

areas, the elderly may be more likely to accept and participate in the points-based management mechanism, while in economically underdeveloped areas, due to differences in education level, economic income, and personal environment, low-income people may have lower awareness and participation in the points-based management mechanism. Therefore, the research results may not fully reflect the situation of the management mechanism of elderly care service in China. In addition, the sample collection is mainly concentrated in the specific age group of 30-50 years old and the elderly with a monthly income level of less than 3,000 yuan, which may lead to the results not fully representing the elderly groups with different incomes, educational backgrounds or health conditions. Because the proportion of low-income elderly people in the sample is relatively high, and the proportion of low-income people with an income below 2,000 yuan is more than 60%, the research results fail to fully consider the needs and challenges of other age groups and income groups in the points-based management mechanism, consequently affecting the comprehensiveness of policy recommendations.

5.4.2 Limitations of the Theoretical Model

In this research, social exchange theory is used to explain the operation and impact of the points-based management mechanism. Through the social exchange of points, interpersonal interactions and interpersonal trust among low-income people can be promoted. In the process of social exchange of points, low-income people can perceive the benefits of points and the positive impact of points, which can further promote mutual support among low-income groups. Some innovative features of the points-based management mechanism benefit a wider range of low-income elderly groups under the mediation of the diffusion of innovation, thereby promoting the potential success of the points-based management mechanism. Although social exchange theory can explain many phenomena in interpersonal interactions, it may not fully cover all the complex factors in the management of elderly care service. The points-based management mechanism involves not only exchanges between individuals and service providers or caregivers, but also the influence of a wider social structure, policy environment, and cultural background. Social exchange theory may have an insufficient understanding of these complex backgrounds, consequently limiting the explanatory power of the research results. For example, social exchange theory may focus too much on exchange behavior at the

individual level and ignore the impact of institutional constraints and incentive mechanisms on individual behavior. The points-based management mechanism is not only a product of individual behavior, but also a result of policy design and social culture. Therefore, relying solely on social exchange theory may lead to neglect of some important influencing factors, such as policy sustainability and social equity.

5.4.3 Recommendation for Further Research

1) Conduct a long-term follow-up survey to research the development changes and impacts of this model at different stages by extending the research period

Time and resource limitations are important factors that affect the depth of this research. Due to limited research time, it is impossible to conduct long-term follow-up surveys, and the long-term effects of the points-based management mechanism cannot be fully observed. Short-term studies may only reveal the effects of the initial implementation of the mechanism, but fail to reflect its development changes and long-term impacts at different stages. In addition, the researcher's resource limitations will also lead to a small scale and insufficient coverage of the qualitative research sample, and fail to conduct in-depth analysis of some key variables. It is difficult to explore in depth the complex interpersonal relationships and social factors in elderly care service. These limitations may affect the accuracy and comprehensiveness of the research conclusions. It is recommended to make up for these deficiencies in future research by extending the research period.

2) Incorporate more Influencing Factors

In addition to the existing social exchange and innovation diffusion factors, further research should include more factors that may affect the point system management mechanism, such as policy environment, market factors, technological development, social opinion, etc. In terms of policy environment, study the support or restriction of the adjustment of government pension policies on the point system management mechanism; in terms of market factors, analyze how changes in supply and demand and price

fluctuations in the pension service market affect the value and feasibility of point redemption; in terms of technological development, explore the application of information technology (such as big data, artificial intelligence, the Internet of Things, etc.) in the point system management mechanism, and how to improve service efficiency and quality; in terms of social opinion, study the impact of media reports, public perception and evaluation on the promotion of the mechanism and the behavior of participants.

3) Cooperate with Elderly Care Service Institutions to Carry out Pilot Projects

Established a close cooperative relationship with the elderly care service institutions to jointly carry out pilot projects on the points-based management mechanism. The researchers were deeply involved in the planning, implementation and evaluation process of the pilot projects, directly applied the research results to practice, and obtained feedback and data from practice to further optimize the research. The elderly care service institutions provided venues, personnel and service resources for the pilot projects, and cooperated with the researchers to innovate and improve the mechanism. For example, in a certain elderly care service institution, a new point redemption service project was implemented. The researchers and the staff of the institution jointly formulated the project plan, designed the point rules and service processes, and closely observed the reactions and effects of the participants during the implementation process, and adjusted and optimized the project content in a timely manner to improve the feasibility and effectiveness of the project.

4) Employing the SOR Approach in Promoting the Points-based Management Mechanism from Potential Success to Success

Stimulus-Organism-Response (SOR) is a theoretical model widely used in many fields such as consumer behavior and psychology. In the further research, the SOR theory will be used to promote the success of this management mechanism.

- **Stimulus**

In the points-based elderly care service model, stimulation can be varied. Publicity and promotion activities are an external stimulus. When caregivers introduce the points-

based elderly care service model to the elderly, show that points can be obtained by participating in community activities, and points can be exchanged for various elderly care services (such as medical care services, life care services, cultural and entertainment activities), this is an information stimulus. In addition, the display of the points-based elderly care service itself is also a stimulus. A display area is set up in the community service center, displaying items and service introductions that can be exchanged for points to attract the attention of the elderly. These stimuli are intended to arouse the interest of the elderly and make them start to pay attention to the points-based elderly care model. Factors such as the intensity, frequency and novelty of the stimulus will affect the elderly's perception of the points-based elderly care service. Frequent community publicity activities (such as weekly community radio broadcasts introducing the points-based elderly care service) and attractive incentives (such as giving a certain number of points for the first registration of the points system) can increase the attention of the elderly to the points and encourage them to learn more about the model.

- **Organism (here mainly refers to the elderly)**

The individual characteristics of the elderly play a key role in this link. These characteristics include age, health status, education level, economic status, etc. For example, elderly people with better health may be more interested in cultural and entertainment points-based services, while elderly people with poorer health may pay more attention to health care points-based services. Elderly people with higher education levels may find it easier to understand the rules and operating procedures of the points-based elderly care model, while elderly people with lower education levels may need more guidance and help. Economic status will also affect the attitudes of the elderly. Elderly people with poorer economic conditions may be more sensitive to the fact that points can relieve economic pressure. In addition, psychological factors such as cognition, attitude and motivation are also important. The degree of awareness of the elderly about the points-based elderly care service determines whether they are willing to participate. If they have a clear understanding of the value of points, how to obtain them and the rules for redemption, they are more likely to accept this model. In terms of attitude, some elderly people may be open and positive about new things, while others may be more conservative. In terms of motivation, some elderly people participate in the points-based

elderly care service in order to obtain better elderly care services, while others may participate in the points-based elderly care service in order to help others.

- **Response**

The response of the elderly is mainly reflected in behavior. Positive responses include registering a points account, participating in points-based elderly care activities (such as participating in community volunteer services, health lectures to obtain points), and using points to redeem services. For example, after learning about the points-based elderly care model, an elderly person actively participated in the garbage sorting publicity activities organized by the community to obtain points, and then used the points to redeem a home medical examination service. This is a complete positive behavioral response. The response of the elderly will also generate feedback, affecting subsequent stimuli and their own behavior. If they have a good experience after using the points-based elderly care service, they will enhance their trust and participation in the points-based elderly care model, and may be more active in obtaining points and redeeming other services. On the contrary, if the experience is not good, such as a complicated redemption process or poor service quality, they may reduce participation and even spread negative comments to other elderly people, thereby affecting the promotion of the points-based elderly care service model.

In order to transition the points-based management mechanism from potential success to success, these aspects will be further explored in future research.

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APPENDIX A

QUESTIONNAIRE

THE MANAGEMENT MECHANISM OF POINT-BASED ELDERLY CARE SERVICE FOR LOW-INCOME PEOPLE IN CHINA: AN INNOVATIVE & SOCIAL EXCHANGE APPROACH

Researcher: Mr. Tan Youmo

Curriculum: Doctor of Philosophy in Management, Siam University

Instruction: The purpose of this study is to understand your opinions and attitudes towards the model of point-based elderly care service. Your information will be kept secret. Should you have any questions or suggestions, please contact me at the following addresses and numbers: *Siam university 38 Phetkasem Road, Phasicharoen, Bangkok, 10160 Thailand; Tel 662-867-8000 or Guangxi Science and Technology Normal University, Junwu Road, Liubei District, Liuzhou City, Guangxi, China. Tel: 15278871801*

Background: Points-based elderly care service is a new model for the elderly who is over 60 years old. Point or digital virtual currency managed by special application on cellphone can be collected to get elderly care service without expiration date.

The elderly over 60 can be care-givers or care-receivers while the younger can only be care-givers. The younger cannot use the points to get the services until they turn 60. The care-givers will provide service and get 1 point per hour while the care-receivers will need to pay 1 point per hour to receive services.

This questionnaire has 7 pages and is divided into 5 parts as follows:

Part I: Personal Information

Part II: Social Exchange of Points (SEP-SMMP)

Part III: Diffusion of Innovations (SEP-DOI)

Part IV: Success in Management Mechanism of Points (DOI-SMMP)

Part V: Recommendation

Part I: Personal Information

Please mark on the appropriate box for the following questions.

1. What is your gender?

☐ 1) Male ☐ 2) Female ☐ 3) LGBTQ+

2. What is your age in year? (years old)

☐ 1) 21-30 ☐ 2) 31-40

☐ 3) 41-50 ☐ 4) above 51

3. What is your marital status?

☐ 1) Single ☐ 2) Married

☐ 3) Divorced ☐ 4) Separated

4. What is your education level?

☐ 1) Under Bachelor Degree

☐ 2) Bachelor Degree or even

☐ 3) Postgraduate

5. Which province do you work in?

☐ 1) Gansu ☐ 2) Guizhou ☐ 3) Hainan

☐ 4) Henan ☐ 5) Hebei ☐ 6) Heilongjiang

6. What is your resident identification?

☐ 1) Urban ☐ 2) Rural

7. How many elderly people are over 60 years old in your family?

☐ 1) 0 ☐ 2) 1-2 ☐ 3) 3 or more

8. What is the average monthly income of your family (Yuan)?

☐ 1) below 1,000 ☐ 2) 1,001 - 2,000 ☐ 3) 2,001 - 3,000

9. What kind of insurance do you have?

☐ 1) Endowment Insurance

☐ 2) Medical Insurance

☐ 3) No Insurance

☐ 4) Others.....(Please specify)

Part II: Social Exchange of Points (SEP-SMMP)

Rate the following questions by placing a check in the box. Do not leave each item unanswered.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

	Level of views on points				
	1	2	3	4	5
Interpersonal Interactions					
1. When you meet elderly people, you always show them your respect and concern for their life.					
2. You are willing to support elderly people when they need help.					
3. You always talk with the elderly to relieve their boredom when you are free.					
4. You are willing to explain to others of how to get the points.					
5. You always feel distressed or worried when seeing elderly people who need care.					
Interpersonal Trust					
6. You will always do what you promise to the elderly.					
7. The elderly will trust you more when you provide quality services to them.					
8. Trust can be built when people are honest and reliable.					
9. The more reliable information you share, the more trust you gain.					
10. Trust will strengthen bond between people.					

	Level of views on points				
	1	2	3	4	5
Perceived Benefits					
11. The points can make you have more chances to buy the services you need.					
12. You fully understand that you can only accumulate points when you provide services to the elderly.					
13. You can use points to purchase care service, and it will help you to reduce your pension burden.					
14. People around you will appreciate you when you give services to the elderly.					
15. The points that can be used as the pension funds will provide you a reliable support.					
Reciprocal Support					
16. You are willing to provide help and support to the elderly when they are in need.					
17. You expect to get something in return from the elderly such as a smile when you help them.					
18. You help people, and they will help you when you are in trouble.					
19. The more you get help from the people around you, the more you want to return to them.					
20. Mutual trust and support will make your life better.					

Part III: Diffusion of Innovations (SEP-DOI)

Rate the following questions by placing a check in the box. Do not leave each item unanswered.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

	Level of views on points				
	1	2	3	4	5
Relative Advantage					
21. Distributing the free points to the elderly is a good idea.					

	Level of views on points				
	1	2	3	4	5
22. Care services you receive can make you realize the support from society.					
23. It is fair to get points by helping the elderly and save the points for your future elderly life.					
24. It will be useful when you can use points to buy the elderly care service without spending money.					
25. It is convenient to be able to check your accumulated points via the cellphone.					
Compatibility					
26. The model can provide an additional option to the existing pension model.					
27. Points can add new elements and opportunities to the existing pension security.					
28. Points are suitable for your current economic and family situation to a certain extent.					
29. Points are indeed a solution to the elderly problems when funds are insufficient.					
30. Points can alleviate some of the difficulties and problems of the current aging population.					
Low Complexity					
31. The model of points-based elderly care service is easy to understand.					
32. The operation process of this model is simple and easy to understand.					
33. The model does not require too much skills and knowledge to master quickly.					
34. It is very convenient to use and accumulate the point via application by scanning method.					
35. You can easily educate others how to use and accumulate points.					
Trialability					
36. Trying the model before using it will give you the positive impact on the life of the elderly.					
37. You are willing to participate and experience the model to feel its actual					

	Level of views on points				
	1	2	3	4	5
effect.					
38. Directly participating in the new model can personally test whether it is suitable for your pension needs.					
39. The model can help you to fulfill something you do not have for your future.					
40. The model provides you with a platform that can be tested and give you different choice.					
Observability					
41. Points can improve the quality of your elderly life.					
42. Points can help you to save your cost of living.					
43. Point can enhance the current insurance model to make you gain better life.					
44. The more people to join the program, the more success of the model.					
45. You are willing to introduce the benefits of points to others.					

Part IV: Potential Success of Points-based Management Mechanism (DOI-PSPMM

Rate the following questions by placing a check in the box. Do not leave each item unanswered.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

	Level of views on points				
	1	2	3	4	5
Sustainability					
46. The points as a digital virtual currency can be used to purchase elderly care service, and will become a stable source of pension funds.					
47. The model has a reliable management mechanism and will continuously provide support for the elderly.					
48. The model can be supported by government policies, and will continuously improve the pension security for the elderly.					
49. The model can meet many people's needs, and will be sustainable.					

	Level of views on points				
	1	2	3	4	5
50. The model can really improve your pension security capabilities, and is worth promoting.					
Effectiveness					
51. When the model can be accepted by people, it will effectively solve the problem of pension funds.					
52. When the model is promoted, it will provide practical support to the elderly.					
53. The model has a financial support, and it can effectively guarantee the quality of your elderly life.					
54. You can use point to exchange for services, and it will bring positive changes to your life.					
55. More people and organizations join the model, the services operation will be more effective.					
Satisfaction					
56. You will be happy when you can service the elderly and earn the points at the same time.					
57. You feel very fulfilled when the elderly appreciate your services.					
58. You feel very satisfied when you use the points to exchange for the care services and save your medical expense.					
59. Accumulating points without expired date to exchange for the care services will satisfy you.					
60. The model of points-based elderly care service is stable and reliable, and it will satisfy you.					

Part V: Recommendation

……

……

……

THANK YOU FOR YOUR TIME AND PARTICIPATION.

APPENDIX B

QUESTIONNAIRE (Chinese Version)

调查问卷

中国低收入者的积分养老服务管理机制：一种创新的社会交换方式

研究者：谭有模先生

课　程：暹罗大学管理哲学博士

说　明：本次调查的目的是了解您对积分养老服务模式的看法和态度。您的信息将被保密。如果您有任何问题或建议，请通过以下地址和电话联系你：Siam University 38 Phetkasem Road, Phasicharoen,Bangkok,10160Thailand；电话 662-867-8000 或中国广西柳州市柳北区军武路广西科技师范大学。电话：15278871801

背　景：积分养老服务是针对 60 岁以上老年人的一种新模式。可以通过手机专用应用程序管理的积分或数字虚拟货币来获取无有效期的养老服务。每一位 60 岁以上的老年人都可以获得一定数量的免费的基础积分，而特殊人群还可以额外获得一定数量的免费的特殊积分。60 岁以上的老年人可以是照顾者或被照顾者，而年轻人只能是照顾者。年轻人在年满 60 岁之前不能使用积分获得服务。护理人员提供服务并每小时获得 1 积分，而受护理人员则需要每小时支付 1 积分才能获得服务。

本调查问卷共 6 页，分为以下 5 个部分：

第一部分：个人信息

第二部分：积分的社会交换 (SEP-PSPMM)

第三部分：创新扩散 (SEP-DOI)

第四部分：积分管理机制的成功（DOI-PSPMM）

第五部分：建议

第一部分：个人信息

请从下面各题的选项中选择最合适的一个答案。

1. 您的性别是：

☐ 1)男　　☐ 2) 女

2. 您的年龄是：

☐ 1)21-30 岁　　☐ 2)31-40 岁

☐ 3)41-50 岁　　☐ 4)51 岁以上

3. 您的婚姻状况：

☐ 1) 单身　　☐ 2) 已婚

☐ 3）离婚　　☐ 4）分居

4. 您的教育水平：

☐ 1) 高中及以下　　☐ 2）大学　　☐ 3) 研究生及以上

5.你在哪个省工作？

☐ 1）甘肃　　☐ 2）贵州　　☐ 3）海南

☐ 4）河南　　☐ 5）河北　　☐ 6）黑龙江

6. 您的户口所在地：

☐ 1) 城镇　　☐ 2) 农村

7. 您家里年满 60 岁以上的老人数量：

☐ 1）0 人　　☐ 2) 1-2 人　　☐ 3) 3 人及以上

8. 您家里人均月收入是：（家庭月总收入÷家庭人口总数=人均月收入）

☐ 1) 低于 1000 元　　☐ 2) 1001 -2000 元　　☐ 3) 2001 -3000 元

9. 您购买的保险有：

☐ 1)养老保险　　☐ 2) 医疗保险

☐ 3) 没有保险　　☐ 4) 其他_____(请写下)

第二部分：积分的社会交换（SEP-PSPMM）

通过在方框中打勾来对以下问题进行评分。 请对每个问题进行回答，不要遗漏。

强烈不同意 有点不同意 中立 有点同意 强烈同意

1 2 3 4 5

	关于积分的态度				
	1	2	3	4	5
人际交往					
1. 当你见到熟悉的老人时，你总会向他们打招呼问候。					
2. 当老年人需要帮助时，你愿意支持他们。					
3. 当你有空的时候，你总会陪老人聊天解闷。					
4. 你会和别人交流关于养老方面的事情。					
5. 面对需要照顾的老人，你总会有感同身受的心疼难过和担心					
人际信任					
6. 答应了老人的事情，你一定会说到做到。					
7. 当你为老人提供了优质服务，他们会更信任你。					
8. 人们诚实可靠，就可以建立信任的关系。					
9. 分享的可靠的信息越多，你们之间的信任就越多。					
10. 信任会进一步促进人与人之间的联系。					
可感知的好处					
11. 积分可以让老年人有更多机会购买他们需要的服务。					
12. 你完全明白你只有为老人提供服务才能累积积分。					
13. 当你能用积分购买养老服务，将有助于减轻你的养老负担。					
14. 当你为老人提供服务，你认为周围的人会表示赞赏。					
15. 当养老金用的积分会给你提供可靠的支持。					
互惠支持					
16. 当老人有需要，你愿意为他们提供帮助和支持。					

	关于积分的态度				
	1	2	3	4	5
17. 当你帮助老人时，你总会得到一些回报比如微笑等。					
18. 当你经常帮助别人，在你遇到困难时他们也会帮助你。					
19. 得到社会的帮助越多，你就想回报社会更多。					
20. 互相信任和支持会让你的生活变得更美好。					

第三部分：创新扩散（SEP-DOI）

通过在方框中打勾来对以下问题进行评分。 请对每个问题进行回答，不要遗漏。

强烈不同意 1　有点不同意 2　中立 3　有点同意 4　强烈同意 5

	关于积分的态度				
	1	2	3	4	5
相对优势					
21. 把积分免费发放给给老人，你认为这个创意很好。					
22. 你受到的关怀和服务可以让你体会到来自社会的支持。					
23. 通过帮助老人获得积分是公平的，并为你以后的老年生活节省成本。					
24. 你非常赞成不用花钱就能用积分从社会购买自己需要的养老服务，那会很有用。					
25. 通过手机查看你的积分数量的确是很方便的。					
兼容性					
26. 积分模式可以给现有的养老模式提供一个额外的选择。					
27. 积分模式能够为现有的养老保障体系增加新的元素和机会。					
28. 积分在一定程度上适合你目前的经济和家庭状况。					

	关于积分的态度				
	1	2	3	4	5
29. 在养老资金不足的情况下，积分是解决养老问题的一个办法					
30. 积分可以缓解当前人口老龄化的一些困境和问题。					
低难度性					
31. 积分模式很容易理解。					
32. 积分模式的操作流程简单易懂。					
33. 积分模式不需要太多的技能和知识就能快速掌握。					
34. 通过手机扫码方式存取和支付积分的确很方便。					
35. 轻松地教会别人如何存取和支付积分。					
可试用性					
36. 在使用积分模式之前先尝试一下，会对老人的生活产生积极的影响。					
37. 你愿意亲自参与和体验积分模式，感受它的实际效果。					
38. 直接参与新的养老模式，可以亲测它是否适合你的养老需求					
39. 通过参与积分模式，尝试为自己的养老金储备提供新的途径					
40. 积分模式给你提供可尝试的平台，并给你不一样的养老选择					
可观察性					
41. 积分可以提高你的生活质量。					
42. 积分可以帮助你节省养老费用。					
43. 积分可以增强现有的保险模式，使你获得更好的生活。					
44. 加入积分模式的人越多，这个模式就会越成功。					

	关于积分的态度				
	1	2	3	4	5
45. 你愿意向别人介绍养老积分的好处。					

第四部分：积分管理机制的成功（DOI-PSPMM）

通过在方框中打勾来对以下问题进行评分。 请对每个问题进行回答，不要遗漏。

强烈不同意 1　有点不同意 2　中立 3　有点同意 4　强烈同意 5

	关于积分的态度				
	1	2	3	4	5
可持续性					
46. 积分作为用来购买养老服务的数字虚拟货币，将成为养老资金的稳定来源。					
47. 如果积分模式有可靠的管理机制，就能够维持为养老提供支持。					
48. 积分模式能够得到政府政策的支持，就可以不断提高老年人的养老保障。					
49. 这个模式能够满足很多人的需求，它就会是可持续的。					
50. 积分模式确实能够提高老年人的养老保障能力，就一定值得推广					
有效性					
51. 当积分模式能够被人们接受，就能有效解决养老资金问题。					
52. 当该积分得到推广，将为老年人提供切实有效的支持。					
53. 积分提供的资金支持能有效保障老年人的生活质量。					
54. 当你能用积分换取养老服务，就可以给你的生活带来积极的变化					
55. 当更多的人和组织参与该养老模式，积分养老服务的效					

	关于积分的态度				
	1	2	3	4	5
果将更加有效。					
满意度					
56. 当你给老人提供服务的同时又获得积分，你会感到很高兴。					
57. 当老人感谢你给他们提供服务时，你会感到很有成就感。					
58. 当你使用积分兑换护理服务并节省了医疗费用，你会感到很满意					
59. 积累可以换取养老服务的无期限的积分会让你感到满意。					
60. 积分模式是稳定可靠的话，一定会让你感到满意。					

第五部分：建议

……

……

……

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……

……

感谢您的参与！

APPENDIX C

INTERVIEW FORM (English Version)

THE MANAGEMENT MECHANISM OF POINT-BASED ELDERLY CARE SERVICE FOR LOW-INCOME PEOPLE IN CHINA: AN INNOVATIVE & SOCIAL EXCHANGE APPROACH

Researcher Mr. Tan Youmo

Curriculum Doctor of Philosophy in Management, Siam University

Instruction:

1. Interviewees are low-income people, caregivers, instructors from university and government officers.
2. All participants will be requested to sign the consent form.
3. The purpose and nature of the research will be explained to participants prior to do the interview and participants has opportunity to ask questions about the research.
4. All participants rights for the interview will be listed in the consent form.
5. Your information will be kept secret. Without your permission, your identity, any related persons, and organization names will remain anonymous.
6. 16 questions will be asked to collect information from participants
7. The interview will be most benefit to the research. Therefore, participation of all participants will be highly appreciated.
8. The interview will be **in face-to-face interview**.

Consent Form

I, …… voluntarily agree to participate in this research study.

- I understand that all information I provide for this research will be treated confidentially.
- I agree to my interview being audio-recorded.
- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.
- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.
- I understand that participation involves **the model of points-based elderly care service in China**.
- I have had the purpose and nature of this research explained to me in writing and I have had the opportunity to ask questions about this research.
- I understand that I will not benefit directly from participating in this research.
- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.
- I understand that disguised extracts from my interview may be quoted in dissertation, conference presentation, and published papers.
- I understand that if I inform the researcher that myself or someone else is at risk of harm, they may have to report this to the relevant authorities - they will discuss this with me first but may be required to report with or without my permission.
- I understand that signed consent forms and original audio recordings will be retained in Siam University, Thailand by the researcher until the exam board confirms the results of the researcher's dissertation.
- I understand that a transcript of my interview in which all identifying information has been removed will be retained for two years from the date of the exam board.

- I understand that under freedom of information legalization I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Researcher name: Mr. Tan Youmo

Degrees: Doctor of Philosophy in Management

Address: Siam university 38 Petkasem Road, Phasicharoen, Bangkok, 10160 Thailand; Tel 02-867-8000 or *Guangxi Science and Technology Normal University, Junwu Road, Liubei District, Liuzhou City, Guangxi, China. Tel: 15278871801*

Signature of research participant

---------- ----------

Signature of participant Date

Signature of researcher

I believe the participant is giving informed consent to participate in this research.

Tan Youmo

Signature of researcher Date

Date of interview:_____ Time: _____

Part I: Personal Information

1. Participant name _____

2. Contact address _____

3. Participant information

3.1 What is your gender?

☐ 1) Male ☐ 2) Female

3.2 What is your age in year? (years old)

☐ 1) 21-30 ☐ 2) 31-40

☐ 3) 41-50 ☐ 4) above 51

3.3 What is your marital status?

☐ 1) Single ☐ 2) Married

☐ 3) Divorced ☐ 4) Separated

3.4 What is your education level?

☐ 1) Under Bachelor Degree

☐ 2) Bachelor Degree or even

☐ 3) Postgraduate

3.5 What is your resident identification?

☐ 1) Urban ☐ 2) Rural

3.6 How many elderly people are over 60 years old in your family?

☐ 1) 0 ☐ 2) 1-2 ☐ 3) 3 or more

3.7 What is the average monthly income of your family (Yuan)?

☐ 1) below 1,000 ☐ 2) 1,001 - 2,000

☐ 3) 2,001 - 3000 ☐ 4) above 3,001

3.8 What kind of insurance do you have?

☐ 1) Endowment Insurance ☐ 2) Medical Insurance

☐ 3) No Insurance ☐ 4) Others…….....(Please specify)

Part II: Opinion on Social Exchange of Points

1. Can you describe if the **interpersonal interactions** (Various interactions among different individuals) are related to the social exchange of points?

……

……

2. Can you describe if the **interpersonal trust** (Confidence in another people) is related to the social exchange of points?

……

……

3. Can you describe if **perceived benefit** (perception of the positive consequences that are caused by a specific action) is related to the social exchange of points?

……

……

4. Can you describe if the **reciprocal support** is related to the social exchange of points?

……

……

Part III: Opinion on Diffusion of Innovations

5. Could you please explain about the **relative advantage** of the points-based elderly care service model from the perspective of innovation diffusion?

……

……

6. Could you please explain about the **compatibility** of the points-based elderly care service model from the perspective of innovation diffusion?

……

……

7. Could you please explain about the **low complexity** of the points-based elderly care service model from the perspective of innovation diffusion?

……

……

8. Could you please explain about the **trialability** of the points-based elderly care service model from the perspective of innovation diffusion?

……

……

9. Could you please explain about the **observability** of the points-based elderly care service model from the perspective of innovation diffusion?

……

……

Part IV: Opinion on the Potential Success of Points-based Management Mechanism

10. Do you think **sustainability** can prove the potential success of points-based elderly care service model? Why?

……

……

11. Do you think **effectiveness** can prove the potential success of points-based elderly care service model? Why?

……

……

12. Do you think **satisfaction** can prove the potential success of points-based elderly care service model? Why?

……

……

Part V: Opinion on the Relationships Between Social Exchange of Points, Diffusion of Innovations and Potential Success of Points-based Management Mechanism

13. Do you believe that social exchange of points has significant and positive impact on the potential success of points-based management mechanism ? Why?

……

……

14. Do you believe that social exchange of points has a significant relationship with diffusion of innovations? Why?

……

……

15. Do you believe that diffusion of innovations has significant and positive impact on the potential success of points-based management mechanism ? Why?

……

……

16. Do you believe that diffusion of innovations significantly mediates the relationship between social exchange of points and potential success of points-based management mechanism? Why?

……

……

Part VI: Recommendation

……

……

……

……

APPENDIX D

INTERVIEW FORM (Chinese Version)

访谈提纲

中国低收入者积分养老服务管理机制：一种创新的社会交换方法

研究者： 谭有模

课程名称： 暹罗大学管理学博士

说明:

1.受访者为低收入人群、护理人员、大学教师、专家和政府官员。

2.所有参与者将被要求签署同意书。

3.在进行访谈之前，将向参与者解释研究的目的和性质，参与者有机会就研究提出问题。

4.所有参与者的访谈权利将在同意书中列出。

5.您的信息将被保密。未经您的许可，您的身份、任何相关人员和组织名称都将保持匿名。

6.将提出 16 个问题来收集参与者的信息

7.访谈将对研究有益。因此，我们将非常感谢所有参与者的参与。

8.访谈将以面对面访谈的形式进行。

同意书

我， _____自愿同意参加本研究。

我理解我为本研究提供的所有信息都将保密。

我同意对我的访谈进行录音。

我理解即使我现在同意参加，我也可以随时退出或拒绝回答任何问题，而不会产生任何后果。

我理解我可以在访谈结束后两周内撤回使用访谈数据的许可，在这种情况下，材料将被删除。

我理解参与涉及中国积分制养老服务模式。

我已以书面形式向我解释了研究的目的和性质，并且我有机会就研究提出问题。

我理解我不会直接从参与本研究中受益。

我理解在任何关于本研究结果的报告中，我的身份都将保持匿名。这将通过更改我的名字并隐藏任何可能泄露我的身份或我所谈论的人身份的访谈细节来实现。

我理解，我的采访摘录可能会被引用到论文、会议报告和已发表的论文中。

我理解，如果我告知研究人员我或其他人有受到伤害的风险，他们可能必须向相关部门报告此事——他们会先与我讨论此事，但可能会被要求在获得或未获得我的许可的情况下报告此事。

我理解，研究人员签署的同意书和原始录音将保留在泰国暹罗大学，直到考试委员会确认研究人员的论文结果。

我理解，我的采访记录中所有身份信息均已删除，将从考试委员会之日起保留两年。

我理解，根据信息自由合法化，我有权在信息存储期间随时访问我提供的信息，如上所述。

我理解，我可以自由联系任何参与研究的人员，以寻求进一步的澄清和信息。

研究员：谭有模先生

学位：管理学博士

地址：暹罗大学 38 Petkasem Road, Phasicharoen, Bangkok, 10160 泰国；
电话 02-867-8000 或
广西科技师范大学，中国广西柳州市柳北区君武路。电话：15278871801

研究参与者签名：

_____

参与者签名　　日期：

研究人员签名：

我相信参与者已知情同意参与本研究。

_____

研究者签名　　日期：

采访日期:_____ 时间: _____

第一部分：个人信息

1. 参与者姓名：_____

2. 联系地址：_____

3. 参与者信息

3.1 您的性别是：

1)男 2)女

3.2 您的年龄是：

1)21-30 岁 2)31-40 岁 3)41-50 岁 4)51 岁以上

3.3 您的婚姻状况：

1)单身 2)已婚 3)离婚 4)分居

3.4 您的教育水平：

1)高中及以下 2)大学 3)究生及以上

3.5 您的户口所在地：

1)城镇 2)农村

3.6 您家里年满 60 岁以上的老人数量：

1)0 人 2)1-2 人 3)3 人及以上

3.7 您家里人均月收入是：（家庭月总收入÷家庭人口总数=人均月收入）

1)低于 1000 元 2)1001 -2000 元 3)2001 -3000 元

3.8 您购买的保险有：

1)养老保险 2)医疗保险 3)没有保险 4)其他_____(请写下)

第二部分：对“养老积分的社交交换”的看法

1. 请您描述一下“**人际交往**”（不同个体之间的各种互动）是否与养老积分的社会交换有关？

……

……

2. 请您描述一下“**人际信任**”（对他人的信心）是否与养老积分的社会交换有关？

……

……

3. 请您描述一下“**可感知的好处**”（对特定行为造成的积极后果的感知）是否与养老积分的社会交换有关？

……

……

4. 请您描述一下“**互惠支持**”是否与养老积分的社会交换有关？

……

……

第三部分：对“创新扩散”的看法

5. 请从创新扩散的角度阐述积分养老服务模式的**相对优势**？

……

……

6. 请从创新扩散的角度阐述积分养老服务模式的**兼容性**？

……

……

7. 请从创新扩散的角度阐述积分养老服务模式的**低复杂性**？

……

……

8. 请从创新扩散的角度阐述积分养老服务模式的**可尝试性**？

……

……

9. 请从创新扩散的角度阐述积分养老服务模式的**可观测性**？

……

……

第四部分：对“积分养老管理机制的潜在成功”的看法

10. 您认为**可持续性**能证明积分养老管理机制的潜在成功吗？为什么？

……

……

11. 您认为**有效性**能证明积分养老管理机制的潜在成功吗？为什么？

……

……

12. 您认为**满意度**能证明积分养老管理机制的潜在成功吗？为什么？

……

……

第五部分：养老积分的社会交换、创新扩散与积分养老管理机制的潜在成功之间的关系

13. 您认为“**养老积分的社会交换**”对于“**积分养老管理机制的潜在成功**”有显著的积极影响吗？为什么？

……

……

14. 您认为“**养老积分的社会交换**”与“**创新扩散**”之间有显著的关系吗？为什么？

……

……

15. 您认为“**创新扩散**”对于“**积分养老管理机制的潜在成功**”具有显著的积极的影响吗？为什么？

……

……

16. 你认为“**创新扩散**”在很大程度上调节了“养老**积分的社会交换**”与“**积分养老管理机制的潜在成功**”之间的关系吗？为什么？

……

……

第六部分：建议

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……

APPENDIX E

QUESTIONNAIRE WITH IOC RESULT

THE MANAGEMENT MECHANISM OF POINT-BASED ELDERLY CARE SERVICE FOR LOW-INCOME PEOPLE IN CHINA: AN INNOVATIVE & SOCIAL EXCHANGE APPROACH

Researcher: Mr. Tan Youmo

Curriculum: Doctor of Philosophy in Management, Siam University

Instruction: The purpose of this research is to understand your opinions and attitudes towards the model of points-based elderly care service. Your information will be kept secret. Should you have any questions or suggestions, please contact me at the following addresses and numbers: *Siam university 38 Phetkasem Road, Phasicharoen, Bangkok, 10160 Thailand; Tel 662-867-8000 or Guangxi Science and Technology Normal University, Junwu Road, Liubei District, Liuzhou City, Guangxi, China. Tel: 15278871801*

Background: Points-based elderly care service is a new model for the elderly who is over 60 years old. Point or digital virtual currency managed by special application on cellphone can be collected to get elderly care service without expiration date. The elderly over 60 can be care-givers or care-receivers while the younger can only be care-givers. The younger cannot use the points to get the services until they turn 60. The care-givers will provide service and get 1 point per hour while the care-receivers will need to pay 1 point per hour to receive services.

This questionnaire has 6 pages and is divided into 5 parts as follows:

Part I: Personal Information

Part II: Social Exchange of Points (SEP-PSPMM)

Part III: Diffusion of Innovations (SEP-DOI)

Part IV: Potential Success in Management Mechanism of Points (DOI-PSPMM)

Part V: Recommendation

Instructions to do IOC

1) Please help to check IOC (Item Objective Congruence Index) and provide comment on the questionnaire.

2) Criteria to verify score is

+1 means "the measurement item is congruence with objective of study"

0 means "the measurement item is undecided with objective of study"

-1 means "the measurement item is inconsistent with objective of study"

3) It would be highly appreciated if you would return this questionnaire to the researcher to the email 357717398@qq.com by 16 April, 2024.

4) Should you have further questions, please do not hesitate to contact me. Thank you very much for your assistance.

Mr. Tan Youmo

Part I: Personal Information

Please mark on the appropriate box for the following questions.

1. What is your gender?

☐ 1) Male ☐ 2) Female

2. What is your age in year? (years old)

☐ 1) 21-30 ☐ 2) 31-40

☐ 3) 41-50 ☐ 4) above 51

3. What is your marital status?

☐ 1) Single ☐ 2) Married

☐ 3) Divorced ☐ 4) Separated

4. What is your education level?

☐ 1) Under Bachelor Degree

☐ 2) Bachelor Degree or even

☐ 3) Postgraduate

5. Which province do you work in?

☐ 1) Gansu ☐ 2) Guizhou ☐ 3) Hainan

☐ 4) Henan ☐ 5) Hebei ☐ 6) Heilongjiang

6. What is your resident identification?

☐ 1) Urban ☐ 2) Rural

7. How many elderly people are over 60 years old in your family?

☐ 1) 0 ☐ 2) 1-2 ☐ 3) 3 or more

8. What is the average monthly income of your family (Yuan)?

☐ 1) below 1,000 ☐ 2) 1,001 - 2,000 ☐ 3) 2,001 - 3,000

9. What kind of insurance do you have?

☐ 1) Endowment Insurance

☐ 2) Medical Insurance

☐ 3) No Insurance

☐ 4) Others.....(Please specify)

Part II: Social Exchange of Points (SEP-PSPMM)

Rate the following questions by placing a check in the box. Do not leave each item unanswered.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

	Expert score						
	1	2	3	4	5	Total	Ave
Interpersonal Interactions							
1. When you meet elderly people, you always show them your respect and concern for their life.	1	1	1	1	1	5	1
2. You are willing to support elderly people when they need help.	1	1	1	1	1	5	1
3. You always talk with the elderly to relieve their	1	1	1	1	1	5	1

	Expert score						
	1	2	3	4	5	Total	Ave
boredom when you are free.							
4. You are willing to explain to others of how to get the points.	1	0	1	1	1	4	0.8
5. You always feel distressed or worried when seeing elderly people who need care.	1	0	1	1	0	3	0.6
Interpersonal Trust							
6. You will always do what you promise to the elderly.	1	1	1	1	1	5	1
7. The elderly will trust you more when you provide quality services to them.	1	1	1	1	1	5	1
8. Trust can be built when people are honest and reliable.	1	1	1	0	1	4	0.8
9. The more reliable information you share, the more trust you gain.	1	1	1	1	1	5	1
10. Trust will strengthen bond between people.	1	1	1	1	1	5	1
Perceived Benefits							
11. The points can make you have more chances to buy the services you need.	1	1	1	1	1	5	1
12. You fully understand that you can only accumulate points when you provide services to the elderly.	1	1	1	1	1	5	1
13. You can use points to purchase care service, and it will help you to reduce your pension burden.	1	1	1	1	1	5	1
14. People around you will appreciate you when you give services to the elderly.	1	1	0	1	1	4	0.8
15. The points that can be used as the pension funds will provide you a reliable support.	0	1	1	1	1	4	0.8
Reciprocal Support							
16. You are willing to provide help and support to the elderly when they are in need.	1	1	1	1	1	5	1
17. You expect to get something in return from the elderly such as a smile when you help them.	1	1	1	1	1	5	1
18. You help people, and they will help you when you are	1	1	1	1	1	5	1

	Expert score						
	1	2	3	4	5	Total	Ave
in trouble.							
19. The more you get help from the people around you, the more you want to return to them.	1	1	1	1	1	5	1
20. Mutual trust and support will make your life better.	1	1	1	1	1	5	1

Part III: Diffusion of Innovations (SEP-DOI)

Rate the following questions by placing a check in the box. Do not leave each item unanswered.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

2

	Expert score						
	1	2	3	4	5	Total	Ave
relative advantage							
21. Distributing the free points to the elderly is a good idea.	1	1	1	1	1	5	1
22. Care services you receive can make you realize the support from society.	1	1	1	1	1	5	1
23. It is fair to get points by helping the elderly and save the points for your future elderly life.	1	1	1	1	1	5	1
24. It will be useful when you can use points to buy the elderly care service without spending money.	1	1	1	1	1	5	1
25. It is convenient to be able to check your accumulated points via the cellphone.	1	1	1	1	1	5	1
Compatibility							
26. The model can provide an additional option to the existing pension model.	1	1	1	1	1	5	1
27. Points can add new elements and opportunities to the existing pension security.	1	1	1	1	1	5	1
28. Points are suitable for your current economic and family situation to a certain extent.	1	1	1	1	1	5	1

	Expert score						
	1	2	3	4	5	Total	Ave
29. Points are indeed a solution to the elderly problems when funds are insufficient.	0	1	1	1	1	4	0.8
30. Points can alleviate some of the difficulties and problems of the current aging population.	1	1	1	1	1	5	1
Low Complexity							
31. The model of points-based elderly care service is easy to understand.	1	1	1	1	1	5	1
32. The operation process of this model is simple and easy to understand.	1	1	1	1	1	5	1
33. The model does not require too much skills and knowledge to master quickly.	1	1	1	1	1	5	1
34. It is very convenient to use and accumulate the point via application by scanning method.	1	1	1	1	1	5	1
35. You can easily educate others how to use and accumulate points.	1	1	1	1	1	5	1
Trialability							
36. Trying the model before using it will give you the positive impact on the life of the elderly.	1	1	1	1	1	5	1
37. You are willing to participate and experience the model to feel its actual effect.	1	1	1	1	1	5	1
38. Directly participating in the new model can personally test whether it is suitable for your pension needs.	1	1	0	1	1	4	0.8
39. The model can help you to fulfill something you do not have for your future.	1	1	1	1	1	5	1
40. The model provides you with a platform that can be tested and give you different choice.	1	1	1	1	1	5	1
Observability							
41. Points can improve the quality of your elderly life.	1	1	1	1	1	5	1
42. Points can help you to save your cost of living.	1	1	1	1	1	5	1
43. Point can enhance the current insurance model to make you gain better life.	1	1	1	1	1	5	1

	Expert score						
	1	2	3	4	5	Total	Ave
44. The more people to join the program, the more success of the model.	1	1	1	1	1	5	1
45. You are willing to introduce the benefits of points to others.	1	1	1	1	1	5	1

Part IV: Potential Success of Points-based Management Mechanism (DOI-PSPMM)

Rate the following questions by placing a check in the box. Do not leave each item unanswered.

Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree
1	2	3	4	5

	Expert score						
	1	2	3	4	5	Total	Ave
Sustainability							
46. The points as a digital virtual currency can be used to purchase elderly care service, and will become a stable source of pension funds.	0	1	1	1	1	4	0.8
47. The model has a reliable management mechanism and will continuously provide support for the elderly.	1	1	1	1	1	5	1
48. The model can be supported by government policies, and will continuously improve the pension security for the elderly.	1	1	1	1	1	5	1
49. The model can meet many people's needs, and will be sustainable.	1	1	1	1	1	5	1
50. The model can really improve your pension security capabilities, and is worth promoting.	1	1	1	1	1	5	1
Effectiveness							
51. When the model can be accepted by people, it will effectively solve the problem of pension funds.	1	1	1	1	1	5	1
52. When the model is promoted, it will provide practical	1	1	1	1	1	5	1

support to the elderly.							
53. The model has a financial support, and it can effectively guarantee the quality of your elderly life.	1	1	1	1	1	5	1
54. You can use point to exchange for services, and it will bring positive changes to your life.	1	1	1	1	1	5	1
55. More people and organizations join the model, the services operation will be more effective.	1	1	1	0	1	4	0.8
Satisfaction							
56. You will be happy when you can services the elderly and earn the points at the same time.	1	1	1	1	1	5	1
57. You feel very fulfilled when the elderly appreciate your services.	1	1	0	1	1	4	0.8
58. You feel very satisfied when you use the points to exchange for the care services and save your medical expense.	1	0	1	1	1	4	0.8
59. Accumulating points without expired date to exchange for the care services will satisfy you.	1	1	1	1	1	5	1
60. The model of points-based elderly care service is stable and reliable, and it will satisfy you.	1	1	1	1	1	5	1

Part V: Recommendation

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THANK YOU FOR YOUR TIME AND PARTICIPATION.

APPENDIX F

ETHICS APPROVAL CERTIFICATE

ใบรับรองจริยธรรมการวิจัยในมนุษย์
สถาบันการจัดการปัญญาภิวัฒน์

หมายเลขใบรับรอง: PIM-REC 024/2567

ข้อเสนอการวิจัยนี้ และเอกสารประกอบของข้อเสนอการวิจัยตามรายการแสดงด้านล่าง ได้รับการพิจารณาจากคณะกรรมการจริยธรรมการวิจัยในมนุษย์ สถาบันการจัดการปัญญาภิวัฒน์แล้ว คณะกรรมการฯ มีความเห็นว่าข้อเสนอการวิจัยที่จะดำเนินการมีความสอดคล้องกับหลักจริยธรรมสากล ตลอดจนกฎหมาย ข้อบังคับและข้อกำหนดภายในประเทศ จึงเห็นสมควรให้ดำเนินการตามข้อเสนอการวิจัยนี้ได้

ชื่อข้อเสนอโครงการ: The Management Mechanism of Point-based Elderly Care Service for Low-income People in China: An Innovative and Social Exchange Approach

รหัสข้อเสนอการวิจัย (ถ้ามี): (ไม่มี)

หน่วยงาน: มหาวิทยาลัยสยาม

ผู้วิจัยหลัก: Tan Youmo

ลงนาม.....

(อาจารย์ ดร.พิเชษฐ์ มุสิกะโปดก)
ประธานคณะกรรมการจริยธรรมการวิจัยในมนุษย์
สถาบันการจัดการปัญญาภิวัฒน์

วันที่รับรอง: 29 พฤษภาคม 2567 **วันหมดอายุ:** 29 พฤษภาคม 2568

เอกสารที่คณะกรรมการรับรอง
1. โครงร่างการวิจัย
2. ข้อมูลสำหรับชี้แจงกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย และ ใบแสดงความยินยอมจากกลุ่มประชากรหรือผู้มีส่วนร่วมในการวิจัย
3. เครื่องมือที่ใช้ในการวิจัย/เก็บรวบรวมข้อมูล เช่น แบบสอบถาม แบบสัมภาษณ์ ประเด็นในการสนทนากลุ่ม เป็นต้น

เงื่อนไขการรับรอง
1. นักวิจัยดำเนินการวิจัยตามที่ระบุไว้ในโครงร่างการวิจัยอย่างเคร่งครัด
2. นักวิจัยรายงานเหตุการณ์ไม่พึงประสงค์ร้ายแรงที่เกิดขึ้นหรือเปลี่ยนแปลงกิจกรรมวิจัยใดๆ ต่อคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ภายในกำหนด
3. นักวิจัยส่งรายงานความก้าวหน้าต่อคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ตามเวลาที่กำหนดหรือเมื่อได้รับการร้องขอจากคณะกรรมการฯ
4. หากการวิจัยไม่สามารถดำเนินการเสร็จสิ้นภายในกำหนด ผู้วิจัยต้องยื่นขออนุมัติใหม่ก่อนอย่างน้อย 1 เดือน
5. หากการวิจัยเสร็จสมบูรณ์ ผู้วิจัยต้องแจ้งปิดโครงการตามแบบฟอร์มที่กำหนด

APPENDIX G

ETHICS TRAINING CERTIFICATE

CERTIFICATE

OF COMPLETION

PHRP Online Training, Inc. certifies that

Youmo Tan

has successfully completed the web-based course "Protecting Human Research Participants Online Training SBE."

Date Completed: 2023-08-14 Certification Number: 2991175

PHRP
Protecting Human
Research Participants
Online Training

APPENDIX H

REQUEST LETTER FOR DATA COLLECTION

No. SU 0210.7/84

Graduate School of Management,
Siam University
38 Petkasem Rd., Bang-wa,
Phasi-charoen, Bangkok, 10160.

May 16th, 2024

Subject: Request for Data Collection via Questionnaire Distribution
To Whom It May Concern:

Mr. Tan Youmo Student ID # 6 3 1 9 2 0 0 0 0 2, a doctoral student of the Graduate School of Management, Siam University (Mobile Phone No. 15278871801 and email: 357717398@qq.com) is currently working on the Ph.D. Dissertation entitle: "The Management Mechanism of Point-based Elderly Care Service for Low-income People in China: An Innovative and Social Exchange Approach" under the supervision of Dr. Burin Santisarn.

In this regard, the Graduate School of Management would like to request for your cooperation by corresponding the attached questionnaire form. The completion of this questionnaire form will allow Mr. Tan Youmo to further proceed on his research with data accuracy and overall quality. Your kind assistance is fully appreciated.

Best Regards,

(Associate Professor Dr. Chaiyanant Panyasiri)
Dean of the Graduate School of Management

Graduate School of Management
Telephone +662-867-8000 ext. 5311
E-mail: phd_m1@siam.edu

AUTHOR'S BIOGRAPHY

Name and Surname	:	Youmo TAN
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Address	:	No. 88 Guizhong Avenue, Liuzhou City, Guangxi, China
E-Mail	:	357717398@qq.com
Work Position	:	Associate Professor
Workplace	:	Guangxi Science &Technology Normal University, China
Education	:	Master Degree

Bachelor's Degree

Degree	B.A.
Major	English Education
Institution	Nanning Normal University (Former Guangxi Normal College)
Country	China
Year	1996-2000

Master's Degree

Degree	M.A.
Major	Sociology
Institution	Guangxi Normal university
Country	China
Year	2006-2009

Publishing Research :

Tan, Y., Santisarn, B., Limsiritong, K., & Suksermsongchai, S. (2025). The management mechanism of points-based elderly care service for low-income people in China: An innovative and social exchange approach. *International Journal of Sociologies and Anthropologies Science Reviews, 5*(5), September-October. (TCI Tier 1) https://so07.tci-thaijo.org/index.php/IJSASR/about