

The Influence of Family Background on the Employment Tendency of Graduates of Landscape Architecture Based on Grey Relational Analysis

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Abstract:

This paper traces the relevant data on the family background and employment expectations of the graduates majoring in landscape architecture, uses the grey relational analysis method to calculate the grey relational degree between the employment choices, expected salary and family background of the graduates majoring in landscape architecture, and calculates the relevant indicators to show that Correlation. Especially the parent's degree level, economic status, social class, employment opportunities, employment expectations, employment direction selection and many other aspects of landscape architecture graduates. This paper analyzes the relationship between the employment and family background of graduates majoring in landscape architecture, and explores the impact of landscape architecture graduates' psychological expectations and family background on employment. The study found that the higher the degree level of the parents in the family, the stronger the willingness of landscape architecture graduates to go abroad for further study; the higher the social class of the family, the better the economic situation, and the more employment opportunities for landscape architecture graduates . It shows that family background has a certain positive impact on the employment of landscape architecture graduates. There is a certain correlation between family background factors and the employment expectations of landscape architecture graduates. From the perspective of employment expectations, graduates majoring in landscape architecture should exercise and enhance their employability through professional practice in order to obtain better employment opportunities. Research has shown that landscape architecture majors often encounter a certain amount of resistance in their initial employment. It is true that their family background has a certain positive effect, improving their jobs, wages and status, but this phenomenon also has a certain degree of influence on these newly recruited graduates. Society, strengthen the employability and professional quality of landscape architecture graduates, so that they can better find their professional orientation and value attribution. On this basis, the research will continue to track more data samples, deeply explore the relationship between family background and the employment of landscape architecture graduates, and call on more people to pay

attention to the employment situation of landscape architecture graduates.

Keywords : *Landscape architecture graduates, Family background factors, Vocational ability, Correlation coefficient, Employment strategy, Grey correlation analysis.*

I. INTRODUCTION

The employment rate and employment matching degree of college graduates are two important indicators to test the quality of professional education and one of the internal motivations for the sustainable development of professional education. Landscape architecture major has become a major with a more advantaged employment because of its strong practicality and professionalism. According to the research, the employment of the graduates of landscape architecture is affected by various aspects. Family background is one of influencing factors factor that cannot be ignored among numerous aspects. The family background can be divided into "strong family background" and "weak family background" after combining several factors such as parents' occupation, education level, family income and family relationship network. According to relevant survey data, the influence of the family background on the employment of the graduates of landscape architecture is significantly positive[1]. These graduates with a "strong family background" appear to be easier when they are employed, which are deserved to higher education or further studies when they are graduated and incline to improve their personal abilities and professional skills. graduates of landscape architecture with weak family backgrounds are often bounded by family factors based on their family economics or other factors when they are employed, which are more adv preferred to seek for a relatively stable job when they graduate[2]. It notably shows that the graduates of landscape architecture with weak family backgrounds are at a disadvantage than the one with strong family backgrounds when they are employed[3].

The family background is a vague and broad concept, including parents' occupation, economic income, education level, family location, family harmony, and so forth, which covers both the physical environment and the spiritual environment. Employment concept is the basic view and attitude of the employment subject to the purpose and significance of the employment, which to obtain the employment, the employment space, and so on[4]. Generally speaking, the focus of family background mainly includes parents' occupation, parents' education level, and family income, Family structure[5]. Therefore, in this paper, the impact on the employment of the graduates of landscape architecture is analyzed from the above five aspects, including the nature of parents' work of, education level, family income, ways of obtaining job information for graduates and their expectations of salary. Finally, Grey Relation Analysis is used to analyze the grey relational degree between employment trend and family background, so as to draw conclusions and thinking.

II. RESEARCH IDEAS AND CONTENT

After data tracking and analysis, the family background and the employment trend of graduates are sure to have a certain relationship. A study is focusing on the analysis of the employment of graduates of

landscape architecture and their expectations on jobs salary[6]. However, their investigations and studies lack of the relationship between employment and family background of the graduates of landscape architecture, and also ignore the influence of their family background attention. The relationship between family background and graduates' employment trend is scientific and reasonable, and the conditions of data mining and analysis are also available in the analysis of data logic.

2.1 Research Status

Some scholars found that the education level and occupational status of parents have a significant positive impact on their children's occupations when these graduates learn to hunt a job for graduates of other majors[6][7]. It has a certain reference value for the research on this issue. In the past research, the questionnaire survey method and the experience summary method were often used on this issue. However, there are still some shortcomings in the past research, which are mainly manifested in the following aspects:

a) The research system has not yet formed. There is currently no complete system for the influence of family background on employment.

b) The research method is still singular. Although there are empirical studies on the employment trend of the graduates of landscape architecture based on family background in the academic circles, descriptive studies are generally used, which is not conducive to the scientific and systematic research.

c) The research data sample is limited. There are not sufficient data samples involved in this topic selection, and the research only analyze the existing valid data, especially the influence and elaboration of family background on the employment trend of the graduates of landscape architecture.

2.2 Research Methods

2.2.1 Sampling

The purpose sampling is used in the research, and the sample that can provide greater amount of information for the research is selected according to the purpose of this research. Due to the relatively large base of fresh graduates in Wuhan, a Chinese city with over four millions graduated graduates per year, it was urban planning and designated as the survey point for more intuitively indicating the employment situation. The scope of this research covered ten colleges and universities with graduates of landscape architecture, and 386 questionnaires were issued.

2.2.2 Data collection

This research comprehensively uses the literature research method, the questionnaire survey method, the statistical grouping method, the comparative analysis and other methods to carry out descriptive statistics and cross-analysis on the existing research status and the occupation of the student's parents, family income, parental education level, demographic structure, and so forth, as well as their employment area, the employment industry (the nature of the unit), employment expectations and so on.

2.2.3 The ideas

Firstly, suppose that the graduate graduates with different family backgrounds have different employment trends. In order to demonstrate this hypothesis, this paper divides the employment trend into three dimensions, including employment region, employment industry (unit nature), and employment expectations. The factors that affect the employment trend of the graduates of landscape architecture consist of four aspects: parents' occupation, family income, parents' education level and demographic structure, and questionnaire surveys and observations, which are conducted based on this conceptual framework. Secondly, the obtained questionnaire results are analyzed for focusing on the differences in the employment trends of the different family backgrounds and the reasons behind these differences, as well as the most prominent difficulties that the graduates from different family backgrounds feel in terms of employment. Finally, it draws preliminary conclusions that a broader employment background or a higher starting point is caused by a good family background, indicates the most important factor affecting the employment the difference of graduates of landscape architecture, and puts forward practical and effective suggestions.

III. ANALYSIS OF THE FAMILY BACKGROUND AND EMPLOYMENT TREND OF GRADUATES OF LANDSCAPE ARCHITECTURE

3.1 Basic Profile of Data Sources and Survey Subjects

According to the actual survey, a questionnaire survey method is adopted to investigate the family background and employment trends of the graduates of landscape architecture from major universities in Wuhan from July 2018 to September 2020, and finally collect them. There were 386 questionnaires, of which 360 were valid questionnaires, with an effective rate of 93.26%. It is worth noting that far more female graduates were surveyed than male graduates. Among the questionnaires returned, there are 120 male graduates, accounting for 33.33%, and 240 female graduates, accounting for 66.67%.

3.2 Description of The Basic Family Background of The Graduates of Landscape Architecture.

The concept of the family background has been defined in this topic in more detail, which is mainly measured by family social class (that is, a symbol of parental occupation and rights), education level, and economic status. In the following, these three factors similarly represent the description of the basic family background of the graduates of landscape architecture.

3.2.1 Family social class

The social stratum of the family is a relatively permanent social stratum of the family consisting of family members with the same or similar social status based on the social stratum. Family social stratum is dynamic and has relativistic stratum division. It is worth noting that there are similarities in attitudes, behaviors, patterns and values among members of the same social stratum.

TABLE I. Survey on work units and positions of target parents

N otably, Table 1 shows that the numb er of the	Work unit	Father	Mother	Job position	Father	Mother
	Government agency	28 (7.78%)	12 (3.33%)	Senior leader	16 (4.44%)	8 (2.22%)
	School and scientific research institution	14 (3.89%)	27 (7.5%)	General manager	58 (16.11%)	33 (9.17%)
	Enterprise (including self-employed)	101 (28.06%)	104 (28.89%)	Technical employee	37 (10.28%)	17 (4.72%)
	Worker	107 (29.72%)	79 (21.94%)	General employee	139 (38.61%)	149 (41.39%)
	Rural area	110 (30.56%)	138 (38.33%)	Unemployed or otherwise	110 (30.56%)	153 (42.5%)
	Number of valid entries in this question	360 (100%)	360 (100%)	/	360 (100%)	360 (100%)

parents whose work units are "Enterprises (self-employed)", "Workers", and "Farmers" is the largest, while the number of the persons whose work units are "Government agencies", "Schools and scientific research institutions" is very small. Our research reveals few graduates' parents are "Senior leaders", "General managers" and "Technical employees", and most graduates' parents are "General employees" and "Unemployed or otherwise" in Table I. Simultaneously, it is also seen that the mother has the highest rate of being a "Farmer", "unemployed or otherwise", whether it is the parent's work unit or job position.

3.2.2 The family education level

The family education level in this topic mainly refers to the education level of their parents. It means that the education level of the parents determines the child's family education, which has a subtle influence during the growth of the child[8]. The graduates in families with their parents who get a high level of education are capability to receive more opinions and suggestions from their parents when facing graduation, and they also have more choices for employment. According to our research, the education level of the parents of the respondents is mainly concentrated in "Junior high school", "High school", accounting for 40.28%, 31.94% and 37.22%, 27.5% of the respective subjects.

3.2.3 Family economic status

This topic divides the annual family income of the college graduates into five levels. The data sample shows that the proportion of the annual family income of college graduates in the three income levels of "200-500 US dollars", "500-800 US dollars" and "800-1000 US dollars" is relatively large. They accounted for 27.5%, 38.33%, and 20.83% respectively.

IV. ANALYSIS OF THE FAMILY BACKGROUND AND EMPLOYMENT TRENDS OF GRADUATES OF LANDSCAPE ARCHITECTURE

Urban planning and design is one of the important disciplines in the field of modern humanities and social sciences, and it is also an indispensable key discipline in the development of today's society[9][10]. In a sense, the development level of urban planning and design represents the level of citizenship[11][12]. Therefore, in developed countries, urban planning and design education and scientific

research have always occupied a very important position [13]. According to a survey conducted by the Social Investigation Institute of China (SSIC), 53% of the graduates of landscape architecture and their parents believe that "relationships" have more important impact than ability on employment; 24% of the graduates said that they could not choose jobs based on their preference owing to no "relationship"[14]. It indicates that the "relationship network" have a greater impact on the employment of graduates of landscape architecture[15].

4.1 Research Hypothesis

The family background largely affects college graduates' first employment. Even in the United States and Japan with differences in social class and status, it is difficult to achieve complete equality in educational opportunities and educational outcomes. In a society where the Chinese class system has far-reaching influence, the family background factors are even more inevitable[16]. In view of this, this topic further explores the influence of the family background on the employment trend of the graduates of landscape architecture to investigate the relationship between the family background and the graduates of landscape architecture' employment trends[17].

Now it puts forward the following assumptions:

Research hypothesis 1:

From the perspective of the employment, the stronger the family background is, the wider the employment choice of the graduates of landscape architecture is.

Research hypothesis 2:

The stronger the family background is, the higher monthly salary of graduates of landscape architecture is expected.

Research hypothesis 3:

The different family backgrounds have different employment outcomes for the graduates of landscape architecture. Family background has a significant positive influence on the choice of graduates' employment.

Research hypothesis 4:

The graduates of landscape architecture with weak family background gives priority to employment after graduation, and family background has little influence, most of whom use public resources for employment.

4.2 The Relationship Between Family Background and Employment Channels for Graduates of Landscape Architecture

Analyzed from the data in Table 2 and Table 3, when they are employed, the higher the work unit and education level of the parents is, the higher the family education level of graduates of landscape architecture is and the higher the proportion of "parental arrangements" is. The more contacts and suggestions are given to help graduates' employment with a more rationalize plan and make their short-term development more clear and favorable[18]. From the perspective of the employment channels,

the utilization rate of "Rural" and "Worker" families is much higher than that of "Government agency" families, although the graduates of landscape architecture are mainly employed through the school's job fairs and recruitment websites. It shows that the graduates with a low family social class need to make more use of public resources for employment when getting a job, and they faces greater employment pressure than the former; while it is more possible for the graduates of landscape architecture with a high family social class to be arranged by their parents and their employment channels are wider resulting in more employment opportunities and a higher acceptance rate.

The data in the two Tables intuitively shows that the employment of the graduates of landscape architecture is closely related to the family background factors (father's work unit, mother's education level). For example, when the father is an "Enterprise (including self-employed)", the number of the graduates of landscape architecture who choose to work by "parents" reaches 24(24.24%). The reason is that the parents may want to give their children a more prone environment to grow up. Their parents' experience can be utilized to guide rather than to let them look for work again by themselves. And when the mother's education level is "University and above", the number of the graduates of landscape architecture looking for jobs through "School recommendation or on-campus job fairs" and "Using professional recruitment websites" are 18 and 20, respectively, which demonstrates that the graduates that are trained more self-exploring and have independently thinking ability to solve their own work problems have more advantages, when the mother's education level is higher. These two family background factors play a particularly important role in the first employment of college graduates who have just graduated.

TABLE II. Work unit of father and employment path of graduates

X\Y	Parental arrangements	School's job fairs	Recruitment websites	Information through friends and family	Self-recommended to target company	News and advertisements published by enterprises in newspapers and magazines	Others	Subtotal
Government agency	10(35.71%)	18(64.29%)	17(60.71%)	4(14.29%)	13(46.43%)	5(17.86%)	8(28.57%)	28
Schools and research institutions	4(28.57%)	7(50%)	10(71.43%)	2(14.29%)	2(14.29%)	3(21.43%)	3(21.43%)	14
Enterprise (including self-employed)	24(23.76%)	68(67.33%)	66(65.35%)	37(36.63%)	51(50.50%)	24(23.76%)	15(14.85%)	101

Worker	13(12.15%)	78(72.90%)	74(69.16%)	39(36.45%)	54(50.47%)	32(29.91%)	28(26.17%)	107
Rural	11(10%)	86(78.18%)	71(64.55%)	29(26.36%)	51(46.36%)	28(25.45%)	23(20.91%)	110

TABLE III. Mother's education level and employment path of graduates

X\Y	Parental arrangements	School's job fairs	Recruitment websites	Information through friends and family	Self-recommended to target company	News and advertisements published by enterprises in newspapers and magazines	Others	Subtotal
University level and above	8(26.67%)	18(60%)	20(66.67%)	8(26.67%)	8(26.67%)	5(16.67%)	8(26.67%)	30
High school and technical secondary school	24(24.24%)	65(65.66%)	60(60.61%)	35(35.35%)	56(56.57%)	28(28.28%)	26(26.26%)	99
Junior high school	26(19.40%)	101(75.37%)	91(67.91%)	48(35.82%)	70(52.24%)	41(30.60%)	25(18.66%)	134
Elementary school level and below	4(4.12%)	73(75.26%)	67(69.07%)	20(20.62%)	37(38.14%)	18(18.56%)	18(18.56%)	97

4.3 The Influence of Family Social Class on the Employment Trend of Graduates of Landscape Architecture

This section mainly explores the employment expectations and the employment options of the graduates of landscape architecture from the family social class, and discusses their relationship[19]. According to related researches, the family social class is mainly measured by the work unit or position of the parents.

4.3.1 The influence of family social class on the employment expectations of graduates of landscape architecture

Table 4 is a cross-analysis Table of the father's position and expected monthly salary of the graduates' employment. From a vertical perspective, the expected monthly salary of graduates of landscape architecture is "\$500-800". The proportion of graduates whose father's occupation is "General employee" is the highest, accounting for 28.06%.

Among them, the proportion of fathers whose occupations are "Senior leaders" only accounts for 6.25%. And the graduates of landscape architecture expect a higher percentage of graduates from "Senior leaders" than "General workers" in the father's profession with a monthly salary of "\$1,000 or more". The above data indicates that the level of the family's social class determines the employment expectations of graduates. The higher the family's social class is, the higher monthly salary for employment the graduates expects.

TABLE IV. Father's position and the expected monthly salary of graduates of landscape architecture

X\Y	\$200-500	\$500-800	\$800-1000	≥\$1000	Subtotal
Senior leader	1(6.25%)	7(43.75%)	3(18.75%)	5(31.25%)	16
General manager	6(10.34%)	27(46.55%)	14(24.14%)	11(18.97%)	58
Technical staff	8(21.62%)	10(27.03%)	11(29.73%)	8(21.62%)	37
General worker	39(28.06%)	37(26.62%)	33(23.74%)	30(21.58%)	139
Unemployed or others	23(20.91%)	29(26.36%)	25(22.73%)	33(30%)	110

4.3.2 The influence of family social class on the choice of employment direction for graduates of landscape architecture

The employment direction of graduates of landscape architecture upon graduation consists of four parts: "Work", "Study Abroad", "Self-employment" and "Postgraduate entrance examination". As shown in Table 5, from a horizontal perspective, graduates with a low family social class are more favorably inclined to choose "Work" upon graduation. Therefore, the proportion is much higher than the other three directions.

TABLE V. Father's position and choice of direction for graduates of landscape architecture upon graduation

X\Y	Work	Study abroad	Self-employment	Postgraduate entrance examination	Subtotal
Senior leader	4(25%)	2(12.5%)	4(25%)	6(37.5%)	16
General manager	29(50%)	4(6.90%)	5(8.62%)	20(34.48%)	58
Technical staff	18(48.65%)	4(10.81%)	3(8.11%)	12(32.43%)	37
General worker	81(58.27%)	2(1.44%)	4(2.88%)	52(37.41%)	139
Unemployed or others	63(57.27%)	1(0.91%)	6(5.45%)	40(36.36%)	110

From the vertical point of view, among the graduates who chose to "Work" upon graduation, the proportions of their fathers whose occupations are "General workers" and "Unemployed or other" are 58.27% and 57.27%, respectively. Obviously, they are much higher than "senior leaders." From the

perspective of choosing "Study" and "Self-employment", only 1.44% and 2.88% of the father's occupation is a "General worker", which are far lower than those with high family social class. It represents that the higher the social class of the family is, the more resources the landscape architecture graduates are provided. And the graduates of landscape architecture themselves have more information and resources. Therefore, these graduates have more choices in the direction of the employment upon graduation.

4.4 The Influence of Family Social Class on The Employment Trend of Graduates of Landscape Architecture

The family education level in this topic mainly refers to the education level of the parents, and the education level of the parents has an indirect influence on the employment of the graduates of landscape architecture. The higher the parent's education is, the stronger the family education ability of the graduates of landscape architecture is, and the stronger learning mobility the graduates get[20]. In families with highly educated parents, the graduates of landscape architecture are also given more reasonable opinions and suggestions by parents when facing graduation, and have more choices and higher expectations when facing employment.

4.4.1 The influence of family education level on the employment expectations of graduates of landscape architecture

In Table 6, from a horizontal perspective, there is a higher percentage when graduates of landscape architecture whose mothers' education level is "Elementary school and below" expect a monthly salary of "\$200-500" and "\$500-800"; while the expected monthly salary of graduates of landscape architecture whose mothers are "University and above" is mainly distributed in the two ranges of "\$800-1000" and "≥\$1000". Although the mother's education level in the Table does not distinguish much between the expected monthly salaries of the graduates of landscape architecture.

TABLE VI. The mother's education level and the expected monthly salary of graduates of landscape architecture

X\Y	\$200-500	\$500-800	8\$00-1000	≥\$1000	Subtotal
University level and above	5(16.67%)	7(23.33%)	13(43.33%)	5(16.67%)	30
High school and technical secondary school	19(19.19%)	31(31.31%)	28(28.28%)	21(21.21%)	99
Junior high school	29(21.64%)	40(29.85%)	28(20.90%)	37(27.61%)	134
Elementary school level and below	24(24.74%)	32(32.99%)	17(17.53%)	24(24.74%)	97

It can still be seen that graduates with high family education expect a higher monthly salary than graduates with low family education. It means that the family education level has an indirect impact on the

employment expectation of the graduates of landscape architecture. The higher the education level of the family is, the stronger the educational ability of the graduates of landscape architecture is. That is a subtle influence.

4.4.2 The influence of family education level on the choice of employment direction of college graduates.

From Table 7, the family education level has a significant influence on the direction of employment for the graduates of landscape architecture[21]. Horizontally, the proportion of graduates whose fathers' education is "Primary school and below" chooses "Work" is much higher than the other three categories, which is accounting for 76%. Vertically, the proportion of the graduates of landscape architecture whose father's education is "University and above" chooses "Study", "Self-employment" and "Postgraduate entrance examination" is much higher than that of urban planning and design whose father's education is "Primary school and below" Engineering graduates. Notably, the education level of the family determines the direction of the graduates' employment. The higher the education level of the family is, the more graduates can choose to continue their studies or have a certain amount of entrepreneurial capital to be "Self-employed." On the contrary, families with a low level of family education prefer the graduates to work as soon as possible, with fewer choices of direction.

TABLE VII. Father's education level and choice of direction when graduates majoring in urban planning and design graduate

X\Y	Work	Study abroad	Self-employment	Postgraduate entrance examination	Subtotal
University level and above	19(38%)	5(10%)	4(8%)	22(44%)	50
High school and technical secondary school	58(50.43%)	4(3.48%)	9(7.83%)	44(38.26%)	115
Junior high school	80(55.17%)	4(2.76%)	7(4.83%)	54(37.24%)	145
Elementary school level and below(including illiterate)	38(76%)	0(0.00%)	2(4%)	10(20%)	50

4.5 The Influence of Family Economic Status on the Employment Trend of Graduates of Landscape Architecture

The economic status of the family mainly refers to the level of the family's living standards, the amount of income, the source of income and how to control it[22][23]. The financial status of the family have the most direct impact on the employment of the graduates of landscape architecture[24]. Families with good financial status have a higher employment rate for the graduates of landscape architecture. When facing employment, the graduates can get more material security[25].

4.5.1 The impact of family economic conditions on the employment expectations of graduates of landscape architecture

In Table 8, there is a clear distinction between the good or bad family economic situation and the expected monthly salary of the graduates of landscape architecture. From a horizontal perspective, the graduates with good family financial status expect a higher percentage of monthly salary "≥\$1000".

From a vertical perspective, the graduates of landscape architecture expect a monthly salary of "\$500-700", and the proportion of graduates with good family financial status is far lower than that of those with poor family financial status. It means that the family economic status has a greater impact on the expected monthly salary of the graduates' employment[26][27].

TABLE VIII. Family economic status and student employment expectation monthly salary

X\Y	\$200-500	\$500-800	\$800-1000	≥\$1000	Subtotal
Very good with an annual family income ≥\$30,000	3(12%)	5(20%)	6(24%)	11(44%)	25
Relatively good with an annual family income of \$10,000-30,000	11(14.67%)	30(40%)	15(20%)	19(25.33%)	75
Average with an annual family income of \$7500-15000	30(21.74%)	46(33.33%)	36(26.09%)	26(18.84%)	138
Relatively tight with an annual family income of \$1500-7000	24(24.24%)	26(26.26%)	27(27.27%)	22(22.22%)	99
Very tight with an annual family income ≤ \$1500	9(39.13%)	3(13.04%)	2(8.70%)	9(39.13%)	23

4.5.2 The influence of family economic status on the choice of employment direction for graduates of landscape architecture

The economic status of the family has an indirect influence on the employment direction of graduates of landscape architecture[28][29]. When graduates of landscape architecture are faced with graduation choices, if their families can provide a certain economic foundation and material security, they will have more choice of directions and more choices[30]. Table 9 shows that family economic conditions have a significant impact on the direction of graduates of landscape architecture when they graduate. graduates whose family financial situation is "very tight, and their annual family income is less than or equal to US\$1,500" almost choose "work" when they are employed, accounting for 78.26%. According to related research, the proportion of the families choose d to "Enter a higher education" and "Self-employment" whose family economic status is "Very good with an annual family income of ≥\$30,000" is much higher than other families. The economic status of the family determines the direction of the graduates' employment. The families with good family economic conditions are able to give the student more economic foundation and material security[31]. Consequently, the graduates of landscape architecture in these families have more choices when facing employment rather than being limited to direct "Work". The graduates of landscape architecture with poor family financial status can only "Work" first to maintain the family's material demands when they graduate. It may cause these graduates not to make serious choices and considerations when they are employed[32].

TABLE IX. Family economic status and choice of directions for college graduates' graduation

X\Y	Work	Study abroad	Self-employment	Postgraduate entrance examination	Subtotal
Very good with an annual family income \geq \$30,000	8(32%)	6(24%)	4(16%)	7(28%)	25
Relatively good with an annual family income of \$10,000-30,000	33(44%)	2(2.67%)	6(8%)	34(45.33%)	75
Average with an annual family income of \$7500-15000	78(56.52%)	1(0.72%)	8(5.80%)	51(36.96%)	138
Relatively tight with an annual family income of \$1500-7000	58(58.59%)	2(2.02%)	3(3.03%)	36(36.36%)	99
Very tight with an annual family income \leq \$1500	18(78.26%)	2(8.70%)	1(4.35%)	2(8.70%)	23

V. USING GREY CORRELATION ALGORITHM TO CALCULATR THE GREY CORRELATION DEGREE BETWTEN FAMILY BACKGROUND AND GRADUATES EMPLOYMENT TENDENCY

In this section, the GRA algorithm is utilized for analyzing the influence of the family background on employment tendency of the graduates of landscape architecture. In order to build a multivariable gray model, it is significant to identify the main factors influencing the employment tendency. According to relevant researches, this research proposes the expected monthly salary and the direction choice of the graduates of landscape architecture as two reference sequences, parents' position, parents' education level, and annual family income as initial correlation factors. The procedures of gray relational analysis are as follows:

Step 1: Translating the performance of all alternatives into a comparability sequence. According to these sequences, a reference sequence (ideal target sequence) is defined.

Step 2: The gray relational coefficient between all comparability sequences and the reference sequence is calculated.

Step 3: Based on these gray relational coefficients, the gray relational grade between the reference sequence and every comparability sequences is calculated.

According to the analysis of the influence factors on the influence of the family background on employment tendency of the graduates of landscape architecture, based on the concept of the capability, three factors are determined from the factors system. The GRA generally includes transforming the original data, finding the sequence difference, calculating the correlation coefficient, and sorting the correlation.

5.1 Transforming The Original Data

TABLE X. Proportion of Comprehensive Factors of Job Choice and Family Background of Graduates of Landscape Architecture

Dependent variable: Job choice	Factor 1	Factor 2	Factor 3
	Senior leaders & managers	College & high school	family income is very good & better
Work	54.17%	44.59%	46.67%
Study abroad	3.61%	8.11%	5.45%
Self-employment	6.11%	12.20%	7.88%
Postgraduate entrance examination	36.11%	35.14%	40.00%

TABLE XI. Proportion of Comprehensive Factors of Expected Salary and Family Background of graduates of landscape architecture

Dependent variable: Expected salary		Factor 1	Factor 2	Factor 3
		Senior leaders & managers	College & high school	family income is very good & better
\$200-500	21.39%	9.46%	18.60%	14.00%
\$500-800	30.56%	45.95%	29.46%	35.00%
\$800-1000	23.89%	22.97%	31.78%	21.00%
\$1000+	34.16%	21.62%	20.16%	30.00%

5.2 Finding The Sequence Difference

In the gray relational space, let the original sequence after data transformation,

$$X_o = \{x_o(1), x_o(2), \dots, x_o(n)\}, \tag{1}$$

And the subsequence is

$$X_i = \{x_i(1), x_i(2), \dots, x_i(n)\}, i = 1, 2, \dots, m. \tag{2}$$

The absolute difference between the original sequence and the subsequence is

$$\Delta_{oi}(k) = |x_o(k) - x_i(k)| \tag{3}$$

where

$$\Delta_{oi} = (\Delta_{oi}(1), \Delta_{oi}(2), \dots, \Delta_{oi}(n)) \tag{4}$$

Firstly, the maximum and minimum difference can be reckoned as

$$M = \max_i \max_k \Delta_{oi}(k) \quad \text{and} \quad m = \min_i \min_k \Delta_{oi}(k), \text{ respectively.}$$

Secondly, the gray correlation coefficient can be calculated in the following

$$\gamma(x_o(k), x_i(k)) = \frac{\min_i \min_k \Delta_{oi}(k) + \xi \max_i \max_k \Delta_{oi}(k)}{\Delta_{oi}(k) + \xi \max_i \max_k \Delta_{oi}(k)} \quad (5)$$

Where $i = 1, 2, \dots, m; k = 1, 2, \dots, n$, ξ is a resolution coefficient for enhancing the prominence of the difference between the gray correlation coefficients. The range of ξ is in $[0, 1]$, and the value is taken at 0.5 for calculation convenience in the research.

5.3 Calculating The Correlation Coefficient

The GRA is essentially the comparison of the geometric relationships between time series data. If the two comparison time series overlap at each time, the correlation coefficient is 1 and the correlation degree is also 1.

$$\rho(x_0, x_i) = \sum_{k=1}^7 \alpha_k \times \gamma(x_0(k), x_i(k)) \quad (6)$$

If two comparison time series cannot intersect vertically at any time, the correlation coefficient is greater than 0 and the degree of ρ association is also greater than 0. Therefore, the correlation degree of the two comparison time series can be quantitatively expressed by the weighted average of the correlation coefficients at each time of the two series as follows.

Therefore, the value of the correlation degree is obtained. And then make the judgements on the correlation degree. If $\rho(x_0, x_i) > 0.5$, the correlation degree is valid, otherwise, look back to collecting the original sequence, which are shown in Figure 1.

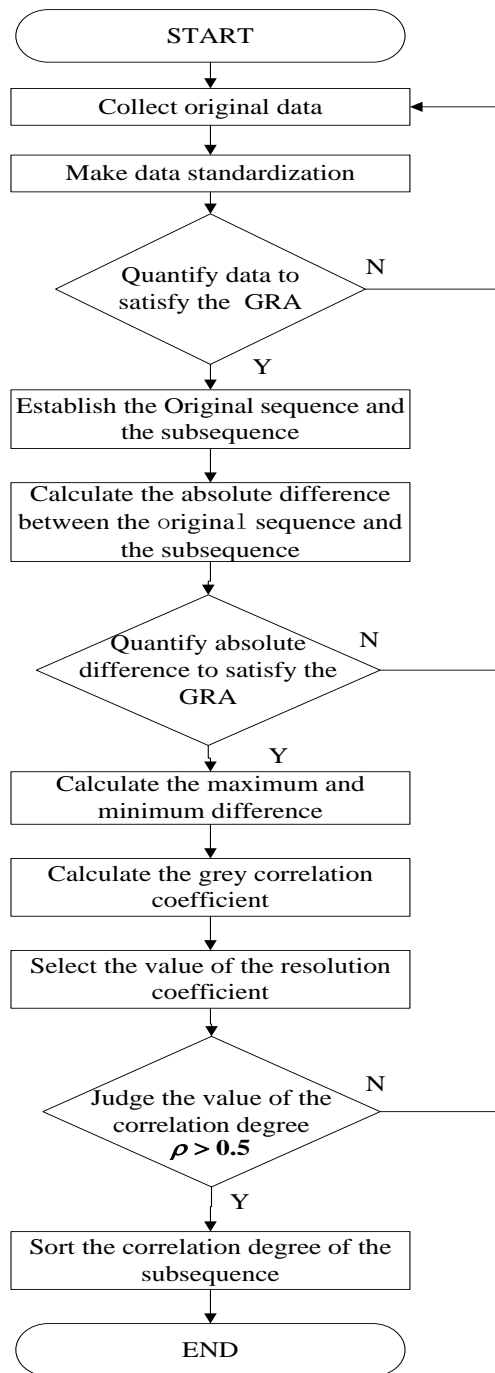


Figure 1. Gray Correlation Algorithm Flow chart

5.4 Sorting the Correlation

In the GRA, the correlation degree of the subsequence to the same parent sequence is arranged in order of magnitude to form the correlation sequence. It directly reflects "primary and secondary" relationship of each subsequence to the same parent sequence.

TABLE XII. Grayscale Correlation Degree between Job Choice, Expected Salary and Family Background Factors of Graduates of Landscape Architecture

Job choice / Factors	Gray correlation degree	Expected salary / Factors	Gray correlation degree
Factor 1	0.6993	Factor 1	0.6668
Factor 2	0.6669	Factor 2	0.5774
Factor 3	0.7113	Factor 3	0.7998

Therefore, we can sort these factors by the degree of gray correlation to determine which factors are primary and which are secondary, which are shown in Table 12. According to the analysis results of the data algorithm, the gray correlation degrees of the three influencing factors all exceed 0.5 on the dependent variable-- "Job choice", which indicates that the three factors have strong correlation with "Job choice". It is worth noting that the gray correlation between "Job choice" and factor 3 "Family income is very good& better" reached 0.7113, indicating that in the data sample, the options "Work" and "Postgraduate entrance examination" with high job choice. This option also corresponds more with "Family income is very good & better ", indicating that better household income has a positive impact on graduates' employment trends and helps graduates of landscape architecture to find better jobs or choose better ways of employment.

In the gray correlation degree of the dependent variable--"Expected salary", the three factors also show a certain gray correlation. It can be seen that when more graduates choose jobs with higher expectations, their family income is also in the "Good& better" and according to the previous quantitative factors, it shows that job-seeking graduates from higher-income families expect higher-paying jobs. It is noteworthy that the grey correlation between the independent variable "College & high school" and "Expected salary" is 0.5574, which is the smallest of the three values. To some extent, the practicality and professionalism of urban planning and design major have a negative effect on this number, that is, graduates can acquire higher-paid jobs by mastering their professional skills and learning. On the other hand, parental education and graduate salary expectations do not mean that they are not closely related, but only in the sample data.

VI. RESEARCH CONCLUSIONS AND COUNTERMEASURES AND SUGGESTIONS

6.1 Research Conclusion

6.1.1 Family background affects the employment opportunities of graduates of landscape architecture

Family background has a positive impact on the employment opportunities of graduates of landscape architecture. In the process of employment, graduates of landscape architecture with strong family backgrounds have more resources, better financial conditions, and support from their families. Under the influence of the family's environment and atmosphere, their psychological quality is stronger, and the pressure when facing employment will be less, and there will also be more opportunities to choose. According to the research of this topic, graduates of landscape architecture with weak family backgrounds

have fewer family resources available to them when facing employment, and they use public resources to obtain employment information. Therefore, the employment for graduates of landscape architecture with a weak family background are far narrower than those with a strong family background. In other words, graduates of landscape architecture with a weak family background will have fewer job opportunities.

6.1.2 The stronger the family background is, the higher the expectation of employment for graduates of landscape architecture will be

Through research on the data, it is found that the higher education level of the father gets and the stronger the family background is, the higher the employment expectations of graduates of landscape architecture will be. Most graduates of landscape architecture expect to work in a place with a better salary and more benefits. The family background also has a larger influencing factor: graduates of landscape architecture with a strong family background will easier to realize their expectations due to the rich family resources because they have a higher expectation of employment. Relatively speaking, graduates with weak family backgrounds will give priority to the needs of family life when they are employed, so their employment expectations will not be very high. This result is consistent with the first result analysis of the previous study.

6.1.3 Family background has a significant positive influence on the choice of employment direction for graduates of landscape architecture

Through research in this topic, it is found that family background has a more significant influence on the choice of employment direction for graduates of landscape architecture. graduates of landscape architecture with different family backgrounds have different choices of employment direction due to different family socioeconomic resources. The employment direction of graduates of landscape architecture whose parents get a higher education level tend to go to higher education or go abroad for further study, and the graduates in a family of a higher social class and better economic situation will have more job opportunities. For graduates of landscape architecture with a stronger family background, their family can provide more resources when they choose the direction of employment, which will be much less restricted and the scope of employment will be wider. However, graduates of landscape architecture with weak family backgrounds are easily bound by factors such as family. Due to the pressure of family burdens, their choice of employment direction will be limited, the scope of employment will be narrower, and the final employment results will be relatively poor.

6.2 Countermeasures and Suggestions

6.2.1 Personal aspects

Landscape architecture major specializes in cultivating wide-caliber, compound talents. It is a discipline that practice is greater than theory. Therefore, it presents the characteristics of "multiple points, wide range, and strong adaptability" in employment. For graduates of landscape architecture, only by improving the application of professional skills and strengthening their hands-on ability can they better adapt to work and the development of society. In order to better adapt to the development of work and society, and to quickly balance the adverse effects of family background when applying for a job after

graduation.

6.2.2 School aspects

As a constantly developing industry, landscape architecture should focus on cultivating innovation consciousness and carry out multi-dimensional employment planning. Technologies in the fields of forestry management, environmental sustainability, green building engineering, urban planning and design are all applied to people's daily life. In order to provide more business practice opportunities for graduates majoring in landscape architecture, let graduates go to the grassroots level, enhance their hands-on ability, cultivate a spirit of bearing hardships and stand hard work, and better complete the transition from graduates to social workers], schools should strengthen cooperation with Cooperation with enterprises, understand the needs of the society for the industry, and make appropriate adjustments to the curriculum arrangement and employment situation of landscape architecture graduates to adapt to changes in the industry.

6.2.3 Social aspects

Local governments should provide a good policy environment for the employment and development of graduates majoring in landscape architecture, and make corresponding reform plans for them. At the same time, they should cooperate and communicate more with the same employers and schools to strengthen mutual links. Understanding the needs of graduates majoring in landscape architecture and design and establishing and improving labor market mechanisms are also very needed. Especially for female college graduates in landscape architecture and design, they should get equal employment opportunities and rights protection. Relevant government departments should increase recruitment platforms for graduates of landscape architecture, expand recruitment methods, and simplify the recruitment process to strengthen the information flow of the labor market so that graduates can grasp first-hand employment information.

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