



Research article

Research on the path of local colleges participating in community education of affordable rental housing in industrial parks

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ABSTRACT

The affordable rental housing community in industrial parks has become a large-scale community, but little attention has been paid to this type of community education. Therefore, based on the concept of educational equality, this project aims to explore the path of local colleges participating in community education for affordable rental housing in industrial parks. With convenient samples, empirical research is conducted on the current situation and residents' needs of affordable rental housing community education in the *Qianwan New Area Industrial Park*. And it has been found that community residents have a high willingness to learn on one hand, however, on the other hand, there are few types of community education to meet their demand; Although there are many public space resources, the utilization of scene spaces is far from sufficient. Based on these findings, this research explores and proposes the paths for local colleges to participate in community education for affordable rental housing in industrial parks through resource sharing models, in-depth community services for all-age residential groups, the cultivation of application-oriented talents to promote the integration of industry and education and enriching spiritual connotation of community education content. By enhancing the quality of all-age residents, namely, the new citizens including industrial workers and their relatives, it can promote the construction of a learning-oriented society and contribute to the realization of common prosperity. This study has certain theoretical and practical significance in enriching the research field of community education, promoting social integration of new citizens, and helping to achieve common prosperity.

1. Introduction

The report of the Twentieth National Congress of the Communist Party of China pointed out that Chinese path to modernization is "the modernization of Common prosperity for all people, and the modernization of the coordination of material civilization and spiritual civilization." By 2035, substantial progress will be made towards common prosperity for all people, and maintaining social fairness and justice will also be one of the important principles for achieving common prosperity. Currently, China is vigorously promoting the construction of a skill-oriented society, and education is an important means to achieve common prosperity and an important carrier for achieving social fairness and justice. Therefore, community education construction is beneficial for the new residents of affordable rental housing communities in industrial parks to "live and work in peace and contentment," improve their social integration and happiness, enhance their material and spiritual living standards, and achieve common prosperity and social fairness and justice. Moreover, in the current situation that there has been a new paradigm shifting to digital solutions after the COVID-

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19 pandemic, it will be of greater significance to improve community education [1].

As for colleges, fulfilling the functions of serving society, participating in community construction and providing intellectual support can contribute to local economic development, improve neighborhood relations and public education. It can enhance the comprehensive teaching ability of college teachers, and at the same time, communities can provide social practice venues and platforms for local college students, strengthen the competitiveness of local colleges and promote their distinctive development.

A learning-oriented society means breaking through the boundaries of age and place of learning, and expanding people's learning time and space. The construction of a learning community is an integral part of the construction of a learning-oriented society. While in the industrial park's affordable rental housing community, the education level of residents is relatively weak. Through the participation of local colleges, community residents are motivated to continue learning, and the cultural literacy of industrial workers and overall community education level are improved so as to establish a learning-oriented community.

In recent years, community education research has focused more on macro-level policy interpretation and meso-level system construction, with less in-depth research on micro level on one hand; and on the other hand, Chinese scholars focus on speculation and theoretical discussion, while there is relatively insufficient empirical research on community education of specific residential groups [2]. That is, the classification of research objects of community education is seldom targeted. However, micro and empirical research is an urgent need for the development of community education practice [3]. In addition, the previous research regarding local colleges' participation in community education is mainly related to the advantages, difficulties, and macro perspectives for of colleges to get involved in community education [4].

At present, the affordable rental housing community in industrial parks in China has become a large-scale community, however, the relevant community education seldom receives research attention as a research gap. While the existing research on domestic affordable housing communities mainly focuses on human geography and management, etc. [5]. And the community education of affordable rental housing in industrial parks is an integral part of the system project to achieve education equity. Therefore, it is of great significance to guide the continuing education of industrial workers living in the parks, which will help the construction of the demonstration zone for common prosperity, and the fulfillment of Chinese path to modernization.

With the above concern, this article focuses on the community education of affordable rental housing in industrial parks. It specifies the research audience of community education and delves into the micro level. Firstly, based on local characteristics, an empirical investigation was conducted on the affordable rental housing community in the Qianwan New Area Industrial Park, Ningbo, in order to understand the current status of community education and residents' demands; Furthermore, in response to practical issues, specific paths were proposed for local colleges to serve community education, reflecting the regional nature of community education. By exploring the specific path for local colleges to serve community education of affordable rental housing in industry parks, we hope to broaden the perspective of community education research and provide reference for promoting the collaborative and innovative development of local higher education and community education.

2. Literature review

2.1. Theory of educational equality

As a global concern, educational equality is the direction of China's education reform and a core component of national strategy, which is of great significance for achieving national modernization [6]. Educational equality includes opportunity, process, outcome and social equality. Equality in educational opportunity, which means that every individual has equal opportunity in the field of education, including access to education, learning resources and opportunities for further education, is the foundation of educational equality and requires equal opportunity for all in the field of education [7]. Process equality means ensuring that every individual receives fair treatment in the field of education to achieve outcome equality, which is related to social equality and mobility, narrowing social disparities, and eliminating social inequality. And because the humanistic nature and characteristics meet the essential demand of educational equality, and on the other hand, during the period of rapid social transformation, community education requires a more arduous social responsibility. Therefore, community education has unique a role in promoting educational equality [8].

2.2. Community education

Community is not only a geographical concept, but also a concept that describes the spatial relative agglomeration of social members based on indicators such as economic income, education level, and place of residence [9]. Community education is rooted in private schools in Europe, political democracy in the United States, and "mass education" in Latin America. It is widely developed in Southeast Asia and is essential for achieving lifelong education [10].

In foreign countries, community education research started earlier, was more systematic, and had diverse themes. In recent years, most studies are case studies. For example, adult community education is a unique part of Education in Australia's education system, providing an important link between the educational environment, the workplace and the community. Most schools provide adult basic education, such as language, literacy, arithmetic, numbers, and other basic skills [11]. In Ireland, there are specialized community and volunteer departments that provide community education services, eliminating barriers such as cost, transportation, daycare, and convenience. Addressing the needs of literacy or numeracy, personal development, and social and political awareness [12]. The number of people participating in community education in the UK is increasing year by year, and the concept of lifelong education is deeply rooted in the hearts of the people, which is also closely related to the development of Economy of the United Kingdom's economy [13]. The community college in the San Francisco Bay Area of the United States provides vocational training for

hundreds of thousands of community students, or skills based courses such as cooking, piano, oil painting, computer, nursing, hotel services, fitness, and digital applications, to meet the desire of primary and secondary school students to learn ahead of time, expand the educational needs of in-service employees to improve knowledge and skills, and improve the comprehensive cultural literacy of community residents [14]. The prominent feature of community education in Japan is its strong legal system [15].

In China, community education, as a branch of continuing education, began to promote lifelong education in the 1980s. In Chinese modern community education, a government-led and diversified funding system for community education has been established, with a significant and consistent increase in total investment [16]. Fang Yingfen et al. [2] conducted a systematic review of community education research over the past 70 years since the founding of the People's Republic of China. As an informal education, community education is a field in educational research that combines a social perspective, with educational, regional, flexible, diverse, open, and humanistic characteristics. The research hotspots in the past 20 years are lifelong education, learning-oriented society, elderly education, community governance, etc. [17]; Besides, the future paradigm of community education operation was explored from the perspective of value inheritance [18].

In recent years, research on the participation of colleges in community education has gradually increased, and it is necessary and feasible for colleges to participate in community education. For example, Xu Haishen et al. [19] proposed strategies for local colleges to participate in community education from the aspects such as platform construction, incentive mechanisms, management mechanisms, guarantee mechanisms, and teaching staff; Shao Xiaofeng [20] proposed a specific path for the professionalization of community education teachers; Hou Jingyi [21] constructed a future community education service supply chain model with college participation to address the issues of a lack of excellent teachers in community education, planning of educational facilities in community construction and educational operation thinking in community management.

In addition, the pandemic of COVID-19 has affected all levels of society and caused many adverse factors and challenges to society, environment and economy [22,23]. Both domestic and foreign research on community education has begun to focus on how to establish resilient and sustainable communities in the post-pandemic era, and promote innovation and practice of community education concepts [24,25]. Moreover, it has been demonstrated that college students' participation in community volunteer activities in the post-epidemic era and the strengthening of the integration and innovation of "Internet+" have a positive impact on college students' growth and the construction of a community of practice-oriented education [26].

3. Materials and methods

3.1. Research object

Ningbo Qianwan New Area is located in the northern part of Ningbo City, at the golden node of Shanghai, Hangzhou, and Ningbo. It is an important component of Zhejiang Province's construction of a world-class Greater Bay Area and a landmark strategic platform for participating in the integrated development of the Yangtze River Delta region. The planned total area of the new area is 604 square kilometers, with a population of 720,000. At present, the new area has preliminarily formed a "1341" industrial system, with the "1" being a major characteristic leading industry—the automotive industry; the "3" refers to the three emerging pillar industries—high-end equipment, electronic information, and new materials; The "4" refers to the four advantageous industries in the region—smart home appliances, key infrastructure, biopharmaceuticals, and energy conservation and environmental protection; the other "1" refers to a batch of productive service industries—R&D design, education and training, automation integration services, etc. In 2022, the intelligent automobile industry platform in Ningbo Qianwan New Area achieved a total industrial output value of 126.08 billion yuan, a year-on-year increase of 27.2 %, becoming the first platform in Zhejiang Province with an output value exceeding 100 billion yuan.

In recent years, the new area has been based on industries and aimed at serving the "New Qianwan People". It focuses on creating a comprehensive rental community that fully meets the communication space and leisure life of future young industrial workers, with mixed functions and a balance between work and residence. Accordingly, it has explored the path of integrated development of industry and city with the characteristics of the industrial zone. The new area adheres to the goal of industrial development and the demand for industrial population introduction, and has set up five rental communities in the industrial park, including high-tech, intelligent, mass-innovation park, Yuexi Lake, and Shuangpu rental communities. The total construction scale exceeds 2 million square meters, and the planned capacity can accommodate over 120,000 industrial personnels. At present, 1.1 million square meters have been built and put into use, which can meet the living needs of over 70,000 industrial workers. The mixed community has become a home and warm harbor for the growth of industrial workers in the new area.

Haizhi Future Community mainly includes Haihui Garden, Zhongqi Jiayuan, Neighborhood Center, Haizhi Primary School, Haizhi Kindergarten, etc., with a land area of approximately 21.11 ha and a residential population of approximately 13,600 people. Haizhi Future Community was listed in the third batch of creation of future community in 2021, which is a supporting community for the "10,000 mu and 100 billion" smart car industry platform in Qianwan New Area, Ningbo. It is also the first industrial community creation project in Zhejiang Province. At present, the "Three Modernizations and Nine Scenarios" of Haizhi Future Community has been completed and obtained preliminary approval.

This study focuses on "new youth, new industries, new neighborhoods, and new culture" in combination with the construction of Haizhi Future Community, and discusses the path for local colleges to participate in the community education of affordable rental housing in industrial parks, with an aim to provide reference for the community education of rental housing in industrial parks. Targeting the construction of Future Education Scenarios in the process of creating Haizhi Future Community, this study aims to summarize and analyze the effectiveness and problems encountered in the operation of rental communities in the construction of community education system, resource sharing, investment mechanism, team building, education form, education content,

information application, and citizen credit bank construction.

3.2. Study design and participants

A questionnaire survey was conducted among the residents living in the affordable rental housing community of Qianwan New Area, Ningbo. Due to the lack of relevant empirical research and appropriate scales, the questionnaire was designed based on the combination of the purpose of this study and the four main educational scenarios in the “Zhejiang Province Pilot Work Plan for Future Community Construction”, namely, building high-quality childcare services, expanding the supply of excellent preschool education resources, creating a superior youth community communication and learning platform, and establishing a community knowledge and skills sharing and exchange platform for adults to interact with the whole population. Therefore, the survey investigates the current population profile of the community (age structure, educational background, occupational composition), the residents’ demands for community education, and degree of satisfaction with existing cultural and educational facilities in the community. At the same time, the survey consults the community residents about their true needs of public facilities, which are not currently available. And both closed and open questions are included in the questionnaires. The acquired information will serve as a foundation to help the improvement of community education and possible methods for local colleges to participate in community education in the affordable rental housing community in industrial parks. It is hoped that the current research can provide reference for same or similar educational work in the future.

3.3. Procedures

After obtaining approval from the researcher’s institution for research ethics and the consent of the respondents to ensure that the questionnaire survey is only for use in this study, a convenient sample was taken for this study. A total of 500 questionnaires were distributed among the affordable rental housing community in industrial parks in Qianwan New Area, Ningbo and 364 valid questionnaires were collected. Then based on the respondents’ demographic information and their responses to the questions, suggestions are given to local colleges in order to participate in the education in the affordable rental housing community in industrial parks.

4. Results and discussion

4.1. Community residents’ demographic information

The survey shows the current situation and needs of community education for affordable rental housing community in industrial parks in Qianwan New Area. The following is the information about the age, education and occupation structures of the respondents of the survey.

The age structure of the respondents: The overall age range is between 18 and 40. Among them, around 75 % are aged 18–25, around 15 % are aged 25–30, and around 10 % are aged 30–40. The community population is mainly composed of young technical personnels aged 18–30, who are the key residential groups that the community serves.

The educational background of the respondents: 70 % have the educational experiences in junior high school, technical school, technical secondary school, and vocational high school; 20 % graduate from colleges or have bachelor’s degrees; 10 % have master’s degrees or above.

The occupational composition of the respondents: 80 % are factory operation technicians, and most of them are employees of the same type of enterprise, with relatively low education and limited social circle; 5 % are business entrepreneurs or freelancers; 80 % are factory frontline operators; 15 % are management personnels in enterprises.

Demographic Information	
1. Age	Percentage
18–25	75 %
25(above)-30	15 %
30(above)-40	10 %
2. Occupation	
Entrepreneur	5 %
Technician	80 %
Management	15 %
3. Education	
secondary school or below	70 %
college with or without bachelor’s degree	20 %
with master degree or above	10 %

4.2. Current situation and residents’ needs for community education

4.2.1. High willingness to learn and limited types of community education

Firstly, the community residents are mainly young people with diverse family and cultural backgrounds. They are not familiar with

each other, therefore, a community learning and cultural activity platform is needed so that they can participate in some interest-based and theme learning activities, connecting everyone together to enhance mutual communication. Secondly, the overall educational level of community residents is not high, and the majority of residents hope to have more access to the continuing education of higher education. Through channels such as continuing education, adult education, online education, and self-study exams, they can improve their educational level. Thirdly, the majority of residents have a high demand for education and training in vocational skills training, vocational continuing education, employment and entrepreneurship training, etc.

Despite the diverse learning needs of community residents, the current type of community education is mainly focused on interest-oriented education, training, and activities. Due to the lack of efficient and professional participation, some community education such as academic continuing education and skill-based vocational training are difficult to carry out.

4.2.2. Sufficient public space resources and insufficient utilization of scene space

In the affordable rental housing community in the Qianwan New Area Industrial Parks, Haizhi Future Community has relatively comprehensive types of cultural and educational facilities. For example, within the 15-min cultural life circle, there are Haizhi Primary School with 18 classes and Haizhi Kindergarten with 6 classes. And community neighborhood centers have been set up, including community service centers, community cultural centers, and other cultural and educational facilities, such as a cultural auditorium, 4:30 school, community library, and recreational center. These facilities provide community residents with resources and places required for full-age lifelong learning.

As for cultural activities, Haizhi Community focuses on the community residents as its main target, constantly enriching community activities and communicating with neighbors, regularly holding Haizhi Reading Club and Haizhi Yoga Club, as well as arranging professional personnels to organize cultural counseling, training, lectures, and other activities that reflect the unique cultural themes of the community, such as Haizhi Talent plan, series of Xueer lectures, and community building activities, to guide community residents to learn independently and share learning.

In terms of informatization application, a community digital information platform was built on the basis of "Haichuang Cloud", encouraging the active participation of residents in various community work and activities by establishing an online and offline linkage of point system. There is active connection of internal and external resources, electronic reading rooms, networking between community libraries and municipal libraries has been achieved. At the same time, activities are announced and appointed through the "Haina Space App".

In general, Haizhi Future Community has relatively complete public facilities, community cultural and educational activities and information utilization have also achieved significant results. However, due to the diversity and professionalism of community education, relying solely on the operation of the community itself makes it difficult to coordinate resources to carry out normalized and sustainable community education. Incentive policies should be further improved for social forces to participate in community services and take actions to promote the linkage between communities and social organizations, social workers, community volunteers, and community charitable resources to carry out community services. In fulfilling the function of serving society, local colleges can participate in the education of affordable rental housing community based on the current situation of community education and the needs of the community residents. The following aspects are suggested for local colleges to participate in community education for affordable rental housing in industrial parks.

4.3. Path for local colleges to participate in community education for affordable rental housing

4.3.1. Innovative models for sharing educational resources between local colleges and communities

Firstly, course resources. Fully, reasonably and effectively utilize open learning resources to benefit residents of the industrial park's affordable rental housing community (i.e. industrial workers and their families, the same below). For example, offline classroom resources can be opened to community residents for a limited period of time, allowing residents in the park to have the opportunity to experience the campus cultural atmosphere and subtly improve their personal qualities. Besides, with information technology, an online course resource library can be created and online learning accounts can be distributed. Also, effective methods can be figured out to support community residents in online learning and promote high-quality MOOCs from schools to community residents. In addition, cooperate with relevant departments to develop incentive mechanisms for continuing education and enhance the theoretical level and occupational value of community residents.

Secondly, data resources. Colleges are the forefront of promoting and disseminating online information, initiating the use and popularization of online information in society. Local colleges should utilize this advantage to assist in the digital construction of communities. For example, open online library resources to meet the professional and various information needs of enterprise employees. Social media softwares such as WeChat and QQ can be used to address real-life problems confronted by community residents. Colleges can also ensure the continuity and sustainability of community education by establishing high-quality online education systems, especially during crises such as the COVID-19 pandemic [27].

Thirdly, academic resources. Local colleges should broaden their thinking, enhance their participation awareness, and explore paths for scientific research cooperation with enterprises and communities in industrial parks. Utilize professional and theoretical advantages, participate in community education management, systematically organize planning, provide suggestions and recommendations. At the same time, relevant teaching and research achievements will be shared with community education management institutions and applied to community education practices, benefiting community residents.

4.3.2. Provide characteristic education services for residents of all ages in the community, and support the creation of "one senior and one junior" (i.e. elderly care and child care) education service supporting facilities

Local colleges can directly participate in the social re-education services for residents of the industrial park's affordable rental housing community by utilizing the localized resources of community education. Regardless of the gender, age, identity, culture, and income differences of community members, ensure their equal participation and enjoyment of educational services provided by the community. Every resident is subject to the same rules, enjoys equal rights and receives lifelong education, which reflects educational justice and promotes educational equality.

The main education objects of the rental community in the industrial park are new citizens such as industrial workers, and they are important participants and objects in the construction of the demonstration zone for common prosperity. On the one hand, local college teachers and students can have close contact with the community in various forms such as lectures and training to popularize knowledge, further enhance the professional and cultural literacy of employees in the industrial zone, and elevate their sense of self-identity. Furthermore, pay attention to the cultivation of the comprehensive quality of industrial workers, stimulating their interests in arts such as music, chess, calligraphy and painting, and publicizing the concept of common prosperity, so as to enrich the spiritual life of the community residents and accelerate the construction of a learning-oriented society.

On the other hand, in order to truly address the concerns of these new citizens, it is necessary to pay attention to their family well-being, especially the issue of "one senior and one junior". Local colleges can contact relevant departments to establish volunteer services and practical bases for students, and serve children and the elderly in the community. For example, providing a variety of cultural and entertainment activities, knowledge lectures, reading tutoring, skill training, etc. Guide the elderly to use new technologies, understand new things, provide legal and safety education, and better integrate into society. Research has shown that the digital literacy of preschool children is directly positively correlated with their school readiness, mental health, and resilience, while psychological resilience plays an important mediating role between children's digital literacy and school readiness [1]. Offer voluntary extracurricular tutoring for children, utilize the free time after the end of the semester and before holidays, to pilot various vocational skills training for teenagers, providing opportunities for future professional experience or career planning, and preparing them for professional and career planning. In addition, effectively promoting the ideological and moral construction and psychological health counseling of young people in the new era, contributing to the improvement of the "one senior and one junior" home community service system in the industrial parks. This also reflects the spiritual connotation of educational fairness and common prosperity, so that the concept of common prosperity can be passed on in the community.

4.3.3. Explore application-oriented talent training models that serve local areas and promote the integration of industry and education

Attach importance to ideological guidance, cultivate students' awareness of serving the community, and deepen the research cooperation between industries and colleges through the integration of industry education and school enterprise cooperation.

Firstly, promote the development of affordable rental housing communities in industrial parks as future communities. In combination with the characteristics and needs of new youth and new citizen groups, and the requirements of the "future community" in Zhejiang Province, help transform the affordable rental housing community in the industrial parks into the future community from the perspective of educational scenarios. Meanwhile, promote the integration of industry and education in terms of application-oriented talent training in combination with the industrial characteristics in the park. Local colleges provide talent support for the construction of future community education scenarios, and transform theoretical research into practical results. Integrate the research on the construction of educational supporting facilities for affordable rental housing in industrial parks and that of the community education services for children, the elderly, and adults. At the same time, based on the specific reality of the industries in the industrial park, cultivate management talents for future community construction, so as to make up for the shortcomings of enterprises in terms of education management and operation.

Secondly, promote the construction of the teaching team of the employed community residents, including enterprise engineering technicians, highly skilled talents, management personnels, skilled craftsmen, etc., so that enterprise technicians can form a high sense of identity with the school culture and running philosophy, strengthen teaching training, make them proficient in teaching requirements and teaching methods, and improve the professional teaching effects. Besides, the majority of new citizens in affordable rental housing communities have lower educational levels or weak theoretical literacy. However, they have strong practical skills. Therefore, they need to strengthen the interaction with college teachers to enhance their sense of identity, value, and social integration during the guidance and training process for college students.

4.3.4. Give full play to the theoretical advantages of local colleges, enrich community education content, attach importance to spiritual and cultural education such as social responsibility and values

In addition to the conventional content and improve the professional and theoretical literacy of community residents, the spiritual connotation of Chinese path to modernization of common prosperity should be deeply integrated into community education. For example, research has shown that in the post-pandemic era, legal tax avoidance behavior, employee behavior, and corporate social responsibility significantly improve business performance and corporate image [28]. Therefore, local colleges can also introduce these research results to community residents, especially employees in the industrial parks. Moreover, local colleges can reduce community education and training costs, display the social responsibilities of colleges as organizations.

On the other hand, small and medium-sized enterprises are crucial for the development and success of any economy. In these enterprises, green servant leadership with strong practices and values towards the environment can have a significant impact on employees' environmental behavior [29]. Other studies have found that technology, urbanization, and natural gas supply all can affect the achievement of carbon neutrality [30]. In the process of industrialization and urbanization, energy demand has sharply increased.

Waste management and environmental policies can significantly increase electricity generation [31]. Therefore, when local colleges participate in community education, they should also take into account the actual situation of enterprises in the industrial park, and in the process of cooperating with relevant departments to provide re-education opportunities for park residents, they should not only attach importance to the training of theoretical literacy such as green servant leadership for enterprise management, improve the cultural and professional literacy of residents, but also stimulate the sense of belonging and environmental protection awareness of enterprise employees, stimulate the proactive participation of employees in sustainable development such as energy, materials, nature, and ecosystems, and help achieve the sustainable development goals of enterprises in the industrial parks and prevent environmental degradation. In order to achieve sustainable development of the environment, community education should also guide residents, including industrial workers and family members, to pay attention to the environment, cultivate environmental awareness, encourage green travel in daily life, and reduce carbon emissions. This is also an indispensable part of building Chinese path to modernization and achieving common prosperity. In the post-pandemic era, community residents should also enhance their awareness of safety and security. As employees living in concentrated industries, it is even more important to enhance their awareness and ability in epidemic prevention. Local colleges should also open up their thinking and provide suggestions for emergency preparedness of enterprises in the park. For example, research has shown the need for sustained funding for key global health issues such as epidemic prevention [32].

Besides innovating the content in community education, local colleges should provide relevant professional suggestions or design plans to assist in the construction of affordable rental housing communities in industrial parks. In terms of building or material use, more energy-saving products or new energy, such as solar energy, should be fully utilized. Moreover, in the era of social media, online information plays an important role in building brand trust [33]. Therefore, local colleges should also inspire community residents, especially young residents, to create personal and community brand awareness through social media in community education.

5. Conclusions

5.1. Findings

In the context of social transformation, each period has its own phased characteristics and urgent practical issues that need to be studied. On the basis of investigating the current situation of community education, needs of “new citizens” for education and the relevant problems in the affordable rental housing community of industrial parks, this study explores the path for local colleges to utilize their own educational resources and participate in the community education of affordable rental housing in industrial parks from multiple channels and perspectives. The questionnaire survey revealed that the education level of community residents is generally low, and their willingness to learn is high. However, there are few types of community education available, and the educational content is not diverse enough. Moreover, local colleges have low participation and insufficient academic and vocational skills education. In addition, although there are many public space resources in the community, the utilization of scene space is limited.

5.2. Policy recommendations

Encouraging local colleges to participate in community education can promote cooperation between local colleges and communities, improve the education level and comprehensive quality of community residents in industrial parks. Therefore, firstly, it is recommended for the government to develop specialized policies and regulations to encourage local colleges to participate in community education. These policies can include providing financial support, establishing incentive mechanisms and preferential policies for active participation in community education.

Secondly, the government can establish a cooperation mechanism to promote the cooperation between local colleges and communities, and establish a stable cooperation mechanism. For example, a dedicated cooperation fund can be established to fund projects and activities between colleges and communities; Establish a cooperation agreement to clarify the responsibilities and rights of both parties; Organize regular exchange meetings and symposiums to promote interaction and cooperation between them.

Thirdly, the government can provide professional support and training to help local colleges enhance their ability to participate in community education. For example, specialized training courses or seminars can be organized to invite experts and scholars to share their experiences and best practices; Provide support for educational research and evaluation to help improve the quality and effectiveness of community education.

Fourthly, the government can encourage community residents to actively participate in community education projects and provide feedback and suggestions. For example, a community consultation committee can be established, composed of community residents and college representatives, to hold regular meetings to discuss the needs and issues of community education, and jointly develop improvement plans.

Finally, the government can promote successful cases and experiences sharing of local college participating in community education through various channels, such as conferences, seminars, reports, etc. This can motivate other colleges to actively participate and provide them with reference and inspiration.

In short, the above policies by the government can encourage local colleges to participate in community education, thereby improving the education level of all community residents in the affordable rental housing community in industrial parks, promoting educational equality in the background of common prosperity.

5.3. Limitations

The limitations of this study are primarily reflected in the research methodology. The questionnaire survey method has certain limitations in obtaining information. A questionnaire survey relies on respondents to provide accurate and truthful information. However, in terms of some sensitive issues or personal privacy, respondents may provide incomplete or inaccurate information, or choose to avoid certain issues. This may lead to bias or inaccuracy in the research results. In addition, because this is the first attempt on the current research topic, there exist some flaws in the design of the questionnaire and the options in the questionnaire may not be comprehensive or accurate, and may not fully cover the actual situation of the respondents, thereby affecting the accuracy of the research results.

5.4. Implications

Regardless of the above limitations, this study has both theoretical and practical implications and significance. Although the affordable rental housing community in industrial parks has become a large-scale community, there is still a lot of room for the research regarding the relevant community education. This study serves as an attempt to fill the relevant research gap, while it is also intended that the research results can help address the concerns of employees in industrial parks and integrate the concept of lifelong education with the economic development of industrial parks. Local colleges should actively participate in community education, assist relevant departments in improving the utilization of community education scenarios, and promote systematic and normalized community education. This has certain practical significance in improving the supporting level of public service facilities for affordable housing in industrial parks, promoting the integration of work and housing, industry and city. In the process of helping build strong, resilient and inclusive communities, local colleges' participation in community education contributes to social education equality and social stability, and helping to achieve common prosperity.

5.5. Recommendations for future research

In future research, firstly, questionnaire surveys can be combined with other research methods, such as in-depth interviews or experiments. At the same time, expand the range of research subjects in addition to community residents. Organizers and participants of community education, such as relevant functional departments and local colleges can also be surveyed and interviewed with so as to deeply understand the factors affecting the development of community education, enrich the practice of community education for affordable rental housing in industrial parks, and broaden research vision.

Secondly, conduct in-depth research on how to fully integrate the educational resources of local colleges, match the educational needs of industrial park rental housing communities, and provide educational services that meet the needs of community residents. We can explore the establishment of a cooperation mechanism between colleges and community schools, sharing teachers, educational facilities, and curriculum resources, and improving the quality and sustainable development of community education.

Thirdly, in response to the unique characteristics of rental housing communities in industrial parks, research is needed on how to establish a targeted and effective community education management mechanism to ensure the rational allocation and use of educational resources. We can study and formulate relevant policies and regulations, clarify the responsibilities and rights of colleges and community schools, establish an education quality evaluation system, supervise and evaluate the effectiveness of community education, and continuously improve the quality and management level of education.

Fourthly, research how to promote educational equality and inclusiveness in community education for affordable rental housing. We can focus on the balanced allocation of community education resources, pay attention to the educational needs of vulnerable groups, and promote equal educational opportunities. At the same time, research can be conducted on how to provide diversified educational content and forms to meet the learning needs and interest development of different residents.

Ethics statement

The Ethics Group of the Academic Committee in the College of Science and Technology, Ningbo University has reviewed the manuscript and certified that the study meets the requirements of research ethics (No. 2023NDKY001). All participation was voluntary and anonymous, and participants were informed about the objective of the study and ensured of confidentiality before their consent.

Data availability statement

The data associated with this study has not been deposited into a publicly available repository. Data will be made available on request.

CRedit authorship contribution statement

Wei Yue: Writing – original draft, Methodology, Investigation, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

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