# Exploring how family environmental factors influence the employability of higher education students majoring in elderly care management in Hubei Province, China

## Xian Zhao and Jirawan Deeprasert*

Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin, Salaya, Nakhon Pathom, 73170, Thailand.

**ABSTRACT**

This study is based on ecological systems theory to investigate the impact of family environment on the employability of higher education elderly care management students in Hubei Province, China. Understanding the relationships between these factors is particularly important for enhancing students' employability. This study uses qualitative research methods to conduct an in-depth interview through semi-structured questions. First, purposive sampling was used to select respondents familiar with elderly care management in Hubei Province, China, including 10 employers from elderly care institutions, 10 teachers, and 10 students along with their family members in this field, followed by snowball sampling to expand the sample size. The findings reveal that among the family environmental factors examined, financial support showed the strongest influence on employability, followed by values and beliefs, then informational support, and lastly, family expectations. Overall, this study provides valuable insights for enhancing the employability of elderly care management students in higher education institutions in Hubei Province, China.

**Keywords:** Higher education, employability, elderly care management students, family environment.

*Corresponding author. E-mail: jirawan.dee@rmutr.ac.th.

## INTRODUCTION

The global ageing trend is becoming increasingly evident. According to the latest data, the global population aged 65 and over has reached approximately 800 million, accounting for 10.2% of the world's total population. This number is expected to double to 1.58 billion by 2050, making up more than 16% of the global population (United Nations, 2024). In China, the ageing phenomenon is even more pronounced. The seventh national census data in 2020 showed that the Chinese population aged 60 and above reached 264 million. It is projected that this number will exceed 300 million during the 14th Five-Year Plan period, which indicates that China will enter the stage of moderate aging from mild aging (Jun, 2022). By 2050, China is expected to become the country with the largest population of people aged 65 and above in the world.

Ageing population has a profound impact on society and the economy. First, it relied more on institutional care (McGarry and Grabowski, 2021). Second, it increased isolation and mental health concerns (Mushtaq and Khan, 2024). This transition heightened concerns about mental health and the need to strengthen workforce skills for evolving care demands. In the field of elderly care industry, employability is particularly crucial as the industry has evolved from providing basic daily care to offering more comprehensive and specialized services (Zou et al., 2024). Employability refers to an individual's ability to secure and maintain employment within the labor market (Donald et al., 2024). Professionals in elderly care must continually enhance their employability by improving communication skills, acquiring advanced professional knowledge, developing psychological care competencies, emergency response capabilities, and cultural sensitivity (Argyriadis et al., 2022).

As the ageing trend increases pressures on healthcare

systems, changes in family structures shrink the quality of the labour force in China, slow Chinese economic growth and reduce investment demand (Wang et al., 2022). The Chinese government has introduced a series of measures to promote the development of the elderly care industry (Li and Zhong, 2022), particularly focusing on increasing efforts to expand employment opportunities for students and strengthening the construction of elderly care institutions, which highlights the state's strong emphasis on this sector (Chen et al., 2023). Despite various efforts, the social and economic pressures brought about by China's aging population have not been effectively alleviated (Chen, 2023), as the imbalance between the supply and demand for talent in the elderly care industry remains significant (Liu et al., 2023). Concurrently, the projected demand for nursing staff ranges from 5.6 million (low estimate) to 11.5 million (high estimate). Thus, the human resource supply of long-term care is worrying" (Zhang et al., 2021). The reason for the imbalance between supply and demand for talent in the elderly care industry lies in the graduates lacking sufficient employability, which hampers their ability to meet the increasingly diverse needs of elderly care (Bao et al., 2024). Therefore, enhancing the employability of higher education students majoring in elderly care management is considered to be a crucial measure to address the imbalance between the supply and demand for talent in the elderly care industry (Liang et al., 2023).

According to ecological systems theory, which was developed by psychologist Urie Bronfenbrenner, human development is influenced by different types of environmental systems (Chen et al., 2023). It emphasizes the role of the family environment as a key factor in the development of an individual's social behavior (Dunst, 2022). Especially in the context of accelerated global aging, the direct influence of the family environment on individual behavior has become increasingly evident (Padeiro et al., 2023). Therefore, family environmental factors play an indispensable role in a student's career development, directly or indirectly influencing their employability (Koçak et al., 2021).

A previous study suggested that the family environment on individuals consists of four key variables: family expectations, financial support, informational support, values and beliefs (Tasković and Pedović, 2024). As one of the most significant background factors affecting individuals' growth and development, the family environment has a specific and essential impact on individuals' career choices (Jiang, 2022). However, few studies have explored the specific impact of family environment on employability for higher education students majoring in elderly care management. Faced with the low employability of higher education students majoring in elderly care management, it is necessary to dig deeper into the specific factors related to the family environment. To this end, the researcher plans to conduct an in-depth analysis using qualitative research methods to better identify these factors.

To summarize, the study sought to answer the following **research question:** How are the main family environmental factors influencing the employability of higher education students majoring in elderly care management? The **research objective** is as follows: To identify the main family environmental factors influencing the employability of higher education students majoring in elderly care management.

## LITERATURE REVIEW

### Ecological systems theory

This study applies ecological systems theory to analyze the impact of family expectations, financial support, informational support, values and beliefs on the employability of students in elderly care management.

Ecological systems theory explains how human development is influenced by different types of environmental systems. The theory implies the dynamic interactions between individuals and their environments, which are organised into nested levels (Iruka et al., 2020). Ecological systems theory posits that an individual's social environment (such as family environment, institutions, groups, community, etc.) should be viewed as a social ecosystem, emphasizing that everyone's social environment should be considered as a whole ecological system (Crawford, 2020). The theory emphasizes the role of the family environment as a key factor in the development of an individual's social behaviour. Specifically in the context of accelerated global ageing (macrosystem), the direct influence of the family environment (mesosystem) on individual behaviour (microsystem) has become increasingly evident. Previous studies analyzed family influence on individual behavior through four major areas: Family expectations, financial support, informational support, values and beliefs (Vautero et al., 2020). Existing research shows that employability is a form of positive adaptive behaviour, which includes behavioral traits such as adaptability and proactivity (Zhao et al., 2022).

### Elderly care industry in China

The combination of the one-child policy and rising life expectancy has accelerated the ageing process in China (Lobanov-Rostovsky et al., 2023). By 2035, the population of those aged 65 and above is expected to be 312.88 million, making China one of the fastest-ageing countries in the world.

The concept of institutionalized elderly care still faces resistance in China, where filial piety is deeply ingrained in the culture. Many elderly individuals, particularly in rural areas, expect to be cared for by their children, as the

family-based care model remains dominant. This cultural expectation limits the acceptance of professionalized care, creating a significant gap between the demand for and supply of elderly care services (Tan et al., 2022). In order to solve the problem mentioned above, the Chinese government has taken a series of concrete measures to promote the development of elderly care services. 1) China has expanded and upgraded its healthcare infrastructure by establishing more specialized hospitals or wards for older people, equipped with facilities and personnel for the treatment of chronic illnesses, cardiovascular diseases, and cognitive impairments (Min et al., 2021). 2) At the same time, the government has increased investment in nursing homes, community care centers, and home care services, broadening the coverage of elderly care infrastructure and promoting the integration of medical and nursing care services (Zhang et al., 2021).

However, despite the various measures taken by the Chinese government, the shortage of professional talent in the elderly care industry remains critical. Data reported in the news indicates that currently, there are approximately 200,000 direct care staff in China providing services to over 2 million elderly individuals living in care institutions, with an average of around ten residents per caregiver. According to international norms, the ratio of caregivers to disabled elderly people is usually one to three. Based on this standard, China currently requires over ten million caregivers for the forty-four million disabled and semi-disabled seniors (Wang et al., 2024). The elderly care management program in higher education is specifically designed to meet the demands of an ageing society by preparing professionals to manage elderly care service institutions effectively, the primary objective is to develop versatile professionals who can thrive in healthcare settings, elderly care institutions, and related service sectors (Bladt et al., 2023).

## Employability of the higher education students majoring in elderly care management

The current studies indicate that the psychological capital of students, such as self-efficacy and resilience, significantly influences their employability. Factors like family support and workload management also play crucial roles in enhancing retention and motivation in the workplace (Fu et al., 2024). The mean scores for self-perceived competency increased significantly after the course, and students with higher self-perceived competency were more interested in geriatric medicine. This suggests that improving students' perceived competencies in elderly care can enhance their employability and willingness to work in the field (Ng et al., 2021). Gender, contact experience with older adults, and volunteer experience with the elderly were significant factors influencing nursing students' attitudes toward older

adults with dementia, which in turn affects their perceived preparedness and future employability in elderly care (Grey et al., 2024). Although existing literature has examined the employability of students, there are relatively few studies on the employability of higher education students majoring in elderly care management. The limited studies available mainly focus on factors like psychological attributes, knowledge, and experience, but these studies do not entirely explain the factors that affect the employability of higher education students majoring in elderly care management in the context of a family environment.

## The higher education students majoring in elderly care management in Hubei province

The primary sample of this study comes from Hubei Province, which is located in the mid-region of China. According to Yang (2020), the population density of individuals aged 65 and over in Hubei Province, ranges from 0.26 to 29.87 people (per 10,000 m²).

Hubei has a population of 58.44 million at the end of 2022, with 9.75 million of the population aged 65 and above. The percentage of the population over 65 in Hubei Province is 16.69%, which is the top 1 among the mid-region of China, highlighting the significant ageing trend (National Bureau of Statistics of China, 2023). Hubei Province is the first province in the mid-region of China to establish higher education programs in elderly care management. Hubei Province has 134 higher education universities, and its educational resources rank among the top ten in China, with an enrollment of 555,794 students and around 470,661 graduates by the end of 2022 (Hubei Provincial Bureau of Statistics, 2023).

## RESEARCH METHOD

While quantitative research primarily examines whether a positive relationship exists between factors within the family environment and employability, qualitative research provides a more detailed and specific exploration of the key elements that shape elderly care management students' employability and the mechanisms through which these factors exert their influence (Lim, 2024). Therefore, this study employs qualitative research methods to conduct an in-depth analysis, integrating multiple perspectives from interviews to explore how the family environment influences factors affecting the employability of higher education students majoring in elderly care management.

## Unit of analysis

There were a total of thirty respondents for the interview as follows:

1. Ten employers in the elderly care industry,
2. Ten graduates (2024-2025) majoring in elderly care management and corresponding family members,
3. Ten teachers of elderly care management.

## Sampling method

In this study, purposive sampling was used to initially screen respondents familiar with elderly care management, including five employers from elderly care institutions, five teachers, and five students along with their corresponding family members in this field. The goal was to analyze the influence factors of employability of elderly care management students, specifically examining how the family environment influences their employability.

After selecting the initial fifteen respondents, snowball sampling was used to further expand the sample to thirty. The initial participants were asked to recommend others with relevant expertise in elderly care management, leading to the inclusion of an additional fifteen participants (five employers, five teachers, and five students along with their corresponding family members). This approach allowed for a broader range of perspectives while ensuring that the sample remained relevant to the study's focus (Akkaş and Meydan, 2024).

## Research tools

Jones and Arminio (2021) argue that qualitative research is well-suited for exploring complex issues and requires considering the problem from multiple perspectives. According to Aguilera et al. (2024), stakeholders are all individuals and groups that influence the achievement of an organization's goals. Data triangulation will help this study establish the stakeholders involved in qualitative research. Therefore, solutions to the research problem must be found from a multi-stakeholder perspective.

This study utilized a semi-structured interview method for data collection. The respondents' interview questions aim to reflect the characteristics of three respondent identities (employers, teachers, and students with their families). Each respondent group answered a total of ten questions covering: (1) the employability skills required in the elderly care industry, (2) the family environment of elderly care management graduates (2024–2025), and (3) the relationship between family environment and students' employability, as perceived by the three parties.

## Data collection method

The researcher conducted semi-structured interviews with thirty participants, each lasting 35 to 50 minutes. With the consent of the participants, audio recordings were made.

Additionally, the researcher employed both online (network teleconference) and offline (face-to-face) methods for the interviews. Eleven respondents (two employers, four students and their corresponding family members, and five teachers) were interviewed face-to-face, while the remaining nineteen respondents (eight employers, six students and their corresponding family members, and five teachers) were interviewed via web video.

## Data analysis

To analyze the relatively inaccurate and scattered information from informants that appeared to be relevant to the study, the researcher used the licensed software NVIVO 14, introduced by QSR International, to aid in analyzing the collected interview data.

Step 1: Created a new project in NVIVO.
Step 2: Imported the data into the NVIVO system.
Step 3: Analyzed the data using three coding levels: open, axial, and selective.

At the end of coding, the item model analysis tool in NVIVO was used to present a macro picture of the nodes. Subsequently, a micro-level description of each node was provided to explain these factors in more detail.

## RESULTS

### Descriptive statistics of respondents

The detailed information on respondents in this study is presented in Table 1.

### Open coding analysis

Open coding is the initial phase of data analysis, where concepts, attributes, and categories discovered in the data are gradually refined and defined. In this study, manual coding was used to process the data. Textual data was analyzed sentence by sentence, extracting accurate and valuable concepts and further categorizing them into categories. Effective concepts are key ideas extracted from data that capture underlying themes, while sub-scopes in open coding analysis are more specific aspects that help categorize these concepts (Kiely and Hartman, 2023). For example, an effective concept derived from representative statements is "gender suitability in specific roles", the corresponding sub-scope in open coding analysis is "Gender-Job Fit". Through careful and iterative comparative analysis, 41 effective concepts and 23 scopes were identified. In the next stage, the upper main scope will be identified through axial coding analysis to explore broader patterns and relationships.

**Table 1.** Code for employers, teachers, students and corresponding family members.

| Elderly care institutions (Selected employers from) | Employer code | High-education institutions offering elderly care management majors in Hubei (Selected teachers, students and corresponding family members from) | Teacher code | Student and corresponding family member code |
|---|---|---|---|---|
| 1. Social Welfare Institution of Wuhan | E1 | 1. Hubei College of Chinese Medicine | T1 | SF1 |
| 2. Taikang Elderly Care Institution of Wuhan | E2 | 2. Hubei Polytechnic Institute | T2 | SF2 |
| 3. Social Welfare Social Welfare Institution of Wuhan Hanyang District | E3 | 3. Science and Technology College of Hubei University of Arts and Science | T3 | SF3 |
| 4. Social Welfare Social Welfare Institution of Wuhan Jianghan District | E4 | 4. Hubei Health Vocational College | T4 | SF4 |
| 5. Social Welfare Institution of Xiaogan | E5 | 5. Hubei Three Gorges Polytechnic | T5 | SF5 |
| 6. Social Welfare Institution of Huangshi | E6 | 6. Xianning Vocational Technical College | T6 | SF6 |
| 7. Sunshine Welfare Institution of Guangshui | E7 | 7. Wuhan Social Work Professional College | T7 | SF7 |
| 8. Zhaoshang Guanyi Elderly Care Institution of Wuhan Hanyang District | E8 | 8. Huanggang Polytechnic College | T8 | SF8 |
| 9. Social Welfare Institution of Jiangling | E9 | 9. Ezhou Polytechnic | T9 | SF9 |
| 10. Elderly Care Service Center of Wuhan Qiaokou District Yijia Street | E10 | 10. Huanggang Vocational College of Science and Technology | T10 | SF10 |

## Axial coding analysis

The categories derived from open coding are relatively independent, with their internal relationships yet to be established. Axial coding builds upon the concepts and categories identified during open coding, using the initially formed categories as a central axis to identify and establish connections between them (Al-Eisawi, 2022). Simultaneously, through iterative comparative analysis of the original data, key categories are selected. In the axial coding process of this study, 12 main scopes were extracted from the 23 sub-scopes in the open coding process. Please refer to Table 2 for the axis coding results.

## Selective coding analysis

Selective coding aims to identify the "core categories" from the main categories and develop "storylines" (Al-Eisawi, 2022), thus leading to identify main family environmental factors influencing the employability of elderly care management students. This study has identified 12 main categories through axial coding. To ensure comprehensive conceptual coverage, five additional original statements from respondents were analyzed after completing the initial coding. No new significant concepts emerged, and core concepts repeatedly appeared, indicating that

theoretical saturation was achieved. The final coding results of this study are shown in Table 3.

## Relationship between family environmental factors and employability

The coding system software showed that the main family environmental factors influencing employability of the higher education students majoring in elderly care management are family expectation, financial support, informational support, values and beliefs respectively. Further analysis of the interview text revealed that:

**1. Among the family environmental factors examined, financial support showed the strongest influence on employability.** There were a total of eighteen respondents involved in family financial support. This is because family financial support enables elderly care management students to focus on internships, participate in professional caregiving training, and concentrate on job-seeking activities without worrying about immediate livelihood or job-search-related costs. This economic stability helps them adopt a more strategic approach to elderly care career planning, allowing them to better prepare for employment (Hailu et al., 2024).

**Table 2.** Axial coding.

| Main scope | Sub-scope | Scope connotation |
| --- | --- | --- |
| 1. Career choice expectation | Gender-job fit | Gender aligns with elderly care management job requirements or workplace equality policies. |
| | Age-job fit | Age is appropriate for elderly care management job demands and opportunities. |
| | Personality-job fit | Personality traits suit the elderly care management job's nature and environment. |
| 2. Elderly care responsibility expectations | Companionship and emotional support | What family members believe is essential for the orderly's daily life. |
| | Medical and health care | |
| 3. Family-work balance expectation | Time balance | Balancing work deadlines while ensuring quality family time. |
| | Role conflict management | Effectively manage conflicts between work and family roles to avoid stress from role overlap. |
| 4. Parental educational investment | Parental educational investment | Expenditures on tuition, learning materials and other resources that support elderly care management student's academic success. |
| 5. Family living assistance | Family living assistance | Support provided to meet elderly care management student's basic living needs, including food, clothing, housing, and transportation. |
| 6. Investment in professional skills | Soft skills investment | E.g., teamwork skills, communication skills, problem-solving skills, and job responsibility |
| | Hard skills investment | E.g., mastery of geriatric nursing techniques, operation of assistive devices, emergency response skills. |
| 7. Industry trend sharing | Market dynamics and innovations | Sharing the latest developments in elderly care market demand, emerging technologies, and industry innovations. |
| | Policy and regulatory updates | Providing information on new elderly care policies, regulations, and their potential impact on the industry. |
| | Practices and competitive insights | Sharing successful elderly care industry cases, operational strategies, and competitive analysis. |
| 8. Family social capital | Professional exchange channel | Professional knowledge or skills accumulated by family members in elderly care fields (such as hospital care or community services). |
| | Social relationship network | Family connections within the elderly care industry chain (such as relatives working in elderly care institutions). |
| | Opportunity access | Relying on family-based implicit social capital (such as internal referrals), individuals can gain priority access to internships. |
| 9. Professional development planning | Professional development planning | Setting career goals and taking proactive steps to succeed by planning ahead and exploring diverse career paths in the elderly care industry. |
| 10. Social responsibility | Economic responsibility | Reducing the economic burden on families and society while promoting the healthy development of the "Silver Economy". |
| | Ethical responsibility | Respecting the dignity and rights of the elderly, upholding fair care, professional ethics, and human-centered elder care environment. |
| 11. Values of filial piety | Filial piety | Being respectful and dutiful toward one's parents. |
| 12. Inter-generational value transmission | Cultural and traditional transmission | To transmit and learn the customs, language, and festive rituals of the elderly. |
| | Life wisdom transmission | To transmit the life experiences, practical wisdom, and other non-material values of the elderly. |

**Table 3.** Results of selective coding process.

| Coding | Axial coding | Respondent count | | | Total | Rank |
|---|---|---|---|---|---|---|
| | | E | T | SF | | |
| Family expectation | 1. Career choice expectation | 5 | 2 | 1 | 12 | 4 |
| | 2. Elderly care responsibility expectations | 1 | 0 | 1 | | |
| | 3. Family-work balance expectation | 1 | 1 | 0 | | |
| Financial support | 1. Parental educational investment | 1 | 1 | 4 | 18 | 1 |
| | 2. Family living assistance | 2 | 3 | 3 | | |
| | 3. Investment on professional skills | 2 | 1 | 1 | | |
| Informational support | 1. Industry trend sharing | 2 | 2 | 2 | 13 | 3 |
| | 2. Family social capital and networking | 0 | 0 | 3 | | |
| | 3. Professional development planning | 0 | 2 | 2 | | |
| Values and beliefs | 1. Social responsibility | 2 | 2 | 3 | 15 | 2 |
| | 2. Values of filial piety | 1 | 2 | 1 | | |
| | 3. Inter-generational value transmission | 1 | 1 | 2 | | |

Notes: E = Employer; T = Teacher; SF = Student and corresponding family. Respondent count = frequency of axial coding scope references made by 10 employers, 10 teachers, and 10 students with corresponding family members) across the 10-question interview.

*E3: We have found that students without financial pressure are more willing to invest time in additional aged care training and workshops. Such candidates adapt more quickly after being hired and demonstrate stronger practical skills in elderly care services.*

*T9: Financial support allows students to choose higher-quality aged care internship placements rather than settling for any opportunity just to cover living expenses. This is crucial for enhancing their professional competence and making informed career choices in elderly care.*

*SF2: If it weren't for my family's support, I would have to work several jobs to make a living, leaving no time for internships in aged care, let alone preparing for interviews in this field.*

**2. Values and beliefs ranked second among the examined family environmental factors impacting employability.** There were a total of fifteen respondents involved in family values and beliefs. The interviews revealed that the values and beliefs within families in this study include social responsibility, values of filial piety, and inter-generational value transmission, which are shaped by the students' family environment. For higher education students, who have received advanced education and developed independent perspectives on life and values, the integration of family values and beliefs with higher education has a more pronounced intrinsic impact on their

employability (Li and Zhong, 2022). This influence has gradually raised values and beliefs to become the second most significant factor affecting their employability, following financial support from the family.

*E7: Understanding and practicing filial piety is crucial in our caregiving environment. This not only enhances the quality of care provided but also fosters a deeper emotional connection between caregivers and the elderly, promoting a more compassionate and respectful atmosphere.*

*T4: We emphasize the importance of social responsibility, including economic and ethical responsibilities, in our curriculum. By integrating these principles into our teaching, we aim to prepare students to make informed decisions that benefit both the elderly and the broader community, ensuring sustainable and ethical practices in elderly care.*

*SF9: As a student, I believe ethical responsibility is a key to building trust in elderly care institutions. Demonstrating ethical responsibility not only strengthens the reputation of care institutions but also ensures that the elderly receive dignified and respectful treatment, which is fundamental to their well-being.*

**3. Informational support ranked third among the examined family environmental factors in impacting employability.** There were a total of thirteen respondents

involved in family informational support. The interviews revealed that family information support plays a crucial role in the employability development of students majoring in elderly care. As the elderly care industry evolves rapidly and technological requirements continue to advance, staying updated with the latest information in a timely manner is essential. This not only helps students adapt to industry changes but also enables them to better cope with the employment challenges brought by an aging society.

> *E8: Keeping up with market dynamics and innovations is crucial for elderly care professionals. We prioritize employees who can adapt to emerging technologies and industry shifts.*
> *T6: Students with family ties in the industry often benefit from better resource coordination. We encourage them to leverage these networks for professional growth.*
> *SF3: Having a family member in the elderly care field has helped me gain insights and networking opportunities. Their guidance has been crucial in securing internships and job referrals.*

**4. Family expectations ranked fourth among the examined family environmental factors impacting employability.** There were a total of twelve respondents involved in family expectations. Insights from interviews reveal that although family expectations impact employability, their influence is relatively less significant compared to other three family factors- financial support, value and beliefs, and information support, due to their higher education. Higher education fosters independence and critical thinking skills, equipping students to make more autonomous decisions (Golden, 2023). In contrast, students without higher education show greater susceptibility to family influence, as they often rely more on family guidance when making career decisions.

> *E5: Family expectations are a double-edged sword. They can motivate students to prepare thoroughly, but I've also seen some students apply hastily, clearly without seriously considering whether elderly care is truly suitable for them.*
> *T1: Some students may quickly dive into job-seeking within the elderly care industry due to family expectations, but problems arise when they lack genuine interest in the field.*
> *SF4: I know my family means well, but sometimes it feels like I'm living for them rather than myself. I chose elderly care management because it's 'practical,' but I often wonder if there are other possibilities*

*out there.*

## DISCUSSION AND CONCLUSION

### Discussion of research results

This research found that, among the examined family environmental factors, financial support demonstrated the strongest direct effect on employability. It was followed by values and beliefs, informational support, and finally family expectations.

**1. Family financial support significantly influences the employability of elderly care management students through parental educational investment, family living assistance, and investment in professional skills.** This empirical evidence supports the views of previous researchers. Dynarski et al. (2023) pointed out that financial support from parents, such as covering tuition fees and purchasing educational resources, enables students to focus on their studies without being burdened by financial stress. This support is particularly crucial for students involved in elderly care management, as it allows them to manage caregiving responsibilities while maintaining their academic performance. Additionally, Moores and Burgess (2022) emphasized that students from low-income households benefit significantly from parental educational investment, which improves retention rates and academic outcomes, further enhancing employability. Pivoriūtė (2024) found that for some Lithuanian young adults, financial support from parents conflicted with their desired career paths and raised fears of having to pursue undesirable jobs to achieve independence. This dependence, coupled with uncertainty, may undermine their confidence and sense of autonomy in career development. This different opinion may stem from varying socio-cultural contexts. In China, family financial support is often viewed as a shared family investment, especially for students in elder care programs where early career returns may be limited. It allows them to focus on developing skills and gaining experience, thereby enhancing employability. In contrast, research from Lithuania shows that continued financial dependence can clash with the pursuit of independence, potentially weakening young adults' confidence in building meaningful careers.

**2. Family values and beliefs significantly influence the employability of elderly care management students through social responsibility, values of filial piety, and inter-generational value transmission.** This empirical evidence supports the views of previous researchers. Yi et al. (2022) pointed out that family environments that foster values of justice and empathy significantly contribute to the development of a strong sense of social responsibility among college students. Fonseca et al. (2019) noted that

students who engage in socially responsible activities during their academic years develop stronger professional skills and a deeper commitment to elderly care, improving their employability prospects. In contract, Ng et al. (2022) indicated that extrinsic work values did not predict external employability. This divergence primarily stems from Ng et al. (2022) examining employability in general workplace settings, while this study specifically focuses on elderly care- a highly ethics-driven field where altruistic values and social responsibility (often instilled through family upbringing) serve as key employer evaluation criteria. Additionally, Ng et al.'s study measured external employability through market-oriented competitive indicators (e.g., job-position fit), whereas the elderly care industry emphasizes value congruence -an implicit employability factor reflecting alignment with professional values and beliefs.

**3. Family informational support significantly influences the employability of elderly care management students through industry trend sharing, family social capital, and professional development planning.** This empirical evidence supports the views of previous researchers. Especially, Hofer et al. (2020) pointed out that merely providing access to career and labor market information is not sufficient; students, particularly those with limited prior exposure to career planning, may struggle to interpret and apply complex information without additional guidance from either parents or career professionals. Li and Zhong (2022) pointed out that families with better access to information about employment opportunities and market developments are able to provide valuable advice to students, thus enhancing their readiness for the job market. Baik et al. (2024) pointed out that social capital derived from family networks was positively associated with formal volunteering among caregivers, which enhances employability by providing practical experience and community engagement. Han and Zhang (2023) pointed out that parental career support, including verbal encouragement and information about career pathways, has a significant positive influence on students' career adaptability. However, Prasetya and Soetjipto (2023) found that family support had a positive and significant impact on burnout, which in turn increased job stress. This suggests that in this context, family information support did not function as a protective factor enhancing job performance or capability, but rather contributed to emotional exhaustion, potentially undermining employment-related functioning. The differing findings stem from variations in study context and target groups. For Chinese elder care students, family informational support - such as advice on industry trends and career planning - helps them stay aligned with evolving industry demands and continuously upgrade their professional skills. In contrast, the study of Prasetya and Soetjipto focuses on 641 female employees at Tunas Artha Mandiri

in Indonesian, where family support is shaped by traditional norms that emphasize women's domestic responsibilities, making such support more emotionally oriented and less focused on professional growth.

**4. Family expectation significantly influences the employability of elderly care management students through career choice expectations, elderly care responsibility expectations and family-work balance expectations.** This empirical evidence supports the views of previous researchers. Hadiyati and Astuti (2023) pointed out that family expectations, along with personality and interests, guide students toward specific career paths, ultimately affecting their employability. Medeiros et al. (2022) emphasized that individuals with strong family support and clear expectations of balancing work and caregiving are better able to navigate these dual responsibilities, improving their employability in caregiving fields. The effect of work-family balance, specifically work-to-family conflict, on job satisfaction was stronger among women than among men. Whereas, Young et al. (2022) indicated that work-life balance did not have a significant main effect on occupational satisfaction in the information technology area. This inconsistency may also be related to differences in work-life balance expectations and norms across professions, with the elderly care industry placing greater emphasis on emotional labor and caregiving responsibilities, while the IT sector often values flexibility, innovation, and project-based outcomes.

**Implications to ecological systems theory**

This study applies ecological systems theory to provide a theoretical foundation for the relationship between family environmental factors (family expectations, financial support, informational support, and family values and beliefs) and the employability of elderly care management students in higher education. The qualitative research results identify the main family environmental factors influencing the employability of elderly care management students, these findings provide practical support and evidence for the application of ecological systems theory in the field of elderly care management education.

**Implication to stakeholders**

This study can serve as a valuable reference for elderly care management-related university administrators, teachers, parents, students, and employers. University administrators can develop strategies to enhance educational outcomes by understanding the influence of family environment on student career motivation and performance. Teachers can better recognize family factors that influence students' career choices and provide tailored guidance. Students and their families can benefit from

understanding how family factors interact with career development in this growing sector. Employers can use these insights to recruit candidates whose family backgrounds support career development in the elderly care area, reducing turnover and training costs.

## Limitations

This study aims to explore the family environmental factors influencing the employability of elderly care management students in Hubei, since all participants were drawn from elderly care programs in Hubei, the findings may not fully reflect the perspectives of students and stakeholders in other regions. This geographical limitation particularly impacts the study's external validity, as Hubei's unique socioeconomic characteristics and the present condition of its elderly care industry may not be representative of other provinces or countries.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## REFERENCES

Aguilera, R. V., De Massis, A., Fini, R., and Vismara, S. (2024). Organizational goals, outcomes, and the assessment of performance: reconceptualizing success in management studies. *Journal of Management Studies*, *61*(1), 1-36. https://doi.org/10.3390/ijerph191811282

Akkaş, H., and Meydan, C. H. (2024). Sampling methods in qualitative sampling in multicultural settings. In *Principles of conducting qualitative research in multicultural settings* (pp. 34-55). IGI Global. https://doi.org/10.4018/979-8-3693-3306-8.ch003

Al-Eisawi, D. (2022). A design framework for novice using grounded theory methodology and coding in qualitative research: Organisational absorptive capacity and knowledge management. *International Journal of Qualitative Methods*, *21*, 1-13. https://doi.org/10.1177/16094069221113551

Argyriadis, A., Patelarou, E., Paoullis, P., Patelarou, A., Dimitrakopoulos, I., Zisi, V., Northway, R., Gourni, M., Asimakopoulou, E., and Katsarou, D. (2022). Self-assessment of health professionals' cultural competence: Knowledge, skills, and mental health concepts for optimal health care. *International Journal of Environmental Research and Public Health*, *19*(18), 11282. https://doi.org/10.3390/ijerph191811282

Baik, S., Crittenden, J., and Coleman, R. (2024). Social capital and formal volunteering among family and unpaid caregivers of older adults. *Research on Aging*, *46*(2), 127-138. https://doi.org/10.1177/01640275231202260

Bao, M., Ma, R., and Chao, J. (2024). Research on the supply and demand of elderly care service resources in China. *Public Health Nursing*, *41*(5), 1082-1088. https://doi.org/10.1111/phn.13342

Bladt, M., Fuino, M., Shemendyuk, A., and Wagner, J. (2023). Modelling the burden of long-term care for institutionalised elderly based on care duration and intensity. *Annals of Actuarial Science*, *17*(1), 83-117. https://doi.org/10.1017/S1748499522000136

Chen, J., Duan, Y., Zhang, Y., Zhang, X., Chu, M., Shi, Y., and Zhang, X. (2023). Self-care behavior and associated factors of nursing students with dysmenorrhea: A structural equation model. *Journal of Nursing Management*, *2023*(1), 8820772. https://doi.org/10.1155/2023/8820772

Chen, Z., and Xiong, R. (2023). Impact of China's aging population on economic development and possible solutions. *BCP Business & Management*, *38*, 897-904. https://doi.org/10.54691/bcpbm.v38i.3794

Crawford, M. (2020). Ecological Systems Theory: Exploring the Development of the Theoretical Framework as Conceived by Bronfenbrenner. *Journal of Public Health Issues and Practices*, *4*(2). https://doi.org/10.33790/jphip1100170

Donald, W. E., Baruch, Y., and Ashleigh, M. J. (2024). Construction and operationalisation of an Employability Capital Growth Model (ECGM) via a systematic literature review (2016–2022). *Studies in Higher Education*, *49*(1), 1-15. https://doi.org/10.1080/03075079.2023.2219270

Dunst, C. J. (2022). Child studies through the lens of applied family social systems theory. *Child Studies*, 1, 37-64. https://doi.org/10.21814/childstudies.4126

Dynarski, S., Page, L., and Scott-Clayton, J. (2023). Chapter 4 - College costs, financial aid, and student decisions. In E. A. Hanushek, S. Machin, & L. Woessmann (Eds.), *Handbook of the Economics of Education* (Vol. 7, pp. 227-285). Elsevier. https://doi.org/10.1016/bs.hesedu.2023.03.006

Fonseca, I., Bernate, J., Betancourt, M., Barón, B., and Cobo, J. (2019, October 28). Developing social responsibility in university students. Proceedings of the 11th International Conference on Education Technology and Computers, United States.

Fu, J.-X., Huang, L.-L., Li, X.-H., Zhao, H., and Li, R. (2024). Association between ageing knowledge and willingness to care for older adults among nursing students in China: the mediating role of attitude towards older adults. *Gerontology & Geriatrics Education*, *45*(3), 444-457. https://doi.org/10.1080/02701960.2023.2227874

Golden, B. (2023). Enabling critical thinking development in higher education through the use of a structured planning tool. *Irish Educational Studies*, *42*(4), 949-969. https://doi.org/10.1080/03323315.2023.2258497

Grey, E., Baber, F., Corbett, E., Ellis, D., Gillison, F., and Barnett, J. (2024). The use of technology to address loneliness and social isolation among older adults: the role of social care providers. *BMC Public Health*, *24*(1), 108. https://doi.org/10.1186/s12889-023-17386-w

Hadiyati, M., and Astuti, B. (2023). Student careers: What factors influence career choice? *Journal of Education Research and Evaluation, 7*, 608-614. https://doi.org/10.23887/jere.v7i4.61686

Hailu, G. N., Abdelkader, M., Meles, H. A., and Teklu, T. (2024). Understanding the support needs and challenges faced by family caregivers in the care of their older adults at home. A qualitative study. *Clinical Interventions in Aging*, 481-490. https://doi.org/10.2147/CIA.S451833

Han, Z., and Zhang, X. (2023). The influence of parental career support on career adaptability of vocational college students. *5*, 30-34. https://doi.org/10.23977/avte.2023.050506

Hofer, A.-R., Zhivkovikj, A., and Smyth, R. (2020). The role of labour market information in guiding educational and occupational choices. *OECD Education Working Papers* 229), 1-58. https://doi.org/10.2147/CIA.S451833

Hubei Provincial Bureau of Statistics (2023). Hubei Statistical Yearbook. https://tjj.hubei.gov.cn/tjsj/sjkscx/tjnj/qstjnj/index.shtml

Iruka, I. U., DeKraai, M., Walther, J., Sheridan, S. M., and Abdel-Monem, T. (2020). Examining how rural ecological contexts influence children's early learning opportunities. *Early Childhood Research Quarterly*, *52*, 15-29. https://doi.org/10.1016/j.ecresq.2019.09.005

Jiang, C. (2022). The effect of family cohesion and adaptability on career choice self-efficacy of graduates: The mediating effect of State Anxiety. *Work*, *72*(3), 979-988. https://doi.org/10.3233/WOR-210508

Jones, S. R., Torres, V., and Arminio, J. (2021). *Negotiating the complexities of qualitative research in higher education: Essential elements and issues.* Routledge. https://doi.org/10.4324/9781003090694

Jun, F. U. (2022). Research on the current characteristics and countermeasures of population aging: A case study of Linyi City. *Management Studies*, *10*(4). https://doi.org/10.17265/2328-2185/2022.04.006

Kiely, R., and Hartman, E. (2023). Qualitative research methodology and international service learning: Concepts, characteristics, methods, approaches, and best practices. In *International service learning* (pp. 291-317). Routledge. https://doi.org/10.4324/9781003445371

Koçak, O., Ak, N., Erdem, S. S., Sinan, M., Younis, M. Z., and Erdoğan, A. (2021). The role of family influence and academic satisfaction on career decision-making self-efficacy and happiness. *International Journal of Environmental Research and Public Health*, *18*(11). https://doi.org/10.3390/ijerph18115919

Li, H., and Zhong, F. (2022). Research on the Impact of Family Capital on College Students' Employment. *International Journal of New Developments in Education*, *4*(9), 15-24. https://doi.org/10.25236/ijnde.2022.040904

Liang, F., Adenan, A., Azman, M. N. A., and Kassymova, G. K. (2023). Research on the retention factors of interns majoring in elderly care service in Chinese higher vocational colleges: based on a qualitative comparative analysis method (QCA). *Perspectives of Science and Education*, *65*(5), 704-719. https://doi.org/10.32744/pse.2023.5.41

Lim, W. M. (2024). What is qualitative research? An overview and guidelines. *Australasian Marketing Journal*, 1-31. https://doi.org/10.1177/14413582241264619

Liu, Y., Chen, L., Lv, L., and Failler, P. (2023). The impact of population aging on economic growth: a case study on China. *AIMS mathematics*, *8*(5), 10468-10485. https://doi.org/10.3934/math.2023531

Lobanov-Rostovsky, S., He, Q., Chen, Y., Curry, N., Brunner, E., Liao, J., Hemmings, N., and Venkatraman, T. (2023). Growing old in China: Systematic review of long-term care insurance pilot studies. *Innovation in Aging*, *7*(Supplement_1), 196-197. https://doi.org/10.1093/geroni/igad104.0645

McGarry, B. E., and Grabowski, D. C. (2021). Nursing homes and COVID-19: a crisis on top of a crisis. *The Annals of the American Academy of Political and Social Science*, *698*(1), 137-162. https://doi.org/10.1177/00027162211061509

Medeiros, T. J., Barbosa, G. C., Alves, L. C. D. S., and Gratão, A. C. M. (2022). Work-family balance among caregivers of elderly people: A systematic review. *Cadernos Brasileiros de Terapia Ocupacional, 30*, e3154. https://doi.org/10.1590/2526-8910.ctoar241831542

Min, L., Yichao, S., and Hailing, M. (2021, June 18). An Empirical Research on Construct and Influencing Factors of College Students' Blended Learning Power Based on SPSS 22 software and AMOS 24.0 software. 2021 2nd International Conference on Artificial Intelligence and Education (ICAIE), Dali, China.

Moores, E., and Burgess, A. P. (2023). Financial support differentially aids retention of students from households with lower incomes: a UK case study. *Studies in Higher Education*, *48*(1), 220-231. https://doi.org/10.1080/03075079.2022.2125950

Mushtaq, A., and Khan, M. A. (2024). Social isolation, loneliness, and mental health among older adults during COVID-19: a scoping review. *Journal of Gerontological Social Work*, *67*(2), 143-156. https://doi.org/10.1080/01634372.2023.2237076

National Bureau of Statistics of China (2023). China Statistical Yearbook. https://www.stats.gov.cn/sj/ndsj/2023/indexeh.htm

Ng, P. M. L., Wut, T. M., and Chan, J. K. Y. (2022). Enhancing perceived employability through work-integrated learning. *Education + Training*, *64*(4), 559-576. https://doi.org/10.1108/ET-12-2021-0476

Ng, Z. L., Mat Din, H., Zakaria, N. F., Inche Mat, L. N., Wan Zukiman, W. Z. H., Md Shah, A., Daut, U. N., and Sallehuddin, H. M. (2021). Implementation of a healthcare of elderly course with multi-professional teachers for undergraduate medical students in a public university in Malaysia: A quasi-experimental pre and post study. *Frontiers in Public Health*, *9*, 743804. https://doi.org/10.3389/fpubh.2021.743804

Padeiro, M., Santana, P., and Grant, M. (2023). Global aging and health determinants in a changing world. In *Aging* (pp. 3-30). Elsevier. https://doi.org/10.1016/B978-0-12-823761-8.00021-5

Pivoriūtė, M. (2024). *"How do I find myself, become successful, financially independent and experience the joys of youth?" Experiences of quarter-life crisis among Lithuanian students* Vilniaus universitetas].

Prasetya, K. B. T., and Soetjipto, B. E. (2023). Burnout as mediateer of the influence of organizational support and family support on job stress at KSPPS Tunas Artha Mandiri. *Economics and Business Journal (ECBIS)*, *1*(4), 293-304. https://doi.org/10.15388/vu.thesis.597

Tan, Y., Liu, X., Sun, H., and Zeng, C. (2022). Population ageing, labour market rigidity and corporate innovation: Evidence from China. *Research Policy*, *51*(2), 104428. https://doi.org/10.1016/j.respol.2021.104428

Tasković, M., and Pedović, I. (2024). Adaptation and validation of the Family Influence Scale on the sample of Serbian students. *Psiholoska istrazivanja*, *27*(1), 81-107. https://doi.org/10.5937/psistra27-44740

United Nations (2024). World Population Prospects. United Nations. Retrieved January 30, 2025 from https://ourworldindata.org/grapher/population-by-age-group-with-projections?time=2024..latest

Vautero, J., Taveira, M. d. C., Silva, A. D., and Fouad, N. A. (2020). Family influence on academic and life satisfaction: A social cognitive perspective. *Journal of Career Development*, *48*(6), 817-830. https://doi.org/10.1177/0894845320902270

Wang, K., Ke, Y., and Sankaran, S. (2024). How socially sustainable is the institutional care environment in China: A content analysis of media reporting. *Buildings*, *14*(9), 2953. https://doi.org/10.3390/buildings14092953

Wang, S., Li, X., Liu, H., Liu, S., and Lin, X. (2022). Family social class as a predictor of college students' career decision-making self-efficacy. *Social Behavior and Personality: An International Journal*, *50*(9), 1-11. https://doi.org/10.2224/sbp.11713

Yang, L. (2020, December 17). *Construction of Integrated Health Care and Elderly Care Talent Training System for Health Care and Elderly Care Major in Higher Vocational Education under Combination of Medical Treatment and Endowment* 2020 International Symposium on Advances in Informatics, Electronics and Education (ISAIEE), Frankfurt, Germany.

Yi, Y., Tan, Q., Liu, J., Liang, F., Liu, C., and Yin, Z. (2022). The mechanism of cumulative ecological risk affecting college students' sense of social responsibility: the double fugue effect of belief in a just world and empathy. *International Journal of Environmental Research and Public Health*, *20*(1), 10. https://doi.org/10.3390/ijerph20010010

Young, D. K., McLeod, A. J., and Carpenter, D. (2023). Examining the influence of occupational characteristics, gender and work-life balance on IT professionals' occupational satisfaction and occupational commitment. *Information Technology & People*, *36*(3), 1270-1297. https://doi.org/10.1108/itp-08-2020-0572

Zhang, L., Shen, S., Guo, Y., and Fang, Y. (2021). Forecasting future demand of nursing staff for the oldest-old in China by 2025 based on Markov model. *International Journal of Health Policy and Management*. https://doi.org/10.34172/ijhpm.2021.63

Zhao, L., Li, W., and Zhang, H. (2022). Career adaptability as a strategy to improve sustainable employment: A proactive personality perspective. *Sustainability*, *14*(19), 12889. https://doi.org/10.3390/su141912889

Zou, Q., Tang, Q., Wang, L., Geng, J., Deng, B., Yu, Z., An, A., Wei, L., Tong, X., and Rong, P. (2024). Service specification for senior care workers with traditional Chinese medicine specialty. *Science of Traditional Chinese Medicine*, *2*(4), 327-331. https://doi.org/10.1097/st9.0000000000000049