



Graduate Employability: The Perspective of Social Network Learning

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ABSTRACT

This study provides a conceptual framework for understanding how the graduate acquire employability through the social network in the Chinese context, using insights from the social network theory. This paper builds a conceptual model of the relationship among social network, social network learning and the graduate employability, and uses structural equation analysis method to conduct an empirical test on the theoretical hypothesis, based on a sample of 1468 fresh graduates of business discipline from the local university in Zhejiang province of China. The findings suggested that social network is one of the important platforms for graduate to acquire employability in China, the scale of social network, social network heterogeneity and the strength of the relationship have positive effects on the formation of graduate employability. The acquisition mode of employability based on the social network can be divided into imitation learning, communication learning, accepting guidance, these three kinds of learning mode have positive effects on the formation of graduate employability, and play a mediating role in the relationship between social networks and graduate employability. University graduate should pay attention to the shaping of learning behavior based on social network to improve their employability in China.

Keywords: graduate employability, social network, network learning, SEM

INTRODUCTION

Graduate employability has an important impact on economic development and scientific and technological innovation (Tholen, 2014), which also has an important impact on maintaining the competitive advantage of enterprises (Finch, Hamilton, Baldwin, & Zehner, 2013) in the context of knowledge economy. Graduate employability has significant influence on the employment, starting salaries, career success, career self-efficacy, job satisfaction, turnover intention (Trede & McEwen, 2015), job insecurity for graduate (Okay-Somerville & Scholarios, 2017). Under the background of higher education popularization, the acquisition of employability is one of the main objectives for a university graduate on completion of their studies and an important factor to influence the development of universities, and it is also an important factor affecting the quality of Higher Education (Harvey, 2001). The Chinese

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State of the literature

- The existing literature studies the employability structure from the perspectives of graduates and employers. Employability is the individual characteristics related to occupation, and the collection of abilities that can meet the needs of the labor market.
- The present study ignores the fact that the formation of graduate employability needs a process and graduates lack clear career goals.
- Existing studies have confirmed the positive effect of university training system on graduate employability, but there is no analysis of how students acquire employability through social networks learning.

Contribution of this paper to the literature

- Based on the context of Chinese universities, the paper regards professional self-identity as a dimension of employability, and defines the way of network learning as imitation, communication and accepting guidance.
- This paper focuses on fresh graduates and makes a questionnaire survey.
- Using structural equation analysis, the paper found that imitation, communication and accepting guidance in social networks have positive effect on employability.

"National Long-term Education Reform and Development plan (2010-2020) " pointed out that Chinese university students' ability to adapt to society and employment was not strong, there are a lot of universities students had low occupation identity and the lack of ability to occupational planning, the vocational target was not clear (Wang, 2014).How to enhance the graduate employability has become an urgent problem to be solved for Chinese teaching-oriented higher education institutions. The development and promotion of graduate employability is closely related to the "teaching" and "learning" activities in universities, and is the embodiment of the comprehensive effects of various links in teaching (Yorke & Knight, 2007). The formation of graduate employability is not only closely related to the training mode of universities, but also closely related to the students' participation experience from extracurricular activities and outside university.

Academic activities, student club activities, social practice, internship have a positive effect on the formation of graduate employability, but the research on how to acquire the employability of university students through social network is often neglected. There are many workers without higher education experience had obtained employability. To observe and imitate the behavior of the employed who has good career, to communicate with the family, senior graduate, entrepreneurs are the opportunities to learn for graduate (Pittaway & Cope, 2007), which is conducive to the formation and development of graduate employability. Therefore, learning from the social network is one of the most important factors affecting graduate employability acquisition (Kempster & Cope, 2010). The exploration of network learning based on social network is more likely to understand the effect of social network on the graduate employability. This paper will be the first time to study how university graduate learn from the social network to acquire employability in the context of Chinese university.

The rest of this paper will be divided into four parts, the first part is a literature review on graduate employability, on social network and network learning mode. The second part is the construction of conceptual model for graduate employability through the social network learning and put forward the hypothesis. The third part is the research design and data collection, the fourth part is data analysis and testing hypothesis. The last part is the conclusion and discussion.

LITERATURES REVIEWING

Graduate employability

The graduate employability refers to the collection of a series of abilities that graduate can obtain employment and succeed in their career (Tomlinson, 2012; Harvey, 2001). This ability enables graduate to meet the needs of employers and adapt to changes in the labor market, and it is a kind of comprehensive ability to improve the future career development (Thijssen, Van Der Heijden, & Rocco, 2008; Rothwell & Arnold, 2007). Research on the development of graduate employability started from 1990s, and the research can be divided into two categories. The one is the perspective of employment performance, which hold that employability is the employment results, and proposed employability is multidimensional dimension, including internal and external dimension (Guilbert, Bernaud, Gouvernet, & Rossier, 2016). The internal dimensions include the personal knowledge and skills related to the job, the ability to continue learning, and the external dimensions include the condition of labor market (Tholen, 2014). The internal dimension can be further subdivided into individual employment skills and attributes, individual demographic characteristics, physical condition, the ability to occupation information search, family social network, family income level and so on. The external dimension can be further subdivided into the labor market factors, the macro economic development level and employment support policies (McQuaid & Lindsay, 2005).

The other one is the perspective of individual ability, which considers that the graduate employability is an individual ability, and it is a collection of abilities that can help the graduate to obtain employment and professional development (Tholen, 2014). The graduate employability is a comprehensive ability to improve graduate future career development level (Finch et al., 2013), including a series of skills, knowledge and personality characteristics (Yorke & Knight, 2007). As a kind of individual ability, the structure of graduate employability includes personal basic social attribute, personal attitude, basic communication skills, teamwork skills (McQuaid & Lindsay, 2005). The most existing research emphasized the graduate employability was a kind of "soft skills" to get jobs and occupation development success (Reid, 2016; Kalfa & Taksa, 2015). The five factor model of Bennett, Dunne, and Carre' (1999), USEM model of Yorke and Knight (2004), CareerEDGE model of Dacre Pool and Sewell (2007), five factor model of Bridgstock (2009), which subdivided the structure of graduate employability into various basic abilities, such as professional ability, learning ability,

problem-solving ability, executive ability, practice skills and the ability to adapt to the occupation environment.

Therefore, based on previous studies, combined with low occupation identity, unclear occupation target, and the lack of occupation planning ability for Chinese university students (Wang, 2014), this study defined the structure of graduate employability as five dimensions: professional self-identity, learning ability, teamwork skills, career planning ability, social adaptability.

Social networks and networks learning

The social network also called relationships, refers to a group of people of all formal and informal social relations, including the direct social relationship between people and people, as well as indirect social relationship through the physical environment and cultural sharing form (Slotte-Kock & Coviello, 2010). In the analysis of social network, "network" can be regarded as a series of social relations or social connections of social actors, and a relatively stable social structure is composed of actors and social relations (Ravasi & Turati, 2005). The strong relationships are developed between individuals with similar socioeconomic characteristics, such as gender, age, education level, professional identity, income level and so on. The weak relationship is developed between the individual with different social and economic characteristics (Liao & Welsch, 2005). This kind of strong relationship with homogeneity makes the information obtained is often of great repeatability and surplus, which is of little help to individual learning (Jack, 2005). The weak relationship with heterogeneity can cross the boundaries of other classes to obtain information and resources, and thus acts as a bridge between different social groups. In other words, the strength of social networks depends on the heterogeneity of actors or members of the network. The greater the heterogeneity (defined as "weak relationship"), the stronger the social network's role in acquiring information. The social network of Chinese graduate is diverse, which is an important platform for graduate to obtain employability (Bao & Liu, 2016). There is no clear definition of the social network with learning function in the process of graduate employability acquisition. This study uses discussion network design in the study of Greve and Salaff (2003), focus on three dimensions of social network: network heterogeneity, network size and relationship strength.

Social network learning is a way for graduate to obtain employability from their social network. Through the observation and imitation of other people's employment behavior, employment activities (Ozgen & Baron, 2007), to contact and communicate with other members of the social network, graduate can get the support and guidance of the social network members (Lans, Biemans, Versteegen & Mulder, 2008). The existing study on the graduate employability has not yet established a unified measurement scale (Bao & Liu, 2016), especially lack measurement scale of graduate employability based on social networks. Based on the existing theoretical research, it can be concluded that imitation, communication, and accept guidance are the main ways for graduate to acquire employability by learning from the

social network (Holcomb, Duane Ireland, Michael Holmes JR, & Hitt, 2009). Imitation learning refers to learning through observation and imitation of other people's behaviors, activities and outcomes, which is a process of "knowledge transfer" and is example learning to a certain extent. Communication learning refers to the learning behavior of acquiring knowledge, skill, or cognition through formal communication, cooperation, or informal communication and cooperation with formal or informal network members (Greve & Salaff, 2003). Accept guidance learning refers to the learning behavior of the graduate who are guided by the social members and get new knowledge, skills, or cognitive changes (St-Jean & Audet, 2012). In view of the above analysis, this paper defines the way of network learning as three ways: imitation learning, communication learning and accepting guidance.

THEORETICAL HYPOTHESIS AND MODEL CONSTRUCTION

The Social network and graduate employability

Graduate acquire the employability not only through the talent training system of university, also through social network learning (Sin & Amaral, 2017). The members of the social network are often composed of members of different professional identity and backgrounds, and social networks are often heterogeneous. The heterogeneity of the network comes from the diversity of the members, including the family and friends of the graduate, schoolmates of other discipline, senior graduate, as well as professional person from industry. The heterogeneity of the social network is helpful for the graduate to obtain knowledge and information related to employability. Network learning in the heterogeneous social network can provide employment information and resources for graduate, which can affect the graduate professional mission, occupation clarity, and promote the graduate employability. The larger the size of the social network, the more the graduate exposed to the various types of members, the more obvious the heterogeneity, the more conducive to the identification of employment opportunities and to enhance the cognitive ability to career, career goals clarity for graduate. The strength of the relationship between graduate and the social network members will also affect the various dimensions of graduate employability. Based on above analysis, this paper puts forward the first research hypothesis:

- **H1a:** The number of contacted members in the social network have a positive impact on each dimension of graduate employability.
- **H1b:** Graduate in the social network access to the more types of members have a positive impact on each dimension of graduate employability.
- **H1c:** The strength of the relationship between the graduate and the members in the social network has a positive effect on each dimension of graduate employability.

The Social network and network learning

The social network can promote the information and knowledge sharing, knowledge integration and utilization (Peng & Wang, 2012). In the process of the formation of employability, graduate can use social networks to obtain the content of learning. Social

network has an important role in promoting learning. The more the number of nodes in the social network, the more abundant types, the learning behavior of graduate will also increase, the more learning needs can be met. There is a certain correlation between the characteristics of social network and network learning. In depth interviews with fresh graduate, the author found that graduate was often guided by their parents and other elders, communicate with alumni, senior graduate to get the knowledge of the employability. Graduate will also be able to improve their employability by learning from the successful experience of the alumni. When interacting with different people, graduate will adopt a different learning approach. When the heterogeneity of the social network is more significant, the relationship is weaker, the graduate is more likely to learn by observing and simulating the behavior and activities of the network members (Jia, 2016). When the graduate is more closely related to the members of the social network, the higher the degree of trust, the graduate are more likely to take the initiative to accept the guidance of network members, to obtain the desired employment information and employment knowledge. Based on above analysis, the research hypothesis is put forward:

- **H2a:** social network scale has positive influence on network learning.
- **H2b:** social network structure has a positive impact on network learning.
- **H2c:** social network relationship has a positive impact on network learning.

Network learning and graduate employability

The existing research has proved that the academic behavior, community activities, social practice, work experience have a positive role in promoting the employability of students (Okay-Somerville & Scholarios, 2017). The acquisition approach of employability is diversified, and the formation of employability can be achieved by imitation, communication and guidance. Imitation is to consciously learn by receptive learning from the benchmark character. In the process of imitation learning, graduate will form the desire to become a benchmark character, learn the behavior of the benchmark character, thus forming the employability. The graduate employability can also be obtained through the communication with teachers, alumni, professional talent from the industry, family and friends. Through the communication learning graduate gain the experience of success and failure, and internalize the experience knowledge. Graduate receive instruction in the classroom, in the practice process, community activities, communication with family and friends, to obtain guidance on the information of employment and occupation planning, to enable graduate to acquire employability. Based on the above analysis, the following hypotheses are proposed in this paper:

- **H3a:** imitation learning is helpful to improve the graduate employability.
- **H3b:** exchange learning helps to improve the graduate employability.
- **H3c:** accepting guidance is helpful to improve the graduate employability.

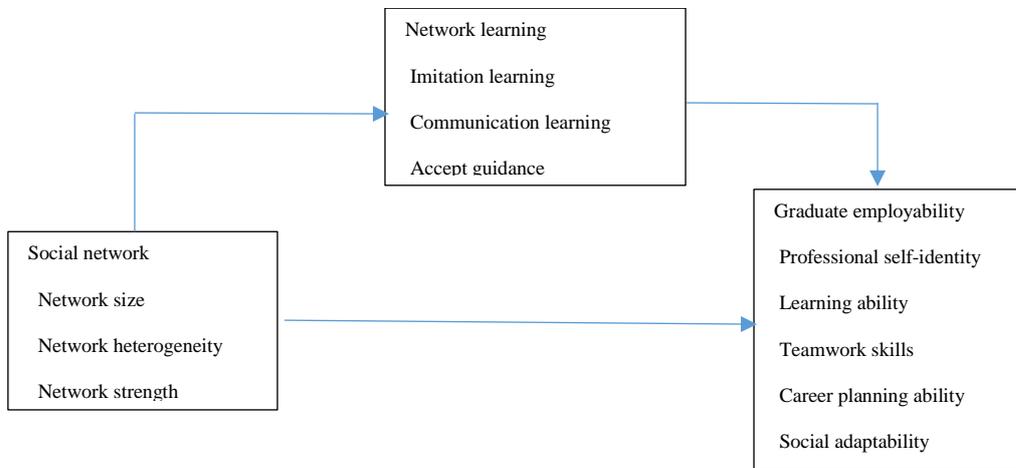


Figure 1. The conceptual model for social network, network learning and employability

The mediating role of network learning

Graduate can improve employability through social networks, but it does not mean that every graduate can improve employability through social networks. The way of learning determines how many graduate can learn the experience, knowledge and skills in the social network. Therefore, only by choosing the right way of learning, through the interaction with the members of the social network, graduate can improve their employability. Based on the above analysis, this paper puts forward the hypothesis:

H4: network learning has a mediating role between social network and employability.

To sum up, this paper constructs a conceptual model of the relationship between social networks, network learning and employability, as shown in [Figure 1](#).

RESEARCH DESIGN

Questionnaire design

This research questionnaire is developed based on depth interviews of 60 graduate of business discipline (20 fresh graduates of 2014, 20 fresh graduates of 2015, 20 fresh graduates of 2016), and matured scale in the context of China. The questionnaire mainly includes four parts: the basic characteristics of graduate, the conditions of social network of graduate, the way of network learning and the employability status.

In this paper, according to the existing measurement scale (Teijeiro, Rungo, & Freire, 2013), the employability is defined as five dimensions: professional self-identity, learning ability, teamwork skills, career planning ability and social adaptability. The study make full use of the conclusion of Park and Luo (2001), Clercq and Sapienza (2005), Tan, Yang, and Veliyath (2009) to formed the operation scale of social network, and the social network is defined as the size of the network, network heterogeneity and network strength. The scale of

Table 1. Pearson correlation coefficient matrix

	1	2	3	4	5	6
1 social network	1.000					
2 network learning	0.453*	1.000				
3 graduate employability	0.411**	0.513**	1.000			
4 gender	0.089	0.043	0.089	1.000		
5 family income	0.067	0.035	0.125*	0.011	1.000	
6 education level of parents	0.078	0.032	0.181*	0.012	0.065	1.000

Note: ** indicates a significant level of double tailed test $P < 0.01$, * indicating a significant level of double tailed test $P < 0.05$.

network learning is mainly based on the results of Xie and Huang (2014), include imitation learning, communication learning, accepting guidance. The scale of the questionnaire in this paper adopts the 5-level score, "1 = very inconsistent", "5 = very consistent". Before the formal investigation, with the help of the callback work of Education Department of Zhejiang Province, 140 graduates were pre-tested. Through the reliability and validity of the questionnaire, deleted and revised parts of the item, the final questionnaire was formed.

Sample selection and data acquisition

The sample of this study is the graduate of business discipline from the local universities in Zhejiang Province. The implementation of the survey carried out with the help of the graduate callback work supported by Education Department of Zhejiang Province, from April to June 2016, lasted 3 months, using a combination of paper questionnaire and network questionnaire. The survey covers business graduate from 10 local universities in Zhejiang province. A total of 3000 questionnaires were distributed, 2028 questionnaires were recovered, and there were valid questionnaires of 1486, the recovery rate was 73.6%, the effective rate was 73.3%. There were 965 girls and 521 boys of respondents. There are 223 fresh graduates with annual household income of less than 100,000 yuan, 505 fresh graduates with the family annual income of 100,000 yuan to 200,000 yuan, 584 students of the family annual income of 200,000 yuan to 300,000 yuan, 174 students of the family annual income of more than 300,000 yuan. The number of parents who have received higher education is 645, and the number of students who have not received higher education is about 841.

Table 1 shows the correlation analysis between the main variables of the study, and the potential variables are related to a higher level of significance and support for further exploration of its accurate structural relationships. According to existing literature (Teijeiro et al., 2013; Tomlinson, 2012), employability is influenced by gender, family income and parental education level, therefore the gender, family income, parents' education level were investigated as control variables. From the results of this study, gender, family income and parental education has no significant effect on social networks and network learning. To find out the influence of network learning mode and the social network on the employability as far as possible, we will not consider the influence of the control variables in the data analysis. Using SPSS22 software to analyze the item, the values of the Cronbach's Alpha for all variables measured items were greater than 0.7, shows that the reliability of the item is higher and the

Table 2. Structural equation model fitting parameters

Model fitting index	χ^2/df	NNFI	CFI	PNFI	RMSEA
Model 1	2.847	0.911	0.902	0.509	0.081
Model 2	2.132	0.916	0.905	0.579	0.068
Model 3	2.913	0.921	0.912	0.668	0.071
Model 4	2.782	0.909	0.938	0.501	0.083

Table 3. The standard solution of social network's influence on employability

	Professional self-identity	Learning ability	Teamwork skills	Career planning ability	Social adaptability
Size of social network	0.35**	0.21**	0.18*	0.51**	0.53**
Network heterogeneity	0.24*	0.25*	0.19*	0.43*	0.69**
Network strength	0.37**	0.34**	0.23*	0.56**	0.63**

Note: ** indicates a significant level of double tailed test $P < 0.01$, * indicating a significant level of double tailed test $P < 0.05$.

same factor is measured. The validity of the questionnaire was tested. It was found that the KMO value of each variable was greater than 0.8, and the total variance of the items under each variable was greater than 80%. The results show that the whole questionnaire has good structural validity, which is suitable for further confirmatory factor analysis and structural equation analysis.

RESEARCH RESULTS

In this study, AMOS21.0 was used to test the difference of the factor structure of each variable through confirmatory factor analysis. As well as the social network and employability (model 1), social network and network learning (model 2), network learning and employability (model 3), the mediating effect of network learning model (model 4) were tested by fitting test. According to the ideal fit index of Fang, Wen, Zhang, and Sun (2014), χ^2 / df , PNFI, NNFI, CFI and RMSEA are used as the main indexes to test model fitting. The results are shown in **Table 2**. The fitting effect of the observation data on the hypothesis model is quite satisfactory, and the model hypothesis can be tested.

Multiple regression analysis was performed on Model 1 to obtain the standard solution as shown in **Table 3**. The results show that the social network has a positive impact on employability, the hypothesis 1a was confirmed, and were at a significant level, indicating significant effect. The results show that the heterogeneity of social network and the intensity of network relationship have positive effects on the employability of each dimension, and H1b, H1c, has been verified.

Multiple regression analysis was performed to test model 2, the standard solution was shown in **Table 4**, and the social network structure had a positive impact on network learning. The standardized path coefficients of the social network size on network learning were 0.19,

Table 4. The standard solution of social network's influence on network learning

	Imitation learning	Communication learning	Accepting guidance
Size of social network	0.23*	0.22*	0.25*
Network heterogeneity	0.25*	0.21*	0.19*
Network strength	0.36**	0.57**	0.65**

Note: ** indicates a significant level of double tailed test $P < 0.01$, * indicating a significant level of double tailed test $P < 0.05$.

Table 5. The standard solution of network learning on employability

	Professional self-identity	Learning ability	Teamwork skills	Career planning ability	Social adaptability
Imitation learning	0.35*	0.21*	0.19*	0.25*	0.22*
Communication learning	0.24*	0.21*	0.18*	0.34**	0.43**
Accepting guidance	0.42**	0.27*	0.21*	0.51**	0.61**

Note: ** indicates a significant level of double tailed test $P < 0.01$, * indicating a significant level of double tailed test $P < 0.05$.

0.22, 0.25, and at a significant level, H2a had verified. The standardized path coefficient of social network heterogeneity on imitation learning, communication learning and guiding learning were respectively 0.21, 0.15, 0.17, and at a significant level, indicating that the network heterogeneity has a significant positive effect on learning, so that H2b has been verified. It can be seen from **Table 4**, the relationship between strength of social network has positive and significant effect on network learning, the standardized path coefficients of social networks strength on the network learning were 0.36, 0.57, 0.65, and at a significant level, so that H2c has been verified.

Multiple regression analysis was performed on model 3 and obtain the standard solution as shown in **Table 5**. Network learning has a positive impact on the employability, the standardized path coefficient of imitation learning effects on different dimensions of employability were 0.35, 0.19, 0.13, 0.16, 0.22, and at a significant level, H3a has been verified. The influence coefficient of communication learning on employability were 0.24, 0.21, 0.18, 0.34, 0.43, at significant levels, H3b hypothesis was verified. The influence coefficient of guidance learning on the employability of the coefficients were 0.42, 0.27, 0.21, 0.51, 0.61, at significant levels, H3c was verified.

If the mediating variables of network learning were considered, the regression coefficient of each dimension of social network on employability were significantly reduced. The mediating variable of network learning were significantly related to employability, and social network and employability, social network and network learning were still significantly related. Fang, Zhang, and Chiou (2012) pointed out that adding intermediary variables to the model about the independent variables and the dependent variable, the significant relationship between independent variables and the dependent variables will completely disappear (complete mediation variable), or decreased (partial mediation variable), and the

Table 6. The complete standard solution of the mediate effect of network learning

	Professional self-identity	Learning ability	Teamwork skills	Career planning ability	Social adaptability	Imitation learning	Communication learning	Accepting guidance
Size of social network	0.22** (0.35**)	0.16** (0.21**)	0.15* (0.18*)	0.45** (0.51**)	0.44** (0.53**)	0.18* (0.23*)	0.16* (0.22*)	0.18* (0.25*)
Network heterogeneity	0.17* (0.24*)	0.19* (0.25*)	0.15* (0.19*)	0.23* (0.43*)	0.32** (0.69**)	0.16* (0.25*)	0.17* (0.21*)	0.15* (0.19*)
Network strength	0.22* (0.37**)	0.21* (0.34**)	0.17* (0.23*)	0.31* (0.56**)	0.34* (0.63**)	0.21* (0.36**)	0.27* (0.57**)	0.32* (0.65**)
Imitation learning	0.18* (0.35*)	0.17* (0.21*)	0.15* (0.19*)	0.19* (0.25*)	0.16* (0.22*)			
Communication learning	0.15* (0.24*)	0.14* (0.21*)	0.13* (0.18*)	0.19* (0.34**)	0.23* (0.43**)			
Accepting guidance	0.25* (0.42**)	0.18* (0.27*)	0.15* (0.21*)	0.31* (0.51**)	0.36* (0.61**)			

Note: ** indicates a significant level of double tailed test $P < 0.01$, * indicating a significant level of double tailed test $P < 0.05$.

mediating variables were significantly correlated with the dependent variables, which verified the effect of mediating variables. Therefore, it can be seen from **Table 6** that this study has verified the mediating effect of network learning on the relationships between employability and social networks, H4 has been verified.

CONCLUSION AND RECOMMENDATION

This paper studied the relationship of social network, network learning and graduate employability formation, building up a relationship model of social network, network learning and employability, and enrich related theories of graduate employability. Previous studies have focused on the employability acquired through College talent cultivation system. In the context of China, the members of social network of graduate, such as parents and relatives, alumni have more significant impact on the graduate employability (Bao&Liu, 2016). There is no research on the relationship between social network, network learning and employability in existing literature. The paper take the fresh graduate of business discipline from the university in Zhejiang province China as a sample, using the structural equation method to analyze the questionnaire data to verify the hypothesis, put forward the following two conclusions:

Social networks have a positive impact on employability. The study found that the social network size, heterogeneity, relationship strength had a positive impact on the employability. Through the construction of high-quality extracurricular experiences has a good promoting effect on the formation of graduate employability.

The graduate employability can be acquired through imitation learning, communication learning and accepting guidance in the social network. Social network is an important platform for employability acquisition, network learning plays a partial mediating role between social network and employability. The study found that social network heterogeneity was more conducive to graduate employability acquisition, and there is positive

relationship between social network and network learning, the higher the strength of social network was conducive to graduate employability acquisition through the network learning.

This paper introduced the mediating role of network learning, and systematically explores the relationship between social network and employability. The main limitations of this paper are as follows: firstly, there was one-sided and subjective problems in the selection of the indicators and measurement. Because there was no variable measurement scale for network learning, this study was mainly based on literature and interview to get the scale, the future study can do more in-depth study on graduate learning activities in the social network, to further refine the network learning index system. Secondly, the data collection failed to dynamic tracking of graduate employability formation process, with a delay of research data. It can conduct the combination of case study and comparative study and a longitudinal study. Finally, the research sample of this paper was just graduate of business discipline from Chinese university, the future study can be take the graduate of engineering, science and other subjects as research object, and a comparative study of graduate in different countries.

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