



**INFLUENCE OF LEARNING MOTIVATION OF MAINLAND
CHINESE STUDENTS TO UNIVERSITIES IN TAIWAN ON
CAREER ADAPTABILITY: WITH FUTURE TIME
PERSPECTIVE AS MEDIATOR, LOCUS OF
CONTROL AS MODERATOR**

**By
NING WANG**

A Dissertation Submitted in Partial Fulfillment of the Requirements for
the Degree of Doctor of Philosophy in Education Management
Graduate School, China-ASEAN International College
Dhurakij Pundit University

2019



Certificate of Acknowledgement of the Dissertation

China-ASEAN International College, Dhurakij Pundit University

Doctor of Philosophy Program in Education Management

Title of Dissertation Influence of Learning Motivation of Mainland Chinese Students to Universities in Taiwan on Career Adaptability: with Future Time Perspective as Mediator, Locus of Control as Moderator
Researcher WangNing
Program Doctor of Philosophy (Education Management)
Principle Supervisor Dr. Chia-Ching Tu
Co-Supervisor

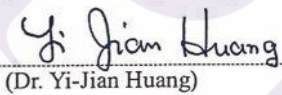
Has been approved by


.....
(Asst. Prof. Dr. Hugo Yu-Hsiu Lee)

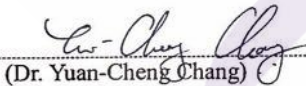
Chairman of the Committee


.....
(Dr. Ren-Cheng Zhang)

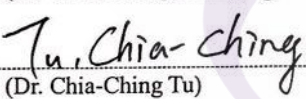
Committee Examiner


.....
(Dr. Yi-Jian Huang)

Committee Examiner


.....
(Dr. Yuan-Cheng Chang)

Committee Examiner


.....
(Dr. Chia-Ching Tu)



Principal Supervisor

Approved by the DPU China-ASEAN International College


.....
(Dr. Chun-Shuo Chen)

Dean of China-ASEAN International College

Date 04 JUL 2019

Dissertation Title: Influence of Learning Motivation of Mainland Students to Universities in Taiwan on Career Adaptability: with Future Time Perspective as Mediator, Locus of Control as Moderator

Author: Ning WANG

Dissertation Principle Supervisor: Dr. Chia-Ching TU

Dissertation Supervisor: N/A

Program: Ph.D. (Education Management)

Academic Year: 2019

ABSTRACT

The aim of this study is to investigate the relationships among learning motivation, future time perspective, locus of control and career adaptability of college students from Mainland China who went to Taiwan for exchange study. Questionnaire survey is employed herein. SPSS and AMOS are adopted for statistical analysis. This study took 674 Mainland Chinese exchange students from universities in Taiwan as participant (target population). Eleven universities in different regions from north, central and south of Taiwan are selected from which Mainland Chinese exchange students of different grades are taken as participants. This research focuses on how learning motivation of Mainland Chinese exchange students to universities in Taiwan influence their career adaptability by taking future time perspective and locus of control in seeking, and thus to provide a theoretical basis to cultivate practice related to university students' career adaptability from the viewpoint of learning motivation.

Keywords: Learning Motivation; Career Adaptability; Future Time Perspective; Locus of Control

ACKNOWLEDGEMENTS

When I finished my doctoral dissertation, I had extremely mixed feelings.

Looking back on these years when I studied in the doctoral program, I felt excited when I went abroad for further study for the first time; anxious when I faced the contradiction between work and study, reluctant to leave my family and my son; and confused when I was confused about my studies. All these scenes are still clear and vivid, and will be engraved in my memory to the end of my life.

Along the way, too many people gave me care and help, which enabled me to complete my study. First of all, I'd like to thank my work unit for providing me with the opportunity to study with pay. I also want to thank my colleagues and many good friends for their encouragement and help, which enabled me to concentrate on my work and study and realize my dream successfully. I'd like to thank all the committee members: Dr. Hugo Yu-Hsiu Lee, Dr. Ren-Cheng Zhang, Dr. Yi-Jian Huang and Dr. Yuan-Cheng Zhang, it is their most pertinent advice and guidance that made my dissertation be improved and perfected. I am especially grateful to my supervisor, Dr. Chia-Ching Tu, for her attentively guidance. She is my mentor and friend, and her patience, gentleness, encouragement and trust are important motivations for me to complete my dissertation. My special thanks also go to my dear lover, my lovely son and my beloved parents for their great mental comfort and spiritual support. Without them, I wouldn't be where I am today.

I'd like to dedicate this glory to my most beloved family.

NING WANG

Table of Contents

	Page
ABSTRACT.....	ii
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	ix
LIST OF FIGURES	xvi
Chapter 1 INTRODUCTION.....	1
1.1 Research Background.....	1
1.1.1 Origin	2
1.1.2 Cross-Strait Education and Academic Exchange.....	4
1.1.3 Policies for Mainland Chinese Students Studying in Taiwan	8
1.1.4 Current Situation of Mainland Chinese Students Studying in Taiwan	15
1.2 Research Motivation.....	18
1.3 Significance of Research	24
1.4 Research Purpose	25
1.5 Research Questions	26
1.6 Noun Interpretation	27
Chapter 2 LITERATURE REVIEW	30
2.1 Learning Motivation.....	30
2.1.1 Definition and Connotation.....	31
2.1.2 Relevant Theories	36
2.1.3 Dimension and Measurement	42
2.1.4 Related Research.....	45

2.2	Career Adaptability.....	47
2.2.1	College Stage: Critical Period of Career Development	48
2.2.2	Definition and Connotation.....	51
2.2.3	Relevant Theories	60
2.2.4	Dimension and Measurement	73
2.2.5	Related Research.....	76
2.3	Future Time Perspective	80
2.3.1	Definition and Conceptual Development.....	80
2.3.2	Relevant Theories	84
2.3.3	Dimension and Measurement	87
2.3.4	Relevant Research.....	90
2.4	Internal-External Locus of Control	95
2.4.1	Definition and Conceptual Development.....	95
2.4.2	Relevant Theories	98
2.4.3	Dimension and Measurement	103
2.4.4	Relevant Research.....	108
2.5	Interrelationship among Variables	111
2.5.1	Influence of Learning Motivation on Career Adaptability	111
2.5.2	Mediating Effect of Future Time Perspective	115
2.5.3	Moderating Effect of Internal-external Locus of Control.....	122
2.6	Summary	130
Chaper 3	METHODOLOGY	131
3.1	Research Process	131
3.2	Research Framework.....	133

3.3	Research Hypothesis	135
3.4	Participants	137
3.5	Procedure of Data Collection	137
3.6	Research Measurement.....	138
3.6.1	Establish Expert Validity.....	139
3.6.2	Analysis Method	140
3.6.3	Learning Motivation Scale.....	143
3.6.4	Career Adaptability Scale	149
3.6.5	Future Time Perspective Scale.....	160
3.6.6	Locus of Control Scale.....	167
3.7	Descriptive Statistics Analysis of Formal Questionnaire	172
3.8	Confirmatory Factor Analysis of Formal Questionnaire (CFA).....	174
3.8.1	Reliability and Validity Analysis	175
3.8.2	Model Fit Test	186
3.9	Statistical Analysis	189
Chapter 4	RESULTS	191
4.1	Status Analysis of Variable.....	191
4.1.1	Learning Motivation	191
4.1.2	Career Adaptability	192
4.1.3	Future Time Perspective	193
4.1.4	Internal-External Locus of Control.....	194
4.2	Variance Analysis	195
4.2.1	Gender.....	196
4.2.2	Grade.....	201

4.2.3	Birth Order	209
4.2.4	Family Socioeconomic Level	216
4.3	Correlation Analysis	224
4.3.1	Correlation Analysis of Learning Motivation and Career Adaptability	224
4.3.2	Correlation Analysis of Learning Motivation and Future Time Perspective	226
4.3.3	Correlation Analysis of Future Time Perspective and Career Adaptability	228
4.3.4	Correlation Analysis of Locus of Control and Career Adaptability	229
4.4	Mediation Model Test	231
4.4.1	Mediating Effect Model Test of Future Time Perspective between Interest of Seeking Knowledge and Career Adaptability	232
4.4.2	Mediating Effect Model Test of Future Time Perspective between Self-development and Career Adaptability	242
4.4.3	Mediating Effect Model Test of Future Time Perspective between Tour Interest and Career Adaptability	249
4.5	Verification of Moderating Effect	257
4.5.1	Influence of Locus of Control on Career Adaptability	258
4.5.2	Moderating Effect of Locus of Control between Interest of Seeking Knowledge and Career Adaptability	261
4.5.3	Moderating Effect of Locus of Control between Self-development and Career Adaptability	268
4.5.4	Moderating Effect of Locus of Control between Tour Interest and Career Adaptability	270

4.6 Summary of Hypothesis Verification	272
Chapter 5 DISCUSSIONS	274
5.1 Current Status of Participants	275
5.2 Current Situation Analysis of Each Variable.....	276
5.3 Difference of Background Variables.....	280
5.4 Correlation Analysis.....	293
5.5 Mediating Effect of Future Time Perspective	299
5.6 Moderating Effect of Locus of Control	304
Chapter 6 CONCLUSIONS	310
6.1 Theoretical and Practical Significance	310
6.2 Suggestions to Education Practice	312
6.3 Study Limitations and Suggestions for Follow-up Studies.....	320
BIBLIOGRAPHY	322
APPENDICES	352
Appendix I.....	352
Appendix II.....	363

List of Tables

Table Number	Page
1.1 Taiwan's Higher Education Exchange Policy towards Mainland China	11
2.1 Definition of Learning Motivation.....	33
2.2 Stages and Characteristics of Ginzberg's Career Development Theory	61
2.3 Stages and Tasks in Super's Career Development	65
2.4 Definition of Future Time Perspective	81
2.5 Connotation Meaning of Future Time Perspective	87
2.6 Definition of Internal-External Locus of Control	96
2.7 Weiner's Tripartite Attribution Classification System.....	102
3.1 Basic Data of Effective Participant of Pre-test Questionnaire.....	138
3.2 Information on Expert Reviewers.....	139
3.3 Dimensions and Items of Learning Motivation Scale.....	144
3.4 Expert Review Opinions on Learning Motivation Scale	145
3.5 Item Analysis of Learning Motivation Scale	146
3.6 KMO and Bartlett Test Result of Learning Motivation Scale	147
3.7 EFA of Learning Motivation Scale Pre-test.....	148
3.8 Reliability Analysis of Learning Motivation Scale	149
3.9 Dimensions and Items of Career Adaptability Scale	150
3.10 Expert Review Opinions on Career Adaptability Scale.....	153

3.11	Item Analysis of Career Adaptability Scale.....	155
3.12	KMO and Bartlett Test Result of Career Adaptability Scale.....	157
3.13	EFA of Career Adaptability Scale Pre-test	158
3.14	Reliability Analysis of Career Adaptability Scale	160
3.15	Dimensions and Items of Future Time Perspective Scale	161
3.16	Expert Review Opinions on Future Time Perspective Scale	162
3.17	Item Analysis of Future Time Perspective Scale	163
3.18	KMO and Bartlett Test Result of Future Time Perspective Scale	164
3.19	EFA of Future Time Perspective Scale Pre-test	165
3.20	Reliability Analysis of Future Time Perspective Scale	166
3.21	Dimensions and Items of Locus of Control Scale	168
3.22	Expert Review Opinions on Locus of Control Scale	169
3.23	Item Analysis of Locus of Control Scale	170
3.24	KMO and Bartlett Test Result of Locus of Control Scale	170
3.25	EFA of Locus of Control Scale Pre-test	171
3.26	Reliability Analysis of Locus of Control Scale	172
3.27	Summary of Formal Questionnaire Collection	173
3.28	Descriptive Statistics Analysis of Formal Questionnaire.....	174
3.29	CFA of Learning Motivation Scale	177
3.30	Validity Measurement of Learning Motivation Scale.....	178

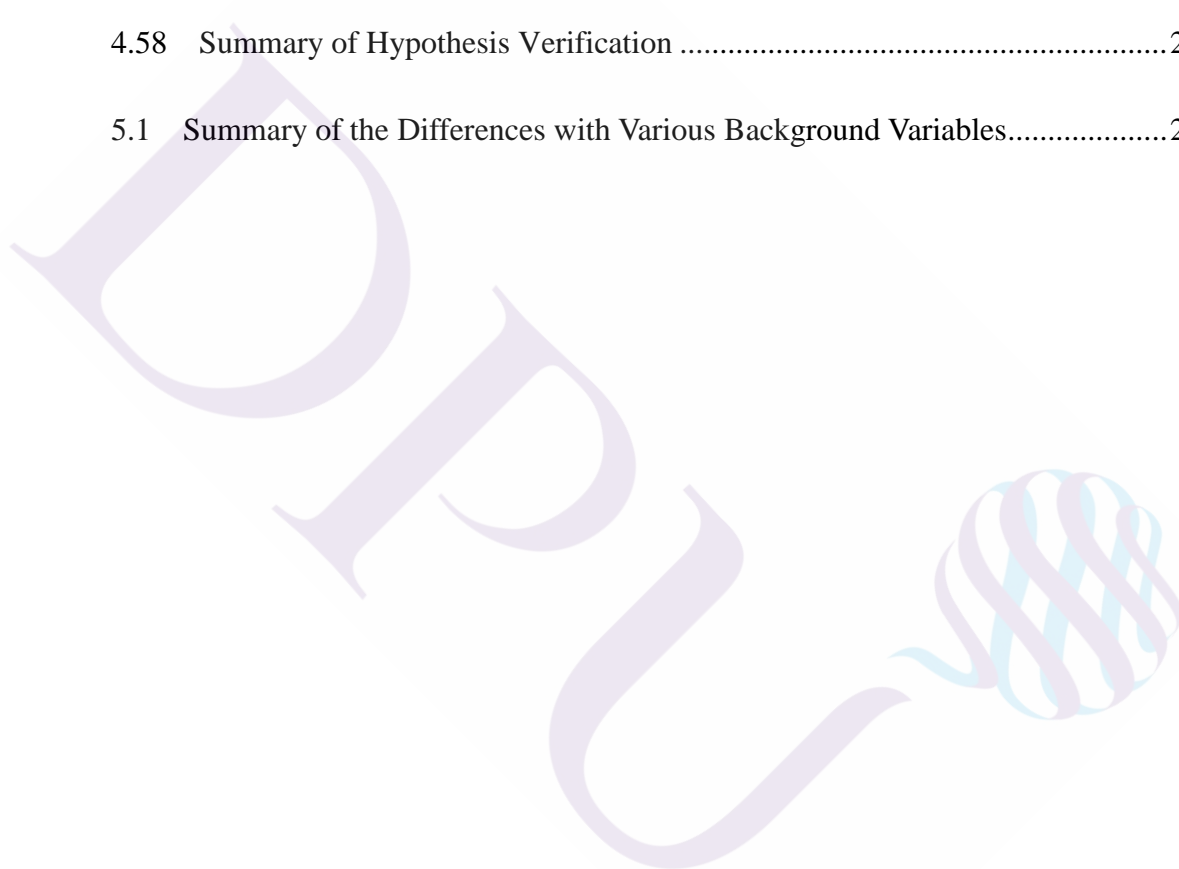
3.31	Discriminate Validity Test by Bootstrapping Technique.....	178
3.32	CFA of Career Adaptability Scale.....	180
3.33	Validity Measurement of Career Adaptability Scale.....	181
3.34	Discriminate Validity Test by Bootstrapping Technique.....	181
3.35	CFA of Future Time Perspective Scale	182
3.36	Validity Measurement of Career Adaptability Scale.....	183
3.37	Discriminate Validity Test by Bootstrapping Technique.....	184
3.38	CFA of Internal-External Locus of Control Scale.....	185
3.39	Validity Measurement of Locus of Control Scale.....	185
3.40	Discriminate Validity Test by Bootstrapping Technique.....	186
3.41	Model Fit of Each Variable	188
4.1	Current Status of Learning Motivation.....	192
4.2	Current Status of Career Adaptability.....	193
4.3	Current Status of Future Time Perspective.....	194
4.4	Current Status of Internal-External Locus of Control.....	195
4.5	Differences in Learning Motivation with Different Gender	196
4.6	Differences in Career Adaptability with Different Gender.....	197
4.7	Differences in Future Time Perspective with Different Gender.....	199
4.8	Differences in Locus of Control with Different Gender.....	200
4.9	Differences in Learning Motivation with Different Grade	202

4.10	Differences in Career Adaptability with Different Grade.....	204
4.11	Differences in Future Time Perspective with Different Grade.....	206
4.12	Differences in Locus of Control with Different Grade.....	208
4.13	Differences in Learning Motivation with Different Birth Order	210
4.14	Differences in Career Adaptability with Different Birth Order.....	212
4.15	Differences in Future Time Perspective with Different Birth Order	213
4.16	Differences in Locus of control with Different Birth Order.....	215
4.17	Differences in Learning Motivation with Different Family Socioeconomic Level.....	217
4.18	Differences in Career Adaptability with Different Family Socioeconomic Level	219
4.19	Differences in Future Time Perspective with Different Family Socioeconomic Level.....	220
4.20	Differences in Locus of Control with Different Family Socioeconomic Level	222
4.21	Correlation Analysis of Learning Motivation and Career Adaptability	225
4.22	Correlation Analysis of Learning Motivation and Future Time Perspective..	226
4.23	Correlation Analysis of Future Time Perspective and Career Adaptability ...	228
4.24	Correlation Analysis of Locus of Control and Career Adaptability	230
4.25	Summary Table of Correlation Coefficients of Each Variable.....	231

4.26	Overall Model Fitness Summary of Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability	234
4.27	Internal Structure Model Fitness Summary of the CFA model for Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability.....	235
4.28	Summary of AVE Analysis among Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability	237
4.29	The 95% Confidence Interval by Bootstrapping Technique.....	237
4.30	Causal Effect Value of Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability	239
4.31	Sobel Test Results of the Indirect Effect between Interest of Seeking Knowledge and Career Adaptability	240
4.32	Confidence Interval of Indirect Effect	241
4.33	Overall Model Fitness Summary of Self-development, Future Time Perspective and Career Adaptability	244
4.34	Internal Structure Model Fitness Summary of the CFA model for Self-development, Future Time Perspective and Career Adaptability	245
4.35	Summary of AVE Analysis among Self-development, Future Time Perspective and Career Adaptability	246
4.36	The 95% Confidence Interval by Bootstrapping Technique.....	246
4.37	Causal Effect Value of Self-development, Future Time Perspective and Career Adaptability.....	247

4.38	Sobel Test Results of the Indirect Effect between Self-development and Career Adaptability.....	248
4.39	Confidence Interval of Indirect Effect	249
4.40	Overall Model Fitness Summary of Tour Interest, Future Time Perspective and Career Adaptability	251
4.41	Internal Structure Model Fitness Summary of the CFA model for Tour Interest, Future Time Perspective and Career Adaptability	252
4.42	Summary of AVE Analysis among Tour Interest, Future Time Perspective and Career Adaptability	253
4.43	The 95% Confidence Interval by Bootstrapping Technique.....	254
4.44	Causal Effect Value of Tour Interest, Future Time Perspective and Career Adaptability.....	255
4.45	Sobel Test Results of the Indirect Effect between Tour Interest and Career Adaptability.....	256
4.46	Confidence Interval of Indirect Effect	256
4.47	Summary of Overall Model Fitness.....	260
4.48	Influence Coefficient of Locus of Control on Career Adaptability	261
4.49	Model Fit Summary	262
4.50	Comparison between Benchmark Model and Assuming Model	264
4.51	Summary of Path Coefficient Identity Test	264
4.52	Path Coefficients in the Multi-group Model.....	265

4.53	Summary of Slope Verification	266
4.54	Model Fit Summary	269
4.55	Comparison between Benchmark Model and Assuming Model	270
4.56	Model Fit Summary	271
4.57	Comparison between Benchmark Model and Assuming Model	272
4.58	Summary of Hypothesis Verification	273
5.1	Summary of the Differences with Various Background Variables.....	292



List of Figures

Figure Number	Page
2.1 Need-Fulfillment Theory	37
2.2 Super's Life Career Rainbow	66
2.3 Super's Career Development Archway Model.....	68
3.1 Research Framework	134
4.1 Cause-and-effect Model of Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability	233
4.2 Cause-and-effect Model of Self-development, Future Time Perspective and Career Adaptability	243
4.3 Cause-and-effect Model of Tour Interest, Future Time Perspective and Career Adaptability	250
4.4 Structure Equation Modeling of the Relationship between External Locus of Control and Career Adaptability.....	259
4.5 Structure Equation Modeling of the Relationship between Internal Locus of Control and Career Adaptability.....	259
4.6 Interaction Diagram of Moderating Effect.....	267

CHAPTER 1

INTRODUCTION

This chapter is to explain the background and motivation, the purpose, the problems and the significance of this research, to clarify the meaning of the nouns related to the research topics.

There are 6 sections in this chapter: the first section is research background; the second section is research motivation; the third section is significance of research; the fourth section is research purpose; the fifth section is research problems; the sixth section is about explanation of nouns.

1.1 Research Background

Under different time background and in different period of time, the authorities on both sides of the straits have great influence on the communication between the two sides, which also highlights that cross-strait exchanges have not always been smooth sailing.

In this section, the current situation and relations between the two sides of the straits are discussed firstly, then the education exchange policy between the two sides is summarized and sorted out, and finally to summarize and integrate. In this way, the trend of education communication between Taiwan and Mainland China is unfolded.

1.1.1 Origin

Since the end of the civil war in 1949, the two sides of the straits have formed a cold war pattern after World War II. The Third Plenary Session of Eleventh Central Committee was held in December 1978, which marks the beginning of Deng Xiaoping's reform and opening up that transformed China. On the New Year's Day in 1979, Letter to Compatriots in Taiwan was issued by standing committee of Chinese National People's Congress, in which put forward policies of ending the military confrontation between the two sides; opening to trade, mail and shipping; expanding cross-straits exchanges. It opened a new prologue of Deng Xiaoping's Taiwan policy (Fu, 2012). Mainland China began communication with Taiwan in 1979, but in a low-key way because of the hostile situation in past the martial law period. The communication between cross-strait becomes more and more important as the boom of opening sightseeing and the landing of Taiwan businessmen.

On July 14, Chiang Ching-kuo, then President of Taiwan, issued a presidential decree that Taiwan lifted martial law from the next day; and in November, Taiwan government announced that people from Taiwan are allowed to visit relatives and go sightseeing in Mainland China (Zhao, 1997). Taiwan ministry of education once open mutual recognition in degree to 73 Mainland Chinese institutions of higher learning but made a sharp turn rapidly based on national security, which becomes a problematic political issues to each education minister (Gao, 2009). Taiwan officially joins the world trade organization in 1st, January, 2002. Since then, it became frequent and multi-dimensional interactions with countries of the world in economic, political, social, cultural, academic, education and other aspects. And its relationship with Mainland China becomes more and more intimate. There is a great development

and a good situation in the cross-strait relationship especially in cultural and educational exchanges (WTO Online Investment Platform, 2005). When the Kuomintang (KMT) came to power again in 2008, which greatly push forward the communication between young students of cross-strait (Zhang & Pan, 2016).

On January 1st 2002, Taiwan joined the World Trade Organization (WTO) whose basic spirit is to reduce tariffs and other barriers to trade among its members in order to expand the production and exchange of goods. According to General Agreement on Trade in Services (GATS), trade in services is divided into 12 categories, and education services, which is divided into five parts: primary education service, medium education service, high education service, adult education service and other education service, is listed as the fifth service sector (WTO Online Investment Platform, 2005). According to GATS, except the teaching activities funded by governments of all countries, all the teaching activities with tuition fees or commercial nature fall into the scope of education trade services, and all WTO members have the right to compete for education services (Zhang, Ye, & Wu, 2007). In 2010, Taiwan and Mainland China signed an economic cooperation framework agreement (ECFA), which is an architectural protocol and the relevant norms of free trade shall not be complete until the subsequent service trade agreements and goods trade agreements of ECFA are completed (Zhang & Pan, 2016).

The cross-strait service trade agreement is the first free trade agreement between the two sides under the ECFA and the general provisions on trade in services (GATS) of the WTO (WTO Online Investment Platform, 2005). Since the service trade agreement bears on the welfare of the whole Taiwan people, discussions in the legislature in 2014 also sparked a massive student movement, thus lead to delay of the

review process. However, the academic education services of both sides of the straits have been launched for a long time, and the progress of the service trade agreement will be notified to the WTO in accordance with the provisions (Mainland Affairs Council, 2013). Mainland China and Taiwan are both members of WTO and promise the open policy to education, which promote their communication in higher education. It opened the way for cross-strait exchanges of higher education from then on (Zhang & Pan, 2016).

When Ma Ying-jeou was elected President of Taiwan in 2008, he immediately put forward the policy of facing the reality; create the future; shelving dispute and pursuing win-win, which would be based as a policy guide for cross-strait relations to implement the policy different from the past government. He also declared to restart consultation between Strait Exchange Foundation and Association for Relations Across the Taiwan Straits, and by this means, to promote the full normalization of cross-straits economic, trade and cultural exchanges (Gao, 2009). From the changes in the number of Mainland Chinese people who have gone to Taiwan to engage in cultural education exchanges in the past 10 years, president Ma's policy of promoting cultural exchanges turned to be effective. From 2008 to the first half of 2018, the number of people from Mainland China who have gone to Taiwan for cultural and educational exchanges increased to nearly 133,700 from 27,000 (Statistics Department of Taiwan Education Ministry, 2018).

1.1.2 Cross-Strait Education and Academic Exchange

With the changing times and its rise, higher education communication in Mainland China between countries becomes more and more frequently. According to the data (2011) of Mainland Affairs Council, Mainland China has already established

education cooperation and exchange relationship with 188 countries and regions, and education career of international students develops rapidly as well. There are 285,000 all kinds of overseas students in 2010, which increase by 140.2% compared with 2005. And there are altogether 1,273,200 overseas students by the end of 2010.

The percentage of Mainland Chinese students studying abroad in recruiting foreign students in different countries is: the United States 59.1% (students from Asia); UK 12.6%; South Korea 7.4%; Japan 6.0%; Australia 25.3%. Obviously, Mainland China is becoming the biggest international students exporting country in the world (Wu, 2013). It promotes the education development of Mainland China in a scientific way when National education reform and development outline of medium and long-term (2010-2020) issued (Web Site of Chinese Education Ministry, 2010). The work point of Chinese Education Ministry (2011) points out that Mainland China should deepen and expand opening to the outside world in education, bring in excellent education resources and deepen education communication and cooperation with Hong Kong, Macao and Taiwan.

In April 2007, Yuan Guiren, deputy minister of education in China, announced in the 3rd Cross-Straits Economic, Trade and Culture Forum (2007) that to further promote the cooperation and communication between Mainland China and Taiwan, we welcome universities in Taiwan to enroll new students in Mainland China, and we provide necessary assistance for Mainland Chinese students going to Taiwan for overseas study. Jia Qinglin, Chairman of CPPCC (Chinese People's Political Consultative Conference), also appealed to expand and deepen educational communication and cooperation of the youth between two sides (People's Daily, 2009). Since then, communication activities between students of both sides became

more and more frequently, such as giving lectures by exchange professors, cooperative research, study activities, visiting group, overseas study group and so on. Since then, the cross-strait economic, trade and cultural BBS has listed cross-strait cultural and educational cooperation and youth exchanges as important topics which shows that both sides attach great importance to the exchange of higher education.

In recent years, the number of colleges and universities in Taiwan is growing rapidly. In September 1994, education reform review committee of the Executive Yuan was set up in Taiwan, and since then, higher education has become an important indicator of government governance. Under the policy principle of education loosening, Taiwan government begins to encourage private education, increase the autonomy of higher education institutions, and emphasize the supply and demand function of education market.

According to the data of Statistics Department of Taiwan Education Ministry (2017), this number grows from 60 (1995) to 157 (2017). The opportunity for Taiwanese people to accept higher education and the popularity of higher education have been greatly improved, and meanwhile, birthrate in Taiwan has also changed dramatically, the phenomenon of low birth rate is more and more serious. According to the data from Taiwan Ministry of Interior (2011), In recent years, the number of births in Taiwan has shown a significant downward trend. The born population in Taiwan is more than 300,000 in 2000, and nearly 25,000 in 2002, but to 2008, the born population reduced drastically to 20,000, and less than 17,000 in 2010.

The number of undergraduate students in the 2011 academic year is 1,021,636 (Statistics Department of Taiwan Education Ministry, 2011). And total population of all newborns from 2007 to 2010 is 761,343 Taiwan Ministry of Interior

(2011). Let's say that over the course of four years, all the newborns are going to go to college, there is still a huge gap between the two numbers. This reflects that the problem of low birth rate is quite serious, which gradually affects the population of higher education. The sharp decline in the birth rate has a huge impact on the market education market in Taiwan. The trend of low birth rate in Taiwan leads to a fact that the enrollment quantity in colleges and universities is much less and the education resources becomes overabundance (Luo, 2007).

In a comprehensive view of the development between the two sides of the straits, in addition to facilitating economic and trade exchanges between them, there is also changes for cultural exchanges because of the same words, language, customs and culture (Zhang & Pan, 2016). Since the government has allowed people to visit relatives on Mainland China in 1987, by the end of March in 2011, Taiwan has approved 411,273 people from Mainland China to participate in cultural and educational activities in Taiwan, and the number is increasing year by year. And here, cultural and educational activities include general cultural and educational activities, mass communication activities, academic and scientific activities, industrial exchange activities, etc.. On the whole, the top three are cultural and educational activities (239,428), health activities (45,317) and mass communication activities (34,979) (Mainland Affairs Council, 2011). At the end of October in 2008, the policy was opened by Taiwan Ministry of Education that exchange students from Mainland China can study in Taiwan for one year or six months, which has sparked a wave of Mainland Chinese exchange students (Guo, 2013).

On the other hand, there are more open and multivariate environment of mass media and academic in Taiwan, and more abundant resources and unique

advantages as well. There are significant achievements in educational concept as a result of learning from countries such as Britain and America, which become referential experience to universities of Mainland China (Wu, 2013). "Exchange student" is the result of the student exchange programs signed by universities on both sides of the straits (Luo & Wang, 2013). As cross-strait exchanges increase, the number of Mainland Chinese exchange students studying in Taiwan is also increasing. Mainland Chinese students can stay no more than 4 months at a time for study in Taiwan according to the rules before 2008. After the policy was opened in 2008, exchange students from Mainland China can study in Taiwan for one year or six months, and there are 1,321 Mainland Chinese students went to Taiwan that year. Since then, the number of exchange students from Mainland China and their proportion in the number of cultural and educational exchanges have increased year by year (Guo, 2013).

According to the data (2011) from Statistics Department of Taiwan Education Ministry, the amount of Mainland Chinese students studying in Taiwan's universities becomes rising year by year. The total number of 2004 is 204, and it is up to 2,000 in 2011 (except 141 person in isolated islands project). According to data (2018), there are 25,824 Mainland Chinese students who came to Taiwan for study as short-term exchange and degree students in 2017. The account percentage of number is about 30%. All the above data shows that there is preliminary form in the number and scale of short-term Mainland Chinese exchange students studying in Taiwan.

1.1.3 Policies for Mainland Chinese Students Studying in Taiwan

Taiwan authorities roundly took policy to expand and deepen communication with Mainland China after the election in 2008 and advocated that the

two sides set up agencies mutually, thus to build a solid foundation for peaceful development of both sides with institutionalization (Zhang, 2011). By this means, Taiwan government accelerates follow-up consultations on the cross-straits economic cooperation framework agreement (ECFA). They further relax restrictions on Mainland Chinese businessmen investing in Taiwan, Mainland Chinese students studying in Taiwan and Mainland Chinese tourists traveling freely to Taiwan; amend the regulations on cross-straits relations; remove outdated restrictions and discriminatory provisions (Zhou, 2015). The government has also actively promoted the establishment of offices in each of the two sessions to accommodate the millions of people who travel between the two sides of the straits every year and lay a more solid foundation for the institutionalization of peaceful development across the straits (Huang, 2009).

1. Policy of Culture and Education

Taiwan's cultural and educational policies on Mainland China mainly start with the publication in March 1990 of the operational guidelines on issues related to Mainland China at the present stage of international conferences or activities, which is the embryonic stage of academic exchanges between the two sides of the straits (Zhou, 2015). In the following five years, academic exchanges between the two sides of the straits made a great leap forward.

A series of laws and regulations related to cross-strait academic exchanges are published at that period, and the exchanges and interactions between people on both sides of the straits reached a peak. Taiwan allowed professionals and students from Mainland China to engage in cultural and educational activities in June 1993, laying a solid foundation for future education exchanges across the Taiwan straits

(Zhou, 2008). But after 1999, due to political factors and the rotation of political parties, the two sides of the straits fell into a tense atmosphere. It was not until 2005, when Lien Chan, the former chairman of the Kuomintang, met with Mr. Hu Jintao and reached the "five visions", that peaceful exchanges between the two sides resumed (Gao, 2009). In May 2008, the Kuomintang regained power and accelerated its policy of cross-strait exchanges. Since 2008, colleges and universities have teamed up with Mainland Chinese universities to exchange students or engage in academic exchanges. Cross-strait academic and education exchanges are becoming more and more frequent and close (Zhang, 2008).

However, colleges and universities in Taiwan all face the difficult enrollment situation because of junior college upgrade and low birth rate. Relevant institutions (Legislative Yuan, Mainland China Affairs Council, Straits Exchange Foundation, Taiwan Ministry of Education, Colleges and Universities) began to research and legislate for opening college entrance policy of Mainland Chinese students to universities in Taiwan (Taiwan Ministry of Education, 2013).

In July 2009, the Kuomintang of China and the Taiwan Affairs Office of the State Council of Mainland China held the 5th Cross-Strait Economic and Trade Cultural Forum (2009) in Changsha, Hunan province, where reached a high degree of consensus on the recognition of academic qualifications from Mainland China and the admission of Mainland Chinese students to Taiwan. Under the active efforts of Taiwan's Ministry of Education, three laws, Regulations on the Relations between the People of Taiwan and Mainland China, University Law and Junior College Law, are passed by the Legislative Yuan on August 19, 2010 (Zhou, 2015).

The evolution of Taiwan's higher education exchange policy towards Mainland China is shown in Table 1.1.

Table 1.1 Taiwan's Higher Education Exchange Policy towards Mainland China

Time	Policies and Regulations	Influence
Nov. 1987	Regulations on the Transfer of People from Taiwan to Mainland China for Visiting Relatives.	Teachers have the opportunities to visit relatives in Mainland China.
Mar. 1990	Operation Points on Issues Related to International Meetings or Activities Involving Mainland China at Present Stage.	Cross-strait academic exchanges sprout.
May 1992	Key Points for Government Institutions and Schools to Send Personnel to Engage in Cultural and Educational Activities in Mainland China.	Taiwanese can go to Mainland China to engage in cultural and educational activities except administrative officers.
May 1993	Measures for Research Licensing of Scientific and Technological Personnel from Mainland China to Taiwan.	Mainland Chinese professionals begin to be hired to Taiwan for research.
June 1993	Licensing Method for Mainland China Professionals and Students Go to Taiwan to Engage in Cultural and Educational Activities.	Licensed Mainland Chinese academics and students can go to Taiwan for further studies.
June 1998	Licensing Method for Professionals from Mainland China Go to Taiwan to Engage in Professional Activities.	Time extension of Mainland Chinese students came to Taiwan for study from 4 months to 1 year.
Feb. 1999	Key Points for Professionals and Students from Mainland China to Taiwan to Engage in Cultural and Educational Activities.	Cultural and educational professionals and students from Mainland China can go to Taiwan to engage in cultural and educational activities.
Feb. 2004	Key points for cooperation between schools at all levels and schools in Mainland China or for written cooperation.	Launch cross-strait education cooperation and became more clarified after amendment in October 2008.
Aug. 2010	Amend and Pass Regulations on the Relations between the People of Taiwan and Mainland China, University Law and Junior College Law.	Cross-strait higher education exchanges have made great strides on this legal basis for coming to Taiwan.
Jan. 2011	Issue Measures for Recognition of Academic Qualifications in Mainland China, Measures for People of Mainland China to Study in Colleges above Junior Colleges in Taiwan.	Work specifications of the recruitment of Mainland Chinese students to Taiwan is clarified.
Jan. 2011	Operating Points of the Enrollment Plan for People from Mainland China to Study in Universities in Taiwan is examined by Ministry of Education.	Begin to accept and review the admission plan for Mainland Chinese students proposed by colleges and universities.
Feb. 2011	Universities Enrollment of Mainland Chinese Students in 2011 Academic Year was approved by the Ministry of Education of Taiwan.	Begin to approve the relevant planning for colleges and universities starting recruitment of students from Mainland China.

Source: researchers collate.

Since the time when the legislature recruited Mainland Chinese students to practice the law, schools in Taiwan have made arrangements with schools in Mainland China to facilitate academic exchanges, exchange students, exchange professors and publications between the two sides (Zhang & Pan, 2016). On August 19, 2010, the Legislative Yuan passed the following bills: Regulations on the Relations between the People of Taiwan and Mainland China, University Law and Junior College Law, as well as "Three-limit & Six-no Policy" (Taiwan Ministry of Education, 2011).

Then, in September 2010, Taiwan Ministry of Education announced the implementation of "measures for Mainland Chinese students to study and stay in Taiwan". Colleges and universities propose admission plans and form joint admission committees (Liao, 2010). On January 4, 2011, the Ministry of Education of Taiwan promulgated several laws as the basis for universities to recruit Mainland Chinese students: Measures for Recognition of Academic Qualifications in Mainland China, Measures for the People of Mainland China to Study in Colleges above Junior Colleges in Taiwan, The Ministry of Education examined the operating points of the enrollment plan for people from Mainland China to study in colleges and universities in Taiwan, Guidelines for Colleges and Universities to Recruit Mainland Chinese Residents to Apply for Admission Programs of 2011 academic year in Taiwan (Lin, 2011).

The number of written agreements signed by schools at all levels in Taiwan with Chinese Mainland once comes up from 185 in 2004 to 1460 in 2011, and the total number to 2012 is up to 5229 (Cheng, 2013). After the completion of the legislation, universities and colleges jointly formed the joint recruitment association

for Mainland Chinese students, began to enroll undergraduate students from Mainland China in 2011, and began to enroll two-year bachelor's programs, master's and doctor's programs in research institute (Cheng, 2013). According to statistics from the ministry of education, the total number of Mainland Chinese students studying in Taiwan has exceeded 200,000 from 2011 to the end of 2017 (Statistics Department of Taiwan Education Ministry, 2018).

Judging by the number of Mainland Chinese students coming to Taiwan for study in colleges and universities, it is obvious that the number is growing rapidly. Thus it can be seen that in the future, the admission policy of colleges and universities in Taiwan will become one of the focal points of the development of educational affairs.

2. Policies of Taiwan to Recruit Mainland Chinese Students

There are three stages in Taiwan's recruitment process for Mainland Chinese students: legal revision, non-credit and credit and policy announcement.

(1) Legal Revision Stage (1992-2000)

Regulations on the Relations between People of Taiwan and Mainland China came into force in 1992, and in September, in accordance with the relevant provisions of this regulation, the ministry of education of Taiwan drafted Measures for Recognition of Academic Qualifications in Mainland China which was promulgated and implemented after being approved by the ministry of education of Taiwan in October 1997. And meanwhile, a list of 73 Mainland Chinese institutions of higher learning is announced (Jin, 2010). But in June 1998, the Ministry of Education of Taiwan decided to postpone the implementation of all relevant assignments except those below senior high school (Zhang, 2008).

(2) Non-credit and Credit Stage (2000-2007)

In November 2000, the former Education Minister, Zeng Zhilang reopened Measures for Recognition of Academic Qualifications in Mainland China, which made it possible for Taiwan's education policy towards Mainland China continue to be developed (Zhang, 2009). In 2002, Taiwan joined the WTO and became one of its member states. In August, Mainland Chinese Affairs Council prepared draft amendments to some articles of Regulations on the Relations between People of Taiwan and Mainland China. In February 2004, Ministry of Education of Taiwan issued Key points for cooperation between schools at all levels and schools in Mainland China or for written cooperation. From 2004 to 2009, colleges and universities across the straits have signed 679 academic cooperation agreements, among which there are 128 colleges and universities in Taiwan have signed academic cooperation agreements with colleges and universities in Mainland China, accounting for 79% of the total number of colleges and universities in China (Cheng, 2013).

(3) Policy Announcement Stage (2008 to present)

With the relaxation of the relevant exchange conditions between Taiwan and Mainland China, Taiwan's colleges and universities have improved the actual exchange of Mainland Chinese students to Taiwan (Zhang, 2010). In February 2008, the ministry of education extended the length of stay for Mainland Chinese students studying in Taiwan from 4 months to 1 year, and the number of Mainland Chinese students studying in Taiwan increased again (Mainland Affairs Council, 2011). Since Ma Ying-jeou was elected President in 2008, the number of students from Taiwan studying in Mainland China has been increasing year by year, following the increasingly frequent exchanges and interactions between people on both sides of the

straits. It is hoped that by means of mutual recognition of academic qualifications of institutions of higher learning on both sides, the political views on cultural and educational exchanges between Mainland China and Taiwan can be put into practice (Zhang, 2008).

In December 2008, the ministry of education of Taiwan actively studied Regulations on the Relations between People of Taiwan and Mainland China, University Law and Junior College Law (hereinafter referred to as three laws and regulations concerning Mainland Chinese students), and draft amendments to "measures for Mainland Chinese students to study and stay in Taiwan" and Measures for Examination and Recognition of Academic Qualifications in Mainland China (Zhang, 2013). After more than 10 years of hard work, the "three laws and regulations concerning Mainland Chinese students" was finally passed in the Legislative Yuan on August 19, 2010, and Taiwan's education policy on Mainland China began to have a legal basis. There are certain policy principles, legal norms and practical plans for the recruitment of students from Mainland China in Taiwan (Lv, 2010). Among them, planning is based on "Three-limit & Six-no Policy", followed by policies and supporting measures for Mainland Chinese students to Taiwan. According to the "Three-limit & Six-no Policy", the total amount of land to Taiwan is only 0.5-1% of the total enrollment of Taiwan (about 1000-2000 students), which undoubtedly limits its space for enrollment in terrestrial development (Zhou, 2015).

1.1.4 Current Situation of Mainland Chinese Students Studying in Taiwan

In the Taiwan policy commentary article, it is mentioned that under the cultivation of different educational policies and systems, the thinking mode of Mainland Chinese students is different from that of Taiwanese students. Mainland

Chinese students study hard and thinking deeply, but they rarely have team work and their thinking is relatively solid, while Taiwanese students are more open-minded (Chen, 2013). In June 2015, the first batch of Mainland Chinese students obtained university degrees from Taiwan, with a total of 686 students (He, 2015). According to "World Magazine", both teachers and students in Taiwan feel positive about Mainland Chinese students, whether in classroom participation, homework quality, academic achievement, and the maintenance of teacher-student relationship (Li & Cai, 2015). The characteristics of these Mainland Chinese students coincide with the local students' advantages mentioned by professors from Taiwan who give lectures in Mainland China--thirsty for knowledge, active in learning, hard-working and active in asking questions (Peng, 2012).

According to local laws in Taiwan, graduates are required to leave the country within 30 days of graduation except those continuing to study at the institute's graduates. Liu Zhimin, a senior specialist in the International Department of the Ministry of Education, pointed out that it is enough for Mainland Chinese students to stay for 30 days after graduation due to the lack of work and internship needs in Taiwan. If staying too long, it is not good for Mainland Chinese students, because there is no school management, in addition to the fear of derivative medical treatment, illegal work and other problems (He, 2015). This regulation caused a lot of different reactions from Mainland Chinese students and other parties.

Chen Dehua, former deputy head of the Ministry of Education, said that the original setting of "Three-limit & Six-no Policy" has been gradually loosened in recent years, and if there is consensus in the society, as long as there is no law involved, it will be gradually loosened. The "Three-limit & Six-no Policy" will be

gradually lifted in the future except insisting that Mainland Chinese graduates cannot work in Taiwan and do not recognize Mainland Chinese medical qualifications (You, 2015). Up to now, there are only one-limit and three-no kept in the "Three-limit & Six-no Policy" (Li & Cai, 2015). Flexible measures are taken in the rest aspects except restrictions related to the examination of medical certificates and their academic qualifications, no extra points, no influence to the domestic enrollment quota and no staying in Taiwan for employment. As now moving towards one-limit and one-no, you can see the following thing turned out to be true: Taiwan's future commitment to ECFA-related service trade structure, cross-strait trade in services negotiated through legislation, emphasis on and promotion of educational services, and relevant government departments will have more progressive research, loosening and improvement of Mainland Chinese students' policies. At the same time, the number of Mainland Chinese college students going to Taiwan for short-term exchanges is also increasing year by year (Cheng, 2013).

As far as Mainland Chinese undergraduates are concerned, it becomes more and more necessary for them to contact with multicultural and to broaden their international vision. There are so many sameness between Taiwan and Mainland China, such as origin, humanity, language and environment, which become the advantages and convenience for Mainland China students to study in Taiwan's universities (Zhang, 2010). On the other hand, there are more open and multivariate environment of message and academic in Taiwan, and more abundant resources and unique advantages as well. There are significant achievements in educational concept as a result of learning from countries such as Britain and America, which become referential experience to universities of Mainland China (Zhang & Pan, 2016).

According to the data from Mainland Affairs Council (2013), the number of Mainland Chinese people taking part in cultural and educational communication presents increasing trend, and is up to 100,000 by 2012. Data from Taiwan Ministry of Education (2018) shows that the total number of short-term exchange students from Mainland China increases to 35,286 in 2017 from 448 in 2006.

It can be clearly seen from various aspects of student exchanges that due to mutual exchanges and discussions, the students of both sides have made progress towards better quality of study and academic career (Cheng, 2013). The long-term academic and teacher-student exchanges between the two sides have actually contributed to each other's growth and development at educational, political and economic levels (Zhang & Pan, 2016).

1.2 Research Motivation

1. Cross-straits Exchanges Become Increasingly Frequent

With reform and opening up and economic rise in Mainland China for more than 30 years, the number of overseas students has been rapidly expanded. It has become the fastest growing and largest group of students in the global higher education market. As Mainland China becomes the biggest international students exporting country, the condition of their life and study, as well as their learning effect, gradually become the focus of the education field (Luo & Wang, 2013). As Mainland China becomes one of the major countries in the world striving for international students, neighboring Japan and South Korea are also actively seeking students from Mainland China to study there. In Japan, for example, 60.2% of foreign students from

Mainland China went to study in Japan in 2008 and 70% (44,746) of foreign students going to South Korea are Mainland Chinese (Wu, 2013).

Taiwan is adjacent to Mainland China and has the same cultural and historical origin as Mainland China. Communication and interaction are inevitable because of the similar written and spoken language, life customs and cultural traditions, and the special political relationship between the two sides as well.

For years, it has become a choice of higher education for students from Taiwan to study in Mainland China. However, due to political and social factors, Taiwan has been unable to build consensus and formulate and implement relevant policies on the admission of Chinese Mainland Chinese students to study in Taiwan. And therefore, Taiwan is a bit behind other countries in recruiting students from Mainland China (Jin, 2010).

2. Colleges and Universities in Taiwan Offer "Olive Branch" to Chinese Mainland Students

In recent years, in order to effectively promote the international competitiveness of Taiwan's universities and education exchanges and interactions across the straits, Taiwan government actively opens up mutual recognition of academic qualifications from Mainland China and enrollment of Mainland Chinese students in Taiwan. They'd like to show the soft power of education and culture by preliminary completion of relevant legislation and supporting measures which carry their hopes of strengthening the learning interaction between students from both sides of the straits, stimulating the intellectual motivation of students from Taiwan and enabling students from both sides to recognize the value of Taiwan's democracy and openness (Statistics Department of Taiwan Education Ministry, 2011).

The amendment about "Three Laws for Mainland Chinese students" was passed on August 19, 2010. And afterwards, there are admission of Mainland Chinese qualifications and admission of Mainland Chinese students to Taiwan from the 2011 academic year by amending some legal provisions of Regulations on the Relations between the People of Taiwan and Mainland China, University Law and Junior College Law (Lv, 2010).

Meanwhile, in considering of social expectations, safeguards national security and national rights and interests, Taiwan government sets limits in relevant laws and regulations, that is, they restrict on the identification of Mainland medical qualifications; Mainland Chinese students are not allowed to apply for the national security secrets institute; no nationality of Taiwan is not allowed to participate in the national examination. Taiwan government also standardize the principle of "three limits and six no's" by administrative orders that makes a clear regulation of limitation of university, quality and field; besides the regulation of no bonus points, no influence on Taiwan's enrollment quota, no awards and bursaries, no working in Taiwan, no employment in Taiwan, no registration for public office (Xiao, 2010).

As can be seen that in the context of internationalization trend of higher education and increasingly frequent cross-strait exchanges, Taiwan government actively promotes the policy of opening up to Mainland Chinese students for study in Taiwan and encourages Mainland Chinese students to study in Taiwan with the hope to internationalize Taiwan's higher education, and make up for the shortage of students in higher education institutions, at the same time to attract Mainland Chinese talents to Taiwan, so that Taiwan students and Mainland Chinese students have a positive interaction and competition in order to promote mutual understanding and

exchanges between people on both sides of the straits and promote peaceful development of relations.

3. Many "Focal Points" in the Field of Education

Many researchers (Anderson, 2006; Bourke, 2000; Chirkov, 2007; David, 2014, 2010; Hunley, 2010; Marcum, 2010; William, 2015) have already taken notice of the phenomenon that there really exist difference between overseas students and those of inside colleges. Deyon (2014) finds in his research of short-term overseas students that undergraduate who take part in short-term overseas study have better self-development than those do not participate in, and have better global adaptability as well. Thus it can be seen that it's good for undergraduates' development to take part in short-term overseas study. This researcher intends to discuss the influence of learning motivation of Mainland Chinese students to universities in Taiwan on career adaptability and hope to provide valuable reference to the similar research of education circle.

Motivation in learning makes a direct influence on learning behaviors and results. Learning motivation refers to the inner psychological process that leads to and maintains student learning activity and makes it tend to setting goals in teaching (Zhang, 1994). Researchers use learning motivation as an important influencing factor in their research on college students learning. Jeffrey (2010) finds in the research on learning motivation and learning effect of exchange students in Queen's University that overseas exchange students with stronger learning motivation tend to achieve better learning outcomes, which help to establish their confidence; Peter (2001) makes a survey about the inner learning motivation of American undergraduates and the research results show that learning motivation has a positive effect on learning

confidence and can influence their participate in social activities. Chen (2006) makes a point in his research on motivation dilemma of self adjusting for vocational colleges and strategy adjustment that undergraduate can improve their learning motivation dilemma because of influence of self and the outside world in the course of self adjusting in learning, the establishment of learning motivation influences their adjustment of learning strategy and then achieve learning goals.

It thus can be seen that learning motivation is a very important factor in the course of leading college students to learning behavior and reach learning goal. The author uses learning motivation of exchange students from Mainland China to Taiwan as an important factor in this research, and tries to make clear the influence of learning motivation on their career adaptability.

Makayla (2013) draws a conclusion from the research results of course learning motivation of the whole academic career that undergraduates who have stronger learning motivation tend to have better career development and stronger career confidence as well. According to the theory of career development, college students are just in late stage of puberty, which makes the career exploration and development a key factor in future workplace.

According to career development theory of Super (1980), at the time of Mainland Chinese students coming to Taiwan for exchange study, they are exactly at a stage of career exploration (age from 15 to 24), and their main task is to explore their own personal traits and interests, to develop interpersonal relationships, to cultivate the ability to study, to establish values, to understand the requirements and to searching for meaning of their own career development and their own life through means of learning the coursework and skills.

Scholars (Rottinghaus, Day, & Borgen, 2005) ever make a point of view that it is necessary to emphasis on individuals meeting the needs of various professional environment by using purposeful elastomeric and effective method or strategy. It can be seen that career adaptability plays an important role in the whole course of personal career development which is one of the motivations for this study and the basis of using career adaptability of Mainland Chinese students studying in Taiwan as a research variable in this research.

Meanwhile, when people have more consciousness in future time perspective, they tend to be more capable of developing certain goal, trying their best to promote themselves to task and planning to take action for achieving future goals (Husman & Lens, 1999). Once they achieve their goals, they boost self-confidence greatly, and prompt further plan for themselves in a more realistic way. This becomes a virtuous cycle for the development of individuals.

In this sense, future time perspective can positively influence person's career control and career confidence, which can definitely improve the ability of career adaptability. In some research (Eccles & Wigfield, 2002; Lens, 2001; Xu, 2016), future time perspective plays a role of mediator. And in some research (Davis & Palladino, 2000; Huang, 2009; Judge et al., 2001; Xie et. al., 2013; Zhang et al., 2008) internal-external locus of control is used as moderator.

Based on the above, the author intends to discuss in this research how the learning motivation of Mainland Chinese students studying in Taiwan influence their career adaptability through future time perspective and internal-external locus of control, which can certainly prove the mediating effect of future time perspective and the moderating effect of locus of control. The author also intends to provide a

theoretical basis for cultivating practical activities of college students career adaptability.

1.3 Significance of Research

With the deepening of internationalization among colleges and universities, there are more and more research (David, 2014; Peng, 2012; William, 2015) focusing on students participating in international exchange. And the political status quo of Mainland China and Taiwan due to historical reasons is also increasingly concerned by the international community. Therefore, it is of practical significance for this study to select college students from Mainland China who went to Taiwan for exchange study as participant.

Through consulting a large number of literature materials, it is found that in the studies on students of different ages, many scholars (Jeffrey, 2010; Makayla, 2013; Peter, 2001; Rottinghaus, Day, & Borgen, 2005) take learning motivation and career adaptability as variables in the field of education, but there are few direct studies on them. The concept of future time perspective has been widely adopted by researchers in relevant research (Eccles & Wigfield, 2002; Lens, 2001); Due to the bidirectional nature of locus of control, in some research (Davis & Palladino, 2000; Judge et al., 2001), it plays a role of mediator.

These four variables are adopted more frequently in the field of education, but they are rarely taken in one study. The former scholars used to focus on the relationship or inter-influence among these variables and others, such as satisfactory,

self-efficacy, self-cognitions and so on. From this perspective, this study has certain research value and significance, which is also the innovation point of this study.

Through the analysis of the relationships among the four variables, this study attempts to explore how the learning motivation of Mainland Chinese college students who went to Taiwan for exchange study affects their career adaptability through future view perspective, internal-external locus of control and other factors, and thus to provide theoretical and empirical reference for future research in the related field.

1.4 Research Purpose

Known from the data and references, learning motivation, future time perspective and locus of control are important influential factors of career adaptability. Besides explaining the relationships and functions of factors, the author intends to make it clear if the mediating effect and moderating effect can bring influence on their career adaptability. The research purpose is as follows:

1. To analyze the differences in learning motivation, future time perspective, internal and external locus of control and career adaptability of college students from Mainland China who went to Taiwan for exchange study with different background variables.
2. To analyze the influence of learning motivation of college students from Mainland China who went to Taiwan for exchange study on their career adaptability.
3. To analyze the influence of learning motivation of college students from Mainland China who went to Taiwan for exchange study on future time perspective.

4. To analyze the influence of future time perspective of college students from Mainland China who went to Taiwan for exchange study on career adaptability.

5. To analyze the mediating effect of future time perspective between learning motivation and career adaptability of college students from Mainland China who went to Taiwan for exchange study.

6. To analyze the influence of locus of control of college students from Mainland China who went to Taiwan for exchange study on their career adaptability.

7. To analyze the moderating effect of locus of control between learning motivation and career adaptability of college students from Mainland China who went to Taiwan for exchange study.

1.5 Research Questions

According to the statement the above motivation and significance, research questions in this study are as follows:

1. Whether there are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among exchange Chinese college students with different background variables?

2. Does learning motivation of exchange Chinese college students have influence on their career adaptability?

3. Does learning motivation of exchange Chinese college students have influence on future time perspective?

4. Does influence of future time perspective of exchange Chinese college students have influence on their career adaptability?

5. Does future time perspective play a mediating role between learning motivation and their career adaptability of exchange Chinese college students?

6. Does locus of control of exchange Chinese college students have influence on their career adaptability?

7. Does locus of control play a moderating role between learning motivation and their career adaptability of exchange Chinese college students?

1.6 Noun Interpretation

There are many important nouns related in this research which can be defined as follows in order to make the research clear.

1. College Students from Mainland China

College students from Mainland China, in a broad sense, refers to all the college students from Mainland China; In this research, it refers to the male and female students who came from colleges and universities of Mainland China to Taiwan private universities for short-term (a term or school year) exchange study as student status during their learning course. At the end of the course, they can obtain a transcript or course certificate officially issued by the sister school, which will be taken to offset credits upon their return to school.

2. Learning Motivation

Learning motivation refers to a behavioral process in which an individual is affected by internal and external factors, triggers his or her thoughts and makes them act and maintain his or her behavioral activities, so as to achieve or meet certain needs. In this research, learning motivation refer to a process of thought transformation that

leads to driving force for Mainland Chinese students studying in Taiwan and strives for achieving learning goals continuously and steadily. This study divides the study motivation of Mainland Chinese exchange students into three dimensions: interest in seeking knowledge, self-development and tour interest.

3. Internal-External Locus of Control

Rotter (1966) defines internal-external locus of control as an individual's belief in the relationship between behaviors and their results. In this research, the research of internal-external locus of control is based on Rottor's control belief theory (1966). People with internal locus of control believe that they can control success, and their behaviors are relatively active, autonomous and positive. People with external locus of control are influenced by luck and power, and they tend to think it is difficult to control, and behave in a passive, dependent and resigned manner. These two personality traits co-exist in a body which display different behavioral tendencies in the same situation.

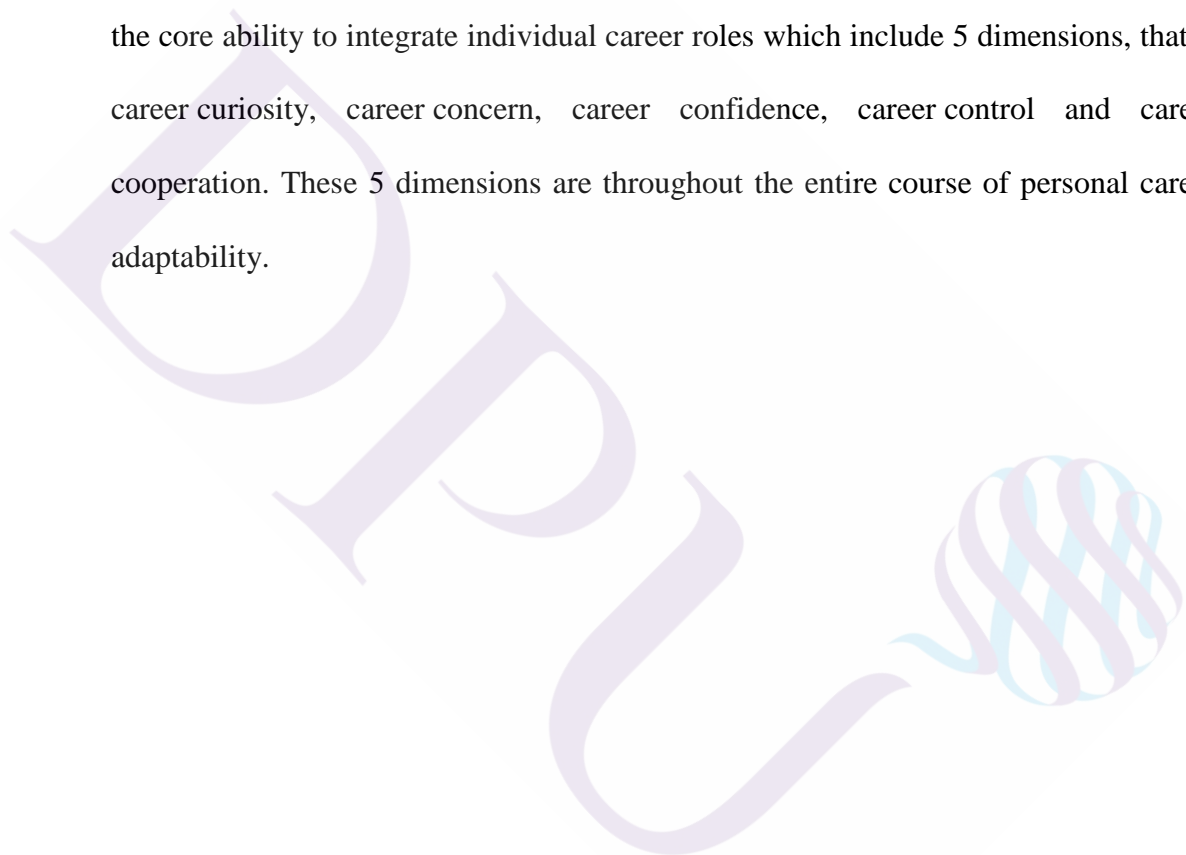
4. Future Time Perspective

The concept of future time refers to the expectation, organization and plan of individuals for future events which could occur weeks, months or decades from now (Seijts, 1998). In this research, future time perspective refers to the degree of individuals expect certain future events and targets (Husman & Lens, 1999). It is the individual's motivation for future goals, which will encourage them to seek long-term goals for the future and to be able to invest in present activities in exchange for desired results in the future. The three dimensions are future goal, value and speed. Future goals represent the extent to which individuals think, plan, and care about

future goals; Value, rather than sensitivity, is a better indicator of what a goal means to an individual; Speed is how fast an individual perceiving the future will arrive.

5. Career Adaptability

Super and Knasel (1981) put forward the concept of career adaptability to explore the impact of changes in the job market on individuals and organizations from the late 20th century to the 21st century. In this research, career adaptability refers to the core ability to integrate individual career roles which include 5 dimensions, that is career curiosity, career concern, career confidence, career control and career cooperation. These 5 dimensions are throughout the entire course of personal career adaptability.



CHAPTER 2

LITERATURE REVIEW

This research aims at probing into the relationships among learning motivation, locus of control, future time perspective, career adaptability of Mainland Chinese undergraduates to universities in Taiwan and the possible mediating and moderating effect between learning motivation and career adaptability. In order to untangle the connotation of this research theme, the author will review and organize the literature about independent variable, moderating variable, mediating variable and dependent variable.

This chapter includes 6 sections: the first is to state the related research on learning motivation; the second section is to state the related research on career adaptability; the third section is to state the related research on future time perspective; the fourth section is to state the related research on internal-external locus of control; and the fifth section is to state the interrelationship among variables; and the sixth section is to propose the research framework of this study.

2.1 Learning Motivation

Motivation is derived from Latin word "movere" with the meaning of causing action (Zhang, 2011). Motivation, with pluralistic dimensions, refers to a mental state in which an individual moves toward a goal through demand, and induces,

guides, and maintains his or her behavior through motivation to achieve or satisfy the internal process of the individual toward the goal. However, external environmental influence factors and evaluations of others may also affect individual motivation (Zhang, 2011). Ball (1990) points out that motivation is a hypothetical structure derived from the inference of individual behavioral performance, which exists in the individual's internal, and has the role of triggering, guiding and supporting the generation of individual behavior. Motivation is a kind of human performance, a need, a behavior, which is generated by the needs of human nature. Motivation is created to meet individual needs. For example, if you are hungry, you may want to eat or drink something. When a need is fulfilled, there is a psychological satisfaction, while when it doesn't meet the demand, it can cause some psychological or physical anxiety or dissatisfaction.

Once people have motivation they will fulfill their specific needs through specific or special processes. Motivation is the intrinsic driving force of human behavior, while learning motivation refers to the inner psychological process that teachers can cause students to learn activities and maintain learning activities when they teach, and then promote the teaching process to the teaching goals set by the teachers (Zhang, 2010).

2.1.1 Definition and Connotation

1. Definition of Learning Motivation

Motivation derives from Latin word "movere", its original meaning is to move or to set in motion (Zhang, 1969). The study of motivation began around the 1930s.

Houle (1961) presents an idea that there are actually many reasons for human beings to choose certain behaviors or seek for certain activities. There are many words familiar with the word motivation in meaning, such as demand, drive, interest, will, curiosity, habits, attitudes, values, incentives, incentives and so on (Zhang, 1996). Ball (1990) puts forward the point of view that motivation is a hypothetical structure derived by personal behaviors, which exists within the inside of an individual and play guiding and supporting role to personal behaviors.

As we all known, there are always motivations leading to our behaviors, so are students in learning. At the beginning of study, there are objectives together with many supporting motivations, which are related with demand, curiosity, interest, values, incentives, etc.. Zhang (1996) points out that learning motivation refers to the inner psychological process that teachers can cause students to learn activities and maintain learning activities when they teach, and then promote the teaching process to the teaching goals set by the teachers.

Xu (2007) believes that learning motivation is divided into two types: intrinsic motivation and extrinsic motivation which can be seen as a need or drive to motivate individuals to participate in the study activities and pursue the default goals. It is a psychological process that urges individuals to keep learning, initiate behaviors and expect success.

Each school has its own point of view about the meaning of learning motivation based on their own position, but the basic concept is similar. The researcher sorted out the definitions of learning motivation of scholars in the following Table 2.1.

Table 2.1 Definition of Learning Motivation

Scholar	Definition
Tough (1978)	Learning motivation emphasizes that the expected rewards that learners are aware of are more important than the power of the subconscious or the environment.
Petri (1986)	Learning motivation refers to the inner strength that causes individuals to learn activities, maintain individual learning activities, and promote individuals toward a certain learning goal.
Brophy (1987)	Motivation is divided into intrinsic motivation and extrinsic motivation. According to learners' preference, learning motivation can be divided into "general motivation to learn" and "specific motivation to learn". The former refers to students who study hard in all aspects, while the latter only work hard on certain subjects.
Han (1989)	Learning motivation refers to the internal motivation to promote individual activities to a certain purpose, the subjective motivation to motivate people to learn, and the psychological tendency of individuals to maintain learning activities.
Wu (1990)	Learning motivation is the internal state of the individual's behavior. The real cause of the motivation cannot be judged according to the explicit behavior. It is generally considered to be the driving force of the behavior.
Middleton (1995)	Learning motivation is the driving force for students to actively seek knowledge. Students realize the importance of learning and the mental state of active learning.
Stipek (1995)	Learning motivation is the achievement motivation of students in learning, a kind of psychological demand for individual pursuit of success, and also one of the main factors affecting academic achievement.
Lin (1995)	Learning motivation refers to the internal reason or internal motivation that promotes individual learning activities.
Shi (1996)	Learning motivation is a learning behavior of the learner and will be maintained until he reaches the goal he has set. This motivation is influenced by his interests, needs and other incentives.
Wen (1997)	Learning motivation is the internal state leading to learning behavior of the individuals, which includes learning needs, motivating behaviors and towards learning goals.
Rezabek (1998)	Learning motivation refers to the factors that influence the learning effect in the process of education, such as students' personal feelings, knowledge, skills, attitudes and so on.
Wigfield & Eccles (2002)	Learning motivation includes three important components: homework value, ability belief and success expectation.
Li & Shan (2001)	Learning motivation can be divided as following: intrinsic motivation of learning—the spontaneous motivation of the learner to feel or need to understand the purpose of learning, and extrinsic motivation of learning
Huang (2002)	Learning motivation as following: the inner psychological process that leads to and maintains learning activity and makes it tend to the setting goals. Learning motivation is not a single dimension but a combination of many kinds of motivations.

Table 2.1 (continued)

Scholar	Definition
Chen (2003)	Learning motivation is a driving force for learning, causing, maintaining and achieving the inherent psychological process of a predetermined learning goal. It is the part that students not only have to learn, but also are willing to learn.
Huang (2003)	Learning motivation refers to the internal tendency shown by the efforts and bets made by students in the learning process.
Qiu (2004)	Learning motivation is a kind of internal motivation, such as a desire, interest and other forms of expression, forming a thrust effect. After learners' cognition of objective learning activities, they start to self-initiate learning and maintain learning status by identifying a learning goal, an internal psychological process and meet his learning goal.
Liao (2004)	Learning motivation refers to a cognition causing learners to recognize objective learning activities. It is an internal psychological process of meeting learning goals maintain learning activities spontaneously, guiding learning activities close to the set goals. That is to say, in learning activities, through various objective cognition, individuals are motivated to devote themselves to learning, maintain learning and violate learning goals.
Lai (2005)	Learning motivation is an act of internal factors which is a inner psychological process led by inner needs of learners, maintains their behaviors and guides them to set goals in studies.
Zhou (2008)	Learning motivation refers to the internal process of individuals participating in learning activities. It can be known as the inner motivation of psychology, which would motivate individuals to achieve goals and sustain that learning.
Zhang (2010)	Learning motivation refers to the inner psychological process that teachers can cause students to learn activities and maintain learning activities when they teach, and then promote the teaching process to the teaching goals set by the teachers.
Chen (2011)	Learning motivation can be divided into external motivation and internal motivation. External incentive refers to the learning motivation of human individuals who are interested in learning results such as reward, punishment and competition. Internal incentive refers to the learning motivation of human individuals who have expectations and needs for learning itself.
Fang (2013)	Students' learning activities are caused by a system composed of many different factors, such as needs, necessities, interests, goals and so on.
Ye (2013)	Learning motivation is the internal process of self-motivated devotion towards learning goals.
Rowell & Hong (2013)	The motivational components that influence learning include: beliefs, goals, values, intrinsic and extrinsic motivation.
Lin & Zhang (2015)	Learning motivation is determined by the value and expectation of learning, which is the internal reason or internal motivation to promote individual learning activities, and it can mobilize, Orient, maintain and regulate learning activities.

Source: researchers collate.

By discussing and analyzing the definition and classification of learning motivation, it is helpful to explain the learning behaviors of students from Mainland China who went to Taiwan for communication in this study. Learning motivation in this research refers to the inner psychological process that leads to and maintains Mainland Chinese students to universities in Taiwan for overseas study activities and tends to achieve their setting goals with efforts. It is a positive energy that drives an individual toward a specific goal or direction.

2. Connotation Meaning of Learning Motivation

Machr and Meyer (1997) point out that motivation is an activity that enables an individual to be energetic, directional, and to maintain behavior. That is to say, motivation encourages students to take the initiative to engage in learning activities and guide them. Slavin (1997) points out that motivation affects individual learning at two levels: first is intrinsic motivation, referring to incentive value of the event itself; the second is extrinsic motivation, referring to encouraging students to do their best by giving feedback and encouragement. Ormrod (2003) summarizes six reasons for how motivation affects individuals' learning and behavior, and the description is as follows: goal-oriented behavior, continuous efforts, beginning and duration of behavior, strengthened process of cognition, enhancement results and improvement possible outcomes.

McKeachie (1961) defines learning motivation as: when the motivation is activated, the individual will choose a strategy that can achieve the greatest satisfaction and the least regret. Individuals combine the expectation of their subjective preferences with the possibility of achieving them to form the so-called learning motivation (Xu, 2002). According to Zhang (1996), learning motivation is

the internal psychological process that causes and maintains students' learning activities and leads them towards the set goals. Garrison (1997) argues that the intrinsic needs of individuals reflect the importance and value of specific learning objectives; Demand and values reflect the reasons for persistence in learning, for example, the importance of learning will determine an individual's interest in learning.

In summary, motivation influences individual behavior. And undeniably, the influence of motivation variables is quite obvious in education learning situation. Therefore, learning motivation is an intrinsic motivation that can lead individuals to actively learn.

2.1.2 Relevant Theories

There are many theories about motivation. This research focuses on the motivation theories that is closely related to this research which include Need-Fulfillment-Theories, Self-efficacy Theory and Expectancy-value Model.

1. Need-Fulfillment-Theory

A psychologist named Maslow (1943) ever presents an idea that there is a hierarchy of human needs, just like pyramid, from low level to high, from the most basic physiological needs to higher psychological needs. When the low level ones reach a certain level of satisfaction, people will seek high-level needs. He believes that Need-Fulfillment-Theories is the best explanation for people's motivation to participate in voluntary service. Although many researchers have questioned Maslow's (1943) hypothesis, Maslow's Need-Fulfillment-Theories is still one of the most cited theories by researchers who are interested in organizations.

There are 5 hierarchy of needs: physiological needs, security needs, love needs, self-esteem needs and self-actualization needs. The description is shown in Figure 2.1.

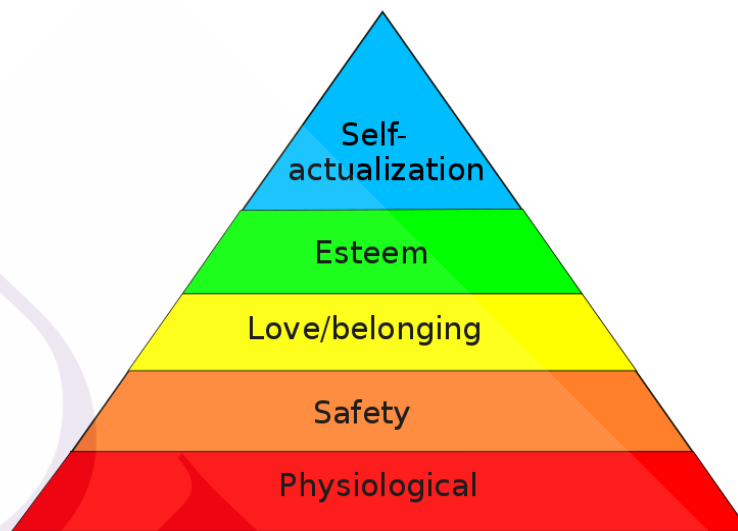


Figure 2.1 Need-Fulfillment Theory

Source: Abraham Maslow (1943)

(1) Physiological Needs

Physiological needs are related to the needs of individual survival, such as food, air, water and other basic needs to maintain life and physiology.

(2) Security Needs

After the physiological needs are satisfied, the individual will seek needs to avoid danger so as to guarantee his life and protect himself in order to survive safely, including life, economic and psychological security needs.

(3) Love Needs

When both physical and safety needs are met, individuals will have social needs, including love and being loved. For most people, these needs come from

family and work relationships, etc. They want to be accepted by the group and have a sense of belonging.

(4) Self-esteem Needs

Self-esteem levels meet two different needs, including internal respect, such as confidence, professional ability, sense of accomplishment and external respect, such as social status, appreciation, identity.

(5) Self-actualization Needs

When the needs of physiology, safety, love and self-esteem are met, individuals' continued growth and individual development in the future can exert their intrinsic potential and express their unique self-identity in order to achieve the highest ideal self-realization.

Maslow(1943) thinks that it is because of needs that lead to motivation, and motivation to behaviors, which is the generation of human behavior. Human needs are hierarchical, from low to high levels, from the most basic physiological needs to higher psychological needs. When low-level needs are satisfied to a certain extent, people then seek high-level needs. It can be seen that self-efficacy theory enhances self-seeking of success through personal perception and experience observation, thus further promoting learning motivation. Applying this point to college students' academic courses is bound to strengthen learners' motivation in learning.

2. Self-efficacy Theory

Bandura's (1986) self-efficacy means that according to his past experience, after a number of successes or failures in a particular job or business, he has confirmed that he has certain experience and grasp in handling the work. This is a feeling of confidence that an individual expresses in the behavior required by a

particular environment (Zhang, 1996). Bandura (1997) further points out that the cognitive sense that individuals think they can effectively deal with specific tasks is self-efficacy. He points out that there are two sources of motivation. One is the calculation of the possible consequences of thought and action, and this estimated results will affect the individual's self-efficacy, which will involve beliefs about the individual's ability in a particular field; The second is to set goals actively. The goals set by the individual will become the standard for assessing performance, while self-efficacy also affects what the individual wants to achieve. Imagining the positive outcomes of success and the negative outcomes of failure, when working hard on our goals, we persist in our efforts until we reach the goals we set (Lin, 1994).

According to Bandura's theory of self-efficacy, we can judge whether an individual actively puts his or her best effort according to the past experiences when he or she face academic or professional challenges. And judge the chances of success as well.

3. Expectancy-value Model

According to the "expectancy-value model" of motivation proposed by Eccles (1983), Pintrich, Smith, and McKeachie (1989) believe that the learning process contains three main motivation components, namely, value, expectation and emotion. The strength of these three components will affect learning results of learners. As follows:

(1) Value Component

Value component refers to students' belief in the importance and value of learning and working, which contains intrinsic goal orientation, extrinsic goal orientation and task value of learners. Students who engage in learning activities due

to factors such as mastery, challenge, interest and curiosity are learners with intrinsic goal-oriented. Students with internal goal orientation are learners of "reading for reading's sake". Students are learners with external goal-oriented when they carry out learning activities because of external values such as grades and rewards or in order to achieve this standard. Learners who have the tendency of external goal-orientation will engage in learning activities for external set values or standards such as grades, rewards and other similar reasons. Work value refers to the learner's assessment of the value of learning work (Cheng & Lin, 2001). It contains three ingredients: personal perception of the importance of work, value of interest in work and utility value of work (Cheng, 1991; Eccles, 1983).

(2) Expectancy Component

The student's belief in the ability or skill to complete a study or work is known as expectancy component. This is the learner's belief in the ability to complete a certain work, the belief in mastery and the expectation of the success of the work. In the component of motivation expectation, it mainly includes control belief, self-efficacy belief and expectancy for success belief. Among them, the control belief refers to the learner's belief in the attribution mode of the success or failure of learning results (Pintrich, Smith, & McKeachie, 1989). People with strong internal control beliefs are more likely to attribute success or failure in learning to personal factors such as effort and ability. While people with a strong belief in external control are more likely to attribute success or failure in learning to factors such as luck, opportunity, and fate that are not under the control of individuals. Self-efficacy belief refers to learners' belief in their ability to express themselves in a specific learning activity.

Bandura (1977, 1986) finds that self-efficacy affects people's choices and ambitions. Self-efficacy affects people in many ways: How much effort will it take? How long does it take to face difficulties? Is your own thinking style self-inflicted or self-help? How much pressure does it take to face the harsh environmental demands? How vulnerable is it to depression? and so on (Cheng & Lin, 2001). People with a strong belief in self-efficacy will have higher expectations of success and persistence. On the contrary, it will lead to students' negativity, anxiety, lack of effort and low achievement.

(3) Affective Component

Affective component refers to learners' emotional response to learning work, learning results or their learning ability (Cheng & Lin, 2001). It mainly includes students' emotional reactions to learning activities, such as testing anxiety and Self-assessment of self-worth or self-esteem. After detailed literature discussion, Pintrich et al. (1989) believe that the use of learning strategies will be effective only when motivated by an incentive. Therefore they propose a model of motivated learning strategies and develop Motivated Strategies for Learning Questionnaire, (MSLQ). Wu and Cheng (1992) have revised the scale and translated into Chinese, making it a measurement method that is often adopted to measure students' learning motivation in China.

In summary, motivation theory of Pintrich et al. (1989) points out that the strength of its three motivation components, value, expectation and emotion, would affect the learning results of learners. It further proves that effective learning results can trigger learners' learning motivation. The expectancy-value model determines whether an individual can generate learning motivation, and it can help individuals to

identify learning objectives, continue to take the initiative to learn, and understand their own reasons for sticking to learning. And then to be active in study and try to overcome difficulties in study to achieve self-set goals.

According to the above three theories of need-fulfillment-theories, self-efficacy theory and expectancy-value model, the theoretical basis for the study of learning motivation is established. This research studies the special group of college students from Mainland China who went to Taiwan for exchange study, discusses the development of their learning motivation, and hopes to find out the influence on their career adaptability.

2.1.3 Dimension and Measurement

There are many related research on learning motivation. The following is part of the study on students' learning motivation. Rezabek (1998) interviews 210 long-distance students and finds that the main learning motivation of the participants included the following aspects: to have the opportunity to improve one's education or to improve one's career through the acquisition of education; distance learning allows students to complete their studies with minimal impact on work and family. In terms of willingness to participate, half said they liked the independence of time and place offered by distance learning.

Huang (2002) takes six aspects in his study to analyze the current situation, namely, social relationship, interest in knowledge, avoidance and stimulation, external expectation, social service and career progress. On average, the interest in seeking knowledge is the highest, followed by avoidance of stimulation and social relations, ranking second and third respectively. Shi (2002) takes seven levels to analyze the current situation, namely, communication improvement, social contact, education

preparation, career progress, family intimacy, social stimulation and cognitive interest. On the average, cognitive interest is the highest, followed by social contact and education preparation, ranking second and third respectively. Chen (2002) takes seven aspects in the relevant research to analyze the current situation, namely, career progress, self-development, avoidance or stimulation, social services, external expectations, social relations, and intellectual interest. On average, self-development is the highest, followed by knowledge seeking interest and career progress, ranking second and third respectively. Ruan (2007) takes four aspects to analyze the current situation in his research, namely, career progress, pursuit of growth, learning pleasure and social relations. On average, the pleasure of learning is the highest, followed by the pursuit of growth and social relationships, which rank second and third respectively. Guo (2010) takes five dimensions in his research to analyze the current situation: knowledge seeking interest, career development, self-development, social relations and external expectations. On average, career progression is the highest. Social relationships and self-development came in second and third place. In the study, Fang (2010) takes six dimensions to analyze the current situation, namely, the demand for knowledge, social demand, occupational demand, social expectation, self-development and life sustenance. Among them, on average, the demand for knowledge is the highest. Self-development and social needs came second and third, respectively.

Carlson, Burn, Useem and Yachimowicz (1990) find that the three strongest motivations for studying abroad are cross-cultural experience, meeting new friends and the desire to travel. The study of Polish and Italian students by Erasmus added that students' main motivation is the opportunity to gain new experience,

understanding culture and meeting new people (Krzaklewska, 2008). Caudrey, Petersen, and Shaw (2008) focus on studying the motivation of students who came to Denmark and Sweden to exchange, and discovered that students wanted to improve their oral English became the most common reason. Some research on motivation to study abroad (Ho, 2009; Kitsantas, 2004; Murphy-Lejeune, 2002) indicates that the last topic of motivation to study abroad is based on career enhancement. Sánchez et al. (2006) point out in their research that American and French students show great interest in studying abroad as a means to promote their career.

In this study, to match the subject's current possible motivation, and according to the above literature discussion, two aspects with high frequency of use are selected, namely, interest in knowledge and self-development, and on this basis, increasing the level of interest in tourism due to the craze of Mainland Chinese tourists to Taiwan. Through the interest of seeking knowledge, we can understand the learning motivation of Mainland Chinese exchange students in the aspects of courses and teaching methods. Considering the popularity of tourism in Taiwan in Mainland China in recent years, whether there is a direct correlation between Mainland Chinese exchange students' tour interest and their learning motivation can be understood from the perspective of tourism interest. Cross-strait economic and trade exchanges are frequent and bilateral exchanges are very close. Through self-development, the self-development intention of Mainland Chinese exchange students studying in Taiwan can be understood.

This study refers to the motivation theories of Maslow (1943), McClelland (1961) and Vroom (1964), and adopts three levels of interest of seeking knowledge, tour interest and self-development to design 12 questions for this questionnaire. Likert

5-point scale is adopted for scoring, 1 point means strongly disagree and 5 points means strongly agree. The higher the score, the higher the degree of feeling of learning motivation. On the contrary, the lower the score, the lower the degree of feeling of learning motivation.

2.1.4 Related Research

After discussing the theories of learning motivation, this part focuses on the influence of different personal background factors on learning motivation. The related research on gender, grade, family socioeconomic level, birth order and learning motivation are described as follows.

1. Gender

Cheng (1991) points out that there are differences in the intrinsic goal orientation, external goal orientation, work value, expectation of success and control belief of primary school students in learning motivation, and all girls are significantly higher than boys. While there is no significant difference in motivation between male and female students in junior high school. Lu (1992) finds that the learning motivation of the students in the cram school of junior high school are significantly different with the gender. Ye (2002) points out that in terms of the subscale of learning motivation of senior high school students, boys score significantly higher than girls on the level of expectation. In terms of value, girls score significantly higher than boys. Chen (2003) points out that there are significant differences in the learning motivation of primary school students of different genders. Huang (2003) also points out that there are significant differences in learning motivation among indigenous students of different genders. Liu (2002) finds that the learning motivations of male and female students are different, and that the learning motivation of male students is higher than

that of female students. Jian (2002) points out in her study on motivation and learning satisfaction of junior high school students in Taiwan that there are significant differences in motivation among different genders, grades.

2. Grade

Cheng (1991) points out that at the level of learning motivation, grade only has no significant difference in external goal orientation, control belief and cognitive interference, and there are significant differences in learning motivation at other levels. Lu (1992) finds that there is no significant difference in the learning motivation of the students in the cram school of junior high school due to different grades. Li (2002) points out that senior high school students use more strategies to adjust their academic motivation to maintain their learning motivation. Chen (2003) points out that the learning motivations of primary school students in different grades are significantly different. Huang (2003) finds that there is no significant difference in learning motivation among aboriginal middle school students in different grades.

3. Birth Order

Among the numerous studies on learning motivation, there are few research taken birth order or one-child as background variables. Gu (2008) finds that the learning motivation of first-born students is significantly higher than that of middle children and elder children; while Liang (2015) points out that there is no significant difference between family ranking and learning motivation. The participants of this study are college students from Mainland China who went to Taiwan for exchange study. It can be seen from the data that whether only child has little influence on the degree of motivation for learning, and nor has birth order. Since Mainland Chinese students at this age are mostly single children, the analysis of this background variable

is meaningful. This study focuses on whether there is difference in the level of learning motivation due to his or her birth order / being only child or not.

4. Family Socioeconomic Level

Cheng (1991) points out in his study that most subjects with high and middle socioeconomic level have higher learning motivation than those with low socioeconomic status. Chen (2003) points out that there are significant differences in the learning motivation of senior elementary school students with different family socioeconomic levels. Liu (2002) finds that the higher the socioeconomic level of learners, the higher their scores in learning behavior.

Therefore, after integrating the theoretical basis and empirical study of learning motivation, this study explores the background variables that influence learning motivation, including gender, grade, birth order/one-child and family socio-economic level, and to explore the differences of learning motivation of students under different these background variables. This study refers to the motivation theories of Maslow (1943), McClelland (1961) and Vroom (1964), and adopts three levels, namely, interest of seeking knowledge, tour interest and self-development.

2.2 Career Adaptability

The concept and connotation of career adaptability come from the career development theory. According to his own study result of career development pattern, Super (1953) divides career development into five stages: growth stage, exploratory stage, establishment stage, maintenance stage, decline stage. This is also the most

common and widely adopted career development stages theory in research on career development. In the theory of career development, Ginzberg (1951) and Super (1957) both put forward relevant career development focus and its importance for college stage. Ginzberg (1951) considers career choice as lifelong decision process. Super divided life development stages by age, in which each individual fulfils the task of this stage. This research is based on career development stage theory of Super.

This section explains the followings in turn: college stage: the critical period of career development; the connotation and category of career adaptability; orientation and measurement of career adaptability and research on career adaptability.

2.2.1 College Stage: Critical Period of Career Development

Tiedemann (1998) mentions the concept of "Life Is Career" in the Career model theory, in which he argued that life is actually the portrayal of the whole life, is the sum of one's life experience and process. Super (1980) advocates the full-period theory of career. In his theory of career development stage, he mentions that college is in the stage of career exploration, which is the critical period of one's career development and the golden period of one's life. Erikson's theory (1956) of development stage also mentions that in this period, people usually need to complete several important development tasks. They get autonomy; To be independent from one's family and parents; Attach importance to colleagues, and gradually develop the relationship between peer groups; Begin to make friends with the opposite sex, and establish intimate relationships with the opposite sex; Try different lives; Full of dreams and expectations for the future; And try to work toward your career goals.

Super (1984) points out that in college, students are in a critical period of career exploration (age 15-24). The evolution direction and course of various events in life will show the unique self-development pattern of individuals. The progress of development tasks and whether they are achieved will also affect the future career development of individuals. Career development in college is closely related to personal personality, environment, available resources, and personal adaptation to life environment (Zhou, 2011). In the aspect of students themselves, the campus learning life after entering the university can also be called the individual learning career in this period (Zhang, 2007). This stage of learning career is mainly for studying to acquire knowledge and skills, prepare for entering the workplace in the future, and establish good interpersonal relationship with teachers and colleagues, so as to enhance the growth and development of all aspects. On the school side, the school provides learning environment and resources, textbooks and teachers' guidance to help students develop knowledge and skills, and then develop career paths (Zhang, 2007).

Human behavior is deeply influenced by the ability to see past, present and future time perspective. The first is to "reflect on" the traces of past growth, the second is to "survey" the current development situation, and the third is to "surmise" the possible future development direction (Jin, 2011). From this point of view, during this critical period of his career, Mainland Chinese students came to Taiwan for study in university is an important choice process through "reflecting on" the past, "surveying" the present and "surmising" the future. During this critical period, it is not easy to choose and make a decision to leave home to study in Taiwan, whether to Mainland Chinese students or to his family members. For personal career planning of

Mainland Chinese students, this important choice may provide more diversified development possibilities for his future career.

Going back to the whole life development process of an individual, the uncertainty of career decision points in each stage from the macro perspective to the micro perspective enables an individual to view the issue of career planning from a further and deeper perspective when facing the feeling of instability (Tian, 2010). This view illustrates that career planning is uncertain, both macroscopic and microcosmic. Career planning leads an individual's life, and its purpose is to achieve the stated goals. Savickas (1997) believes that people need to manage their career development carefully, not only in the field of work, but also in schools, families, communities and workplaces. Designing a life structure for these different areas and incorporating it into career management is just like incorporating career management into career choice.

Mainland Chinese students who went to Taiwan for study have already taken a small step in their career planning. In the pluralistic society of rapid change and rapidly advancing, there are many uncertainties and opportunities in front of us. The individual career choice of Mainland Chinese students is in a critical period, which is of great value and significance in their life.

Some of the career dilemmas in college are caused by the mismatch between the expectations of parents, teachers or elders and their own ones (Wang, 1997). Therefore, the difficulties of career orientation and the hesitation of choice, as well as the pressure brought by the expectation of parents, relatives and teachers also happen to Mainland Chinese students. From this point of view, whether it is the adaptation to the environment, the expectations of family and teachers, the

establishment of interpersonal relations with colleagues, personal efforts and persistence and other internal and external factors are the problems Mainland Chinese students must face at present. When in college, they walked out of different career paths and directions from students studying in Mainland China, bearing the expectations of their families.

From the perspective of the future, Savickas (2003) points out that individuals would lose future if they only considered the current situation when making important decisions. In western culture, future orientation and planning are essential conditions for mental health, and the current learning career is an important period for Mainland Chinese students to have a deeper, broader and broader development in the future. The learning life they have experienced, the adjustment they have taken, the action they have taken and the ability to cope with them lead them towards self-growth and development in the future, which in turn influence their future career direction, goals and actions.

2.2.2 Definition and Connotation

1. Definition of Career Adaptation

The word career begins with psychology and counseling theory. The evolution of the concept of career can be traced back to pre-1950's "occupation choice" and later to the conversion of "vocation", and the term "career" was not widely used until the 1960s.

From a comprehensive view of the views of many scholars mentioned above, it can be seen that career development is a continuous and dynamic process of striving for one's own life goal in the process of one's role in life, from knowing oneself and affirming oneself to showing one's personal strengths, constantly adapting

to the changes of external environment and striving to realize one's own life goal. Everyone goes through similar stages of growth, exploration, building, sustaining, and declining development. Through the change of mental maturity and the transformation of individual social roles and obligations, different career choices will be derived under the interaction with the environment, and then the individual's unique career style and life goal will be shaped.

In the process of career development, individuals will improve their career maturity and development through appropriate learning experience. The higher the degree of self-understanding and self-affirmation an individual has at the early stage of career development, the earlier he can make appropriate career choices to facilitate the smooth development of his future career (Lin, 1987). Maslow (1954) points out in his demand theory that individuals can modify their behaviors through learning so as to maintain a harmonious relationship with the external environment. In his opinion, "adaptation" is a harmonious relationship established between the individual and the environment, but it also contains adjustment. Individuals can timely adjust their internal concepts, attitudes or external behaviors to meet the needs of their environment (Jian, 1986).

To construct the integration and epochal character of Super's life-span & life-space theory, Savickas (1997) proposes to replace career maturity with career adaptability as the core framework of career development theory. Super (1980) points out that maturation is an important process of adolescent career development, but maturity is relatively non-functional for adults. Adaptation is the core of individual career development (Super & Knasel, 1981). Savickas (1997) believes that in today's environment, people need to be more adaptable to cope with the changing and

complex environment rather than master a predictable career development task. Making plans, exploring and making decisions are important procedure and category of career adaptability (Savickas, 1997).

In this study, college students from Mainland China who went to Taiwan for exchange study are in the exploratory stage of Super's career development (1984). By measuring their career exploration and career orientation in this study, we can understand their career development and predict their future career development.

Mainland Chinese students have made the decision to study in Taiwan and have gone through these three processes. He mentioned that "adaptive capacity" is an individual's performance in behavior, which enables people to influence the environment in a more positive and flexible manner to achieve a harmonious state. Blustein (1997) believes that adaptability plays an important role in all stages of development. Phillips and Gully (1997) follows Blustein (1997), and points out that both assessment and decision making belong to the category of career adaptability. Phillips and Gully (1997) also adds a new framework: adaptive decision making is the key point of career adaptability.

Other related research consider planful attitudes, which is another important aspect of career adaptability development. "Adaptation to the environment" is an important factor of adaptive ability (Rottinghaus, Day, & Borgen, 2005). In this study, adaptability emphasizes the interaction between people and the environment. Changes in the environment will affect the growth and development of college students from Mainland China who went to Taiwan for exchange study and study, and their development is also a process of adapting to the environment.

Super calls planning an important component of career decision readiness. Thompson and Lindeman (1988), later scholars of the empirical school, supports the argument in this regard. When defining career adaptability, they believed that future orientation and planning attitude are two equally important preparation abilities that supported career choice readiness and career adaptability to achieve success and satisfaction in various roles in life. In their opinion, the concept of career maturity is only applicable to describe the career development status of teenagers, but it is not enough to describe the complex career development pattern of adults, nor to explain the impact of changes in environment and times on individual career.

Therefore, it is suggested to replace it with the concept of career adjustment. There are four characteristics in the concept of career adjustment proposed by Super and Knasel (1981):

(1) The concept of career adjustment does not focus on the state of individual maturity or growth.

(2) Individuals is considered as initiator of behavior in the concept of career adjustment.

(3) It focuses on the interaction between people and the environment, rather than the cooperation between people and the environment.

(4) The key of career adjustment is the process of adjustment. That is, at work, how individuals balance the impact they can have on the environment under acceptable pressure.

With an era of changeful career and boundaryless work coming, personal career life becomes changeable. People should face all the change not only in the competitive job market but also in professional and personnel environment. All

require people to possess the capacity of sufficient adjustment degree and flexible adjustment process (Savickas, 2009). Super and Knasel (1981) put forward the concept of career adaptability to discuss the influence of changing job market situation for individuals and organizations from the late 20th century to the 21st century.

Afterwards, there are many scholars proposed the same view that individuals use purposeful flexible and powerful methods or strategies to meet the needs of changeable occupational environment. Making plans, exploring and making decisions are important procedure and category of career adaptability (Savickas, 1997). Blustein (1997) points out that adaptability plays an important role in the development of life stages; Phillips and Gully (1997) present an idea that making evaluation and making decision both belong to the category of career adaptability.

Career adaptation emphasizes the interaction between people and the environment, because both people and the environment will change constantly. It is a process of active adjustment and adaptation for individuals how to find the harmony and balance between oneself and the environment. Therefore, compared with career maturity, the concept of career adjustment is more appropriate to explain the development process of an individual's life (Rottinghaus, Day, & Borgen, 2005; Savickas, 2005; Yang, Tian, Wu, & Zhou, 2015).

The career adaptability mentioned in this study refers to the core ability of college students from Mainland China who went to Taiwan for exchange study to integrate various career roles. The five dimensions are career curiosity, career concern, career confidence, career control and career cooperation, which run through the development of their career adaptability.

2. Connotative Meaning of Career Adaptability

Savickas (1997) defines career adjustment as an individual's psychological readiness, that is, an individual's response to predictable tasks in his/her job role, as well as the adjustment to unexpected changes in work tasks and environment; That is to say, the readiness of individuals to perform effective behaviors in order to meet social expectations (Wu, 2002). He proposed that the three connotations related to career adjustment are: planning attitude, self-exploration and environmental exploration, and clear decision-making attitude. After revision, Savickas (2005) forms a more complete theoretical model of career adjustment, which has four main dimensions, namely, career concern, career control, career curiosity and career confidence. The following part is an explanation of the five dimensions of career adaptability:

(1) Career Curiosity

The basic function of "curiosity" in the construction of career is to play the same role as self-exploration and searching for career information in the theory of career development. Career curiosity means that an individual is curious about the possible career direction and goal. It is an internal need that individuals are willing to make active attempts and explorations in terms of understanding himself/herself and the work world. That is to say, individuals express this curiosity need into external actions. When individuals are curious about their future, they are open to new experiences and willing to actively participate in career exploration activities. By participating in career exploration activities, individuals can not only learn about the conditions, types of work and salaries required by different occupations, but also increase their understanding of their own interests, personality and values.

As can be seen from the above, career curiosity is the attitude of being curious, open and willing to try for the future, which is helpful for individuals to collect more objective information, make individuals more realistic about the future, and make more appropriate career decisions after fully understanding their adaptability to the environment.

(2) Career Concern

In the theory of career adaptability, career concern is regarded as the first and most important dimension, which means that individuals can pay attention to their future career. In addition to playing an important role in career constructivism, career concern is also the initial concept in many career development theories. Super's planfulness is a similar point of view. Basically, career focus is a future-oriented concept. People who focus on their personal career tend to integrate their past, present and future experiences and to prepare and plan for their future. As a result, paying attention to one's own career helps one feel more real about the future. People who are concerned about their career are aware of the need to make career decisions or transitions in the near future. Their planning and optimistic attitude and belief make them realize how their efforts today contribute to their future success, and then they are willing to devote themselves to the current career preparation activities. In other words, when individuals have this sense of connectedness, they can realize how today's efforts contribute to success of tomorrow.

(3) Career Control

Career control is the second most important dimension in career adaptability, which means that individuals can have a sense of control over their future career development. That is to say, individuals believe that they are

self-determining and self-responsible in building their own career. When individuals know what they are doing, they are responsible for their decisions, and have a positive attitude, they tend to be more willing to participate in the experience of career activities. This attitude contributes to the development of individual career tasks and the achievement of career transition. When individuals have a sense of responsibility and hold a positive attitude, they tend to be more willing to participate in the activity experience of their career. Such an attitude contributes to the development of individual career tasks or the completion of career transition.

In addition, it is worth noting that, in addition to the subjective sense of career control, individuals still have to consider their own cultural background and inevitable restrictions in making career decisions. Therefore, in the construction of personal career, it is necessary to coordinate between environmental restrictions and personal values and beliefs, so as to make better decisions.

(4) Career Confidence

The basic role of career confidence in career construction is similar to the concepts of self-esteem, self-efficacy and encouragement in career development theory. Career confidence refers to the expectation of whether an individual can effectively overcome and cope with the challenges and obstacles in career. It is also a kind of self-efficacy that an individual responds to and practices in career situations, and whether he or she can make career choices appropriately. Successful coping experiences in daily life can help build confidence in one's career. Career confidence comes from solving problems in daily life, such as housework, schoolwork and hobbies. When individuals effectively perform and complete these tasks, their self-acceptance and self-worth are increased.

Therefore, through extensive exploration experience, confidence and self-efficacy are improved, and it can also make individuals try to experience more things (Wang, 1997; Wu, 2008).

(5) Career Cooperation

Because of the rapid changes in the modern environment, there are more predictable and unpredictable changes in personal career. Ployhart and Bliese (2006) point out that modern workplace work is faced with three major changes: technological changes, emphasis on professional knowledge and ability, and organizational competition. Individuals not only need to keep learning to cope with such changes, but also have the ability to cooperate across disciplines and with people at all levels of the organization.

For the purpose of research, Savickas (2009) joins the career cooperation as the fifth dimension based on the original four-dimension career adaptability. Although he did not give a complete explanation of the meaning of career cooperation, according to the connotation of the items in his scale, such as: I can get along well with any type of person, I can work with others in team plan, I can learn to be a good listener, etc., it can be seen that people with high career cooperation can cooperate and get along well with all kinds of people, and are willing to do their part in the team and make good communication and coordination with others to achieve the best interests of group work.

The above five dimensions of career adaptability are all inherent resources and abilities that people generally have when dealing with predictable or unexpected work tasks and challenges in their personal career development. Thus, the attitude, belief and coping strategies of individuals towards career tasks and challenges can be

formed, and then specific behaviors of career adjustment can be implemented to assist individuals to achieve the state of adaptation. This study also expects to see that in the process of exchange study in universities in Taiwan, Mainland Chinese students can use what they have learned to improve their career adaptability and gradually move towards the state of career adaptation.

2.2.3 Relevant Theories

The theory of development derives from differential psychology, developmental psychology, occupational sociology and personality theory. It emphasizes that life is a continuous and gradual long-term development process, including the whole life process from birth to death. Its representatives are Super and Ginzberg. The former divides the career into five stages: growth, exploration, establishment, maintenance and decline. There are certain tasks in each stage to be completed, and studies the significance of self-concept development and career maturity in the personal growth stage. The latter believes that career choice is a lifelong decision process, which can be divided into three special stages, namely fantasy stage, experimental stage and practical stage.

In the theory of career development, Ginzberg (1951) and Super (1957) both have proposed the focus and importance of career development in university stage. Ginzberg (1951) believes that career choice is a lifelong decision process, and Super divides life development stages according to age and believes that there are certain tasks in each stage to be completed. Individuals are attracted to occupations that meet their personal needs and provide satisfaction (Chen, 2005).

The concept and implication of career adaptability are derived from career development theory. There are many theories about career and career development.

Different schools of thought have different emphases and characteristics, but no one theory can cover the whole of career development. The following are four common theories. The participants of this study are college students from Mainland China who went to Taiwan for exchange study. Most of them are in the stage of career exploration (age 15-24). Therefore, the career development theories and career decision-making theories of Ginzberg, Super, and Holland (1985) are summarized in the following paragraphs, so as to have a deeper understanding of the career development of college students at the stage of career exploration.

1. The Career Development Theories of Ginzberg

Ginzberg, Axelrad and Herma et al. (1951) develop the theory of career development stage in 1951, which divided individual career development stage into three stages: fantasy, experiment and realization. The summary is shown in Table 2.2.

Table 2.2 Stages and Characteristics of Ginzberg's Career Development Theory

Stage	Age	Characteristics
Fantasy Stage	Childhood (before 11)	At the beginning, it was a pure game, and then the concept of work was gradually developed from the game.
Experimental Stage	Teenage (11-17)	Gradually understand the requirements of work for individuals, and gradually develop the understanding of personal interests, abilities and values.
Realization Phase	Late Teenage (18-adult)	The integration of abilities and interests, there is a further specific direction of personal value developed gradually and there is the possibility of career.

Source: quote from Lin, Tian, Zhang, and Zhang (2003).

According to the career development stage theory proposed by Ginzberg, the first stage is the fantasy stage, from 6 to 11 years old. During this period, happiness and fantasy are the main factors that determine children's future career preferences. They do not realize what abilities they need to pursue their favorite career, nor do they think about the obstacles to pursuing a job.

The second stage is the experimental stage, from about 11 to 17 years old, when teenagers gradually realize their responsibilities as adults. The main factors that determine career direction, such as interests, abilities and values, can be gradually found in the activities that individuals engage in at this stage.

The third stage is the realization stage, which starts around the age of 18 and is characterized by exploration, including the continued development of personal interests, abilities and values. This stage usually includes specific development in certain fields, and sometimes individuals spend more time in their favorite fields and try to set goals for career development (Lin et al., 2003).

Ginzberg (1972) emphasizes that personal growth is a continuous process that requires different choices at any time. External social environment, personal physical and mental development, personality traits, values, opportunities, education, and work achievements all influence individual career choice.

Twenty years after the theoretical statement of Ginzberg et al., Ginzberg (1972) proposes a revision and reorganization of the theory. He maintains that the process of career decision-making is not limited to three stages, but is connected with the whole work and life of individuals. When individuals change their goals or work situations in the career process, they need to make career and career decisions again.

In 1984, Ginzberg re-discussed his theoretical construction in 1951 and 1972 and proposed a revision to the theory. He points out that what happens to an individual in his or her 20s affects his or her career. At the same time, a considerable scope is retained for decision-making. And this period just coincides with the university stage. Therefore, he re-emphasizes that career choice is a matter of one's whole life and coexists with one's whole life of work and life (Wu, 1997). Therefore, it can be seen that career development in college plays a key role in influencing college students' career development in the future.

To sum up, Mainland Chinese college students who went to Taiwan for exchange study are at the age of college, that is, the realization stage of Ginzberg's career development theory. They have perceived their own abilities and interests, learned about the value of career based on the experimental stage, considered the needs of society and individuals, and finally integrated all the data results of career choice to test. They take a hands-on approach to exploring and gaining experience as a career choice.

2. Career Development Theory of Super

Super's career development theory (1957, 1990) is a development theory about career stages and career decisions. Super (1990) believes that career development is a unique career development orientation formed with personal growth and learning. Career development is a continuous and gradual lifelong process, in which there are given development tasks during each stage. If the development task of the previous stage is not completed, it will affect the career development task of the next stage.

Therefore, Super (1990) divides the development of an individual's life into time level, wide-area level and depth level.

(1) Super's Career Development Stage (at time level)

Super (1990) divides people's career development into five periods of growth, exploration, establishment, maintenance and decline according to their age and there are given development tasks during each stage. Teenagers in the exploratory stage of career (age 15 to 24) gradually explore various aspects by means of school learning activities, club leisure activities or vacation employment opportunities. Their exploration includes the understanding of the inner world, such as their attitudes, values, habits, abilities, specialties, outlook on life and roles, as well as the exploration of the outer world, such as future work environment and national development trend. Therefore, it is flexible for them in choosing career.

Super (1990) proposes that there are given development tasks in each stage of career development, and in each stage of growth, exploration and establishment, there can be divided into several small stages. The career development stages and tasks are shown in Table 2.3.

The stages of development are based on age. Two key points are noted here: one is that the stage of career development is a continuous process, and there is no obvious distinction between the stages; secondly, the length of time experienced in each stage is often different due to individual differences and external environmental impact. In the process of career development, individuals inevitably encounter various difficulties and choices. If they are to master the tasks of the early stage, they would have more success in the development of the next stage.

Table 2.3 Stages and Tasks in Super's Career Development

Stage	Task
Growth	<p>Need and fantasy are the most important characteristics of this period, with the growth of individual age, social participation and practical experience gradually increased.</p> <ol style="list-style-type: none"> 1. Fantasy Period (4-10 years old): role playing in fantasy is very important. 2. Interest Period (11-12 years old): preference is the main determinant of their participation in activities. 3. Ability Period (13-14 years old): the individual gradually increases his/her ability and can consider working conditions (including training). <p>Task: developing self-concept, correcting attitude to the work world, and understanding the meaning of work.</p>
Exploration	<p>Individuals conduct self-exploration, role exploration and career exploration, through school, leisure activities and various work experience.</p> <ol style="list-style-type: none"> 1. Test Period (15-17 years old): individuals will consider needs, interests, abilities and opportunities, and try them in fantasy, discussion, schoolwork and work. 2. Transition Period (18-21 years old) individuals enter the job market or professional training, pay more attention to practical considerations, and attempt to achieve self-concept. General choices turn into specific choices. 3. Trial and Slight Commitment Period (22-24): initially determine the career and test its possibility of becoming a long-term career life. If not, it may experience the above periods to determine the direction. <p>Task: gradually crystallize career preferences. Task: specialization of career preferences Task: realize career preference.</p>
Establishment	<p>Look for appropriate career areas and gradually build a solid status and position</p> <ol style="list-style-type: none"> 1. Trial-commitment Stable Period (25-30 years old): seeking stability, may not be satisfied due to a number of changes in life or work. 2. Establishment Period (31-44 years old): devoted to work stability. Most people, experienced, well-performed, are at their most creative period. <p>Task: unity, stability and progress</p>
Maintenance	<p>(age 45-64) Gradually gained a position of relative importance, with the focus on how to maintain the status, little innovation, and face the challenges of new entrants.</p> <p>Task: maintain the achievements and status that have been achieved.</p>
Decline	<p>(65-) Physical and mental decline and cessation of work. Develop new roles and find different ways to meet needs.</p> <p>Task: deceleration, relief and retirement.</p>

Source: quote from Lin, Tian, Zhang, and Zhang (2003).

(2) Super's Career Rainbow Chart (at the wide-area level)

In addition to the original development stage theory, Super (1984) proposes a career development concept (life-span, life-space career development) with better breadth and depth, expressed this theory with a life-career rainbow, as shown in Figure 2.2.

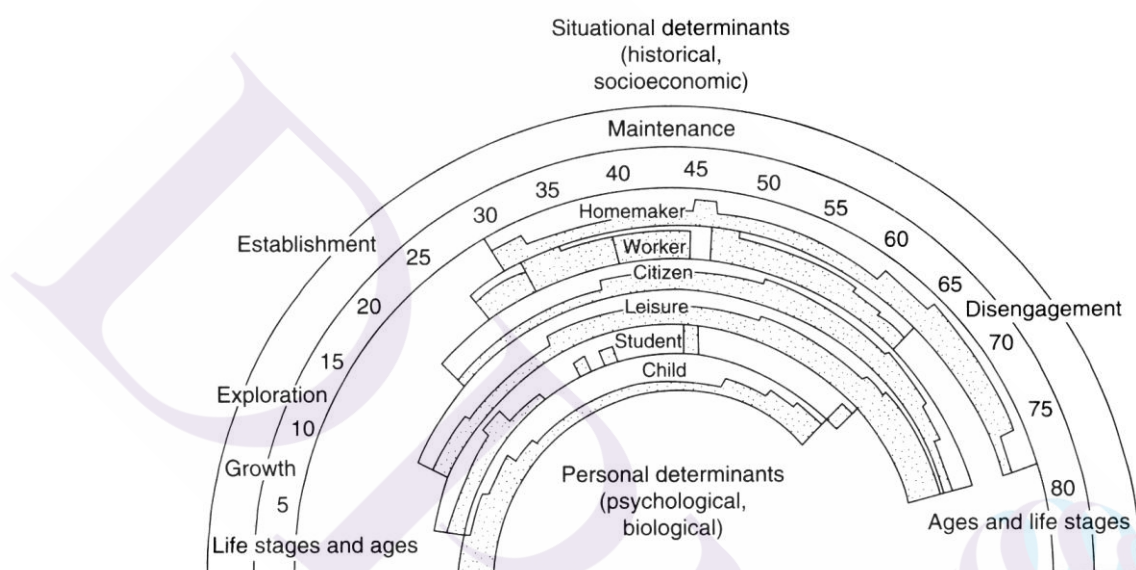


Figure 2.2 Super's Life Career Rainbow

Source: Blustein (1997)

Super (1990) believes that in the process of career development, individuals play different roles with age. In addition to age and social expectation, role growth and decline are also related to the time invested by individuals and their emotional level. Therefore, individuals have significant roles in each stage. The concept of a career rainbow describes how these different roles arise and interact across the spectrum of life. Life span refers to a person's age or life course, which can be divided into five stages: growth, exploration, establishment, maintenance and decline. Life space refers to the various roles that a person plays throughout his life,

including children, students, leisure workers, citizens, workers, spouses, family administrators, parents and retirees, etc., and through the interaction and integration of these roles, a career is formed. The main stages of these roles include family, community, school and workplace (Super, 1990).

From the perspective of the career rainbow chart (Figure 2.2), the shaded part represents the degree of investment of each character. The darker the color is, the more investment the character has, and the more blank is, the less investment the character has. It can be seen from the figure that Mainland Chinese students who went to Taiwan for exchange study in this learning stage are right in the exploration stage (15-24 years old), which mainly plays the role of students and the main stage is the school.

At the same time, we can also see that the main role of individuals from this stage to the next stage is the role of workers in the establishment stage. Therefore, in the process of career development, this period represents a critical stage of entering into a new identity, which is also a turning point in the career process. In this career transition stage, college students from Mainland China who went to Taiwan for exchange study must first have a preliminary understanding of their future career before they can further grasp the direction of their future career. Therefore, career exploration and orientation are very important for them.

(3) Super's Career Arch (at depth level)

Between 1980 and 1990, Super revised the concept of a career rainbow. He integrates the different roles played by individuals in the process of career development into a pattern, and produces Segment Model of Career Development, which is called Archway Model. As shown in Figure 2.3.

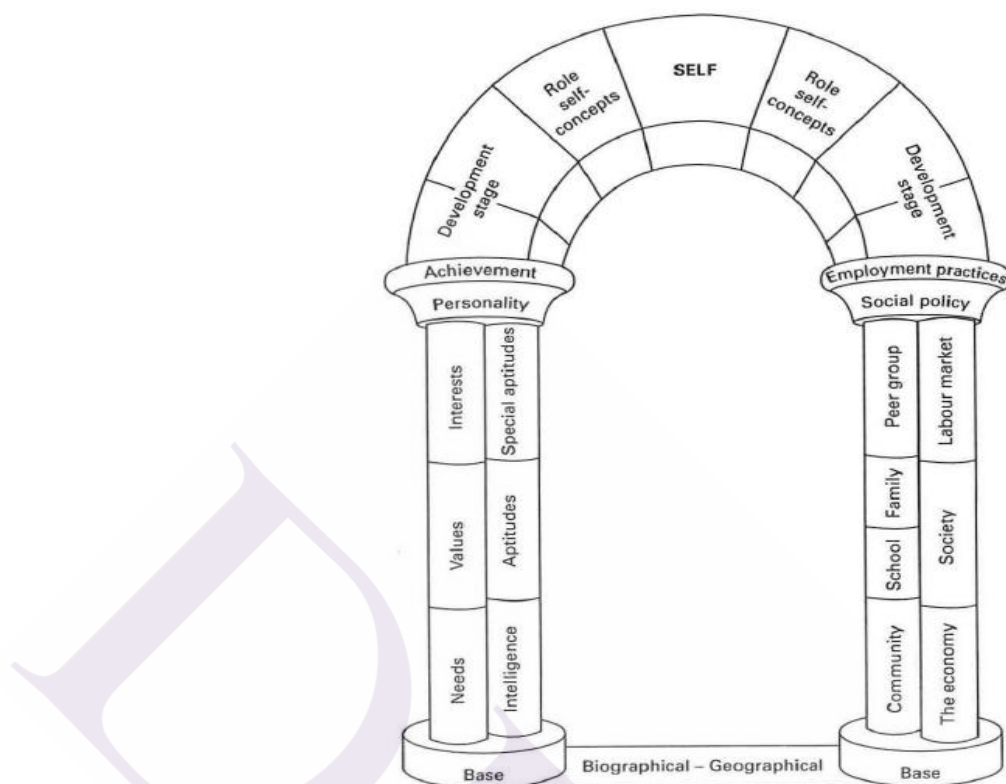


Figure 2.3 Super's Career Development Archway Model

Source: Super, Savickas, & Super (1996)

Arch pattern design mainly shows the severability, unity and development in the process of career development. It describes many changes of different roles that an individual has experienced in his life. The concept is same as that of career rainbow, but it is expressed in different ways (Super, 1990; Wu, 2000). From the arch pattern, it can be seen that individuals (biographical) and environments (geographical) are stepping stones.

The personality traits of individuals (such as interest, value, demand, particularity, sexuality, wisdom) on the left determine their achievements, in which the individual basis, needs and wisdom are developed through interaction with the environment. Value is generated by the need to become a personal goal, and through

activities to pursue the acquisition of value. This is one of the purposes of career exploration.

After career exploration, the integration of various activities are extended to individual career interests. The achievement above personality represents the result of using, misusing and no-using personal resources. The social factors on the right (society, economy, labor market, partner group, family school, community) determine their employment situation and influence the career they pursue through the growth and function of individuals. In the middle, there is the representation of the self as a whole. The arch connecting the right and left cornerstones is formed by the stage of career development and self-concept, which dominates the individual's career choice and development.

Arch mode mainly elaborates on the role self-concept generated by personality traits and social factors, and the two constitute the career development of the self through the interaction. Therefore, the basic concept of arch pattern emphasizes the formation of individual experience learning, self-concept and occupation concept, which is generated through the interaction between individuals and the environment (Super, 1990; Wu, 1997).

Career development theory is established by integrating many different disciplines and viewpoints. Career development is a continuous process, which can be divided into different stages and main development tasks according to the age of individuals, and the development situation of one stage affects the next one.

The main roles that individuals play in different ages are also different. The formation of their experiential learning, self-concept and occupation concept tend to

produce different individual development situations through the interaction between individuals and the environment.

3. Career Decision Theory

The theory mainly focuses on the process and pattern of decision making. Which can be divided into social learning theory and decision-making mode. As follows:

(1) Social Learning Theory of Krumboltz

Bandura (1977, 1986) believes that most personal personality formation came from the experiential learning of the person concerned rather than the influence of heredity or the evolutionary process of the mind. He regards the environment, personal factors and practical behaviors as the reciprocal interaction system of the three parties.

Influenced by Bandura (1986), Krumboltz (1994) put forward the theory of social learning, believing that career decision is the learning experience influenced by cognitive and emotional responses of individuals under different environmental stimuli, which urges individuals to decide to invest in appropriate career fields (Bandura, 1986). Krumboltz's theory addresses career development and choice through four basic elements, including genetic endowment, environmental conditions, learning experience and task-making skills.

Among them, learning experience covers both instrumental learning and combinatorial learning. He stressed that personal learning experience has a great impact on career choices. Sources of this influence include: self-analogies derived from performance levels associated with the standards of experience and learning, developmental skills adapted to the environment, and career-entry behavior.

(2) Decision Mode of Tiedemann

Tiedemann(1998) believes that people are responsible for their actions and can choose purposeful actions. He points out that everyone has self-power, or the potential for self-improvement, to clarify the current state and invest in the desired career environment.

Therefore, in his theoretical content, the path to career development is related to Erikson's (1956) eight developmental strategies of psychosocial crisis theory. Tiedemann (1998) believes that career development is a combination of choices, by constantly identifying self-identification, dealing with developmental tasks, and solving the social psychological crisis in life. Tiedemann (1998) divides career choices into two periods of anticipation and practice.

In anticipation stage, through rich and varied exploration activities, individuals understand the self-interest, ability, social needs and professional world so as to develop clear and specific career goals. The practice stage is the action stage, in which individuals gradually establish a state of balance and integration between individuals and work by combining their own abilities with environmental factors. There are seven steps in the two stages of the decision-making process advocated by Tiedemann, namely, exploration, crystallization, choice), clarification, induction, reformation and integration (translated by Wu, 1997; Tiedemann, et. al., 1963; Xu, 1997).

(3) Decision Mode of Gelatt

According to Gellat's point of view, decision-making is a series of decisions, so that decision-making is the orientation of development, rather than a single event. The criterion is to select the scheme with the most favorable factors and

the least unfavorable factors, and it is evaluated by the whole process, not the results alone. The data for decision making is divided into three systems, including forecasting, value, and decision system data. The whole decision-making cycle is divided into five stages: determining the goal of the decision, collecting information, conducting orientation and interest tests, reviewing the system, presenting acceptable options, expecting results and evaluating possible results (Lin, 1992; Xu, 1997).

From the perspective of Ginzberg's career choice theory mentioned above, the participants of this study, college students from Mainland China who went to Taiwan for exchange study, is at the stage of realization, which is characterized by the integration of ability and interest, the further development of values and the specialization of career choice.

In addition, the age of the participants in this study is in the exploration stage according to Super's life-span theory, and they begin to recognize and accept the need of career choice. In addition to self-exploration, role exploration and career exploration, they also began to collect relevant information, understand the job opportunities related to their interests and abilities, and develop professional skills for job-hunting.

According to the social learning theory, it can be seen that the individual learning experience of Mainland Chinese students has a significant impact on their career choice.

It can also be seen from the decision-making mode that the subjects of this study are involved in the process of continuously identifying themselves, dealing with developmental tasks and solving psychological crises, and then investing in the expected career environment.

2.2.4 Dimension and Measurement

Extending and expanding Super's concept, Savickas (1997) develops the career adjustment theory. He defined career adaptability as following: being ready to adapt to the foreseeable task, taking part in working role and making timely adjustments during unpredictable work circumstances. He specifically put forward 3 dimensions of career adaptability: exploration of self and environment, planned attitude and adaptive decision-making.

In 2005, he integrated the career adaptability into a complete structural model, which added the concept of psychological idea on the basis of the original theory, called career confidence. These four dimensions he proposed in career adaptability run through the whole process of personal career adaptability development, and affect personal coping behaviors in the face of career development tasks, career transitions or career dilemmas, and ultimately form personal unique beliefs, attitudes and abilities (Hua, 2012).

Later, Savickas added another dimension of career cooperation (Tian, 2010; Wu, 2012) He stressed the importance of communication and cooperation in workplace and integrate career adaptability into a complete structure pattern which contains 5 dimensions: career concern, career control, career curiosity, career confidence and career cooperation. These 5 dimensions are divided by the function in career adaptability and are on behalf of using the general resources and strategies when people face career tasks, job transitions or major events during the course of building their career (Savickas, 2009).

On the basis of the interaction between people and the environment, a dimension is added to the structure of career adaptability, which is proactive

personality. That is to say, individuals have the potential to change and create the environment and can consciously select, reconstruct cognition and operate in the external environment, etc., that is, individuals have the ability to actively and stably influence the external environment (McArdle, Waters, & Briscoe, 2007).

From this point of view, individual initiative is closely related to five dimensions of career adaptability, such as curiosity, concern, control, self-confidence and cooperation. For Mainland Chinese students, personal initiative helps them face unfamiliar learning and living environments, interpersonal relationships and adapt to different cultures. Moreover, various academic and life pressures, uncertainties and setbacks also test their personal tolerance.

Ashford and Taylor (1990) propose that three important abilities are shown in effective career adaptability. First, you must get enough and correct information about your environment and be clear about your response to it. Second, the positive characteristics and cognitive attitudes of individuals, such as optimistic attitude, full self-efficacy, and multi-dimensional cognitive schema, are conducive to the challenges and changes of individuals in the work. Thirdly, to face the possible changes in the work, the individual must have a certain degree of flexibility. In the face of possible changes in the environment, one should be prepared psychologically to a certain extent and be willing to change one's behavior, attitude, mood or cognition (Tian, 2010).

In this study, Savickas's integrated structural model of career adaptability is adopted, which is divided into five dimensions: career curiosity, career concern, career confidence, career control and career cooperation. These five dimensions run

through the whole process of personal career adaptability development. The connotations are explained as follows:

Career curiosity refers to an individual's curious and open attitude towards the development of his/her study, life and work in the present and future, and his/her willingness to explore and try.

Career concern refers to an individual's concern about the current and future study, life and work development, preparation for the future, and awareness of the new environment or career choice he/she faces.

Career control means that an individual has a sense of control over the current and future study, life and work development, and believes that he/she can make decisions and act responsibly.

Career confidence refers to an individual's confidence in his/her current and future study, life and work development. An individual can actively face various challenges and overcome obstacles and difficulties.

Career cooperation refers to the cooperation between individuals and various types of people in their current and future study, life and work.

Scholars have many scales for measuring career development and career adaptability. In recent years, the establishment of measurements in empirical studies related to career adjustment is mostly based on the theoretical construction of Savickas (1997, 2005, 2009). Considering that the participants of this study are Mainland Chinese college students to Taiwan for exchange study, and comparing the dimensions of various scales, the researcher choose the career adaptability chart for Chinese compiled by Tian (2010) as the measuring method in this study.

The scale, compiled from Career Adaptation Inventory of Savickas (2005), is also based on Savickas's (1997, 2005) career adjustment theory. This scale is developed based on the Career Adaptabilities Inventory of Savickas (2009) in the transnational research of high school and college students, and referring to the Career adaption subscale in the Career Future Inventory developed by Rottinghaus, Day, and Borgen (2005).

There are altogether five subscales of career curiosity, career concern, career confidence, career control and career cooperation with 11 questions in each, totaling 55 questions. Likert 5-point scale scoring method is adopted in this study. One point means never, five points means always. The higher the score, the higher the subject's career adaptability, On the contrary, the lower the score, the lower the subject's career adaptability.

2.2.5 Related Research

After consulting a lot of literature, it is found that there are differences between career adaptability ability and personal background variables.

1. Gender

There are different results of gender variables in the study of career adaptability.

Tian (2010) points out that there is no significant difference in the influence of gender on career adaptability. In terms of the influence of different genders on career adaptability, there is no significant difference in the statistics of the five subscales of career curiosity, career concern, career control, career confidence, career cooperation.

Wu (2012) also finds that there is no significant difference in the ability of graduate students of different genders to adjust their careers, but the scores of male students in career confidence are significantly higher than girls. Hirschi's study (2009) finds that there is no significant difference in career adaptability between male and female of the same age group. Rottinghaus (2005) conducts a survey on the career future prospect scale for college students, and finds that there is no significant difference in the influence of gender on the career adaptability of college students.

However, in the career adaptability study of urban adolescents, gender differences are found and boys are more concerned about future career development barriers than girls (Kenny & Bledsoe, 2005). It can be concluded from the research results that further empirical studies on gender as a background variable are needed in all aspects. The purpose of this study is to explore the differences in career adaptability of students of different genders from Mainland China of different genders studying in Taiwan.

2. Grade

Many studies have found that grade is an important factor affecting one's career adaptability. The higher the grade, the higher the career adaptability level (Deng, Deng, & Li, 2008; Rottinghaus et al., 2005; Wu, 2008). Some studies have also found that the career adaptability of college students declines with the rise of their grades, and slightly rises in the third year and declines in the fourth year (Zhao, 2011).

Wu (2008) finds that college students of different grades show significant differences in career curiosity, career confidence and overall career adaptability. Zhu (2010) points out that the career adaptability of Chinese college students varies

significantly in different grades. With the rise of grade, career adaptability shows the trend of decreasing first and then increasing later. There are significant differences in career attention, career control, career curiosity, career self-confidence and total career adaptability table of graduate students of different grades. This shows that there is no significant difference in the career adaptability of postgraduate students in different grades (Wu, 2012).

To sum up, the findings on grade variables of numerous studies are different, and most of them show significant differences. This study explores the differences in career adaptability among Mainland Chinese students of different grades.

3. Birth Order

The scores of career confidence, career attention, career control, career curiosity score and total score of career adaptability show that there is no significant difference in birth order. However, it can be seen from the data that the scores of career adaptability of non-only children in all aspects are higher than those of only children.

The results of the study show that whether or not to be an only child has little impact on career readiness, nor does birth order. Both only-child and non-only-child are likely to have higher career readiness. However, the scores of career adaptability of non-only children in all aspects are higher than those of only children (Hua, 2012).

Since most Mainland Chinese students are only children, the analysis of this background variable is significant. This study focuses on the differences in career adaptability of only-child or non-only-child students in Mainland China.

4. Family Socioeconomic Level

In terms of family socioeconomic level, college students born from families with higher family socioeconomic level have higher career adaptability than those born from families with lower family socioeconomic level (Wu, 2008).

In terms of Chinese college students, the career adaptability development of college students with high family socioeconomic level and low family socioeconomic level is relatively good, while that of college students with medium family socioeconomic level is relatively poor (Zhao, 2011).

The research (Hua, 2012) on Chinese master's degree students points out that there is no significant difference in the scores of career adaptability and total score in family socioeconomic background variables. Among university of science and technology students, students with higher family socioeconomic level have better performance in positive psychological resources and career adaptability than those with other family socioeconomic level (Shen, 2015).

Some studies have come up with different results. Studies on teenagers have found that the education level of parents has no influence on the development of teenagers' career adaptability. In other words, the education level of parents does not affect their career adaptability (Hirschi, 2009). It can be seen that there are different research results of family socioeconomic level. This study explores the differences in career adaptability of Mainland Chinese college students with different family and socioeconomic levels.

To sum up the above, the results of relevant studies on background variables and career adaptability show that there is no conclusive conclusion on the influence of background variables on career adaptability. This study explores whether

Mainland Chinese students with different background variables have differences in career adaptability.

2.3 Future Time Perspective

2.3.1 Definition and Conceptual Development

1. Definition of Future Time Perspective

The concept of future time perspective is first put forward by Lewin (1951), among which, the orientation of future goal is the main content of Future Time concept. They emphasize that human beings develop their motivation with the concept of "future" and then influence the behavior of the present (Husman & Lens, 1999).

In other words, it starts with the end part, anticipates the future, reviews and examines, then plans for the present. This is also the particularity of Future Time Perspective Lewin (1951) defines time perspective as individual psychological cognition of future and past existence during specific time. Later, Nuttin (1964, 1985) also mentions that future and past events always affect the behaviors at present.

It can be seen that future time perspective refers to individuals' expectations, organizations and plans for future events. Of course, the future events may happen after several weeks, several months or even decades (Seijts, 1998).

Scholars have different views and discussions on the concept of Future Time Perspective. The definition of Future Time Perspective is summarized in Table 2.4.

Table 2.4 Definition of Future Time Perspective

Scholar	Definition of future time perspective
Lewin (1951)	Individual psychological cognition of future and past existence
Gjesme (1979)	The view of time in the future is a kind of personality trait, which includes cognitive calculation of day, projection and concern for the future, and can be viewed from four angles: involvement, anticipation, occupation, and speed.
De Volder & Lens (1982)	The connotation of Future Time Perspective can be understood from two aspects: cognition and Dynamic. Cognition refers to the ability to anticipate how much the present behavior will affect the future outcome. Dynamic is the ability to evaluate the value of future goals.
Nuttin & Lens (1985)	The concept of future time is extended from the concept of motivation and goal setting, which is defined as the present purpose of the future goal and examined by three concepts: extensibility, denseness and authenticity.
Seijts (1998)	Personal expectations, organization, and planning for future events. It is possible that the future outcome would happen several weeks, months or even decades later.
Zimbardo & Boyd (1999)	The implication of Future Time Perspective is to try to pursue future goals and get the rewards.
Kauffman & Husman (2004)	Design and plan for the future and guide the actions and choices of the present.
McInerney (2004)	A person's awareness of future goals and its motivational influence allows individuals to engage in activities to be beneficial to their future outcomes.
Eren (2009)	Future time perspective plays an important role in setting goals, exploring future possibilities and making important decisions.
Peetsma & van der Veen (2011)	As a stable individual difference factor, future time perspective has a strong influence on human behavior, which deeply and extensively affects individual and social well-being and also reflects a person's personality.
Walker & Tracey (2012)	Individuals with future time perspective will direct themselves towards specific goals and extend their goals to the near or far future, which is a psychological representation of one's future.
Kooij (2014)	The meaning of future time perspective is the individual's perception of his or her future life.
Nuttin (2014)	Future time perspective is a cognitive-motivational structure derived from goal setting.

Source: researchers collated.

Considering the process for individuals from anticipating future events to setting goals, some scholars define Future Time Perspective more accurately as the individual's expectation of future goals (Bembenutty & Zimmerman, 2004; Husman

& Lens, 1999; Simons, Dewtt, & Lens, 2004). Gjesme (1983) uses the search light to describe the function of, which means that the advanced view of Future Time Perspective an individual is holding, the brighter it is on the way forward to help individuals predict the possible outcome and discover the future goal, and to plan actions to achieve them. In other words, Future Time Perspective has a great influence on the process of personal life in setting goals, exploring future possibilities and making important choices (Eren, 2009).

To sum up the views of scholars above, this study defines the concept of future time perspective as an individual's sense of motivation for future goals, which encourages oneself to pursue long-term goals in the future, and to gain future desired results by investing in the activities of the present. Its three dimensions are the future goal, value and speed.

2. Conceptual Development of Future Time Perspective

Frank (1939) and Lewin (1936) are the first scholars to explore the future of individuals. They believe that individuals anticipate the possible outcome of events or actions in the future before deciding on their goals and actions, and this expectation tends to determine the individual's current choices and actions (Husman & Lens, 1999; Nuttin & Lens, 1985). Some early scholars (Lessing, 1968; Teahan, 1958; Wallace, 1956) believe that imagining the future is a kind of ability, and will develop into a stable personality trait (Gjesme, 1983). At the same time, projection tests, such as thematic apperception test, are developed to measure the ability of future time perspective.

Along with time perspective development up to now, most scholars focus on the study of future-oriented time and develop the concept of future time

perspective which is widely adopted in educational field (Peetsma, 2000; Peetsma & Veen, 2011; Phan, 2015). Theory of future time perspective emphasizes on individual cognitive ability that enable people to pre-consider future instantaneous long-term tasks and outcomes at the same time. In short, people with future time perspective tend to consider the possible results of future, go directly toward specific goals and extend these goals to far or near future. This is a psychological statement about the future (Savickas, 1991; Walker & Tracey, 2012).

As to how future time perspective triggers an individual to start and sustain behavior, Nuttin (1964) argues that the goal one wants to achieve in one's mind and the result one imagines to achieve is an important inducement to actual action (DeVolder & Lens, 1982; Husman, McCann, & Crowson, 2000). DeVolder and Lens (1982) continued to develop Nuttin's view and combined Atkinson and Raynor's motivation theory (1977), Vroom (1964) with it. The future time perspective is therefore divided into two levels: one is dynamic aspect, which refers to the high and low value that individuals assign to long-term goals. The second is cognitive aspect, which refers to the possible impact of individual awareness of the present behavior on future goals.

However, the following study finds that the ability of individuals to anticipate future time continues to develop with age, so personal experience and planning of time has the characteristic that changes with the development of individuals (Green, Fry, & Myerson, 1994).

According to Zimbardo and Boyd (1999), the view of time is the fundamental dimension of the construction of individual psychological time, which dynamically affects many important decisions and actions of individuals, and these

influences come from similar experiences and divide human experiences into the past, the present and future time structure and construct the Kingbardo Time Scale. The view of time, as a stable factor of individual difference, has a strong influence on human behavior, which deeply and extensively affects the well-being of individuals and society, and also reflects a person's personality (Bluedorn, 2002; Peetsma & van der Veen, 2011; Zimbardo & Boyd, 1999).

To sum up, future time perspective refers to the degree of individual concern and how to think about future events. The better Future Time Perspective is, the more specific future goals can be formed, and the behavior that personal exploration contributes to the realization of goals. However, the development of future time perspective has been defined as a natural personality trait or ability from the beginning, and gradually transformed into a changeable cognitive structure, which is deeply influenced by social and group culture.

2.3.2 Relevant Theories

Based on the future time perspective of "cognition-motivation", the related theories are Expectancy Value Theory and Goal Setting Theory. The following explains the theoretical basis of future time perspective in this study.

1. Expectancy Value Theory

Expectancy Value Theory is proposed by J. S. Eccles, who thinks expectation and value directly influence the achievement behavior choice, performance, effort and persistence of individuals (Wigfield & Eccles, 2002).

Expectation refers to the belief that one's ability and success may be expected to assess whether or not an upcoming, immediate or long-term task can be

accomplished. People with high expectations of success believe in their ability to succeed in upcoming or future tasks.

Value refers to the importance of future task completion to individuals, including achievement value, intrinsic interest, utility value and cost orientation (Eccles, 1983). When an individual evaluates the achievement value of completing a task, the higher the utility value and the intrinsic interest, and the lower the cost, the more willing one has to participate in the task.

At the educational level, expectations and values are closely related to learning motivation. Students are willing to participate in learning activities and achieve their learning goals if they have the expectation of success in completing their learning tasks and can give them higher value of learning goals.

Expectancy Value Theory is related to the individual's perception of the future goal. The cognitive-dynamic model of future time perspective is the theory of corresponding expected value. De Volder and Lens (1982) divide the view of future time into cognitive and dynamic. Among them, cognition is equivalent to expectation theory, emphasizing the influence of individual's anticipatory present behavior on the future, that is, perceptual instrumentality. Individuals with a better outlook on future time are able to recognize the importance of present behavior to the future and are willing to work in the present in order to achieve future goals (De Bilde, Vans Teenkiste, & Lens, 2011). Dynamic orientation corresponds to the theory of value, which refers to the value that individuals assign to future goals. The incentives for future goals decrease over time, but individuals with better future timelines can maintain a high evaluation of future goals, so they can continue to work toward a given goal (Simons, Vansteenkiste, Lens, & Lacante, 2004).

2. Goal-setting Theory

The Goal-setting Theory is proposed by Locke E.A. (1991), which holds that human conscious behavior is purposeful. Before an individual is engaged in action, he measures his own ability in mind, plans the implementation steps, and expects the degree to be reached, and acts accordingly, which is called goal-setting. The goal is the engine that motivates individual efforts to accomplish certain results. In the range of individual ability, setting clear and difficult goals can motivate individual behavior (Locke, 1991).

Locke and Latham (2002) point out that goals influence individual behavior through four functions: (1) Goal orientation enables individuals to focus on goal-related activities and avoids distractions. (2) The goal has the function of motivating, making the individual willing to commit to the task in order to achieve a higher level of goals. (3) Goals affect persistence, and individuals stick to behaviors to achieve more difficult goals. (4) Goals indirectly guide individuals to use relevant knowledge or strategies to accomplish tasks.

From the perspective of goal setting, Future Time Perspective is defined as the present belief in the future goal. Based on past and present experience, individuals are able to transform broader needs and desire to become precise and motivated future goals, and plan (Lens et al., 2002; Seginer, 2008). Seijis (1998) points out that individuals with a better view of time in the future can set more distant future goals, invest in more detailed near-term goals, and develop high-level action strategies to achieve final success. Future goals for the longer term are difficult and sub-goals for the near future are clear. Based on the goal-setting theory, individuals with a better view of time in the future can motivate themselves through goal-setting, induce

goal-oriented action, focus and continue to move toward the goal, and use various strategies to accomplish the task.

2.3.3 Dimension and Measurement

Human perception of future time is a multi-faceted cognitive structure (Daltrey & Langer, 1984; Husman & Shell, 2008; Seijts, 1998). Because of the abstract and subjective nature of time, the scholars have different degrees of differentiation, as shown in Table 2.5.

Table 2.5 Connotation Meaning of Future Time Perspective

Scholar	Measurement connotation
Kastenbaum, Seijts (1961, 1998)	Extensibility, consistency, directionality, density, susceptibility
Gjesme (1979)	Involvement, anticipation, occupancy, speed
DeVolder & Lens (1982)	Future goal, perceptual instrumentality
Daltrey & Langer (1984)	Extensibility, consistency, directionality, density, attitude/emotion
Strathman, et al. (1994)	Relevance: the individuals assess the potential consequences of behavior affecting the future when they decides on current behavior.
Zimbardo & Boyd (1999)	Consideration of the future, effort, persistence, reward dependence
Peetsma (2000)	Knowledge/cognition, evaluation/emotion, behavior/behavioral intention
Shell & Husman (2001) Husman & Lens (2008)	Association, value, extensibility, speed
Qiu (2007)	Future goal and personal relevance, susceptibility, future preparations, future discussion, future envisioning and time planning
Zhou (2007)	Association, perceptual instrumentality, value, emotion
Lin (2009)	Richness of future plan in depth, forward link, plan discussion, uncertain feelings, hasty nature
He (2011)	Discussion of future goals, awareness of the importance of future goals, links to future goals, and the preparation for future goals.
Chen & Huang (2016)	Future goal, value, speed

Source: researchers collate.

From numerous perspectives, it has been found that the classification structure of the future time view is very different. After induction, it can be seen that the measurement connotation of the future time view is focused on the individual's expected future situation. In other words, the more individuals can set future goals, the more they can consider distances, specific plans, etc., indicating that individuals are more concerned about thinking and caring about the future (Seijts, 1998).

This study uses the three goals of future goals, values and speed to compile a future time scale. Future goals represent the extent to which individuals think, plan, and care about future goals; value is more clearly indicative of the meaning of the goal to the individual than sensibility; speed is the degree to which the individual's perception arrives in the future. The meanings of each level are explained below.

1. Future Goal

The future goal is to set goals from now to the future. Individuals expect that the future situation to be influenced by social and cultural contexts and self-concepts, and further form long-term goals, including completing life, pursuing ideal jobs, the other life tasks as well as the struggle goals and plans (Miller & Brickman, 2004).

2. Value

It is adopted to indicate the relative importance of immediate or future outcomes. DeVolder and Lens (1982) first propose the dynamic dimension of the future time view, and the individual's assessment of the value of achieving long-term future goals. People with better future time views pay more attention to the value of long-term goals, so they are more willing to sacrifice unrelated satisfaction to achieve future goals (Husman & Lens, 1999). Shell and Husman (2001) point out that when

individuals realize that future goals are more valuable than immediate goals, they are more willing to abandon current enjoyment that is not related to achieving goals.

3. Speed

It refers to the speed of personal perception of the passage of time. Subjects with different degrees of future time are subjectively different for equal time distances, and those with better future time perceptions think that the distance to future time is closer (Husman & Lens, 1999; Lens, Simons, & Dewitte, 2002).

In the measurement methods of the future time perspective, it is mostly the projection test in the early stage. With more research input, the aspects and measurement methods also change in the process of future time theory development and derivation.

Many questionnaire-based measurements have been developed. Looking at the views and applications of scholars on the future time scale, and combing with the special group of college students who are studying in Mainland China for exchanges and study, the future time scale adopted in this study is reference to the opinions of DeVolder and Lens (1982); Gjesme (1979); Seijts (1998). At the same time, it considers the future time outlook of Shell and Husman (2008), and Zhou (2007). At last, it is formed after comprehensive induction and screening.

This scale is divided into three levels: future goals, value and speed. Each subscale contains 5 questions, totaling 15 questions. In the form of the Likert 5-point scale, 1 point means very non-conformance and 5 points means very good. Among them, the speed subscale has 1 question for reverse scoring. The higher the total score, the better the individual's view of the future. Conversely, the lower the total score, the worse the individual's outlook on the future.

2.3.4 Relevant Research

The related research on the future time view in the early stage is mostly analyzed in the context of Western culture. Padawer, Jacobs-Lawson, Hershey, and Thomas (2007) survey the future time of Americans aged 24 to 74 and find that men who are elder, have higher incomes and higher education levels are more likely to think about future events and expecting longer-term future events. Padawer et al. (2007) believe that such research supports social variables such as age and socioeconomic differences that affect the development of an individual's future time perspective. Greene and DeBacker (2004) summarize past research to point out that the personal expectations of the future are influenced by socio-cultural factors, such as gender roles, social norms, and regions.

In other words, the common cognitive structure and values in culture or social class influence the development of the individual's future time view. Therefore, this study further analyzes the differences in future time perspectives in terms of gender, grade, birth order, and family social status, as explained below.

1. Gender

Greene and DeBacker (2004) collate the research on the gender differences in the past time, pointing out that men's thinking about the future extension distance is better than that of women, that is, the distance that men expect from the future is longer. The same results are also shown in the study by Padawer et al. (2007). Studies have found that women think slightly about the future than men (de Bilde, Vansteenkiste, & Lens, 2011).

In addition, in the study of the relationship between male and female gender in terms of future time and learning performance, Peetsma (2000) studies

students aged 11 to 20, and the results show that men and women, in the future time and time of study, and in effort and persistence, have no significant differences. However, Adelabu (2007) finds that high school girls' outlook on the future and school belongings can positively predict academic achievement, while high school boys' future perspectives are not related to academic achievement.

When college students think about the future and make decisions, they may not consciously endure the expectations of traditional society for gender roles, and show differences in their outlook on the future time. The results of Zheng (2011) show that female college students have a better concept of future time. In addition, Padawer, Jacobs-Lawson, Hershey, and Thomas (2007) also find that the education level of elder men and women significantly influenced the outlook on the future.

Based on the above research, this study intends to further examine the relationship between gender and the future perspective of college students.

2. Grade

Trommsdorff (1983) points out that as individuals mature, the extent of their cognitive structure develops. Similarly, the individual's outlook on the future changes as the age increases. In general, elder people tend to consider external factors and realistic conditions, and plan long-term viable future goals.

In empirical research, Steinberg, Graham, O'Brien, Woolard, Cauffman, and Banich (2009) explored the difference in age between future time and delay, and find that among subjects aged 10 to 30, young people over the age of 16 have more concern and expectations for the future. Horstmanshof and Zimitat (2007) explore the age difference in the future time view of first-year college students, and divide the students into two groups with a 25-year-old as a cut-off point. The results show that

students over the age of 25 are better at predicting future outcomes and are more aware of the current future benefits. They believe that this difference may be caused by more social and work experience which are experienced by students over the age of 25.

According to Erikson's psychosocial development theory, young people are at the stage of self-identification and confusion. If young people can grasp the point of view of time, they continue to plan for the future and make efforts.

On the other hand, if adolescents face a crisis and only wait for time to pass quickly, then the expectation problem is also past. The adults only passively escape the pressure of growth.

It can be seen that the difference in the future time view in the grade is not consistent. As the grade increases, the students may change physically or psychologically. It is inferred that college students of different grades may have different perspectives on their future time. Therefore, this study incorporates the grades into the variables of the study to examine the differences in the grades of future time of college students.

3. Birth Order

Birth order is a kind of family structure. The interaction among different individuals, parents and other members encourages individuals to develop unique personality traits and life styles. Some studies have shown that individuals with different birth orders concern about the future's situations in different ways. Platt, Eisenman, and DeGross (1969) analyze the differences in future time views between college students of different genders and birth orders, pointing out that the eldest son and the only son are more likely to expect long-term future events than other birth

orders. Travis and Kohli (1995) explore the relationship between different birth orders and educational achievements, and find that the birth order can effectively predict the individual's educational level, and the ranking leader has a higher education level than other rankings.

Some studies have pointed out that there is no significant difference in the extent to which different birth order students expect future events. Tavares, Fuchs, Diligenti, Abreu, Rohde, and Fuchs (2004) point out that the only child, the eldest child and other children are quite similar in anticipation of entering the university and expecting employment. Fuligni and Zhang (2004) conduct a discussion on Chinese students, and find that there is no significant difference in beliefs between middle school students of different birth orders in maintaining and supporting families. And the more students value family relationships, the higher the future benefits, educational aspirations and expectations of education.

It can be seen that the relationships among parents, brothers and sisters may shape the characteristics and lifestyle of children, and thus affect the situation of indium people expecting future events. In other words, mutual help and expectation between parents and children of different birth orders may be one of the important factors shaping the future of the individual. At present, there are not many relevant research results in the birth order, so this study is aimed at college students and explores the relationship between birth order and future time perspective.

4. Family Socioeconomic Level

Past research has pointed out that people with different family socioeconomic status have differences in their views on the future. Among them, Lamm, Schmidt, and Trommsdorff (1976) believe that due to the influence of the

values of the groups and organizations in which individuals are located, their future time perspectives tend to be different. The study also finds that adolescents with moderate family socioeconomic status are more concerned with the future development of public-led cities than the youth of low family social status.

In addition, the relevant research results show that people in the middle and high socioeconomic status not only have higher frequency of thinking about the outcome of future events, but also have better performance in the coherence of events, and have better ability to delay and satisfy (Guthrie et al., 2009; Lomranz, Shmotkin, & Katznelson, 1983).

However, Agarwal, Tripathi, and Srivastava (1983) point out that in terms of materiality, no matter whether it is satisfied or lacking, there is no significant difference in the individual's future time view. Agarwal et al. (1983) believe that even in the absence of economic conditions, individuals can learn from the positive parent-child relationship, emotions and school education to plan for the future to break through the current predicament.

In summary, although some studies have pointed out that families with medium and high socioeconomic status can provide better future capital time and economic resources, so that individuals have a better view of the future. However, some studies have pointed out that the lack of material does not necessarily have a negative impact on the future of the individual's expectations. The family cannot provide abundant material resources, but it may also become an incentive force for individuals to plan their ideal life to meet their needs. This study examines the differences in gender, grade, family socioeconomic background, and birth

order/native children into the discussion of future time perspective of different backgrounds.

2.4 Internal-External Locus of Control

2.4.1 Definition and Conceptual Development

1. The Definition of the Concept of Internal-External Locus of Control

The word "personality" is derived from the Latin word "persona". It has two meanings: firstly, it refers to the mask worn by the actors on the stage, which is adopted as a representation of personal identity; secondly, it refers to the true self, including one's inner motivation, emotions, habits and thoughts (Zhan, 1996).

The corresponding methods and adaptability are different when people of different traits face the same people, events and things. Personality is also the sum of personal characteristics, attributes, and characteristics. It is a persistent and special trait that makes individuals different from others (Guliford, 1959). Allport, a pioneer in the study of personality traits, believed in 1961 that personality is a dynamic organization of a person's inner psychological and physiological systems, a unique form of individual adaptation to the external environment, which determines the unique thinking and behavior of this person (Huang, 2006). The formation of personality will be affected by the background of time and space, growth environment, genetics, experience, cultural differences, etc. (Chen & Wang, 2007; Zhang, 2003). Personality traits are not only the sum of individual characteristics, attributes and characteristics, but also the criteria for determining the commonality and difference between one person and others (Luo & Tang, 2003; Schmitz et al., 2000).

Many studies have detailed the definition and interpretation of personality traits proposed by different scholars, now they are integrated into Table 2.6.

Table 2.6 Definition of Internal-External Locus of Control

Scholar	Definition
Spector (1982)	Internal controllers are more confident in their own abilities. They will work harder to collect information in a complex environment, so their performance must be better. In addition, internal controllers also prefer participatory management, and they give more feedback to their work. As for external controllers, they are more submissive than internal controllers and accept organizational leadership.
Zhang (1990)	When internal controllers work under the system of participation in management, the work is more satisfied; the external controllers are more biased towards imperative management.
Wu (1991)	It is difficult for external controllers to concentrate on their work. And the external controllers' satisfaction is low. They are more alienated from the work group. The internal controllers are opposite to the external controllers. In addition, internal controllers have a higher tendency to be motivated, but if the degree of internal control is too high, it is likely to lead to rigid behavior and poor coordination.
Rottor (1996)	The internal controllers believe that they can control the success of their actions, while external controllers believe that their actions are successful or not will be affected by luck and power, and they cannot or are difficult to control. That is to say, internal controllers are more active, independent and active; external controllers are more passive, dependent, and resigned.
Zheng (1997)	Internal controllers are more predictable about the results of their work, and they are more confident in their work to get paid for their work. Therefore, they like to have more autonomy and a greater overall satisfaction.
Jiang (2001)	Internal and external control refers to the perception of the relationship between yourself and the world around you in your daily life.
Ji (2002)	The so-called internal and external control refers to the individual's belief in the relationship between the behaviors and the consequences.
Ke (2005)	Internal controllers are more predictable about the results of their work, and they are more confident that they can get paid for their work. Therefore, they like to have more autonomy and a greater overall satisfaction.
Xu (2009)	Locus of control is composed of many interactions, not a single trait, so it will affect a person's behavior at different times and situations.
Zhan (2011)	People with internal locus of control believe that one's own efforts and destiny are determined by oneself. On the contrary, people with external locus of control believe that fate is in the hands of others.

Table 2.6 (continued)

Scholar	Definition
Mahajan & Kaur (2012)	Internal and external locus of control personality has the characteristics of continuity and uniqueness, which is composed of many internal and external characteristics and performance. It will directly affect the interaction between a person and others.
Xiao (2014)	People with internal locus of control believe that the outcome of events is under the control of the individual; while people who have external locus of control believe that the outcome of an event is beyond the control of the individual.
Chen (2016)	The success of internal locus of control comes from the uniqueness that they can control, and they do not attribute success or failure to fate or luck. External locus of control is the opposite.
Lai (2017)	Those with internal locus of control think their fate is dominated by themselves, while those with external locus of control think their fate is controlled by others, and all of them are made by fate.

Source: researchers collate.

After decades of development, internal and external locus of control has been fairly stable personality traits (Luo & Tang, 2003; Xu, 2009; Yang, 2009; Yılmaz & Kaya, 2010). Rotter (1966) defines internal and external control of personalities as believes in the relationship between behavior and the outcome of an individual, blaming the occurrence or outcome of an event on the extent to which one believes that one can master or manipulate the fate. And he distinguishes the personality traits into two categories: internal locus of control and external locus of control. One believes that the outcome of an event is controlled and understood by the individual; one considers that the outcome of the event is beyond the control and understanding of the individual (Chen et al., 2012; Chen & Wang, 2007; Liu, 2005; Luo & Tang, 2003; Mahajan & Kaur, 2012; Schmitz et al., 2000; Wu, 2013; Xu, 2009; Xu et al., 2010; Yang, 2009; Yang, 2012; Yılmaz & Kaya, 2010; Zhang, 2003).

Based on the above definition of internal-external locus of control, it is found that personality traits are composed of multi-dimensional traits, including

individual thoughts, emotions and behavior patterns, with unique, stable and long-lasting characteristics, which can be adopted to explain and predict individual behaviors in the particular situation. Everyone has different personality traits and cannot be inferred to all individuals. In other words, a group of people with the same personality traits always show different modes of thinking and behavioral responses when facing different external environments; and a group of people with different personality traits tend to have different behavioral responses and thinking patterns when facing the same situation.

2.4.2 Relevant Theories

1. Locus of Control Theory of Rotter

The theoretical background of internal-external locus of control is derived from the concept of Social Learning Theory proposed by Rotter et al. in 1954. It is mainly adopted to correct the neglect of the behavioral school for the internal cognition of the individual. Beyond the factors, it is more important that the learner believes that what is obtained is the result of the individual's own behavior. In the past, there are quite a lot of studies on personality theories, and there are differences in the classification of personality theories.

However, no matter what method is adopted as the basis for classification, most of them take time as the main clue. And from the early stage, the individual's perception and characteristics is the main clue. In the later period, the behavioral results of individuals interacting with others and the environment are emphasized. The differences in categorization are mostly due to the researcher's perceptions of whether the school has influences.

Rotter (1966) argues that the traditional behaviorist school's view, human learning behavior is the connection between stimulus and reaction and the application of enhanced principle, is too simplistic. He further put forward the theory of expectation enhancement, arguing that human learning behavior is not only a mechanized behavioral process, but a comprehensive stimulus response theory and cognitive theory; that is, the possibility of behavioral occurrence is a function of expectation and enhancement, and also an influence. In addition to the intensity and frequency, the expectation of individuals also tend to be taken seriously.

Based on the above extensions, Rotter (1966) proposes the internal and external locus of control. If the individual believes that the consequences of the event are caused by his own behavior or more persistent characteristics (such as ability, attributes, etc.), and can be controlled or predicted by the individual. This belief is called the Belief in Internal Control. If the individual believes that an enhanced incident occurs not because of the consequences of his own actions, but because of luck, opportunity, fate, or by an authoritative person; or he believes that the surrounding environment is too complicated to predict the consequences of the event. It is called Belief in External Control, referred to as external control.

In short, the traits of internal control the internal control tendencies are positive, active, independent, contingent, independent, self-confident, etc. The traits of external control tends are negative, obedient, passive, and dependent. Wu (1977) points out that internal controllers have more successful experiences. They are more active in changing the environment. At the same time, they have less psychologically abnormal behaviors of anxiety and withdrawal; while external controllers have more failed experiences and more mental illnesses. The description is as follows:

(1) Internal Locus of Control (Internals)

The people of Internal Locus of Control belong to the type of operation. They believe that fate changes because of their hard work (Chen & Wang, 2007; Wu, 2013); when the outcome of the event is unsatisfactory, people with internal locus of control only blame himself instead of others (Mahajan & Kaur, 2012; Xu, 2009). After encountering setbacks, those with internal locus of control are usually more active, proactive, and adopt a constructive approach (Yang, 2009; Ylmaz & Kaya, 2010).

(2) External Locus of Control (Externals)

The people of External Locus of Control belong to people who are obedient. They believe that fate is determined by the external environment and not changes because of their own efforts (Chen et al., 2012; Zhang, 2003); when the outcome of the event is unsatisfactory, the person with external locus of control tend to blame bad luck (Schmitz et al., 2000; Xu et al., 2010); after encountering setbacks, those who have external locus of control are usually more passive, dependent on others, passive, and adopt destructive adaptations (Luo & Tang, 2003; Yang, 2012).

2. Attribution Theory of Success and Failure

Attribution theory of success and failure is to explore the reasons for personal success and failure in work performance, analyze how the results affect learning motivation, and thus to account for the inspiration of an action by the result of its occurrence (Lin, 2010). Heider (1958) is the first to propose the attribution theory. Heider (1958) divided the behavioral results into two categories: person factor and environment factor. Personal factors include personal power and effort or motivation, which are driven by an individual's effort or ability, and is also called an

internal attribution. Environmental factors refer to task difficulty and luck, which are caused by external circumstances, also known as external attribution. So Heider's attribution theory is attributions based on behavioral outcomes, and most people attribute their failures to situational factors.

The theory of causal attribution is more complete with the theory proposed by Weiner (1985). The self-attribution theory proposed by Weiner (1985) mainly proposes causal attribution to achievement-related behavior from the perspective of cognition; He proposed eight types of attribution: ability, effort, task ease or difficulty, luck, mood, fatigue, illness and others, among which ability, effort, task ease or difficulty and luck are the four main factors for individuals to attribute their success or failure. These eight attribution can be divided into three dimensions to explore (Weiner, 1985; Zhang, 1996).

(1) Internal and external dimension refers to the source of factors that an individual considers to influence his or her success or failure, either based on personal conditions (internal orientation) or from external environment (external orientation). If the reason of behavioral attribution is derived from the internal factors of individuals themselves, such as ability, effort, physical and mental state, it is the internal dimension. If the reasons for behavioral attribution are from external factors such as luck, interference of others, difficulty in work, etc., it is the external dimension.

(2) Stability dimension refers to the factors that affect the success or failure of an individual, whether they are stable in nature, and whether they are consistent in similar situations. Some reasons are more stable, such as ability and difficulty of work,

etc., are less likely to change at any time; Some reasons are more unstable, such as hard work, luck, mood, etc., are more likely to change at any time.

(3) Controllability dimension refers to the factors that affect the success or failure of an individual, which are determined by the individual's will in nature. Some factors, such as effort and attention, are controllable by personal intention, while some factors, such as ability, difficulty of work, luck, physical and mental condition, are beyond the control of personal intention. The relationship is shown in Table 2.7.

Table 2.7 Weiner's Tripartite Attribution Classification System

Controllability	Internal		External	
	Stable	Instable	Stable	Instable
Uncontrollable	Ability	Mood	Task Difficulty	Luck
Controllable	Typical Effort	Timely Effort	Teachers' Prejudice	Others Help

Source: researchers collate.

Weiner (1985) finds that people with different achievement motivations have different ways of thinking about success or failure. People who pursue success often attribute failure to effort, which makes individuals feel ashamed and look forward to working hard to succeed in the future, so they work much harder; those who avoid failure attribute it to their ability, which makes individuals to evade responsibility for failure, and thus have lower expectations for success and easy to abandon their efforts. Huang (2002) believes that when failure is attributed to internal, stable and uncontrollable factors, such as lack of ability and sense of learning helplessness, individuals would become unmotivated.

In fact, the research orientation of different personality traits and the formation of theory are often affected by the space-time environment. In addition to the development of science and technology, the practical factors of research equipment limit the scope of research.

At the same time, different era backgrounds may also be based on politics. Through the characteristics of the environment, the mainstream and focus of research are guided, and the research orientation and results are different. Nevertheless, the main purpose of the research is still to improve human well-being. Therefore, no matter how different the theories of personality traits in different schools are, how to understand the nature and characteristics of personality traits, applying the research results to life and work is still the most important topic of personality trait research. This is also the basis for this study as a research variable.

The related research on the internal-external locus of control in this study is mainly based on Rottor's (1966) theory. Internal controllers believe that success is controllable by themselves, and their behaviors are relatively active, autonomous, and positive; external controllers are affected by luck and power, and they think that it is difficult to control their fate, and their behaviors are more negative, dependent, and resigned. These two personality traits can co-exist in the individual, and the behavioral tendencies exhibited in the same situation are also different.

2.4.3 Dimension and Measurement

Personality traits can help us describe, interpret, and predict people's behavior. The constituent characteristics of personality vary from person to person, so everyone has his own uniqueness. Each individual is the real self, and each person may react differently to the same situation. Personality is an individual composed of

many different aspects of interaction, including explicit behaviors and characteristics, as well as internal emotions and thoughts (Sheng, 2012). Huang, Dai, and Lin (2011) believe that personality traits have stability and unity, they are not affected by environmental changes.

Internal and external control is first advocated by American psychologist Rotter (1966), which is a term commonly encountered by psychologists in the past two decades. Actually it is called the internal control tendency or internal control tendency and external control tendency or external control tendency. Rotter proposed based on social learning theory that there are very big limits to applying the laws that explain the behavior of lower animals to complex humans. He argues that to predict human behavior in a given situation, cognitive variables such as behavioral potential (BP), expectations (E), and reinforcement value must be considered (RV).

Therefore, the basic procedure for Rotter (1966) to predict behaviors is as follows: behavioral potential (BP) = expectation (E) + enhanced value (RV) (Burger, 2007). He also points out that individuals believe in the enhancement effect after behavioral experience. There are usually two different views: some people believe that enhancement is caused by the consequence of one's own behavior or by one's own quality, ability or characteristic. His own ability to control it, or to predict its occurrence. This is known as an internal control tendency or internal grip (internal locus of control).

On the contrary, others believe that enhancement is not the result of his own behavior, but based on external effects beyond his control, such as opportunity and destiny, or by another person or thing with authority over which he has no influence. This view is called extrinsic control or extrinsic grip (external locus of

control) (Burger, 2007; Hong, 1975; Huang, 1979; Shi, 2005; Wu, 1975). Dong (2011) believes that the internal controller is the dominant player in enhancing the role, so he tries to transcend his own ability and overcome external environmental difficulties. The external controller, on the other hand, is enhanced by external forces. He just passively accepts and cannot change anything. Although internal and external control is an important and stable psychological trait of an individual, the degree to which each person prefers internal control or external control is only different (Shi, 2005).

Scholar Rotter (1966) proposes that personality traits can be divided into internal locus of control and external locus of control, and the differences are reflected in personal beliefs, behaviors and attitudes. People with internal control personality believe that they can control their destiny, and believe that their ability can be enhanced through hard work. When facing problems, they tend to take the initiative to solve them, show a positive attitude and have a strong desire to attempt. People with external-control personality are more obedient, believe that success or failure is not under the control of individuals, and are mostly affected by external factors. They may be more dependent on problems, or choose to leave things to chance.

Based on the above literature references, and in conjunction with the characteristics of the participants, two basic dimension of locus of control are adopted to carry out relevant studies in this research, namely, internal locus of control and external locus of control.

Internal and external control is a kind of personality trait, it refers to individual's view of the relative relations among oneself and environment in daily life (Zhang, 2000). Internal and external control are both relative, its division is not absolute, but a continuous scale. A person may be at any point between the two ends,

which is much better depends on situation. Lefcourt (1972) points out that locus of control is influenced by past experiences and environment. The external environment contains social and family factors. Brissett and Nowicki (1973) put forward standpoint that people of internal control are much more active, positive and independent; while people of external control more passive, negative and fatalistic.

Rotter (1966) has ever prepared an internal-external scale to measure a person's status in each of these beliefs. However, internal and external control is a continuous variable, and each person only has a different degree of preference for internal control or external control (Chubb, Fertman, & Ross, 1997). The school of social learning proposed that the environment would influence behaviors and behaviors would also influence the environment, and the two would influence each other (Burger, 2007). Internal and external locus of control are not immutable, and individuals may be affected by the environment or events, thus changing their personality traits (Doherty, 1983; Wolfe & Robertshaw, 1982).

Simply, locus of control, circumstances, or external factors all influence each other. The item design of the personality trait scale of internal and external control is mainly aimed at the behavior characteristics of individuals. Therefore, it is necessary to modify the design of items according to different research purposes and participants, and rarely directly use the original scale. What's more, two personality traits can only be distinguished in degree, not in total.

When using the names of internal-external locus of control, it must be noted that they are not types that can be absolutely divided, but continuous scales. Internal or external locus of control is only a relative division, and individuals may be at any point between the ends. There is no such thing as a good orientation for internal

control or external locus of control. In different situations, people with internal and external control orientation may have different adaptation strategies. Therefore, it depends to judge what is the better orientation.

In this study, the scale of internal and external locus of control is introduced from the original scale developed by Rotter (1966), related scales of Yang (2009), Luo and Tang (2003) are referred to, and then revised according to the needs of this study. Internal and external locus of control were adopted in the scale, among which there are 8 questions in total: the internal and external locus of control are respectively designed with 4 questions.

Likert 5-point scale is adopted for scoring, 1 point means strongly disagree and 5 points means strongly agree. The average of internal control items and external control items are calculated separately. Peters, O'conner, and Wise (1984) suggests that the mean of the posttest score of the internal locus of control personality traits should be used as the discriminating benchmark, and the above and below mean of the subjects should be divided into the internal locus of control personality traits and the extrinsic locus of control personality traits.

In this study, the subjects are divided into two groups: internally-controlled personality traits and externally-controlled personality traits. If the average of internal locus of control is higher than that of external locus of control, there is a tendency of internal locus of control; On the contrary, it tends to be external locus of control. This result can show the tendency of the samples' internal and external locus of control. As this scale is a bidirectional scale, the total reliability of this scale can be obtained by counting the total reliability of external control items in reverse.

2.4.4 Relevant Research

In recent years, the concept of locus of control has been effectively applied to the research of work attitude and behavior. Mitchell (1979) finds that internal and external locus of control is one of the three personality traits most noticed by management and industrial psychologists based on his research and theory of organizational behavior. Judge et al. (2001) also finds that, according to Psyc INFO, from 1967 to 1999, internal and external locus of control were one of the most commonly adopted personality traits analyzed in psychology and applied psychology. According to Spector (1986), 5-25% of the variation in a person's work behavior can be explained by internal and external control personality variables. By parity of reasoning, it is very important to study the relationship between students' learning motivation and career adaptability.

This study focuses on the influence of different personal background factors on the internal and external locus of control of Mainland Chinese college students to Taiwan for exchange study. In some research, there are little research on personal background variables related to internal and external locus of control. Summarized as follows:

Findley and Cooper (1983) explore the relationship between internal and external locus of control and academic achievement by literature review. They find that men had a more significant relationship than women in terms of internal and external locus of control and academic achievement. Wu (1975) finds that, for male students, the tendency of internal control is more likely to constitute a motivational factor that promotes their studies. Studies in the workplace also find that people who tend to have internal-control personality traits perform better, while high-achieving

women tend to be more internal-control (Wu, 1998). Lefcourt (1972) points out that internal and external locus of control is affected by past experience and environmental interaction. The external environment includes social and family factors: social factors, such as social culture and status, gender, race and other factors; in terms of family factors, such as parental control attitude and expectation, parents' internal and external control personality. Different subjects show different tendencies of controlling personality traits due to their gender, age and family socioeconomic level.

However, some scholars (He, 1981; Jiang, 2000) have discussed that gender roles have nothing to do with belief in internal and external locus of control. Lai (2002) also points out in her research that there is no significant difference between gender, age, family socioeconomic level and internal and external locus of control. Shi (2005) studies the relationship between internal and external control belief and life adjustment of air force cadets, and draws the following conclusions: the general students who are enrolled have a higher tendency to believe in external control than the cadets who apply for admission and the military students who are enrolled.

There are regional differences in locally-controlled personality traits. Some scholars have investigated college students in western and eastern societies (Japan, India, France, Germany, Italy, Canada, and the United States, seven countries), and pointed out that Japanese college students tend to be externally controlled, while Indian college students tend to be internally controlled. The study also finds that college students in western countries, such as the Americas (the United States and Canada) and Europe (France, Germany and Italy), have the same tendency of control,

while students in eastern countries (Japan and India) have the opposite tendency (Parsons & Schneider, 1974).

McGinnies (1974) studies 1,500 students from five countries including Australia, Japan, New Zealand, Sweden and the United States, and finds that those with external control tendency are Sweden, Japan, Australia, the United States and New Zealand in order, while New Zealand are more inclined to internal control.

In terms of mental health, generally speaking, the internal controller is better than the external controller. Studies have shown that people who believe in internal control have better physical health than those who believe in external control (Ryckman, Robbins, Thornton, & Cantrell, 1982). In the study of college students, it is found that there is a significant difference between internal control personality traits and self-esteem (Saadat, Ghasemzadeh, Karami, & Soleimani, 2012).

Several research of different background variables and personality traits of business executives are carried on by Frost and Wilson (1983), Jamal and Vishwanath (1990), Mitchell and Smyster (1975), Nevid and Rathus (2003), Robbin (1989), Rotter (1966), Spector (1982), Weiner (1985), and Weiner et al. (1971). The results show that different background variables have significant influence on personality traits.

To sum up, in the studies of scholars, different background variables are taken as the phase factors influencing the personality traits of the samples for analysis and research, and the results obtained are also different. This study took Mainland Chinese college students from to universities in Taiwan for exchange study as participants. Considering the particularity of this group, and based on the above references to the literature, this study attempts to include the variables of different

backgrounds of college students into the relevant research on their personality traits, focusing on gender, grade, birth order/only-child status and family socioeconomic status in order to obtain the verification of its related effects.

2.5 Interrelationship among Variables

This section focuses on the relationships among learning motivation, future time perspective, internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange and their career adaptability, so as to further understand the influence of various variables on career adaptability.

This section is divided into three parts: the first part is the research on the influence of learning motivation on career adaptability; the second part is the research on the mediating effect of future time perspective on the influence of learning motivation on career adaptability; the third part is the research on the moderating effect of internal-external locus of control on learning motivation on career adaptability.

2.5.1 Influence of Learning Motivation on Career Adaptability

Directly related literatures has not yet been found during the course of looking up numerous literatures. There are 3 dimensions about learning motivation in this research: interest in seeking knowledge, tour interest and self-development. The 5 dimensions associated with career adaptability are career concern, career control, career curiosity, career confidence and career cooperation. This study attempts to verify the significant influence of learning motivation on career adaptability by studying the influence relationship between its dimensions.

In the research on learning motivation of the course about academic career among American schools, Makayla (2013) finds that undergraduates with stronger motivation of course learning tend to have more better academic career development and stronger career confidence and control; Zhang (2012) points out in his research on student officers studying in Army Command and Staff College of National Defense University that learning motivation of these students has a significant influence on career planning. In his research, Cui (2013) ever takes students from a Hong Kong university who participated in a semester-long exchange program in an English-speaking country as participant and finds that with the improvement of their interest in seeking knowledge, self-development and social relations, their career confidence have been greatly enhanced.

Self-development (self-actualization) is one of the research dimensions of learning motivation, and achievement motivation development of students is an important factor that determines their individual personality development and learning achievement. The following are the studies on self-development (self-actualization) in learning motivation and career adaptability:

Liang (1986) studies college students and finds that those with high self-actualization motivation tend to have higher career development. The research results of Ye (1994) shows that self-actualization motivation has a certain influence on dimensions of career maturity. Xu (2002) takes vocational school students as participants and the research results show that there is significant influence between students' achievement motivation and career development. Based on the research results on learning motivation, learning satisfaction and career development of

postgraduate students, Xie (2006) finds that different learning motivations of learners have a significant impact on each stage of career development.

In addition to this, Lin (2017) mentions in the research on evaluating the learning effectiveness among pre-service teachers that after a semester of courses, students significantly improved their motivation for study, and thus to enhance their willingness to become teachers. Meanwhile, they become more curious about the possible career goals and directions, more positive about self-exploring and working, and also significantly improve their ability to coordinate and communicate with team. Yang (2015) mentions in the research on the relationships among learning motivation, internship outcomes, career decision self-efficacy and career preparation behavior of college students that learning motivation significantly influences the effectiveness of internship, and the effectiveness of internship effectively improve the self-efficacy of career, thus to promote the students' confidence in their career.

You (2015), in his research on self-concept, learning motivation and career development of vocational students, concludes through sampling survey and analysis that the development of self-concept affects the career development of students, and there is significant influence between learning motivation and career development. Michael (2015) draws a conclusion though his research on the related influence relations of American students taking part in academic behaviors, key learning skills and techniques associated with college-career readiness that participation in learning is a good way to improve academic success, and thus to improve ability of career readiness.

Need-Fulfillment theories of psychologist Maslow (1943) ever points out that when people meet needs of physiology, security, love and self-esteem, they tend

to pursuit continued growth in the future and individual development, develop the inherent potential, show unique personality which lead to the highest level of self-actualization needs. This is a performance of human needs hierarchy, from low level to high ones. McClelland (1961) ever describes the need for achievement in his achievement motivation theory that a person with strong need for achievement always hopes to things perfectly with high efficiency, thus to achieve greater success and achievement. They feel dissatisfied with the difficulties overcome and the problems solved during the course of being succeed, as well as the pleasure got though efforts and struggles, and sense of achievement after success.

People need to take actions to motivate individuals to plan and organize for the future, not only for self-actualization of personal continuous growth and development but also for pursuit needs of perfection and achievement. Gotfried (1990) points out that learning motivation has a significant influence on academic achievement, thus can improve the degree of academic confidence and career confidence. When a person has a very clear self-fulfilling expectation, he tend to set future goals and plan to achieve. This ratiocination just fits in with Gjesme's (1983) comparison of future time perspective function to searchlight.

The participants of this study is college students from Mainland China who went to universities in Taiwan for exchange study. Combined with the above theories, it can be inferred that they are at an important stage of having a good vision and expectation for the future. Therefore, they have the motivation to study abroad to facilitate the development of their future career, thus showing their curiosity and confidence in their career.

Therefore, the self-actualization dimension of learning motivation has a significant impact on individual achievement, career development achievements are certainly included.

According to the above theories and results, we can find out that Studies in different countries and regions show the same results. That is, there is influence between dimensions of learning motivation and career adaptability. This study took college students from Mainland China who went to Taiwan for exchange study as participant, so as to understand the correlation between learning motivation and career adaptability, and try to find out the strong evidence through data analysis that college students' learning motivation has a positive and significant influence on their career adaptability. Hence come to the conclusion that learning motivation of undergraduates has positive and significant influence on career adaptability.

Combined with the above discussion, it can be inferred that learning motivation of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on career development achievement. **【H2】**

2.5.2 Mediating Effect of Future Time Perspective

1. Research on the Influence of Learning Motivation on Future Time Perspective

In this study, the learning motivation is the learning motivation that leads Mainland Chinese college students to communicate in Taiwan, and makes this behavior steadily and continuously towards the achievement of self-determined learning goals.

Based on the comparison of the statistical results of literature discussion, the design of learning motivation measurement is made from three dimensions: interest in seeking knowledge, tour interest and self-development. The concept of future time is an individual's motivation for future goals, which urges them to seek for long-term goals in the future, and to be able to exchange future desired results by investing in present activities. There are 3 dimensions: future goal, value and speed. A future goal is a goal set that extends from the present to the future. Individuals' expectations of the future are influenced by socio-cultural context and self-concept, and further form long-term goals. It includes various life tasks such as completing school, pursuing ideal work, goals and plans for struggle, etc. (Miller & Brickman, 2004).

The study result of Kang (1999) on foreign language learning motivation and its change in EFL contexts shows that undergraduates with stronger motivation tend to set clearer objectives and expectations, thus can achieve better learning effect, which has a positive impact on the future development. Miller and Brickman (2004) point out that individuals' expectation of future conditions is affected by experience and social culture. This means that education intervention may further expand one's future time perspective.

The concept of future time belongs to the concept of cognitive motivation, that is, the individual's consciousness of future goals changes with time or situation (Carstensen, 2006; Cate & John, 2007; Park & Jung, 2015). When discussing the effectiveness of treatment plan for drug addiction withdrawal, Alvos, Gregson, and Ross (1993) find that individuals influence their generating different behavioral motivations, and thus to influence their future time perspective, due to the change of

living environment, which shows that living environment is an important factor in determining the future time perspective.

College students from Mainland China who went to universities in Taiwan for exchange study show strong motivation when they choose to leave Mainland China to study in Taiwan. It can be seen that they have a high interest in learning and need for self-development, and they are full of expectation and desire for the future study in other places. The change of their learning environment may play a positive role in the improvement of their outlook on time in the future. Learning environment is an important consideration of learning interest and travel interest in the study of learning motivation.

Therefore, this study speculates that learning motivation of college students from Mainland China who went to universities in Taiwan for exchange study has a significant impact on their future time perspective. **【H3】**

2. Research on the Influence of Future Time Perspective on Career Adaptability

Some scholars (Judge, 1995; Nabi, 2003; Ng, et al., 2005) divide career success into objective career success and subjective career success. Objective career success refers to the assessment level of career success through external criteria, such as job title, salary promotion (Boudreau et al., 2001; Lau & Shaffer, 1999; Seibert & Kraimer, 2001; Vos, Clippeleer, & Dewilde, 2009). While subjective career success refers to the assessment of individual's feeling and satisfaction with career achievement (Judge, 1995; Zacher, 2014).

At present, future time perspective is widely applied in education field, and the relationship between future time view and academic performance is mostly

discussed. It also shows that students with future time perspective invest more in their academic efforts to achieve academic excellence through personal self-efficacy or by increasing their own investment in learning resources, and thus enhance the confidence in career development (Peetsma, 2000; Peetsma & van der Veen, 2011; Phan, 2015).

According to the past research results, there is influence between future time perspective and rank. That is, the higher the rank, the stronger future time perspective (Zimbardo & Boyd, 1999); People with stronger future time perspective were also more satisfied with their lives (Azizli et al., 2015; Shipp et al., 2009). If a person has great ambition for his future work, he tends to get a satisfactory job position by showing good career adaptability and personal self-efficacy (Guan et al., 2014). From this perspective, future time perspective has an impact on one's career confidence and career control to some extent.

Lamm, Schmidt, and Trommsdorff (1976) point out that future time perspective is the result of the socialization process. As socialization deepens, individuals learn the life styles and values of their social classes and groups, and gradually integrate culture-specific future goals into their cognitive systems as part of their personal goals. According to Nuttin and Lens (1985), future-oriented people attach great importance to long-term goals and are willing to give up their present happiness to achieve their ideal future goals. They give important value to future goals and try to put more effort into current activities by planning and arranging future activities. In the process of achieving goals, they adjust their behaviors, monitor their performance at any time and measure whether their performance can meet the constituent elements of achieving goals. They take action now and work

harder to achieve their future goals than others (Husman & Shell, 2008; Simons, Vansteenkiste, Lens, & Lacante, 2004; Thoms & Greenberger, 1995). The same is true for college students from Mainland China who went to universities in Taiwan for exchange study.

Husman and Lens (1999) point out that when learners have stronger future time perspective, they are more able to look on the present efforts as an important way to achieve future goals, therefore they would pay more attention to future outcomes. Bembenutty and Karabenick (2004) consider that future time perspective makes for achievement of future goals, and thus enhance their confidence in the future career. Eccles and Wigfield (2002), and Feather (1990) all mention it in their research that when individuals have stronger future time perspective, they tend to have clear understanding of present learning, which is helpful to achieve their goals. And in this case, people tend to soak themselves in the current job and thus to realize their career control and confidence.

Past studies have shown that Future Temporal Focus is an important predictor of career adaptability (Blustein, 1994; Savickas, 1997; Ebberwein, Krieshok, Ulven, & Prosser, 2004; Phillips & Super & Knasel, 1981; Zacher, 2014). People with a focus on the future plan and actively shape their future career development, and adapt to career tasks and career transitions (Super & Knasel, 1981).

Savickas (1997) also mentions that people with high career adaptability have future-oriented characteristics. They explore and anticipate potential future roles and environments, and prepare for future needs. Lin (2009) points out in his research on the future time view of vocational students that when vocational students perceive that their current planning for future career are highly linked to future goals and that

future goals are highly valued, they are willing to make plans for long-term future goals and adopt different adaptive behaviors in order to facilitate the achievement of future goals, promote career planning and confidence.

The theory of Super's (1984) life-career rainbow also shows that during the course of career development, individuals play different roles with age, there is always a significant role in every stage, thereby prompting individual to choose career decisions. From the perspective of career development, college students from Mainland China who went to universities in Taiwan for exchange study are in the late stage of their youth. Career exploration and development at this stage play a crucial role in entering the workplace in the future. From youth to adulthood, individuals' physical and mental health and ability to adapt to the environment are highly valued (Yuan, 2002).

Super's (1990) career development stage theory points out that the college years are in the stage of career exploration, which is the golden period of life. From the learning of schoolwork and skills at school and in the trends of family and social environments, to explore personality traits, interests, sexual orientation, develop relationships, enhance professional competence, build their own values, know about their own needs, looking for career advancement and meaning in life are main development task in this period. During this critical period, Chinese Mainland students go to Taiwan for exchange study. They are far away from their hometown and family, and step into a totally unfamiliar learning and living environment. They need to arrange daily life, manage time, control money, manage emotions, and express emotions independently (Chen, 1998; Jian, 1986). The pressures on learning to adapt to different living environments and academic activities may affect their

mental health and academic performance (Chou, Chao, Yang, Yeh, & Lee, 2011). From this points of view, in the learning career of college students at this critical stage from Mainland China who went to universities in Taiwan for exchange study, adaptability is an important factor to achieve the tasks at this stage of their career, as well as the driving force for current and future development.

Thus, it can be inferred that the motivation generated by individuals influences individuals to give up their present enjoyment to achieve long-term goals in the future. By comparing the difference between the present and the future state, the self-regulating motivation response generated to motivate individuals to set goals in order to engage in current activities, seek to develop approaches to achieving future goals, and to use self-regulation (career adaptability) to achieve future career goals when facing career planning and development.

It can be seen from the above theories and research that future time perspective has significant influence on the relevant dimensions of career adaptability. Thus reasoning that future time perspective of college students from Mainland China who went to universities in Taiwan for exchange study positively and significantly influences career adaptability. **【H4】**

As mentioned above, the concept of future time perspective has been widely adopted by researchers in relevant research in the field of education. And in some research (Eccles & Wigfield, 2002; Lens, 2001; Xu, 2016), future time perspective plays a role of mediator. Combined with the influence of learning motivation on future time perspective and the influence of future time perspective on career debugging ability in the above discussion, there is reason to infer that future

time perspective of college students from Mainland China who went to universities in Taiwan for exchange study has significant influence on career adaptability. 【H5】

2.5.3 Moderating Effect of Internal-external Locus of Control

There are some research on internal and external control tendency, and the research results generally presented are as follows: Those with internal locus of control believed that fate is in their hands, while those with external locus of control believed that fate is controlled by external forces. Butterfield (1964) points out in his research that people with internal control tendency are more active and autonomous, and can concentrate on things they are interested in and think are important; while those who are inclined to external control are more passive, rely on guidance of others, and pay more attention to what others think is important. Brissett and Nowicki (1973) points out that people with internal locus of control are more active, active and independent, while those with external locus of control are more dependent, passive and resigned.

1. Research on the Influence of Internal-external Locus on Control on Career Adaptability

In the process of studying the literature, we can see that most research on locus of control are about correlation of job performance, organizational commitment, learning motivation, remuneration and academic field.

Spector (1982) points out in his study that people with internal locus of control have more confidence in their ability. They try to collect intelligence and information in a complex environment and actively seek solutions to problems. As a result, they tend to have better work performance and work achievement than external

controllers. The research results of Yu (2002) show that employees' self-directed learning is affected by the personality traits of internal and external locus of control. The more internal control tendency, the higher the performance of employees, and the better their career developed. Su (1998) finds that waiters with internal locus of control performed significantly better than those with external locus of control.

Zhang (2014) finds in his research that there is a significant influence between internal control personality and work performance. Dong (2011) finds that college students who tend to be more inclined to internal control are more willing to assume their own responsibilities and have a clear goal of self-development; students who tend to have internal-control traits are better able to cope with stress, so they do better in grades and career development than those who tend to have external-control traits (Wolk & Bloom, 1978). Lin and Li (2008) take 240 on-the-job students of master's degree in Taiwan institute of physical education and the in-service students of the university's advanced department as participants, in order to understand the relationships among personality traits, learning motivation and career. And it is found that different locus of control significantly influence their career.

When studying the relationship between internal and external control and adaptation, Hong (1975) finds that internal and external control significantly influences adaptation. The more the external controller, the more maladaptive the situation is, and people with external locus of control had more problems than those with internal locus of control. The adaptability of internal and external controllers to the environment is also different, especially in the case of setbacks, the internal controller tend to take a more constructive approach, while the external controller tend to take a more destructive approach (Wu, Pan, & Ding, 1980).

Wang (2006) finds in relevant studies that there is significant influence between internal and external control personality traits and work performance. The more internal control tendency of research and development personnel, the better work performance. The research results of Chen (2010) show that employee personality traits have a significant impact on job performance, and that personality traits tend to be internal locus of control have a significant impact on job performance. Su (1998) points out in his research that internal and external control orientation has a significant impact on work performance.

Pierce and Dunham (1987) discuss organizational commitment and personal development with new employees as participants. The results show that the organizational commitment of internal control is higher than that of external control, and the personal development is much better. Rubin (1993) believes that people who are inclined to internal control have better control and are not afraid of external pressure. Therefore, those who are inclined to internal control have less pressure than those who are inclined to external control, they are able to respond more effectively to what's happening and have higher career achievements. The research of Li, Li, and Zeng (2005) find that personality is an important factor to explain personal career adaptability, and personality has a significant impact on personal career adaptability.

In the personality theory of career tendency, Erikson (1956) focuses on the development of personality in the whole life process. He explained all aspects of personality through the point of turning point or crisis, thus showing the influence of personality traits in the process of life. Therefore, it can be concluded that internal-external locus of control of college students from Mainland China who went

to universities in Taiwan for exchange study have an impact on the development of their career adaptability.

Between 1980 and 1990, Super corrected his theory of life-career rainbow, and incorporate different roles of career development into one mode, thus create a new career development link model named arch way model. It mainly expounds elaborates the roles of personality traits and social factors influence on self career development through interaction. From this theory we can see that different locus of control may play positive or negative effects on career choice and development of individuals.

It can be inferred from the above literature and theory analysis that, for college students from Mainland China who went to universities in Taiwan for exchange study, their internal and external locus of controls have a significant impact on the development of their career adaptability. **【H6】**

2. Research on the Moderating Effect of Internal and External Locus of Control

As can be seen from the foregoing, internal controllers believe that success comes from their own ability and efforts, so they believe that individuals can influence the organization and environment. While external controllers believe that success is caused by luck, opportunity and fate or other external environmental factors and power, which are not under the control of individuals (Spector,1982). Combined with the study on learning motivation in the previous chapter, it can be inferred that people with internal control tendency tend to have better confidence in the upcoming events and hold a positive attitude towards future events, so they tend to have a good

motivation tendency. While people with external control, on the other hand, do the opposite.

Davis and Palladino (2000) study different types of internal and external locus of control personality and find that internal locus of control also performed better academically than external locus of control. Robbins (1993) points out that there are seven factors that can help predict individual behaviors in an organization, among which the internal and external locus of control and achievement motivation have a clear impact on work behavior in the related research of organizational behavior. Other scholars also have pointed out that those with internal locus of control have better academic achievements (Kitsantas, 2004).

Rezabek (1998) points out in his research that the tendency of internal and external control is the main factor that influences students' opportunities to participate in learning activities and learning behaviors. Among them, students with the tendency of internal locus of control are more willing to devote themselves to learning through their own efforts than those with the tendency of external locus of control and believe that they can achieve good academic achievements. Ghasemzadeh and Saadat (2011) find that college students with internal locus of control tend to have good learning motivation and relatively good academic achievements.

Meera, Steven, and Ronal (2009) take 308 college students as subjects to explore the relationship between the five personality traits' prediction of retention motivation and retention performance. It is found that college students' locus of control can predict their learning motivation and performance. Lin and Li (2008) take college students and postgraduate students as participants to study the relationships among their personality traits, learning motivation and career motivation. In the study,

they find that different locus of control influences their learning motivation significantly.

Furnham et al. (1993) infer from Rotter's social learning theory that internal and external control tendency of employees change with their learning and growth experience. Internal locus of control is an internal motivation, and people of this type believes that one's own efforts can bring about change and is more likely to participate in specific activities.

Combined with the above theories and research results, this study attempts to explore that the internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study influence their learning motivation to some extent. The internal controllers are conducive to the promotion of learning motivation, while the external controllers are just the opposite.

Although the internal-external locus of control is a stable personality trait, it is still changeable (Huang & Xue, 1998). Therefore, in many studies (Davis & Palladino, 2000; Huang, 2009; Judge, 2001; Xie et al., 2013; Zhang et al., 2008), it acts as a moderator variable and plays a moderating effect.

For example, Zhang (2016) researches on studying of junior high school students in Taiwan, and the results show that locus of control plays a moderating role in the relationship between the recognition of the 12-year compulsory education and academic stress for junior high school students. Judge (2001) finds in his research that employees with different locus of control that plays a role of interference have positive influence on job performance. In the research of Davis and Palladino (2000) on learners, they draw a conclusion that learners with internal locus of control tend to

have better academic performance than those with external locus of control. It shows the moderating effect of locus of control.

Heider (1958) proposes attribution theory of success and failure, which is to explore the reasons for personal success and failure in work performance and analyze how the results affect learning motivation. Heider (1958) is the first to propose the attribution theory. Heider divided the behavioral results into two categories: person factor and environment factor. Personal factors include personal power and effort or motivation, which are driven by an individual's effort or ability, and is also called an internal attribution. Environmental factors refer to task difficulty and luck, which are caused by external circumstances, also known as external attribution.

Weiner (1985) finds that people with different achievement motivations have different ways of thinking about success or failure. People who pursue success often attribute failure to effort, which makes individuals feel ashamed and look forward to working hard to succeed in the future, so they work much harder; Those who avoid failure attribute it to their ability, which makes individuals to evade responsibility for failure, and thus have lower expectations for success and easy to abandon their efforts. Huang (2002) believes that when failure is attributed to internal, stable and uncontrollable factors, such as lack of ability and sense of learning helplessness, individuals would become unmotivated.

Weiner's (1992) attribution theory is a theory of motivation and emotion, which holds that attribution can affect the expectation of success and various emotional reactions, and thus determine the behavior related to academic achievement. Therefore, this theory is of great significance in education. It can be seen that the

description of this theory is similar to the division of internal-external locus of control, which are both internal and external factors. Weiner's (1992) attribution theory reminds educators to help students build up correct attributions in order to stimulate students' unremitting learning attitude and motivation. This also inspired researchers to explore the moderating effect of internal-external locus of control based on this theory in the study of college students from Mainland China who went to universities in Taiwan for exchange study.

Based on the understanding of relevant literature and theory, a summary of the relevant literature and research about internal and external locus of control is shown as follows: those who tend to have internally locus of control tend to have better academic performance and career performance. People with internal locus of control tend to have better career development because they have more clear personal development goals, can control their own behavior more easily, and bear less pressure. And therefore, they tend to have better career control ability more confidence in career.

In addition, people with internal locus of control tend to be responsible for their own behaviors and have positive psychology, so they always pay more attention to personal development and career planning, and therefore show better career confidence and career control ability. Therefore, this study mainly discusses the moderating effect of locus of control of internal and external locus of control among the influences of learning motivation on career adaptability, so as to find out the combination of personality traits that can improve students' motivation and career adaptability.

In summary, this study attempts to infer the moderating effect of locus of control of college students from Mainland China who went to universities in Taiwan for exchange study between learning motivation and career adaptability. **【H7】**

2.6 Summary

This study is based on the above literature review and relevant theories. The purpose is to explore the influence of the learning motivation of Mainland Chinese college students to Taiwan for exchange study on their career adaptability by taking a future time perspective as mediator and internal-external locus of control as moderator in seeking. This study is carried on according to the scales mentioned in the literature discussion, including learning motivation scale, career a adaptability scale, future perspective scale and scale of internal-external locus of control. The scale of learning motivation includes three dimensions: interest in knowledge seeking, tour interest and self-development. The career adaptability scale includes five dimensions: career curiosity, career concern, career confidence, career control and career cooperation. The future time perspective scale includes three dimensions, namely, future goal, value and speed. The locus of control include two aspects: internal locus of control and external locus of control.

CHAPTER 3

METHODOLOGY

The purpose of this study is to explore the influence of the learning motivation of Mainland Chinese college students to Taiwan for exchange study on their career adaptability, by taking a future time perspective as mediator and internal-external locus of control as moderator in seeking. In order to achieve the above research objectives, the literature is firstly analyzed, the research framework is determined, and then the data are collected and analyzed.

This chapter is divided into 8 sections. The first section is research process; the second section is research framework; section three is about the research hypothesis; section four is the participants; section five is procedure of data collection; section six is about the research measurement; section seven is the description analysis of the formal questionnaire; section eight is CFA of formal questionnaire.

3.1 Research Process

The implementation steps of this study are divided into six steps: defining the research topic and scope, collecting and reading relevant materials, literature theory discussion, compiling research questionnaire, questionnaire recovery and statistical analysis of data, and completing the writing of the dissertation. The specific implementation process is as follows:

1. Defining Research Topic and Scope

The research topic is identified after reading relevant literature and discussing with the advisor. Through the comprehensive arrangement of the literature, the research framework, research steps and research methods are drafted. This study is carried out after being corrected by advisor.

2. Collecting and Reading Relevant Materials

After the collection and reading of relevant literature and materials, the research purpose and sampling are comprehensively sorted out, the research plan is drawn up which the advisor is requested to revise it.

3. Review of Literature

Through paper website, such as Pro Quest, Google Academic, Science Direct, Woley Inter Science, EBSCO, Blackwell, CNKI and Taiwan PhD Thesis Value System, to search for relevant paper research report and collect the required information. After reading, data are sorted out and discussed to form the research content and serve as the basis for further discussion and questionnaire.

4. Developing Questionnaire

After referring to the collected literature materials and the guidance of the advisor, the four scales of this study are obtained: learning motivation scale, locus of control scale, future time perspective scale and career adaptability scale. After many discussions with the advisor, and the adoption of experts' opinions, the scales are revised to make the pre-test questionnaires. After the questionnaires are confirmed, the convenience sampling method in non-random sampling is adopted and teachers from the international office of colleges and universities in Taiwan are invited to help distribute the paper pre-test questionnaires. After data collection, item analysis,

exploratory factor analysis and reliability analysis are carried out. Based on the analysis results, some items of the questionnaires are deleted and the formal questionnaires are obtained after correction. And then, formal paper questionnaires are issued again to collect and analyze the data.

5. Questionnaire Recovery and Statistical Analysis

After the questionnaires are collected, the invalid are removed first, and then coded. The data are corrected and confirmed to be correct after input. According to the research needs, IBM SPSS and AMOS is adopted for statistical analysis.

6. Completing the Writing of the Dissertation

Finally, according to the research objective, literature discussion and statistical analysis of questionnaires survey results, the materials are sorted out and the dissertation is completed.

3.2 Research Framework

Research framework is the structure of research questions and hypotheses, which is formed according to the research purpose, research motivation and literature discussion. On this basis, the research framework of this study is shown in Figure 3.1.

There are four research variables and four background variables in this study. Among them, learning motivation is independent variable, career adaptability is dependent variable, future time perspective is adopted as mediator and internal-external locus of control as moderator. Four background variables are adopted in this research: gender, grade, birth order and family socioeconomic level.

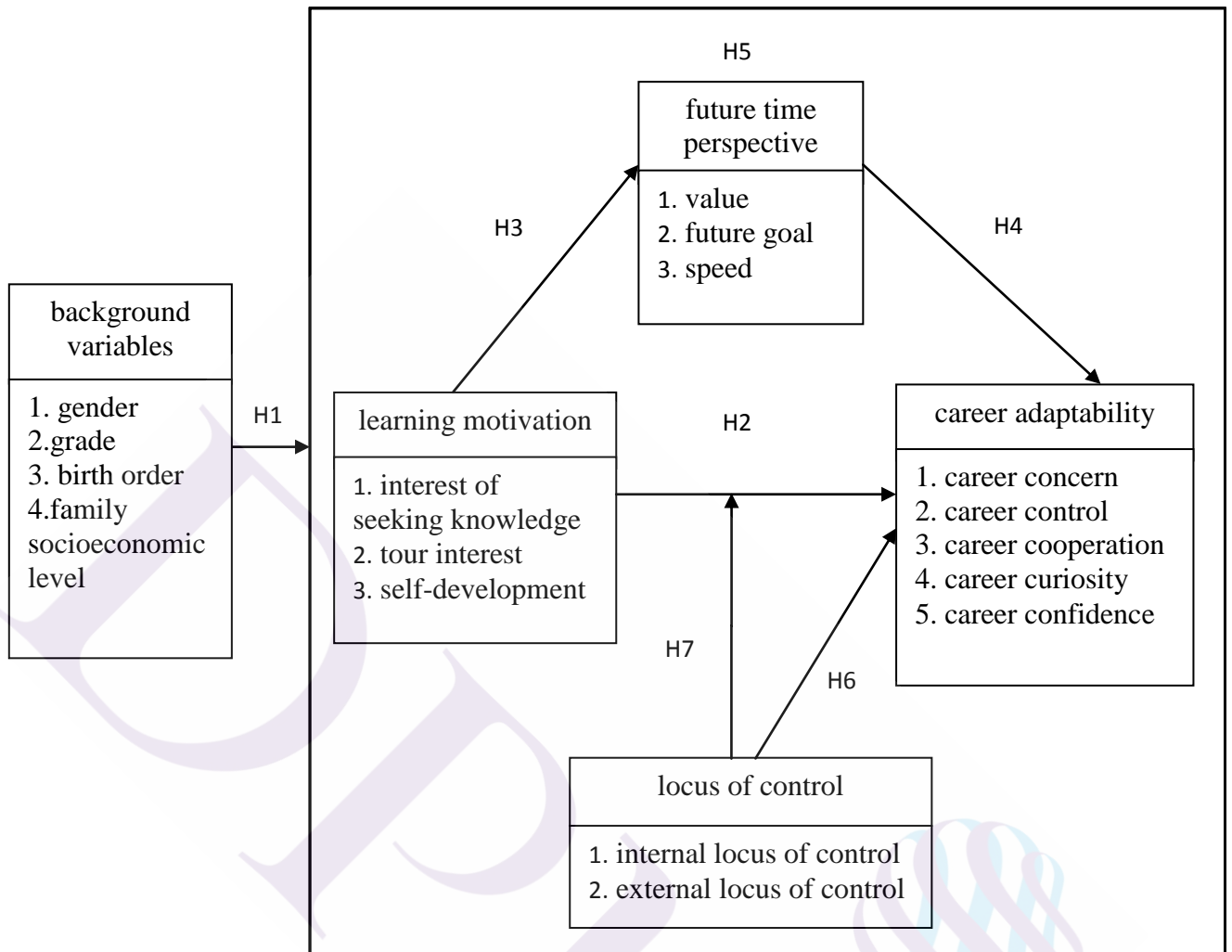


Figure 3.1 Research Framework

The above research framework was created based on Maslow's (1943) need satisfaction theory, McClelland's (1961) achievement motivation theory and Super's (1990) career development theory; as well as a large number of previous research results and conclusions (Alvos, Gregson & Ross, 1993; Davis & Palladino; 2000; Eccles & Wigfield, 2002; Husman & Lens, 1999; Michael, 2015; Spector, 1982; Super & Knasel, 1981).

This study discusses the differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college

students from Mainland China who went to Taiwan for exchange study with different background variables; the prediction of the learning motivation of college students from Mainland China who went to Taiwan for exchange study on their career adaptability; the prediction of future time perspective and internal-external locus of control of college students from Mainland China who went to Taiwan for exchange study on their career adaptability; and whether future time perspective plays a mediating role and internal-external locus of control plays a moderating role.

3.3 Research Hypothesis

According to the research problems and the above research framework, the following research hypotheses are proposed and verified one by one.

H1: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different background variables.

H1-1: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different genders.

H1-2: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different grades.

H1-3: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order.

H1-4: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different family socio-economic level.

H2: The learning motivation of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on their career adaptability.

H3: The learning motivation of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on their future time perspective.

H4: The future time perspective of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on their career adaptability.

H5: The future time perspective of college students from Mainland China who went to universities in Taiwan for exchange study plays a mediating effect between learning motivation and career adaptability.

H6: The internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study has a significant impact on their career adaptability.

H7: The internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study plays a moderating effect between learning motivation and career adaptability.

3.4 Participants

This study took Mainland Chinese exchange students in Taiwan's universities as participants (target population). In this study, 11 universities in northern, central and southern Taiwan are selected, and the convenience sampling method in non-random sampling is adopted to select exchange students from Mainland China of different grades as participants that cover students from freshman to senior.

Due to the fact that college students from Mainland China who went to Taiwan for exchange study are generally rank in sophomores and juniors, the copies of questionnaires are correspondingly much more. But in terms of proportion, all grades are similar.

3.5 Procedure of Data Collection

Paper questionnaire is employed in this study. The pre-test time is in October 2018. With guidance of my advisor, after finding the appropriate scale for this study and considering the examination and vacation time and stress of the tested group, we hereby invited experienced teachers from international office in Taiwan colleges and universities to help organize and issue the pre-test questionnaires, and assist in withdrawing them as well.

In terms of the number of test subjects, according to the principle that Wu (2011) advocated the number of pre-test subjects, the "subscale" of the most questions in the questionnaire is expanded to 3-5 times. In the pre-test stage, 260 copies were issued, 260 copies were recovered, and the recovery rate was 100%. After removing 30 invalid copies with incomplete and non-compliance ones, 230 valid ones were finally obtained with the proportion of effective questionnaires of 88.462%. As shown in Table 3.1.

Table 3.1 Basic Data of Effective Participant of Pre-test Questionnaire

Grade	Total Number	Valid	% of Effective
Grade1	30	25	83.333%
Grade 2	45	40	88.889%
Grade 3	165	148	89.697%
Grade 4	20	17	85.000%
Summation	260	230	88.462%

Source: researchers collate.

3.6 Research Measurement

Questionnaire survey is employed in this study, and the aim is to investigate the relationships among learning motivation, future view perspective, internal- external locus of control and career adaptability of college students from Mainland China who went to Taiwan for exchange study.

The scales, as research measurements, including learning motivation scale, career adaptability scale, future time perspective scale and internal-external locus of control scale, are revised by referring to relevant scales adopted by the former

researchers. The source, measurement method, expert validity, participant analysis of pre-test questionnaires and reliability and validity measurement of each scale are explained in this chapter.

3.6.1 Establish Expert Validity

After the preliminary draft of the questionnaires were prepared, experts were invited to review it, so as to improve the content validity. After consulting expert opinions and discussing with advisor, the pre-test questionnaires were revised to form formal ones.

The principle of topic modification is: if the proportion of experts who suggest deletion or modification of the same topic exceeds 50%, deletion or modification is then made; if the proportion of experts suggesting deletion or modification of the same topic is less than 50%, it can be retained or modified after discussion with the advisor. Information on expert reviewers is shown in Table 3.2.

Table 3.2 Information on Expert Reviewers (sort by first name alphabetically)

Name	Current Status	Relevant Experience
Tu Chia-Ching	Doctoral Advisor	15 years of supervisory experience in university.
Huang Yi-Jian	Doctoral Advisor	30 years experience as teacher and 22 years experience of educational administration.
Pan Fu-Te	Doctoral Advisor	20 years experience as high school principal.
Zhang Ren-Cheng	Doctoral Advisor	1 year experience as middle school teacher and 2 years experience as university teacher.

Source: researchers collate.

3.6.2 Analysis Method

After the pre-test questionnaires were collected, the following statistical methods were adopted for analysis.

1. Item Analysis

The item analysis aims at screening the items in the questionnaires. It assumes that each question has the same value, and the quality of the items in the questionnaires are determined according to whether it has the difference. Item analysis is the most basic task of scale development, and its main purpose is to evaluate the applicability of pre-test items, i.e. to test the reliability of individual items in a scale (Qiu, 2000).

Wu's item analysis criteria (2009) are applied to the pre-test data in this study, and it contains 3 categories: critical ratio, detection correlations and homogeneity test. There are six criteria for judging: critical ratio (CR-value), corrected item-total correlation, corrected item-deleted correlation, Cronbach's alpha if item deleted (α -value), communalities and factor loading. If the total number less than standard up to more than 3 in one item, then the item is removed.

(1) Critical Ratio

According to the total score, the participants are divided into high group (top 27% of question score) and low group (end 27% of question score), and then makes independent participant t-test with the comparison average to test whether there is a significant difference (Wu, 2009).

It is good when the critical ratio is above 3.0 and the p -value reaches significant level ($p < 0.05$) (Wu, 2009), which is taken as the criteria for selecting items.

(2) Detection Correlations

In this study, correlation test includes two parts: corrected item-total correlation and corrected item-deleted correlation.

Correlation test is carried out with SPSS. It is good when the correlation coefficient between the item and the total score is above 0.4, and the p -value reached a significant level ($p < 0.05$). The corrected and total score correlation method is a Pearson product moment correlation coefficient for calculating each item and the total score of the sub-level (excluding the score of the item).

(3) Homogeneity Test

In this study, homogeneity test contains 3 items: Cronbach's alpha if item deleted (α -value), communalities and factor loading.

Cronbach alpha coefficient is to verify the internal consistency of the questionnaire items to evaluate the reliability and stability of the whole scale. The α -value after item deletion refers to the Cronbach coefficient of the whole scale after item deletion. According to the claims of many scholars (Cooper, 1998; DeVellis, 2003; Hair et al., 2006; Henson, 2001; Nunnally, 1978), Cronbach's alpha coefficient value above 0.70 is reliable indicates good internal consistency of the scale. According to Wu's (1985) suggestion, the reference range for reliability is as follows: a Cronbach alpha coefficient above 0.9 represents a high reliability value; between 0.9 and 0.7 represents very reliable; between 0.5 and 0.7 indicates confidence; between 0.4 and 0.5 means credible; between 0.3 and 0.4 is reluctant and credible; below 0.3 represents the bottom of the reliability and can not be taken.

The purpose of factor analysis for homogeneity test is to extract the common basic factors from the items, and the main purpose is to reduce the main

factors according to the degree of correlation of multiple variables, so as to simplify the complexity between the variables, and to construct the maximum possible interpretation of the original variables.

Therefore, in the part of factor analysis, the questions are deleted based on the commonality and factor loading, so as to have the maximum homogeneity among common factors. Using the principal component analysis method, the entire scale is extracted under the largest component, the items whose commonality is less than 0.2, and the item whose factor load is less than 0.45 are recommended to be deleted (Wu, 2008).

2. Exploratory Factor Analysis (EFA)

Exploratory factor analysis (EFA) is adopted for validating validity. KMO and Bartlett spherical tests of each item of dimensions are verified before factor analysis. Wu (2009) points out that the KMO index is between 0 and 1. When the KMO value is less than 0.5, it means that the variables of this item are not suitable for factor analysis. If the KMO index value presented by all item variables is closer to 1, it means that the relationship between item variables is better, which is suitable for factor analysis. Bartlett's significant correlation of 0.000 indicates that there is a correlation between each topic, which is suitable for factor analysis.

3. Reliability Analysis

Cronbach's α -coefficient is to estimate internal consistency of the questionnaire. The higher the α -coefficient coefficient is, the higher the consistency of each dimension presents. According to the claims of many scholars (Cooper, 1998; DeVellis, 2003; Hair et al., 2006; Henson, 2001; Nunnally, 1978), Cronbach's alpha coefficient value above 0.70 is reliable, indicating good internal consistency of the

scale. While Wu (1985) suggests that the reference range for reliability is as follows: a Cronbach alpha coefficient above 0.9 represents a high reliability value; between 0.9 and 0.7 represents very reliable; between 0.5 and 0.7 indicates confidence; between 0.4 and 0.5 means credible; between 0.3 and 0.4 is reluctant and credible; below 0.3 represents the bottom of the reliability and can not be taken.

3.6.3 Learning Motivation Scale

This scale is prepared by referring to the motivation theories of Maslow (1943), McClelland (1961) and Vroom (1964). There are three dimensions: interest of seeking knowledge, tour interest and self-development. The dimensions of learning motivation scale are as follows:

Interest of Seeking Knowledge: Learners mainly participate in learning based on their desire and interest for knowledge, so as to satisfy their thirst for knowledge, acquire new knowledge, enrich themselves and avoid falling behind.

Tour Interest: In order to travel to Taiwan, learners participate in education exchange program.

Self-development: Learners participate in learning in order to pursue personal development and self-realization.

There are 13 questions in this scale. Participants are invited to check the most appropriate blank option according to their own reality and their degree of agreement with the description of the topic. This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree. The higher the score, the greater the learning motivation of the subjects in this direction, and the

higher the total score, the stronger the learning motivation. The specific dimensions and items of the scale are shown in Table 3.3.

Table 3.3 Dimensions and Items of Learning Motivation Scale

Dimension	Item Number	Item Code	Description of Items in Pre-test Questionnaire
Interest of Seeking Knowledge	1	LM1	I came to Taiwan as an exchange student because I was interested in Taiwanese courses.
	2	LM2	I came to Taiwan as an exchange student to experience the teaching style of Taiwanese teachers.
	3	LM3	I go to Taiwan for exchange study to increase knowledge and enrich myself.
	4	LM4	I came to Taiwan to study as an exchange student to learn more about the culture of Taiwan.
	5	LM5	I go to Taiwan for exchange study mainly because I want to visit Taiwan.
Tour Interest	6	LM6	During my exchange study in Taiwan, I hope to have the opportunity to travel around the island.
	7	LM7	I would like to buy all kinds of Taiwan products during my exchange study in Taiwan.
	8	LM8	I would like to experience Taiwanese food during my exchange study in Taiwan.
Self-development	9	LM9	My desire to visit Taiwan is stronger than my desire to study.
	10	LM10	I want to make friends and expand my social circle in Taiwan.
	11	LM11	I go to Taiwan for study is a personal challenge.
	12	LM12	I came to Taiwan for study as part of my self-study, and a part of my career development as well.

Source: researchers collate.

Note: LM--Learning Motivation.

1. Establishing Expert Validity

After the expert review, the questionnaire was collected, the researchers collected the revised opinions provided by the experts into a table. According to the statistical table, at least 60% of the experts' opinions are on the "appropriate" and

"revised appropriate" items. Only divide the 12th item of self-development into two questions; other items in dimensions of interest in knowledge seeking, interest in tourism and self-development were discussed with the advisor in accordance with the expert opinions, and then modified for pre-test. The results are shown in Table 3.4.

Table 3.4 Expert Review Opinions on Learning Motivation Scale

Dimension	Original Number	Number in Revised Pre-test Questionnaire	Code	Appropriate		Revised Appropriate		Result	
				N	%	N	%	Reserve	Delete
Interest of Seeking Knowledge	1	1	LM1	3	75	1	25	√	
	2	2	LM2	3	75	1	25	√	
	3	3	LM3	3	75	1	25	√	
	4	4	LM4	3	75	1	25	√	
	5	5	LM5	2	50	2	50	√	
Tour Interest	6	6	LM6	2	50	2	50	√	
	7	7	LM7	3	75	1	25	√	
	8	8	LM8	3	75	1	25	√	
	9	9	LM9	3	75	1	25	√	
Self-development	10	10	LM10	2	50	2	50	√	
	11	11	LM11	3	75	1	25	√	
	12	12	LM12	0	0	4	100	√	
		13	LM13						

Source: researchers collate.

Note: LM--Learning Motivation.

2. Item Analysis

According to the foregoing criteria, the items in the learning motivation scale in this study were tested and compared. Delete LM5 and LM9 in the original

scale according to the principle of deleting more than three items that are not up to standard. The results are shown in Table 3.5.

Table 3.5 Item Analysis of Learning Motivation Scale

Item	Critical Ratio	Detection Correlations		Homogeneity Test			Under Standard	Remarks
	CR value	Corrected Item-total Correlation	Corrected Item-deleted Correlation	Cronbach's α if Item Deleted (α -value)	Communalities	Factor Loading		
Criterion	≥ 3.0	≥ 0.40	≥ 0.40	< 0.948	≥ 0.20	≥ 0.45		
LM1	-10.176***	0.615**	0.495	0.716	0.664	0.675	0	reserve
LM2	-10.951***	0.626**	0.515	0.714	0.687	0.710	0	reserve
LM3	-11.187***	0.595**	0.485	0.718	0.679	0.671	0	reserve
LM4	-9.153***	0.573**	0.453	0.721	0.556	0.579	0	reserve
LM5	-2.789**	0.195**	0.076	0.757	0.062	0.085	5	delete
LM6	-6.562***	0.427**	0.270	0.744	0.541	0.298	2	reserve
LM7	-8.338***	0.463**	0.324	0.736	0.608	0.347	2	reserve
LM8	-8.002***	0.499**	0.365	0.732	0.617	0.381	2	reserve
LM9	-1.765	0.126	0.008	0.762	0.141	0.046	5	delete
LM10	-6.121***	0.445**	0.291	0.741	0.269	0.383	2	reserve
LM11	-9.415***	0.594**	0.468	0.719	0.646	0.658	0	reserve
LM12	-9.698***	0.582**	0.476	0.720	0.761	0.643	0	reserve
LM13	-10.390***	0.619**	0.509	0.715	0.643	0.669	0	reserve

Source: researchers collate.

Notes: N=230; ***: $p < 0.001$; LM--Learning Motivation.

3. Exploratory Factor Analysis (EFA)

As shown in Table 3.6, the KMO value of this scale is 0.770, and the approximate chi-square distribution value from Bartlett spherical test is 757.964 (the

degree of freedom is 55), which also reaches the significant standard ($p < 0.001$). This means that the overall sampling of the scale is appropriate for factor analysis.

Table 3.6 KMO and Bartlett Test Result of Learning Motivation Scale

	Kaiser-Meyer-Olkin Value	0.770
Bartlett's test	Approximate Chi-square Values	757.964
	Degrees of Freedom (DOF)	55
	Significance	0.000

Source: researchers collate.

In this scale, the principal component analysis method is adopted to extract common factors, and the factors with the characteristic value greater than 1.0 are selected, and then the maximum variation method is adopted for the factor analysis.

After analysis, items with factor load less than 0.40 are deleted, and LM10 in the original scale is deleted. According to the results of statistical analysis, the factors of the items are adjusted to form certain items of the fractal dimension.

Among the three factors obtained, the first factor is named interest of seeking knowledge, with an eigenvalue of 3.433, an explanatory variation of 34.327%, and a total of four items; the second factor is named self-development, with an eigenvalue of 1.795, an explanatory variation of 17.951%, and a total of 3 items; the third factor is named tourism interest, with a eigenvalue of 1.397, an explanatory variation of 13.973%, and a total of three items.

There are totally ten items in this scale, and the total explanatory variance of the three factors is 66.250%. As shown in Table 3.7.

Table 3.7 EFA of Learning Motivation Scale Pre-test (KMO=0.765)

Number of Pretest Questionnaire	Number of Formal Questionnaire	Code	Factor		
			1 Interest of Seeking Knowledge	2 Self-development	3 Tourism Interest
1	1	LM1	0.795		
2	2	LM2	0.817		
3	3	LM3	0.772		
4	4	LM4	0.706		
11	5	LM11		0.783	
12	6	LM12		0.877	
13	7	LM13		0.789	
6	8	LM6			0.725
7	9	LM7			0.813
8	10	LM8			0.791
Eigenvalue			3.433	1.795	1.397
Percentage of Total Variation			34.327%	17.951%	13.973%
Percentage of Variation			34.327%	52.278%	66.250%

Source: researchers collate.

Note: LM--Learning Motivation.

4. Reliability Analysis

The total reliability of the learning motivation scale of this study is 0.775, and the reliability of each facet is between 0.695 and 0.801, indicating that the reliability of the scale is good and the measurement results are reliable. The reliability coefficients of the scale are shown in Table 3.8.

Table 3.8 Reliability Analysis of Learning Motivation Scale

Factor	Item Quantity	Cronbach's α value
Interest of Seeking Knowledge	4	0.801
Self-development	3	0.695
Tourism Interest	3	0.795
Total Reliability	0.775	

Source: researchers collate.

5. Preparation of Formal Questionnaire

According to the test results of the reliability and validity in the pre-test questionnaire, the scale of learning motivation for this research is prepared, with a total of 10 items. The formal questionnaire is shown in appendix II.

3.6.4 Career Adaptability Scale

The researcher chooses the career adaptability scale for Chinese compiled by Tian (2010) as the measuring method in this study. There are altogether five subscales of career curiosity, career concern, career confidence, career control and career cooperation. The description of the dimensions for the preparation of the career adaptability scale is as follows:

Career concern refers to an individual's concern about the current and future study, life and work development, preparation for the future, and awareness of the new environment or career choice he/she faces.

Career control means that an individual has a sense of control over the current and future study, life and work development, and believes that he/she can make decisions and act responsibly.

Career curiosity refers to an individual's curious and open attitude towards the development of his/her study, life and work in the present and future, and his/her willingness to explore and try.

Career confidence refers to an individual's confidence in his/her current and future study, life and work development. An individual can actively face various challenges and overcome obstacles and difficulties.

Career cooperation refers to the cooperation between individuals and various types of people in their current and future study, life and work.

There are 11 questions in each subscale to form a total of 55 items. Student participants were invited to check the most appropriate blank option according to their own reality and their degree of agreement with the description of the topic. This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree. The higher the score, the greater the career adaptability of the students in this direction, and the higher the total score, the stronger the learning motivation. The specific dimensions and items of the scale are shown in Table 3.9.

Table 3.9 Dimensions and Items of Career Adaptability Scale

Dimension	Item Number	Item Code	Description of Item in Pre-test Questionnaire
Career Concern	1	CA1	I will plan the important things in the future in advance.
	2	CA2	I think about my future.
	3	CA3	I know that the choices I make today will affect my future.
	4	CA4	I hope my future is good.
	5	CA5	I will prepare for the future.
	6	CA6	I know what career project I will choose.

Table 3.9 (continued)

Dimension	Item Number	Item Code	Description of Item in Pre-test Questionnaire	
Career Control	7	CA7	I will plan how to achieve my future goals.	
	8	CA8	I can keep optimistic about my future career.	
	9	CA9	I will think about the consequences of my decision in the future.	
	10	CA10	I look forward to making the necessary changes in the future.	
	11	CA11	I will care about my future career.	
	12	CA12	I make my own decisions about my future career.	
	13	CA13	In order to develop better, I will think about it before I act.	
	14	CA14	I am responsible for my actions in the future.	
	15	CA15	In order to have a better future, I can stick to it and be patient.	
	16	CA16	I can maintain my faith in my future choices.	
	17	CA17	I can depend on myself in my future career.	
	18	CA18	I know where I want to go in the future.	
	19	CA19	I can learn how to make a better decision for the future.	
	20	CA20	For the future development, I will do something good to myself.	
	21	CA21	In order to have a bright future, I will do something good to my family.	
	22	CA22	I am responsible for my future.	
	23	CA23	In order to plan my future, I will explore my surroundings.	
	24	CA24	I will seek opportunities for self-growth.	
	25	CA25	I will imagine my future.	
	26	CA26	For better development, I will explore different options before making a decision.	
	Career Curiosity	27	CA27	I will observe different ways of doing things to help myself face the future.
		28	CA28	I will delve into questions about my future career.
		29	CA29	I will collect relevant information about the future choices I make.
		30	CA30	I'm curious about new opportunities.
		31	CA31	For better development, I will consider possible alternatives.
32		CA32	After forming the plan, I will find someone to give me advice or feedback.	
33		CA33	For better development, I will do self-reflection.	

Table 3.9 (continued)

Dimension	Item Number	Item Code	Description of Item in Pre-test Questionnaire
Career Confidence	34	CA34	I can finish the task effectively and get ready for the next step.
	35	CA35	I can learn from my mistakes so that I can develop in the future.
	36	CA36	I can be trusted because I do what I say.
	37	CA37	I take pride in doing a good job.
	38	CA38	I have confidence in myself.
	39	CA39	I will do things carefully in order to get good results.
	40	CA40	I will learn new skills to prepare for my future career.
	41	CA41	I can always motivate myself.
	42	CA42	In the future, I will try to overcome obstacles.
	43	CA43	In the future, I will try to solve problems.
	44	CA44	In order to accumulate various experiences, I will try to accept challenges.
	45	CA45	I became less self-centered.
	46	CA46	In order to get along well with others, I am very friendly.
	47	CA47	I get along well with any kind of people.
	48	CA48	In the future, I can cooperate with others in the team plan.
Career Cooperation	49	CA49	I can play my part well in the team.
	50	CA50	I can compromise with others for a better future.
	51	CA51	In the future, I can learn to be a good listener.
	52	CA52	I can make a contribution to the community.
	53	CA53	I can keep pace with the team for better development.
	54	CA54	In the future development, I can share with others.
	55	CA55	In my career development, I will hide my true feelings for the benefit of the team.

Source: researchers collate.

Note: CA--Career Adaptability.

1. Establishing Expert Validity

After the expert review, the questionnaire was collected, the researcher collected the revised opinions provided by the experts into a table. According to the statistical table, at least 60% of the experts' opinions are on the "appropriate" and "revised appropriate" items. Other items of in the 5 dimensions are discussed with the

advisor in accordance with the expert opinions, and then modified for pre-test. The results of the review are shown in Table 3.10.

Table 3.10 Expert Review Opinions on Career Adaptability Scale

Dimensi on	Original Num ber	Number in Revised Pre-test Question naire	Code	Appropriate		Revised Appropriate		Result	
				N	%	N	%	Reserve	Delete
career concern	1	1	CA1	4	100	0	0	√	
	2	2	CA2	4	100	0	0	√	
	3	3	CA3	4	100	0	0	√	
	4	4	CA4	4	100	0	0	√	
	5	5	CA5	4	100	0	0	√	
	6	6	CA6	4	100	0	0	√	
	7	7	CA7	4	100	0	0	√	
	8	8	CA8	2	50	2	50	√	
	9	9	CA9	4	100	0	0	√	
	10	10	CA10	4	100	0	0	√	
	11	11	CA11	4	100	0	0	√	
career control	12	12	CA12	3	75	1	25	√	
	13	13	CA13	3	75	1	25	√	
	14	14	CA14	3	75	1	25	√	
	15	15	CA15	3	75	1	25	√	
	16	16	CA16	3	75	1	25	√	
	17	17	CA17	3	75	1	25	√	
	18	18	CA18	4	100	0	0	√	
	19	19	CA19	3	75	1	25	√	
	20	20	CA20	3	75	1	25	√	
	21	21	CA21	3	75	1	25	√	
	22	22	CA22	4	100	0	0	√	
	23	23	CA23	3	75	1	25	√	
career curiosity	24	24	CA24	4	100	0	0	√	
	25	25	CA25	4	100	0	0	√	
	26	26	CA26	3	75	1	25	√	
	27	27	CA27	3	75	1	25	√	
	28	28	CA28	3	75	1	25	√	
	29	29	CA29	3	75	1	25	√	
	30	30	CA30	3	75	1	25	√	
	31	31	CA31	3	75	1	25	√	
	32	32	CA32	3	75	1	25	√	
	33	33	CA33	3	75	1	25	√	

Table 3.10 (continued)

Dimensi on	Original Num ber	Number in Revised Pre-test Question naire	Code	Appropriate		Revised Appropriate		Result	
				N	%	N	%	Reserve	Delete
career confiden ce	34	34	CA34	3	75	1	25	√	
	35	35	CA35	3	75	1	25	√	
	36	36	CA36	3	75	1	25	√	
	37	37	CA37	3	75	1	25	√	
	38	38	CA38	3	75	1	25	√	
	39	39	CA39	3	75	1	25	√	
	40	40	CA40	3	75	1	25	√	
	41	41	CA41	3	75	1	25	√	
	42	42	CA42	3	75	1	25	√	
	43	43	CA43	3	75	1	25	√	
	44	44	CA44	3	75	1	25	√	

Source: researchers collate.

Note: CA--Career Adaptability.

2. Item Analysis

According to the foregoing criteria, the items in the learning motivation scale in this study are tested and compared. Delete the items of CA1, CA6, CA7, CA9, CA12, CA13, CA17, CA18, CA23, CA27, CA36, CA37, CA39, CA42, CA47, CA50, CA55 in the original scale according to the principle of deleting more than three items that are not up to standard. The results are shown in Table 3.11.

Table 3.11 Item Analysis of Career Adaptability Scale

Item	Critical Ratio	Detection Correlations		Homogeneity Test			Under Standard	Remarks
	CR-value	Corrected Item-total Correlation	Corrected Item-deleted Correlation	Cronbach's Alpha if Item Deleted (α -value)	Communalities	Factor Loading		
Criterion	≥ 3.0	≥ 0.40	≥ 0.40	< 0.948	≥ 0.20	≥ 0.45		
CA1	-3.882***	0.299**	0.261	0.874	0.358	0.309	3	delete
CA2	-6.974***	0.518***	0.487	0.871	0.585	0.548	0	reserve
CA3	-7.176***	0.480**	0.446	0.872	0.459	0.517	0	reserve
CA4	-7.781***	0.455**	0.422	0.872	0.539	0.486	0	reserve
CA5	-6.085***	0.442**	0.410	0.872	0.329	0.484	0	reserve
CA6	-3.654***	0.226**	0.184	0.875	0.245	0.204	3	delete
CA7	-5.106***	0.296**	0.259	0.874	0.159	0.291	3	delete
CA8	-7.864***	0.508**	0.476	0.872	0.334	0.516	0	reserve
CA9	-5.656***	0.367**	0.333	0.873	0.304	0.378	3	delete
CA10	-5.972***	0.410**	0.379	0.873	0.311	0.443	1	reserve
CA11	-8.028***	0.468**	0.437	0.872	0.414	0.507	0	reserve
CA12	-3.451**	0.269**	0.233	0.874	0.130	0.276	4	delete
CA13	-4.019***	0.304**	0.269	0.874	0.201	0.308	3	delete
CA14	-5.506***	0.433**	0.400	0.873	0.302	0.451	0	reserve
CA15	-7.678***	0.521**	0.490	0.871	0.352	0.539	0	reserve
CA16	-5.934***	0.433**	0.398	0.872	0.417	0.450	1	reserve
CA17	-5.058***	0.370**	0.336	0.873	0.242	0.374	3	delete
CA18	-5.526***	0.372**	0.333	0.873	0.238	0.371	3	delete
CA19	-5.615***	0.436**	0.404	0.873	0.321	0.448	1	reserve
CA20	-8.074***	0.530**	0.502	0.871	0.386	0.554	0	reserve
CA21	-6.809***	0.472**	0.440	0.872	0.413	0.504	0	reserve
CA22	-7.225***	0.506**	0.475	0.872	0.362	0.521	0	reserve
CA23	-5.372***	0.395**	0.361	0.873	0.224	0.413	3	delete
CA24	-8.297***	0.491**	0.463	0.872	0.290	0.498	0	reserve

Table 3.11 (continued)

Item	Critical Ratio	Detection Correlations		Homogeneity Test			Under Standard	Remarks
	CR-value	Corrected Item-total Correlation	Corrected Item-deleted Correlation	Cronbach's Alpha if Item Deleted (α -value)	Communalities	Factor Loading		
Criterion	≥ 3.0	≥ 0.40	≥ 0.40	< 0.948	≥ 0.20	≥ 0.45		
CA25	-7.121***	0.488**	0.455	0.872	0.302	0.510	0	reserve
CA26	-7.345***	0.455**	0.422	0.872	0.252	0.476	0	reserve
CA27	-2.400*	0.253**	0.091	0.896	0.019	0.105	5	delete
CA28	-7.846***	0.508**	0.473	0.871	0.402	0.522	0	reserve
CA29	-8.365***	0.500**	0.469	0.872	0.341	0.509	0	reserve
CA30	-7.483***	0.489**	0.458	0.872	0.384	0.516	0	reserve
CA31	-7.072***	0.443**	0.409	0.872	0.365	0.459	0	reserve
CA32	-6.418***	0.420**	0.385	0.873	0.233	0.417	2	reserve
CA33	-8.488***	0.504**	0.472	0.872	0.536	0.518	0	reserve
CA34	-6.162***	0.421**	0.384	0.873	0.354	0.408	1	reserve
CA35	-7.666***	0.479**	0.445	0.872	0.486	0.480	0	reserve
CA36	-4.499***	0.315**	0.276	0.874	0.382	0.311	3	delete
CA37	-5.685***	0.382**	0.346	0.873	0.387	0.396	3	delete
CA38	-5.803***	0.411**	0.376	0.873	0.316	0.408	2	reserve
CA39	-2.233*	0.330**	0.174	0.893	0.171	0.198	5	delete
CA40	-6.173***	0.454**	0.423	0.872	0.325	0.457	0	reserve
CA41	-4.354***	0.342**	0.304	0.874	0.305	0.343	2	reserve
CA42	-5.565***	0.420**	0.387	0.873	0.196	0.426	3	delete
CA43	-7.564***	0.510**	0.479	0.872	0.326	0.519	0	reserve
CA44	-6.832***	0.457**	0.423	0.872	0.464	0.478	0	reserve
CA45	-5.434***	0.410**	0.373	0.873	0.295	0.409	2	reserve
CA46	-7.023***	0.450**	0.417	0.872	0.396	0.460	0	reserve
CA47	-2.429*	0.190**	0.148	0.875	0.304	0.159	3	delete
CA48	-7.142***	0.461**	0.430	0.872	0.283	0.467	0	reserve

Table 3.11 (continued)

Item	Critical Ratio	Detection Correlations		Homogeneity Test			Under Standard	Remarks
	CR-value	Corrected Item-total Correlation	Corrected Item-deleted Correlation	Cronbach's Alpha if Item Deleted (α -value)	Communalities	Factor Loading		
Criterion	≥ 3.0	≥ 0.40	≥ 0.40	< 0.948	≥ 0.20	≥ 0.45		
CA49	-8.472***	0.500**	0.469	0.872	0.400	0.507	0	reserve
CA50	-4.655***	0.338**	0.302	0.874	0.468	0.326	3	delete
CA51	-6.869***	0.444**	0.412	0.872	0.331	0.464	0	reserve
CA52	-5.689***	0.402**	0.367	0.873	0.376	0.400	2	reserve
CA53	-6.783***	0.462**	0.432	0.872	0.500	0.476	0	reserve
CA54	-9.718***	0.553**	0.527	0.871	0.447	0.583	0	reserve
CA55	-3.635***	0.198**	0.156	0.875	0.338	0.162	3	delete

Source: researchers collate.

Notes: N=230; ***: $p < 0.001$; CA--Career Adaptability.

3. Exploratory Factor Analysis (EFA)

As shown in Table 3.12, the KMO value of this scale is 0.886, and the approximate chi-square distribution value from Bartlett spherical test is 978.724 (the degree of freedom is 66), which also reaches the significant standard ($p < 0.001$).

Table 3.12 KMO and Bartlett Test Result of Career Adaptability Scale

Kaiser-Meyer-Olkin Value		0.829
Approximate Chi-square Values		3818.981
Bartlett's test	Degrees of Freedom (DOF)	1485
Significance		0.000

Source: researchers collate.

And the EFA of career adaptability scale is shown in Table 3.13.

Table 3.13 EFA of Career Adaptability Scale Pre-test (KMO=0.852)

Number of Pre-test Questionnaire	Number of Formal Questionnaire	Code	Factor				
			1 Career Concern	2 Career Control	3 Career Cooperation	4 Career Curiosity	5 Career Confidence
2	1	CA2	0.721				
3	2	CA3	0.707				
4	3	CA4	0.659				
5	4	CA5	0.580				
11	5	CA11	0.548				
14	6	CA14		0.553			
15	7	CA15		0.663			
19	8	CA19		0.566			
28	9	CA28		0.426			
34	10	CA34		0.588			
38	11	CA38		0.572			
49	12	CA49			0.500		
51	13	CA51			0.593		
52	14	CA52			0.682		
53	15	CA53			0.784		
54	16	CA54			0.589		
8	17	CA17				0.600	
20	18	CA18				0.427	
22	19	CA19				0.494	
24	20	CA20				0.515	
32	21	CA21				0.622	
45	22	CA22				0.473	
33	23	CA33					0.748
35	24	CA35					0.635
43	25	CA43					0.445
46	26	CA46					0.628
Eigenvalue			5.337	1.685	1.475	1.188	1.081
Percentage of Total Variation			26.687%	8.427%	7.374%	5.939%	5.405%
Percentage of Variation			26.687%	35.115%	42.489%	48.427%	53.833%

Source: researchers collate.

Note: CA--Career Adaptability.

In this scale, the principal component analysis method is adopted to extract common factors, and the factors with the characteristic value greater than 1.0 are selected, and then the maximum variation method is adopted for the factor analysis. After analysis, items with factor load less than 0.40 are deleted. At the same time, in the process of factor analysis, delete individual items that are highly loaded with several factors at the same time, and delete the items of CA10, CA16, CA21, CA25, CA26, CA29, CA30, CA31, CA40, CA41, CA44, CA48 in the original scale. The rest items are reserved. After item deleting, a total of five factors are obtained, and their total explanatory variation is 53.833%.

As can be seen that among them, the first factor is named career concern, with an eigenvalue of 5.337, an explanatory variation of 26.687%, and a total of 5 items; the second factor is named career control, with an eigenvalue of 1.685, an explanatory variation of 8.427%, and a total of 6 items; the third factor is named career cooperation, with an eigenvalue of 1.475, an explanatory variation of 7.374%, and a total of 5 items; the fourth factor is named career curiosity, with an eigenvalue of 1.188, an explanatory variation of 5.939%, and a total of 6 items; the fifth factor is named career confidence, with an eigenvalue of 1.081, an explanatory variation of 5.405%, and a total of 4 items. There are totally 26 items in this scale, and the total explanatory variance of the three factors is 53.833%.

4. Reliability Analysis

The total reliability of the learning motivation scale in this study is 0.879, and the reliability coefficient of each factor is between 0.660 to 0.757, indicating good reliability of the scale, and the measurement results are reliable. The reliability coefficient of the scale is shown in Table 3.14.

Table 3.14 Reliability Analysis of Career Adaptability Scale

Factor	Item Quantity	Cronbach's α value
Career Concern	5	0.757
Career Control	6	0.686
Career Cooperation	5	0.738
Career Curiosity	6	0.686
Career Confidence	4	0.660
Total Reliability		0.879

Source: researchers collate.

5. Preparation of Formal Questionnaire

According to the test results of the reliability and validity in the pre-test questionnaire, the scale of career adaptability scale for this research is prepared, with a total of 26 items. The formal questionnaire is shown in appendix II.

3.6.5 Future Time Perspective Scale

The scale in this research is formed after comprehensive generalization and screening by the researcher's referring to the views of DeVolder and Lens (1982), Gjesme (1979), Seijts (1998), and referring to the scale of future time perspective of Shell and Husman (2001) and Zhou (2007). This scale is divided into three dimensions, namely, future goal, value and speed. The dimensions of future time perspective scale are as follows.

Future Goals: predict the distance, planning and organization of future goals. Value: the degree to which individuals evaluate the value of achieving long-term future goals. Speed: the speed at which an individual mentally perceives the coming of a future moment. The specific dimensions and items of the scale are shown in Table 3.15.

Table 3.15 Dimensions and Items of Future Time Perspective Scale

Dimension	Item Number	Item Code	Description of Questions in Pre-test Questionnaire
Future Goal	1	FT1	I have made clear plans on how to achieve my future goals.
	2	FT2	I have specific and feasible future goals waiting for me to achieve.
	3	FT3	I can state my future goals clearly and concretely.
	4	FT4	I often think about my future.
	5	FT5	I often plan things for the future in my mind.
Value	6	FT6	I think the future goal is very important, because it can guide the direction of my life.
	7	FT7	I think it is very valuable to achieve future goals.
	8	FT8	Moving towards my future goals gives me a sense of security.
	9	FT9	I know the benefits and advantages of setting goals for the future.
	10	FT10	I think it's important to plan goals for the next five or ten years.
Speed	11	FT11	I don't think a year is a long time.
	12	FT12	I think things about ten years later are not far away from me.
	13*	FT13*	I often have a feeling that the days seem to drag on, as if the days never end.
	14	FT14	I think things of the next one or two years will happen very soon.
	15	FT15	I think the time of a term will pass soon.

Source: researchers collate.

Note: Item 13 is the reverse scoring item; FT--Future Time Perspective.

The three dimensional subscales of the scale each contain 5 questions, a total of 15 questions, among which, one of the speed subscales is entitled reverse scoring. Student participants are invited to check the most appropriate blank option according to their own reality and their degree of agreement with the description of the topic. This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree. The higher the score, the greater the future time perspective of the students in this direction, and the higher the total score, the stronger the future time perspective.

1. Establishing Expert Validity

After the expert review, the questionnaire was collected, the researcher collected the revised opinions provided by the experts into a table. According to the statistical table, at least 60% of the experts' opinions are on the "appropriate" and "revised appropriate" items. Only change the reverse item of 11 and 12 at the speed level to the forward problem, and keep the reverse item of problem 13. Other items are reserved in accordance with expert opinions. The results of the review are shown in Table 3.16.

Table 3.16 Expert Review Opinions on Future Time Perspective Scale

Dimension	Original Item Number	Number in Revised Pre-test Questionnaire	Code of Modified Pre-test Questionnaire	Appropriate		Revised Appropriate		Result	
				N	%	N	%	Reserve	Delete
Future Goal	1	1	FT1	4	100	0	0	√	
	2	2	FT2	4	100	0	0	√	
	3	3	FT3	4	100	0	0	√	
	4	4	FT4	4	100	0	0	√	
	5	5	FT5	4	100	0	0	√	
	6	6	FT6	4	100	0	0	√	
Value	7	7	FT7	4	100	0	0	√	
	8	8	FT8	4	100	0	0	√	
	9	9	FT9	4	100	0	0	√	
	10	10	FT10	4	100	0	0	√	
Speed	11	11	FT11	4	50	2	50	√	
	12	12	FT12	4	50	2	50	√	
	13*	13*	FT13*	4	100	0	0	√	
	14	14	FT14	4	100	0	0	√	
	15	15	FT15	4	100	0	0	√	

Source: researchers collate.

Note: item 13 is reverse scoring; FT--Future Time Perspective.

2. Item Analysis

There are 15 questions in the future time view scale, and the scores of reverse questions are converted before each analysis. After item analysis, the results of the pre-test scale are shown in Table 3.17.

Table 3.17 Item Analysis of Future Time Perspective Scale

Item	Critical Ratio	Detection Correlations		Homogeneity Test			Under Standard	Remarks
	CR-value	Corrected Item-Total Correlation	Corrected Item-Deleted Correlation	Cronbach's Alpha if Item Deleted (α -value)	Communalities	Factor Loading		
Criterion	≥ 3.0	≥ 0.40	≥ 0.40	< 0.948	≥ 0.20	≥ 0.45		
FT1	-10.137***	0.568**	0.477	0.815	0.600	0.563	0	reserve
FT2	-8.410***	0.544**	0.446	0.817	0.636	0.529	0	reserve
FT3	-6.177***	0.461**	0.350	0.823	0.525	0.419	2	reserve
FT4	-6.549***	0.501**	0.405	0.819	0.379	0.482	1	reserve
FT5	-6.709***	0.448**	0.341	0.823	0.428	0.407	2	reserve
FT6	-10.264***	0.586**	0.500	0.813	0.565	0.626	0	reserve
FT7	-12.690***	0.642**	0.560	0.809	0.568	0.674	0	reserve
FT8	-10.307***	0.593**	0.504	0.813	0.529	0.626	0	reserve
FT9	-13.437***	0.672**	0.590	0.806	0.555	0.701	0	reserve
FT10	-8.590***	0.575**	0.482	0.814	0.431	0.589	0	reserve
FT11	-7.840***	0.512**	0.413	0.819	0.454	0.495	0	reserve
FT12	-8.403***	0.485**	0.382	0.821	0.304	0.475	1	reserve
FT13	-5.412***	0.386**	0.271	0.828	0.256	0.330	3	delete
FT14	-10.588***	0.609**	0.528	0.812	0.473	0.634	0	reserve
FT15	-10.571***	0.531**	0.432	0.817	0.517	0.526	0	reserve

Source: researchers collate.

Notes: N=230; ***: $p < 0.001$; FT--Future Time Perspective.

In accordance with the principle of the above-mentioned deletion and the results of this analysis, if three of the six item criteria, that is, critical ratio (CR-value), corrected item-total correlation, corrected item-deleted correlation, Cronbach's alpha if item deleted (α -value), communalities and factor loading, in a question do not meet the criteria, they are deleted. For the three items that do not meet the criteria, the 13th item is deleted, and the rest items are retained. And there are finally 14th item in total.

3. Exploratory Factor Analysis (EFA)

As shown in Table 3.18, the KMO value of this scale is 0.796, and the approximate chi-square distribution value from Bartlett spherical test is 875.190 (the degree of freedom is 105), which also reaches the significant standard ($p < 0.001$). This means that the overall sampling of the scale is appropriate for factor analysis.

Table 3.18 KMO and Bartlett Test Result of Future Time Perspective Scale

	Kaiser-Meyer-Olkin Value	0.796
	Approximate Chi-square Values	875.190
Bartlett's test	Degrees of Freedom (DOF)	105
	Significance	0.000

Source: researchers collate.

In the process of factor analysis, the measured values of the reverse item in FT13 are more than 3 items that are not up to the standard and this item is deleted. After item deleting, the principal component analysis method is adopted to extract common factors, and the factors with the characteristic value greater than 1.0 are

selected, and then the maximum variation method is adopted for the factor analysis.

FT14 is highly loaded with two factors and is deleted.

Thus, the future time perspective scale of this study is formed, and three factors are obtained. As shown in Table 3.19.

Table 3.19 EFA of Future Time Perspective Scale Pre-test (KMO=0.757)

Number of Pre-test Questionnaire	Number of Formal Questionnaire	Code	Factor		
			1	2	3
			Value	Future Goal	Speed
6	1	FT6	0.730		
7	2	FT7	0.736		
8	3	FT8	0.708		
9	4	FT9	0.688		
10	5	FT10	0.620		
1	6	FT1		0.721	
2	7	FT2		0.787	
3	8	FT3		0.687	
4	9	FT4			0.542
5	10	FT5			0.538
11	11	FT11			0.746
12	12	FT12			0.429
15	13	FT15			0.596
Eigenvalue			4.073	1.422	1.205
Percentage of Total Variation			31.328%	10.941%	9.271%
Percentage of Variation			31.328%	42.269%	51.540%

Source: researchers collate.

Note: FT--Future Time Perspective.

It can be seen from the table that the first factor is named value, with an eigenvalue of 4.073, an explanatory variation of 31.328%, and a total of 5 items; the second factor is named future goal, with an eigenvalue of 1.422, an explanatory variation of 10.941%, and a total of 3 items; the third factor is named speed, with an eigenvalue of 1.205, an explanatory variation of 9.271%, and a total of 5 items. There are totally 13 items in this scale, and the total explanatory variance of the three factors is 51.540%.

4. Reliability Analysis

The internal consistency coefficient of this study is 0.812, and the reliability of each facet is between 0.604 and 0.792, indicating that the reliability of the scale is good and the measurement results are reliable. The reliability coefficient of the scale is shown in Table 3.20.

Table 3.20 Reliability Analysis of Future Time Perspective Scale

Factor	Item Quantity	Cronbach's α value
Value	5	0.792
Future Goal	3	0.699
Speed	5	0.604
Total Reliability		0.812

Source: researchers collate.

5. Preparation of Formal Questionnaire

According to the test results of the reliability and validity in the pre-test questionnaire, the scale of future time perspective for this research is prepared, with a total of 13 items. The formal questionnaire is shown in appendix II.

3.6.6 Locus of Control Scale

In this study, the scale of internal and external locus of control is introduced from the original scale developed by Rotter (1966), related scales of Luo and Tang (2003), Yang (2009) are referred to, and then revised according to the needs of this study. There are two dimensions, internal and external locus of control, in this scale. The dimensions of learning motivation scale are as follows:

Internal locus of control is a type of operation. People with internal locus of control believe that fate changes because of their hard work. When encountering setbacks, they tend to be more active, proactive and adopt a constructive approach.

External locus of control is a type of obedience. People with external locus of control believe that fate is determined by the external environment and not change with their own efforts. When encountering setbacks, they are usually more passive, dependent on others, passive, and tend to adopt destructive adaptations.

There are 4 questions for each of the 2 dimensions in this scale, 8 questions in total. Student participants are invited to check the most appropriate blank option according to their own reality and their degree of agreement with the description of the topic. This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree.

Peters, O'conner and Wise (1984) suggest that the mean of the posttest score of the internal locus of control personality traits should be used as the discriminating benchmark, and the above and below mean of the subjects should be divided into the internal locus of control personality traits and the extrinsic locus of control personality traits.

In this study, the subjects are divided into two groups: internally-controlled personality traits and externally-controlled personality traits. If the scores obtained are higher than the average, it indicates a tendency to be internal locus of control; while lower than average, a tendency to be external locus of control. The specific dimensions and items of the scale are shown in Table 3.21.

Table 3.21 Dimensions and Items of Locus of Control Scale

Dimension	Number	Code	Description of Questions in Pre-test Questionnaire
Internal Locus of Control	1	LC1	I know how much I get out of my investment.
	2	LC2	My life can be decided by myself.
	3	LC3	My life is always positive and active.
	4	LC4	I believe that man makes things happen.
External Locus of Control	5	LC5	I think a lot of things are not that hard work will be fruitful.
	6	LC6	My life is the arrangement of fate, can not be under my own control.
	7	LC7	My life is always negative and passive.
	8	LC8	I think a lot of things are left to chance.

Source: researchers collate.

Note: CL--Locus of Control.

1. Establish Expert Validity

After the expert review, the questionnaire was collected, the researcher collected the revised opinions provided by the experts into a table. According to the statistical table, at least 60% of the experts' opinions are on the "appropriate" and "revised appropriate" items. Other items in dimensions of internal locus of control and external locus of control are discussed with the advisor in accordance with the expert

opinions, and then modified for pre-test. The results of the review are shown in Table 3.22.

Table 3.22 Expert Review Opinions on Locus of Control Scale

Dimension	Original Number	Number in Revised Pre-test Questionnaire	Code	Appropriate		Revised Appropriate		Result	
				N	%	N	%	Reserve	Delete
Internal locus of control	1	1	LC1	4	100	0	0	√	
	2	2	LC2	4	100	0	0	√	
	3	3	LC3	4	100	0	0	√	
	4	4	LC4	4	100	0	0	√	
External locus of control	5	5	LC5	4	100	0	0	√	
	6	6	LC6	3	75	1	25	√	
	7	7	LC7	4	100	0	0	√	
	8	8	LC8	3	75	1	25	√	

Source: researchers collate.

Note: CL--Locus of Control.

2. Item Analysis of Pre-test Questionnaire

All the items in the internal and external locus of control scale are analyzed in the pre-test, and the results are shown in Table 3.23. In accordance with the principle of the above-mentioned deletion and the results of this analysis, all items of the scale met the criteria. Therefore, all items are retained to form the internal and external locus of control scale in this study. There are 8 items in total, including two factors.

Table 3.23 Item Analysis of Locus of Control Scale

Item	Critical Ratio	Detection Correlations			Homogeneity Test		Under standard	Remarks
	CR-value	Corrected Item-total Correlation	Corrected Item-deleted Correlation	Cronbach's Alpha if item Deleted (α -value)	Communalities	Factor Loading		
Criterion	≥ 3.0	≥ 0.40	≥ 0.40	< 0.948	≥ 0.20	≥ 0.45		
LC1	-5.820***	0.399**	0.204	0.554	0.311	0.503	2	reserve
LC2	-4.734***	0.363**	0.164	0.564	0.684	0.566	2	reserve
LC3	-5.628***	0.402**	0.189	0.559	0.553	0.569	1	reserve
LC4	-5.266***	0.353**	0.132	0.575	0.652	0.539	1	reserve
LC5	-7.115***	0.521**	0.290	0.528	0.270	0.469	1	reserve
LC6	-11.172***	0.664**	0.451	0.465	0.773	0.478	0	reserve
LC7	-10.379***	0.602**	0.370	0.498	0.748	0.393	1	reserve
LC8	-10.134***	0.597**	0.361	0.501	0.750	0.384	1	reserve

Source: researchers collate. Notes:

N=230; ***: $p < 0.001$; CL--Locus of Control.

3. Exploratory Factor Analysis (EFA)

As shown in Table 3.24, the KMO value of this scale is 0.760, and the approximate chi-square distribution value from Bartlett spherical test is 555.831 (the degree of freedom is 28), which also reaches the significant standard ($p < 0.001$). This means that the overall sampling of the scale is appropriate for factor analysis.

Table 3.24 KMO and Bartlett Test Result of Locus of Control Scale

	Kaiser-Meyer-Olkin Value	0.760
	Approximate Chi-square Values	559.831
Bartlett's test	Degrees of Freedom (DOF)	28
	Significance	0.000

Source: researchers collate.

In this scale, the principal component analysis method is adopted to extract common factors, and the factors with the characteristic value greater than 1.0 are selected, and then the maximum variation method is adopted for the factor analysis. Thus two factors are obtained, and the total explanatory variance of the 2 factors is 59.274%. Among the 2 factors obtained, the first factor is named external locus of control, with an eigenvalue of 2.804, an explanatory variation of 35.050%, and a total of 4 items; the second factor is named internal locus of control, with an eigenvalue of 1.938, an explanatory variation of 24.224%, and a total of 4 items. As shown in Table 3.25.

Table 3.25 EFA of Locus of Control Scale Pre-test (KMO=0.760)

Number of Pre-test Questionnaire	Number of Formal Questionnaire	Code	Factor	
			1	2
			External Locus of Control	Internal Locus of Control
5	1	LC5	0.463	
6	2	LC6	0.877	
7	3	LC7	0.851	
8	4	LC8	0.850	
1	5	LC1		0.545
2	6	LC2		0.816
3	7	LC3		0.743
4	8	LC4		0.793
Eigenvalue			2.804	1.938
Percentage of Total Variation			35.050%	24.224%
Percentage of Variation			35.050%	59.274%

Source: researchers collate.

Note: CL--Locus of Control.

4. Reliability Analysis

In the internal-external locus of control scale of this research, the reliability coefficients of items in internal and external locus of control are 0.717 and 0.770, respectively; As this scale is a bidirectional scale, the total reliability of this scale can be obtained by counting the total reliability of external control items in reverse, and it is 0.701. Thus can be seen that the reliability of the scale is still good and the measurement results are reliable. The reliability coefficient of the scale is shown in Table 3.26.

Table 3.26 Reliability Analysis of Locus of Control Scale

Factor	Item Quantity	Cronbach's α value
External Locus of Control	4	0.770
Internal Locus of Control	4	0.717
Total Reliability		0.701

Source: researchers collate.

5. Preparation of Formal Questionnaire

According to the test results of the reliability and validity in the pre-test questionnaire, the scale of internal-external locus of control for this research is prepared, with a total of 8 items. The formal questionnaire is shown in appendix II.

3.7 Descriptive Statistics Analysis of Formal Questionnaire

Mainland Chinese exchange students were taken in this study as participants. Eleven universities in northern, central and southern Taiwan were

selected, and convenience sampling method in non-random sampling was adopted to select exchange students from Mainland China of different grades as participants that cover students from freshman to senior. 700 formal copies were issued, 685 copies were recovered with recovery rate is 97.857%. After removing 11 invalid copies with incomplete and non-compliance ones, 674 valid ones were finally obtained. The proportion of effective questionnaires is 96.286%, as shown in Table 3.27.

Table 3.27 Summary of Formal Questionnaire Collection

Issued	Recovered	Invalid	Effective	Total Recovery	Effective Recovery
700	685	11	674	97.857%	96.286%

Source: researchers collate.

In this study, background variables of Mainland Chinese exchange students in universities of Taiwan include gender, grade, birth order and family socio-economic level. Gender is divided into male and female; grade refers to freshman, sophomore, junior and senior; birth order is divided into only child, eldest child, youngest child and others; family socioeconomic level refers to the annual income level of the family divided into below 80000, 80000 to 160000, 160000 to 240000, above 240000 and others.

Among the valid samples (N=674), 303 (45%) are male and 371 (55%) are female. In terms of grade, there are 43 freshmen (6.40%), 140 sophomores (20.80%), 434 juniors (64.40%) and 57 seniors (8.50%). In the distribution of birth order, there are 276 only children (40.90%), 233 eldest children (34.60%), 123 youngest children (18.20%) and 42 others (6.20%). In terms of family socio-economic level, 211 people (31.30%), 227 people (33.70%), 147 people (21.80%), 72 people (10.70%) and 17

people (2.50%) with annual income of more than 240,000 are below the family income of 80,000, 160,000 to 240,000, 160,000 to 240,000 and other conditions respectively. The basic statistics analysis is shown in Table 3.28.

Table 3.28 Descriptive Statistics Analysis of Formal Questionnaire

Background Variable	Category	Number	Proportion
Gender	Male	303	45.00
	Female	371	55.00
Grade	Freshman	43	6.40
	Sophomore	140	20.80
	Junior	434	64.40
	Senior	57	8.50
Birth Order	Only Child	276	40.90
	Eldest Child	233	34.60
	Youngest Child	123	18.20
Family Socioeconomic Level	Others	42	6.20
	Below 80000	211	31.30
	80000 to 160000	227	33.70
	160000 to 240000	147	21.80
	above 240000	72	10.70
	Others	17	2.50

Source: researchers collate.

3.8 Confirmatory Factor Analysis of Formal Questionnaire (CFA)

AMOS is adopted in this study to perform confirmatory factor analysis on the measurement models of various scales, mainly to evaluate the reliability, validity and significance level of the observed variables and potential variables as well as the estimated parameters. According to the suggestions of Bagozzi and Yi (1988), the reliability of individual items, the component reliability of latent variables and the average variance extracted are measured to test whether the research model has sufficient reliability and validity.

3.8.1 Reliability and Validity Analysis

Reliability is mainly adopted to test whether the measurement variables of each dimension have internal consistency. It is the test of data reliability as well as stability and consistency of test results. Three reliability analysis measurements are commonly adopted in this study, named Cronbach's α value, composite reliability (CR-value) and average variance extracted (AVE). According to the claims of many scholars (Cooper, 1998; DeVellis, 2003; Hair et al., 2006; Henson, 2001; Nunnally, 1978), Cronbach's alpha coefficient value above 0.70 is reliable, indicating good internal consistency of the scale. While Wu (1985) suggests reference range for reliability is as follows: Cronbach's α coefficient above 0.9 represents a high reliability value; between 0.9 and 0.7 represents very reliable; between 0.5 and 0.7 indicates confidence; between 0.4 and 0.5 means credible; between 0.3 and 0.4 is reluctant and credible; below 0.3 represents the bottom of the reliability and can not be taken.

Fornell and Larcker (1981) suggest CR-value be of more than 0.60 for the latent variables. The higher it is, the more potential variables could be measured. AVE mainly evaluates the average explanatory amount of the variable to its potential variable, the higher it is, the higher convergent validity of the latent variables (Fornell & Larcker, 1981). The recommended values are above 0.5 (Fornell et al., 1981), indicating that the variable has significant explanatory variation (Hair, Anderson & Black, 1998). However, according to the relationship between the sample size and factor loading proposed by Hair (1998), if sample size is more than 350, the AVE value of 0.4 is acceptable. Fornell and Larcker (1981) also propose that AVE value between 0.36-0.5 is acceptable.

Validity refers to whether a conceptual definition fits into an operational definition and is a measure that measures the extent to which a researcher wants to measure things. This study is mainly based on construct validity which consists of convergent validity and discriminate validity. The convergent validity mainly detects the measurement variables developed from each dimension and whether they converge to one factor at last. According to Huang (2004), Bentler (1983) and Wu (1993), factor loading of all items in this scale is above 0.45. The CR-value of latent variables should be above 0.6, and the AVE of each dimension should be greater than or near to 0.40. The discriminate validity is to determine the extent to which the observed variable is clearly distinguishable from other facets.

According to Fornell and Larcker (1981), if the correlation coefficient between two dimensions is less than the square root of AVE, it means that there is discriminate validity between them. Meanwhile, by bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008), and the verification results show that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

AMOS is adopted in this study to carry out confirmatory factor analysis on various scales to evaluate the results of reliability and validity, and the validity analysis of each dimension is tested by AVE method. It is described as follows:

1. Learning Motivation

After the confirmatory factor analysis of the learning motivation scale, all items in the scale met the standard and were retained. In the three dimensions of this scale, Cronbach's α value is 0.783, 0.716, 0.695, respectively; CR-value is 0.789,

0.729, 0.700, respectively. They all meet the standard, indicating that the combined reliability of the learning motivation scale reached a good level. The AVE values of three dimensions in this scale are 0.486, 0.479 and 0.441. There are 674 effective participants in this study, so it can still be regarded as an acceptable convergent validity. The results are shown in Table 3.29.

Table 3.29 CFA of Learning Motivation Scale

Dimension	Item	Factor Loading	Cronbach's α	C.R.	AVE
Interest of Seeking Knowledge	LM1	0.694	0.783	0.789	0.486
	LM2	0.789			
	LM3	0.721			
	LM4	0.566			
Self-development	LM5	0.548	0.716	0.729	0.479
	LM6	0.825			
	LM7	0.679			
	LM8	0.579			
Tour Interest	LM9	0.635	0.695	0.700	0.441
	LM10	0.764			

Source: researchers collate.

Note: LM--Learning Motivation.

AVE method is mainly adopted to compare whether the explanatory power of items in each dimension to its own dimension is greater than that of other dimensions. Therefore, if the square root of AVE is larger than the correlation coefficient, there is discriminate validity between the two, and vice versa. According to the results in Table 3.30, the square root value of AVE of the main diagonal is greater than the correlation coefficient between two dimensions, which represents that the content of

measurement questions of each potential dimension is obviously separated from each other, and are not transited to the meaning represented by other dimensions, thus effectively distinguishing and measuring the status of each dimension.

Table 3.30 Validity Measurement of Learning Motivation Scale by AVE Method

	Interest of Seeking Knowledge	Self-development	Tour Interest
Interest of Seeking Knowledge	0.697		
Self-development	0.446	0.692	
Tour Interest	0.311	0.114	0.664

Source: researchers collate.

Note: The diagonal values are square root of AVE, and the lower triangular values are Pearson correlation coefficient.

And then, by bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008) to test the discriminate validity. The results are shown in Table 3.31.

Table 3.31 Discriminate Validity Test by Bootstrapping Technique (Learning Motivation Scale)

Parameter	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
Interest of Seeking Knowledge ↔ Self-development	0.353*	0.542*	0.352*	0.541*
Interest of Seeking Knowledge ↔ Tour Interest	0.214*	0.419*	0.212*	0.413*
Self-development ↔ Tour Interest	0.005*	0.227*	0.005*	0.228*

Source: researchers collate.

Note: * $p < 0.05$.

As can be seen from the results that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

2. Career Adaptability

After the confirmatory factor analysis of the career adaptability scale, CA11, CA19, CA28, CA8, CA22 are deleted due to the substandard factor loading, and the remaining items in career curiosity dimension are all between 0.45 and 0.50, resulting in low CR and AVE, which are also deleted.

And other items are all reserved. Cronbach's α value in each dimension is 0.699, 0.637, 0.690, 0.661, respectively; CR-value is 0.708, 0.641, 0.696, 0.664, respectively. They all met the standard, indicating that the combined reliability of the career adaptability scale reaches a good level.

The AVE value of each dimension in this scale is 0.381, 0.309, 0.316, 0.332, respectively. As can be seen that there are 3 dimensions do not meet the lowest AVE value of 0.36.

However, as the factor loadings, Cronbach's value and CR-value of this scale all reach the standard, and considering the conceptual integrity, as well as 674 effective participants of this study have reached the standard, so it is regarded as the acceptable convergent validity for subsequent analysis. And the results are shown in Table3.32.

Table 3.32 CFA Results of Career Adaptability Scale

Dimension	Item	Factor Loading	Cronbach's α	C.R.	AVE
Career Concern	CA2	0.718	0.699	0.708	0.381
	CA3	0.648			
	CA4	0.539			
	CA5	0.542			
Career Control	CA14	0.598	0.637	0.641	<u>0.309</u>
	CA15	0.536			
	CA34	0.525			
	CA38	0.549			
	CA49	0.547			
Career Cooperation	CA51	0.498	0.690	0.696	<u>0.316</u>
	CA52	0.566			
	CA53	0.639			
	CA54	0.544			
Career Confidence	CA33	0.595	0.661	0.664	<u>0.332</u>
	CA35	0.605			
	CA43	0.560			
	CA46	0.530			

Source: researchers collate.

Note: CA--Career Adaptability.

The results of validity analysis of the career adaptability scale by AVE method are shown in Table 3.33. The square root value of AVE of the main diagonal is greater than the correlation coefficient between two planes, which means that each potential dimension can effectively distinguish and measure the status of each dimension.

Table 3.33 Validity Measurement of Career Adaptability Scale by AVE Method

	Career Concern	Career Control	Career Cooperation	Career Confidence
Career Concern	0.617			
Career Control	0.608	0.559		
Career Cooperation	0.518	<u>0.571</u>	0.562	
Career Confidence	0.514	0.518	0.507	0.576

Source: researchers collate.

Note: The diagonal values are square root of AVE, and the lower triangular values are Pearson correlation coefficient.

It can be seen from Table 3.33 that when discriminate validity is tested by AVE method, there is a value that fails to reach the standard. Considering to keep the conceptual integrity as far as possible, the discriminate validity is then tested with Bootstrapping technique. As shown in Table 3.34.

Table 3.34 Discriminate Validity Test by Bootstrapping Technique (Career Adaptability Scale)

Parameter	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
Career Concern ↔ Career Control	0.607*	0.785*	0.608*	0.786*
Career Concern ↔ Career Cooperation	0.516*	0.706*	0.521*	0.709*
Career Concern ↔ Career Confidence	0.501*	0.689*	0.512*	0.695*
Career Control ↔ Career Cooperation	0.566*	0.748*	0.567*	0.748*
Career Control ↔ Career Confidence	0.684*	0.860*	0.686*	0.861*
Career Cooperation ↔ Career Confidence	0.602*	0.790*	0.606*	0.797*

Source: researchers collate.

Note: * $p < 0.05$.

As can be seen from the results that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

3. Future Time Perspective

After the confirmatory factor analysis of the future time perspective scale, FT10, FT11, FT12 are deleted due to the substandard factor loading, and other items are all reserved. Cronbach's α value in the each dimension of the three is 0.783, 0.716, 0.695, respectively; CR-value is 0.694, 0.703, 0.583, respectively. They all meet the standard, indicating that the combined reliability of the future time perspective scale reaches a good level. The AVE values of each dimension is 0.369, 0.452, 0.336, respectively.

As can be seen that there is one dimensions does not meet the lowest AVE value of 0.36. However, as the factor loadings, Cronbach's value and CR-value of this scale all reach the standard, and considering the conceptual integrity, as well as 674 effective participants of this study have reached the standard, so it is regarded as the acceptable convergent validity for subsequent analysis. And the results are shown in Table3.35.

Table 3.35 CFA of Future Time Perspective Scale

Dimension	Item	Factor Loading	Cronbach's α	C.R.	AVE
Value	FT6	0.617	0.694	0.699	0.369
	FT7	0.669			
	FT8	0.621			
	FT9	0.510			

Table 3.35 (continued)

Dimension	Item	Factor Loading	Cronbach's α	C.R.	AVE
Future Goal	FT1	0.656	0.703	0.711	0.452
	FT2	0.738			
	FT3	0.609			
	FT4	0.668			
Speed	FT5	0.589	0.583	0.598	<u>0.336</u>
	FT15	0.460			

Source: researchers collate.

Note: FT-- Future Time Perspective.

The results of validity analysis of the career adaptability scale by AVE method are shown in Table 3.36. The square root value of AVE of the main diagonal is greater than the correlation coefficient between two planes, which means that each potential dimension can effectively distinguish and measure the status of each dimension.

Table 3.36 Validity Measurement of Future Time Perspective Scale by AVE Method

	Value	Future Goal	Speed
Value	0.607		
Future Goal	0.349	0.672	
Speed	0.583	0.470	0.580

Source: researchers collate.

Note: The diagonal values are square root of AVE, and the lower triangular values are Pearson correlation coefficient.

And then, by bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008) to test the discriminate validity, and the results are shown in Table 3.37.

Table 3.37 Discriminate Validity Test by Bootstrapping Technique (Future Time Perspective Scale)

Parameter	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
Value \leftrightarrow Future Goal	0.240*	0.464*	0.240*	0.464*
Value \leftrightarrow Speed	0.478*	0.691*	0.475*	0.688*
Future Goal \leftrightarrow Speed	0.368*	0.575*	0.361*	0.571*

Source: researchers collate.

Note: * $p < 0.05$.

As can be seen that the results show that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

4. Locus of Control

After the confirmatory factor analysis of the internal-external locus of control scale, LC1 is deleted due to the substandard factor loading, and other items are all reserved. Cronbach's α value in each dimension is 0.843, 0.728, respectively; CR-value is 0.847, 0.735, respectively. They all meet the standard, indicating that the combined reliability of the internal-external locus of control scale reaches a good level. The AVE values of each dimension is 0.650, 0.413, respectively, which all meet the standard indicating an acceptable convergent validity. The results are shown in Table 3.38.

Table 3.38 CFA of Locus of Control Scale

Dimension	Item	Factor Loading	Cronbach's α	CR.	AVE
External Locus of Control	LC6	0.722	0.843	0.847	0.650
	LC7	0.878			
	LC8	0.805			
Internal Locus of Control	LC1	0.524	0.728	0.735	0.413
	LC2	0.726			
	LC3	0.686			
	LC4	0.609			

Source: researchers collate.

Note: CL--Locus of Control.

The results of validity analysis of internal-external locus of control scale by AVE method are shown in Table 3.39. The square root value of AVE of the main diagonal is greater than the correlation coefficient between two planes, which means that each potential dimension can effectively distinguish and measure the status of each dimension.

Table 3.39 Validity Measurement of Locus of Control Scale by AVE Method

	External Locus of Control	Internal Locus of Control
External Locus of Control	0.806	
Internal Locus of Control	0.179	0.643

Source: researchers collate.

Note: The diagonal values are square root of AVE, and the lower triangular values are Pearson correlation coefficient.

And then, by bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008) to test the discriminate validity, and the results are shown in Table 3.40.

Table 3.40 Discriminate Validity Test by Bootstrapping Technique (Locus of Control Scale)

Parameter	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
External Locus of Control ← → Internal Locus of Control	0.564*	0.752*	0.564*	0.754*

Source: researchers collate.

Note: * $p < 0.05$.

As can be seen that the results show that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

3.8.2 Model Fit Test

Goodness-of-fit refers to the right fit or goodness degree between research model for testing hypotheses and sample data collected in the study. Sivo, Fan, Witta, and Willse (2006) have listed 13 indexes adopted by scholars in the literature on the optimal fit of structural equation model, including GFI, AGFI, CFI, NNFI, SRMR, RMSEA and so on. This study mainly adopts the evaluation indicators suggested by most scholars: χ^2/df , GFI, CFI, NNF, RMSEA, SRMR (Martens, 2005).

(1) χ^2/df

Taking into account the schema complexity, the recommended ratio is 3:1. Some scholars (Bagozzi, Yi, 1988) believe that it is acceptable between 1 and 5.

(2) Goodness-of-Fit Index (GFI)

The value of hypothesis model interpretation of observed data should be between 0 and 1. Generally, GFI value above 0.9 is considered as an excellent goodness of fit.

(3) Comparative Fit Index (CFI)

It is the non-central differences between hypothesis model and independent model which is used most frequently because of the stability of the index value. The value is usually between 0 and 1, and the recommended value is greater than 0.9.

(4) Non-Normal Fit Index (NNFI)

It shows the Chi-square difference between hypothesis model and independent model and the improvement degree of the model compared with the nothingness model. Taking the complexity of the model into consideration, the recommended value is greater than 0.9.

(5) Root Mean Square Error of Approximation (RMSEA)

It's the gap between the theoretical model and the saturated model. When RMSEA value is lower than 0.05, the model is considered as good goodness-of-fit; while it between 0.05 and 0.08, the model is considered as normal goodness-of-fit; and it is just acceptable when between 0.08 and 0.1. Because RMSEA value is not affected by sample size and model complexity, the accuracy of the clustering model goodness-of-fit is very reliable.

(6) Standardized Root Mean Square Residual (SRMR)

This is used to compare the variance or covariance between the sample and the theoretical model. The smaller the value, the more fit the theoretical model with the observed value. When the value is lower than 0.08, the model fits well.

In this study, the above six indexes are adopted for model fit test, and the results are shown in Table 3.41.

Table 3.41 Model Fit of Each Variable

Index	Criterion (Criticality)	Results			
		Learning Motivation	Career Adaptability	Future Time Perspective	Locus of Control
χ^2	the smaller the better ($p>0.05$)	99.926 ($p=0.000$)	263.780 ($p=0.000$)	112.797 ($p=0.000$)	34.506 ($p=0.001$)
χ^2/df	1-5	3.123	2.334	3.525	2.654
GFI	>0.90	0.971	0.956	0.968	0.985
AGFI	>0.90	0.950	0.940	0.945	0.969
CFI	>0.90	0.960	0.936	0.936	0.975
NNFI	>0.90	0.944	0.923	0.910	0.969
SRMR	<0.08	0.042	0.041	0.047	0.034
RMSEA	<0.08	0.056	0.045	0.061	0.050
CN	>200	312	355	276	437
Judgment		Fit Except χ^2	Fit Except χ^2	Fit Except χ^2	Fit Except χ^2

Source: researchers collate.

As can be seen from the above table: in the learning motivation scale ($\chi^2=99.926$), p -value is significant, $\chi^2/df=3.123$, GFI=0.971, AGFI=0.950, CFI=0.981, NNFI=0.944, SRMR=0.042, RMSEA=0.056; in the career adaptability scale ($\chi^2=263.780$), p -value is significant, $\chi^2/df=2.334$, GFI=0.956, AGFI=0.940, CFI=0.936, NNFI=0.923, SRMR=0.041, RMSEA=0.045; in the future time perspective scale ($\chi^2=112.797$), p -value is significant, $\chi^2/df=3.525$, GFI=0.968, AGFI=0.945, CFI=0.936, NNFI=0.910, SRMR=0.047, RMSEA=0.061; and in the locus of control scale ($\chi^2=34.506$), p -value is significant, $\chi^2/df=2.654$, GFI=0.985, AGFI=0.969, CFI=0.975, NNFI=0.969, SRMR=0.034, RMSEA=0.050. The above

data show that in the model fit test of the four variables, all the criteria are met except χ^2 , which is often influenced by the sample size, and can be adopted as a reference (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004). Therefore, all the scales show excellent goodness of fit.

3.9 Statistical Analysis

In this study, data are collected by questionnaire survey. After the effective questionnaires are collected, the invalid ones are removed, and then they are coded and put into the statistical software for analysis. IBM SPSS and AMOS is adopted for statistical analysis in this study. The analysis methods involved are as follows:

1. Item Analysis, Exploratory Factor Analysis (EFA) and Reliability Analysis: These are adopted to select items in the questionnaires.
2. Descriptive Statistics: In order to understand the distribution of background variables, learning motivation, future time perspective, locus of control and career adaptability of college students from Mainland China who went to Taiwan for exchange study, the number distribution, percentage, average and standard deviation of the samples are made in descriptive statistics.
3. Independent Sample t-test: The independent sample t-test is adopted to analyze the differences in learning motivation, future time perspective, locus of control and career adaptability of college students from Mainland China who went to Taiwan for exchange study at different gender, grade, birth order and family socio-economic level.

4. One-way ANOVA Analysis: It is adopted to analyze the differences in learning motivation, future time perspective, locus of control and career adaptability among college students from Mainland China who went to Taiwan for exchange study in different grades, birth order and family socio-economic level. When the variation analysis results show there are significant differences between the groups, Scheffé post-hoc test is carried out to compare the differences among the groups.

5. Path Analysis: Path analysis is adopted to examine the influence of learning motivation on career adaptability, as well as the mediating effect of future time perspective between learning motivation and career adaptability.

6. AMOS is adopted to deal with the moderating effect of internal and external locus of control on learning motivation and career adaptability.

CHAPTER 4

RESULTS

This chapter proceeds statistic analysis of the collected data from questionnaire survey which obtained from the result of the formal questionnaire (N=674) in "Questionnaire on Influence of Learning Motivation of Mainland Chinese Students to Universities in Taiwan on Career Adaptability".

4.1 Status Analysis of Variable

This section analyzes the current status of learning motivation, career adaptability, future time perspective and locus of control of Chinese college exchange students studying in universities in Taiwan. T-test and one-way ANOVA are adopted for descriptive statistical analysis, so as to understand the current situation of variables in this study at all dimensions.

4.1.1 Learning Motivation

The average and standard deviation of each dimension of learning motivation are presented in table 4.1. It can be seen from the table that the average score of learning motivation scale is 4.001. The average score of each dimension is 4.052, 4.043 and 3.891, respectively, which are all higher than the average of 3. It can be seen that college exchange students from Mainland China have a certain considerable degree of feelings on all aspects of learning motivation and have a

certain degree of positive consensus on learning motivation.

Table 4.1 Current Status of Learning Motivation

Dimension	Items	Mean	S.D.
Total Scale	10	4.001	0.396
Interest of Seeking Knowledge	4	4.052	0.536
Self-development	3	4.043	0.576
Tour Interest	3	3.891	0.579

Source: researchers collate.

In the achievement motivation theory proposed by McClelland (1961), the description of the need for achievement also points out that a person with a strong need for achievement is eager to do things perfectly, improve efficiency and achieve greater success and achievement.

According to the self-actualization needs contained in psychologist Maslow's (1943) theory of need satisfaction, when the physiological, safety, love and self-esteem needs are satisfied, individuals will continue to grow and develop in the future, give play to their inner potential, and show their unique personality, so as to achieve the highest ideal of self-realization.

It can be seen that the current situation of the learning motivation of exchange students from Chinese Mainland to Taiwan's universities in this study is consistent with the theory of McClelland and Maslow.

4.1.2 Career Adaptability

From Table 4.2, it can be seen that the average score of career adaptability is 4.103, indicating that the cognition of career adaptability of college students from

Mainland China who went to Taiwan for exchange study reaches a higher degree. The average score of each dimension is 4.103, 4.165, 4.104, 4.098, respectively, which are all higher than the average of 3. It can be seen that college exchange students from Mainland China have a certain considerable degree of feelings on all aspects of career adaptability.

Table 4.2 Current Status of Career Adaptability

Dimension	Items	Mean	S.D.
Total Scale	17	4.103	0.361
Career Concern	4	4.165	0.487
Career Control	4	4.104	0.477
Career Cooperation	5	4.056	0.440
Career Confidence	4	4.098	0.471

Source: researchers collate.

Most of the relevant research also show that the overall cognitive perception of college students' career adaptability is in the middle or above level (Wu, 2008; Zhao, 2011; Zhu, 2011). This also shows that college students are in a special stage of career exploration (Super, 1984), and are increasingly concerned about career development, and begin to pay attention to the cultivation and development of this aspect (Kenny & Bledsoe, 2005).

4.1.3 Future Time Perspective

The average and standard deviation of each dimension of future time perspective are presented in Table 4.3. It can be seen from the table that the average

score of future time perspective scale is 4.001. The average scores of each dimension is 3.895, 3.765, 4.042, respectively, which are all higher than the average of 3.

Table 4.3 Current Status of Future Time Perspective

Dimension	Items	Mean	S.D.
Total Scale	10	3.900	0.396
Value	4	3.895	0.518
Future Goal	3	3.765	0.557
Speed	3	4.042	0.527

Source: researchers collate.

It can be seen that college exchange students from Mainland China have a certain considerable degree of feelings on all aspects of future time perspective and have a certain degree of positive consensus on future time perspective.

As Gjesme (1983) said, future time perspective is just like a searchlight, which can guide students to go forward with a direction and a goal, so as not to get lost in the crisis of adolescent development. From this perspective, the current situation of Chinese Mainland exchange students in Taiwan's universities is good.

4.1.4 Internal-External Locus of Control

From Table 4.4, it can be seen that the average score of each dimension in internal-external locus of control scale is 2.611 and 3.869, respectively, indicating that college exchange students from Mainland China have a certain considerable degree of feelings on internal-external locus of control.

Table 4.4 Current Status of Internal-External Locus of Control

Dimension	Items	Mean	S.D.
External Locus of Control	3	2.611	0.938
Internal Locus of Control	4	3.869	0.551

Source: researchers collate.

That is to say, a small number of students in the tested group tend to have external locus of control. They believe that success will be influenced by luck, power and other external factors, and they are difficult to master and control. So their behaviors are more negative, dependent and resigned to fate. While more students tend to have internal locus of control. They believe that success is under their own control and their behaviors are relatively active, autonomous and positive (Rotter, 1966).

4.2 Variance Analysis

The purpose of this section is to discuss the differences in learning motivation, career adaptability, future time perspective and locus of control among college students from Mainland China who went to universities in Taiwan for exchange study through t-test or one-way Anova.

If the result of one-way Anova analysis reaches the significant level, the significant difference is further tested in post hoc test by means of Scheffé (insignificant) or Dunnett's T3 (significant), which is selected according to whether the test for homogeneity of variance research significant (Jason Hsu, 1996).

4.2.1 Gender

1. The analysis and comparison of the differences in learning motivation and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different gender are shown in Table 4.5.

Table 4.5 Differences in Learning Motivation with Different Gender

Predictor	Background Variables	N	Mean	S.D.	t-value
Total scale	Male	303	4.024	0.415	1.377
	Female	371	3.982	0.379	
Interest of Seeking Knowledge	Male	303	4.084	0.557	1.395
	Female	371	4.026	0.518	
Self-development	Male	303	4.059	0.585	0.667
	Female	371	4.030	0.570	
Tour Interest	Male	303	3.910	0.568	0.753
	Female	371	3.876	0.588	

Source: researchers collate.

It can be seen that:

There is no significant difference in the overall perception of learning motivation among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=1.377$, $p=0.169$).

There is no significant difference in the perception of the dimension named interest of seeking knowledge among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=1.395$, $p=0.164$). There is no significant difference in the perception of the dimension named

self-development among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=0.667$, $p=0.505$). There is no significant difference in the perception of the dimension named tour interest among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=0.753$, $p=0.452$).

This result is consistent with Cheng's (1991) study that there is no difference in learning motivation between male and female students. In the studies of many scholars (Chen, 2003; Lu, 1992; Ye, 2002), students of different gender show differences in learning motivation.

2. The analysis and comparison of the differences in career adaptability and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different gender are shown in Table 4.6.

Table 4.6 Differences in Career Adaptability with Different Gender

Predictor	Background Variables	N	Mean	S.D.	t-value
Total scale	Male	303	4.118	0.367	0.981
	Female	371	4.091	0.356	
Career Concern	Male	303	4.166	0.483	0.038
	Female	371	4.164	0.491	
Career Control	Male	303	4.121	0.466	0.835
	Female	371	4.090	0.486	
Career Cooperation	Male	303	4.077	0.443	1.075
	Female	371	4.040	0.439	
Career Confidence	Male	303	4.120	0.467	1.063
	Female	371	4.081	0.475	

Source: researchers collate.

It can be seen that:

There is no significant difference in the overall perception of career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=0.981, p=0.327$).

There is no significant difference in the perception of the dimension named career concern among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=0.038, p=0.970$).

There is no significant difference in the perception of the dimension named career control among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=0.835, p=0.4040$).

There is no significant difference in the perception of the dimension named career cooperation among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=1.075, p=0.283$).

There is no significant difference in the perception of the dimension named career confidence among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=1.063, p=0.288$).

Some studies shown that male students of different genders are superior to female students in overall career adjustment ability, and male students are superior to female students in career control and career confidence (Kenny & Bledsoe, 2005; Wu, 2008; Zhao, 2011). There are also studies of college students and adolescents that show no difference in career adjustment between genders (Hirschi, 2009; Kenny & Bledsoe, 2005).

3. The analysis and comparison of the differences in future time perspective

and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different gender are shown in Table 4.7.

Table 4.7 Differences in Future Time Perspective with Different Gender

Predictor	Background Variables	N	Mean	S.D.	t-value
Total Scale	Male	303	3.937	0.386	2.214*
	Female	371	3.870	0.402	
Value	Male	303	3.948	0.490	2.410*
	Female	371	3.852	0.536	
Future Goal	Male	303	3.783	0.554	0.767
	Female	371	3.750	0.561	
Speed	Male	303	4.077	0.538	1.582
	Female	371	4.013	0.516	

Source: researchers collate.

Note: * $p < 0.05$.

It can be seen that:

There is significant difference in the overall perception of future time perspective among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=2.214$, $p=0.027$). Males have a significantly higher future time perspective than females.

There is significant difference in the perception of the value dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=2.410$, $p=0.016$). Perception of value dimension of male is significantly higher than female's.

There is no significant difference in the perception of the dimension named future goal among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=0.767, p=0.444$).

There is no significant difference in the perception of the speed dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=1.582, p=0.114$).

Greene and DeBacker (2004) point out that men are better than women at extending the distance of thinking about the future. However, there are also scholars (Adelabu, 2007; Padawer et al., 2007; Zheng, 2011) find in their studies that women's perception of future time is higher than that of men, while some researchers (Peetsma, 2000) have concluded that there is no difference in gender's perception of future time.

4. The analysis and comparison of the differences in internal-external locus of control and two levels of college students from Mainland China who went to universities in Taiwan for exchange study with different gender are shown in Table 4.8.

Table 4.8 Differences in Locus of Control with Different Gender

Predictor	Background Variables	N	Mean	S.D.	t-value
External Locus of Control	Male	303	2.665	0.955	1.343
	Female	371	2.567	0.923	
Internal Locus of Control	Male	303	2.100	0.577	1.340
	Female	371	2.157	0.529	

Source: researchers collate.

It can be seen that:

There is no significant difference in the tendency of external locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=1.343$, $p=0.180$). There is no significant difference in the tendency of internal locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different gender ($t=-1.340$, $p=0.181$). This conclusion is consistent with the research conclusions of He (1981) and Lai (2002), both of which believe that gender has no obvious influence on locus of control.

It can be seen from the analysis that there are no different cognitive differences in learning motivation, career adaptability, locus of control and the various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different gender.

While there is significant difference in the overall perception of future time perspective among college students from Mainland China who went to universities in Taiwan for exchange study with different gender, and males have a significantly higher future time perspective than females; perception of value dimension of male is significantly higher than female's. Therefore, the research hypothesis H1-1 in this study is partially supported.

4.2.2 Grade

1. The analysis and comparison of the differences in learning motivation and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different grades are shown in Table 4.9.

Table 4.9 Differences in Learning Motivation with Different Grade

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total scale	Freshman (A)	43	4.137	0.383	6.908***	A>C B>C
	Sophomore (B)	140	4.078	0.383		
	Junior (C)	434	3.951	0.398		
	Senior (D)	57	4.091	0.357		
Interest of Seeking Knowledge	Freshman (A)	43	4.186	0.559	4.736**	B>C
	Sophomore (B)	140	4.155	0.496		
	Junior (C)	434	3.995	0.543		
	Senior (D)	57	4.132	0.507		
Self-development	Freshman (A)	43	4.054	0.514	3.395*	B>C
	Sophomore (B)	140	4.136	0.529		
	Junior (C)	434	3.994	0.591		
	Senior (D)	57	4.181	0.581		
Tour Interest	Freshman (A)	43	4.155	0.623	4.052**	A>C
	Sophomore (B)	140	3.917	0.605		
	Junior (C)	434	3.850	0.559		
	Senior (D)	57	3.947	0.580		

Source: researchers collate.

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

We can see from the table that:

There is significant difference in the overall perception of learning motivation among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=4.052$, $p=0.000$). The result of Scheffé method for post hoc test shows that freshmen have a significantly higher learning motivation perception than juniors ($I-J=0.186$, $p=0.032$); sophomores also have a significantly higher learning motivation than juniors ($I-J=0.127$, $p=0.012$).

There is significant difference in the dimension named interest of seeking knowledge among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=4.736$, $p=0.003$). The result of Scheffé method for post hoc test shows that sophomores have a significantly higher perception of seeking knowledge interest than juniors ($I-J=0.160$, $p=0.023$).

There is significant difference in the self-development dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=3.395$, $p=0.018$). The result of Scheffé method for post hoc test shows that sophomores have a significantly higher perception of self-development than juniors ($I-J=0.142$, $p=0.046$).

There is significant difference in the tour interest dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=4.052$, $p=0.007$). The result of Scheffé method for post hoc test shows that freshmen have a significantly higher perception of tour interest than juniors ($I-J=0.306$, $p=0.012$).

In many studies, some scholars (Cheng, 1991; Li, 2002) also concluded that different grades lead to different learning motivations. Some scholars (Chen, 2003; Lu, 1992; Huang, 2003) concluded that there is no difference in learning motivation among students of different grades.

2. The analysis and comparison of the differences in career adaptability and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different grades are shown in Table 4.10.

Table 4.10 Differences in Career Adaptability with Different Grade

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total scale	Freshman (A)	43	4.077	0.277	3.661*	D>C
	Sophomore (B)	140	4.135	0.344		
	Junior (C)	434	4.078	0.373		
	Senior (D)	57	4.233	0.335		
Career Concern	Freshman (A)	43	4.128	0.448	2.391	-
	Sophomore (B)	140	4.173	0.498		
	Junior (C)	434	4.145	0.484		
	Senior (D)	57	4.325	0.491		
Career Control	Freshman (A)	43	4.122	0.406	5.352**	D>C
	Sophomore (B)	140	4.173	0.492		
	Junior (C)	434	4.055	0.482		
	Senior (D)	57	4.285	0.388		
Career Cooperation	Freshman (A)	43	4.000	0.355	1.729	-
	Sophomore (B)	140	4.084	0.391		
	Junior (C)	434	4.039	0.456		
	Senior (D)	57	4.161	0.479		
Career Confidence	Freshman (A)	43	4.076	0.448	0.910	-
	Sophomore (B)	140	4.123	0.468		
	Junior (C)	434	4.082	0.478		
	Senior (D)	57	4.1800	0.438		

Data Source: researchers collate.

Note: ** $p < 0.01$, * $p < 0.05$.

It can be seen that:

There is significant difference in the overall perception of career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=3.661$, $p=0.012$). The result of

Dunnett T3 method for post hoc test shows that seniors have a significantly higher career adaptability than juniors ($I-J=0.155, p=0.010$).

There is no significant difference in the perception of the career concern dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grades ($F=2.391, p=0.068$).

There is significant difference in the dimension of career control among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=5.352, p=0.001$). The result of Dunnett T3 method for post hoc test shows that seniors have a significantly higher perception of career control than juniors ($I-J=0.230, p=0.001$).

There is no significant difference in the perception of the career cooperation dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grades ($F=1.729, p=0.160$).

There is no significant difference in the perception of the career confidence dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grades ($F=0.910, p=0.436$).

Some scholars (Li, 2002; Cheng, 1991) also concluded that different grades lead to different learning motivations. Some scholars (Chen, 2003; Lu, 1992; Huang, 2003) concluded that there is no difference in learning motivation among students of different grades.

3. The analysis and comparison of the differences in future time perspective and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different grades are shown in Table 4.11.

Table 4.11 Differences in Future Time Perspective with Different Grade

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	Freshman (A)	43	3.905	0.286	4.949**	B>C D>C
	Sophomore (B)	140	3.974	0.380		
	Junior (C)	434	3.860	0.403		
	Senior (D)	57	4.021	0.416		
Value	Freshman (A)	43	3.791	0.412	2.998*	D>A
	Sophomore (B)	140	3.946	0.493		
	Junior (C)	434	3.869	0.533		
	Senior (D)	57	4.044	0.503		
Future Goal	Freshman (A)	43	3.954	0.434	4.926**	A>C B>C
	Sophomore (B)	140	3.864	0.535		
	Junior (C)	434	3.707	0.558		
	Senior (D)	57	3.819	0.630		
Speed	Freshman (A)	43	4.008	0.445	3.583*	-
	Sophomore (B)	140	4.119	0.528		
	Junior (C)	434	4.000	0.525		
	Senior (D)	57	4.193	0.556		

Source: researchers collate.

Note ** $p < 0.01$, * $p < 0.05$.

We can be seen from the table that:

There is significant difference in the overall perception of future time perspective among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=4.949$, $p=0.002$). The result of Dunnett T3 method for post hoc test shows that sophomores have a significantly higher perception of future time perspective than juniors ($I-J=0.114$, $p=0.016$); seniors

also have a significantly higher future time perspective perception than juniors ($I-J=0.161, p=0.043$).

There is significant difference in the value dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=2.998, p=0.030$). The result of Dunnett T3 method for post hoc test shows that seniors have a significantly higher value perception than freshmen ($I-J=0.253, p=0.040$).

There is significant difference in the dimension of future goal among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=4.926, p=0.002$). The result of Dunnett T3 method for post hoc test shows that freshmen have a significantly higher perception of future goal than juniors ($I-J=0.246, p=0.006$); sophomores also have a significantly higher future goal perception than juniors ($I-J=0.157, p=0.018$).

There is no significant difference in the perception of the speed dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different grades ($F=3.583, p=0.014$).

Super's (1990) theory of career development also proposed that with the growth of age, individuals' cognition of career development would also be strengthened and manifested in different behavioral manifestations. The difference of Chinese Mainland students in grades is consistent with Super's theory.

4. The analysis and comparison of the differences in internal-external locus of control and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different grades are shown in Table 4.12.

Table 4.12 Differences in Locus of Control with Different Grade

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
External Locus of Control	Freshman (A)	43	2.923	0.986	5.946**	A>C
	Sophomore (B)	140	2.767	0.968		
	Junior (C)	434	2.502	0.910		
	Senior (D)	57	2.825	0.920		
Internal Locus of Control	Freshman (A)	43	2.093	0.466	3.341*	C>B
	Sophomore (B)	140	2.007	0.541		
	Junior (C)	434	2.174	0.565		
	Senior (D)	57	2.140	0.498		

Source: researchers collate.

Note: ** $p < 0.01$, * $p < 0.05$.

It can be seen that:

There is significant difference in the tendency of external locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=5.946$, $p=0.001$). The result of Scheffé method for post hoc test shows that the tendency of external locus of control of freshmen is significantly higher than that of juniors ($I-J=0.421$, $p=0.046$).

There is significant difference in the tendency of internal locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different grade ($F=3.341$, $p=0.019$). The result of Scheffé method for post hoc test shows that the tendency of internal locus of control of juniors is significantly higher than that of sophomores ($I-J=0.167$, $p=0.011$).

That is to say, compared with juniors, freshmen are more likely to believe

that what happens is not caused by their own actions, but by luck, opportunity, fate or the authority of others (Robbins, 1998; Super, 1966). While juniors are more likely than sophomores to think that they are the masters of fate and take initiative in their actions (Robbins, 1998; Super, 1966).

It can be seen from the analysis that there is significant difference in the overall perception of learning motivation, career adaptability and future time perspective among college students from Mainland China who went to universities in Taiwan for exchange study with different grade, and there are also significant differences at different dimensions.

Among them, the perception of learning motivation of freshmen and sophomores are significantly higher than that of juniors; in terms of career adaptability, seniors are significantly superior to juniors; Sophomores and seniors have a higher perception of future time than juniors.

From the analysis of different levels in locus of control, freshmen are more inclined to external locus of control than juniors, and juniors are more inclined to internal locus of control than sophomores. Therefore, the hypothesis H1-2 in this study is supported.

4.2.3 Birth Order

1. The analysis and comparison of the differences in learning motivation and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different birth order are shown in Table 4.13.

Table 4.13 Differences in Learning Motivation with Different Birth Order

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	Only Child (A)	276	4.026	0.414	1.431	-
	Eldest (B)	233	3.982	0.376		
	Youngest (C)	123	4.014	0.398		
	Others(D)	42	3.905	0.370		
Interest of Seeking Knowledge	Only Child (A)	276	4.099	0.569	1.226	-
	Eldest (B)	233	4.023	0.506		
	Youngest (C)	123	4.026	0.507		
	Others(D)	42	3.988	0.560		
Self-development	Only Child (A)	276	4.065	0.590	0.575	-
	Eldest (B)	233	4.026	0.567		
	Youngest (C)	123	4.057	0.575		
	Others(D)	42	3.952	0.549		
Tour Interest	Only Child (A)	276	3.891	0.583	1.375	-
	Eldest (B)	233	3.884	0.565		
	Youngest (C)	123	3.954	0.581		
	Others(D)	42	3.746	0.611		

Source: researchers collate.

It can be seen that:

There is no significant difference in the overall perception of learning motivation among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=1.431, p=0.232$).

There is no significant difference in the perception of the dimension named interest of seeking knowledge among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=1.226, p=0.299$).

There is no significant difference in the perception of the dimension named self-development among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.575$, $p=0.631$).

There is no significant difference in the perception of the dimension named tour interest among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=1.375$, $p=0.246$).

This result is the same as the result of Liang's (2015) study, both of which have reach the conclusion that there is no significant difference between family ranking and learning motivation. That is to say, students' birth order has no obvious influence on their learning motivation.

2. The analysis and comparison of the differences in career adaptability and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different birth order are shown in Table 4.14.

It can be seen that:

There is no significant difference in the overall perception of career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.654$, $p=0.581$).

There is no significant difference in the perception of the career concern dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=2.823$, $p=0.038$).

There is no significant difference in the perception of the career control dimension among college students from Mainland China who went to universities in

Taiwan for exchange study with different birth order ($F=0.293, p=0.831$).

There is no significant difference in the perception of the career cooperation dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.279, p=0.840$).

There is no significant difference in the perception of the career confidence dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.267, p=0.849$).

Table 4.14 Differences in Career Adaptability with Different Birth Order

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	Only Child (A)	276	4.126	0.359	0.654	-
	Eldest (B)	233	4.084	0.360		
	Youngest (C)	123	4.097	0.363		
	Others(D)	42	4.078	0.375		
Career Concern	Only Child (A)	276	4.227	0.478	2.823*	-
	Eldest (B)	233	4.116	0.496		
	Youngest (C)	123	4.148	0.469		
	Others(D)	42	4.077	0.511		
Career Control	Only Child (A)	276	4.112	0.474	0.293	-
	Eldest (B)	233	4.099	0.471		
	Youngest (C)	123	4.114	0.511		
	Others(D)	42	4.042	0.434		
Career Cooperation	Only Child (A)	276	4.065	0.436	0.279	-
	Eldest (B)	233	4.036	0.422		
	Youngest (C)	123	4.065	0.469		
	Others(D)	42	4.086	0.492		
Career Confidence	Only Child (A)	276	4.112	0.471	0.267	-
	Eldest (B)	233	4.097	0.466		
	Youngest (C)	123	4.067	0.482		
	Others(D)	42	4.107	0.479		

Source: researchers collate.

Note * $p<0.05$.

Hua (2012) also reaches the same conclusion in his research results, suggesting that only children and non-only children are likely to have a higher degree of career adjustment. In other words, college students from Chinese Mainland who went to Taiwan for exchange study do not have obvious influence on their career adaptability due to different birth orders.

3. The analysis and comparison of the differences in future time perspective and its dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different birth order are shown in Table 4.15.

Table 4.15 Differences in Future Time Perspective with Different Birth Order

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	Only Child (A)	276	3.926	0.422	0.779	-
	Eldest (B)	233	3.885	0.373		
	Youngest (C)	123	3.886	0.367		
	Others(D)	42	3.852	0.431		
Value	Only Child (A)	276	3.888	0.535	0.061	-
	Eldest (B)	233	3.906	0.518		
	Youngest (C)	123	3.896	0.485		
	Others(D)	42	3.881	0.513		
Future Goal	Only Child (A)	276	3.819	0.580	2.008	-
	Eldest (B)	233	3.733	0.542		
	Youngest (C)	123	3.753	0.543		
	Others(D)	42	3.627	0.511		
Speed	Only Child (A)	276	4.086	0.545	1.146	-
	Eldest (B)	233	4.009	0.501		
	Youngest (C)	123	4.005	0.512		
	Others(D)	42	4.040	0.581		

Source: researchers collate.

We can see from the table that:

There is no significant difference in the overall perception of future time perspective among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.779, p=0.506$). There is no significant difference in the perception of value dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.061, p=0.980$). There is no significant difference in the perception of future goal dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=2.008, p=0.112$). There is no significant difference in the perception of speed dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=1.146, p=0.330$).

The results of this study are consistent with the results of Fuligni and Zhang's (2004) study on Chinese students, and find that there is no difference in the degree of future events expected by students of different birth orders.

4. The analysis and comparison of the differences in internal-external locus of control and its two levels of college students from Mainland China who went to universities in Taiwan for exchange study with different birth order are shown in the following Table 4.16.

It can be seen that:

There is no significant difference in the tendency of internal locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=0.832, p=0.476$).

There is significant difference in the tendency of external locus of control

among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order ($F=6.203$, $p=0.000$). The result of Scheffé method for post hoc test shows that the tendency of external locus of control of youngest child is significantly higher than that of eldest ($I-J=0.329$, $p=0.018$) and only child ($I-J=0.411$, $p=0.001$). In other words, the youngest children are more likely than the rest of other birth orders to attribute an event's outcome to external reasons (Robbins, 1998; Super, 1966).

Table 4.16 Differences in Locus of control with Different Birth Order

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
External Locus of Control	Only Child (A)	276	2.489	0.913	6.203***	C>A C>B
	Eldest (B)	233	2.571	0.946		
	Youngest (C)	123	2.900	0.920		
	Others(D)	42	2.786	0.937		
Internal Locus of Control	Only Child (A)	276	2.110	0.585	0.832	-
	Eldest (B)	233	2.177	0.523		
	Youngest (C)	123	2.108	0.514		
	Others(D)	42	2.090	0.584		

Source: researchers collate.

Note: *** $p<0.001$.

It can be seen from the analysis that there are no different cognitive differences in learning motivation, career adaptability, future time perspective and the various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different birth order. While there is significant difference in the overall perception of locus of control among college students from

Mainland China who went to universities in Taiwan for exchange study with different birth order, and the tendency of external locus of control of youngest child is significantly higher than that of eldest and only child. Therefore, the research hypothesis H1-3 in this study is partially supported.

4.2.4 Family Socioeconomic Level

1. The analysis and comparison of the differences in learning motivation and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level are shown in Table 4.17. And we can see from the result that:

There is no significant difference in the overall perception of learning motivation among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=2.539$, $p=0.039$). There is no significant difference in the perception of seeking knowledge interest among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.589$, $p=0.671$).

There is significant difference in the dimension of self-development among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=3.084$, $p=0.016$). The result of Scheffé method for post hoc test shows that students from family with annual income of RMB 80,000-160,000 and 160,000-240,000 have a significantly higher perception of self-development than that of others ($I-J=0.495$, $p=0.019$; $I-J=0.468$, $p=0.038$).

There is significant difference in the dimension of tour interest among

college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=3.084$, $p=0.016$). The result of Scheffé method for post hoc test shows that students from family with annual income of RMB 80,000-160,000 have a significantly higher perception of self-development than that of RMB 80,000 or less ($I-J=0.227$, $p=0.002$); and students from family with annual income of RMB 240,000 or above have a significantly higher perception of self-development than that of RMB 80,000 or less ($I-J=0.217$, $p=0.037$).

Table 4.17 Differences in Learning Motivation with Different Family Socioeconomic Level

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	RMB 80,000 or less (A)	211	3.957	0.414	2.539*	-
	RMB 80,000-160,000 (B)	227	4.056	0.400		
	RMB 160,000-240,000 (C)	147	3.986	0.377		
	RMB 240,000 or above (D)	72	4.024	0.355		
	Others (E)	17	3.847	0.350		
Interest of Seeking Knowledge	RMB 80,000 or less (A)	211	4.057	0.569	0.589	-
	RMB 80,000-160,000 (B)	227	4.088	0.530		
	RMB 160,000-240,000 (C)	147	4.005	0.517		
	RMB 240,000 or above (D)	72	4.031	0.521		
	Others (E)	17	4.015	0.455		
Self-development	RMB 80,000 or less (A)	211	4.021	0.580	3.084*	B>E C>E
	RMB 80,000-160,000 (B)	227	4.084	0.604		
	RMB 160,000-240,000 (C)	147	4.057	0.515		
	RMB 240,000 or above (D)	72	4.060	0.585		
	Others (E)	17	3.588	0.449		
Tour Interest	RMB 80,000 or less (A)	211	3.760	0.567	4.760**	B>A D>A
	RMB 80,000-160,000 (B)	227	3.987	0.606		
	RMB 160,000-240,000 (C)	147	3.891	0.559		
	RMB 240,000 or above (D)	72	3.977	0.529		
	Others (E)	17	3.882	0.456		

Source: researchers collate.

Note: ** $p<0.01$, * $p<0.05$.

This result is similar to Chen (2003); Cheng (1991); Liu (2003), they reached the same conclusion, and the results show that students' learning motivation is different due to different family socioeconomic levels.

2. The analysis and comparison of the differences in career adaptability and its various dimensions of college students from Mainland China who went to universities in Taiwan with different family socioeconomic level are shown in Table 4.18.

We can see from the table that:

There is no significant difference in the overall perception of career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.908$, $p=0.459$).

There is no significant difference in the perception of career concern dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.701$, $p=0.591$). There is no significant difference in the perception of career control dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.561$, $p=0.691$). There is no significant difference in the perception of career cooperation among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.933$, $p=0.444$). There is no significant difference in the perception of career confidence among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.662$, $p=0.619$).

Table 4.18 Differences in Career Adaptability with Different Family Socioeconomic Level

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	RMB 80,000 or less (A)	211	4.134	0.383	0.908	-
	RMB 80,000-160,000 (B)	227	4.107	0.358		
	RMB 160,000-240,000 (C)	147	4.062	0.334		
	RMB 240,000 or above (D)	72	4.086	0.368		
	Others (E)	17	4.097	0.317		
Career Concern	RMB 80,000 or less (A)	211	4.210	0.490	0.701	-
	RMB 80,000-160,000 (B)	227	4.149	0.504		
	RMB 160,000-240,000 (C)	147	4.138	0.465		
	RMB 240,000 or above (D)	72	4.135	0.498		
	Others (E)	17	4.191	0.348		
Career Control	RMB 80,000 or less (A)	211	4.137	0.481	0.561	-
	RMB 80,000-160,000 (B)	227	4.101	0.511		
	RMB 160,000-240,000 (C)	147	4.075	0.442		
	RMB 240,000 or above (D)	72	4.090	0.447		
	Others (E)	17	4.015	0.380		
Career Cooperation	RMB 80,000 or less (A)	211	4.071	0.446	0.933	-
	RMB 80,000-160,000 (B)	227	4.081	0.431		
	RMB 160,000-240,000 (C)	147	3.996	0.429		
	RMB 240,000 or above (D)	72	4.056	0.449		
	Others (E)	17	4.071	0.547		
Career Confidence	RMB 80,000 or less (A)	211	4.132	0.475	0.662	-
	RMB 80,000-160,000 (B)	227	4.104	0.456		
	RMB 160,000-240,000 (C)	147	4.054	0.480		
	RMB 240,000 or above (D)	72	4.069	0.516		
	Others (E)	17	4.118	0.332		

Source: researchers collate.

The results of this study are different from those in most studies (Hirschi, 2009; Shen, 2015; Zhao, 2011). Many research results show that students with

different family socioeconomic levels have different career adaptabilities.

3. The analysis and comparison of the differences in future time perspective and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level are shown in Table 4.19.

Table 4.19 Differences in Future Time Perspective with Different Family Socioeconomic Level

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
Total Scale	RMB 80,000 or less (A)	211	3.892	0.434	0.618	-
	RMB 80,000-160,000 (B)	227	3.898	0.378		
	RMB 160,000-240,000 (C)	147	3.886	0.367		
	RMB 240,000 or above (D)	72	3.967	0.410		
	Others (E)	17	3.859	0.339		
Value	RMB 80,000 or less (A)	211	3.915	0.559	0.929	-
	RMB 80,000-160,000 (B)	227	3.862	0.520		
	RMB 160,000-240,000 (C)	147	3.869	0.480		
	RMB 240,000 or above (D)	72	3.979	0.469		
	Others (E)	17	3.956	0.461		
Future Goal	RMB 80,000 or less (A)	211	3.754	0.576	0.772	-
	RMB 80,000-160,000 (B)	227	3.780	0.555		
	RMB 160,000-240,000 (C)	147	3.755	0.485		
	RMB 240,000 or above (D)	72	3.819	0.643		
	Others (E)	17	3.569	0.575		
Speed	RMB 80,000 or less (A)	211	4.002	0.540	0.607	-
	RMB 80,000-160,000 (B)	227	4.063	0.493		
	RMB 160,000-240,000 (C)	147	4.041	0.523		
	RMB 240,000 or above (D)	72	4.097	0.585		
	Others (E)	17	4.020	0.583		

Source: researchers collate.

It can be seen that:

There is no significant difference in the overall perception of future time perspective among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.618$, $p=0.650$).

There is no significant difference in the perception of value dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.929$, $p=0.447$).

There is no significant difference in the perception of future goal dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.772$, $p=0.544$).

There is no significant difference in the perception of speed dimension among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=0.607$, $p=0.658$).

Some studies (Lamm, Schmidt, & Trommsdorff, 1976) have found that people with different family socioeconomic levels have different views on future time; the results of this study are consistent with the findings of Agarwal, Tripathi and Srivastava (1983), who all believe that individuals from different family and socioeconomic backgrounds have no differences in future time perspective.

4. The analysis and comparison of the differences in internal-external locus of control and its various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level are shown in Table 4.20.

Table 4.20 Differences in Locus of Control with Different Family Socioeconomic Level

Predictor	Background Variables	N	Mean	S.D.	F-value	Post hoc Test
External Locus of Control	RMB 80,000 or less (A)	211	2.367	0.894	8.383***	C>A C>B
	RMB 80,000-160,000 (B)	227	2.601	0.916		
	RMB 160,000-240,000 (C)	147	2.927	0.961		
	RMB 240,000 or above (D)	72	2.722	0.941		
	Others (E)	17	2.569	0.762		
Internal Locus of Control	RMB 80,000 or less (A)	211	2.113	0.550	1.461	-
	RMB 80,000-160,000 (B)	227	2.091	0.574		
	RMB 160,000-240,000 (C)	147	2.179	0.475		
	RMB 240,000 or above (D)	72	2.160	0.606		
	Others (E)	17	2.368	0.607		

Source: researchers collate.

Note: *** $p < 0.001$.

It can be seen that:

There is significant difference in the tendency of external locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level ($F=8.383$, $p=0.000$). The result of Scheffé method for post hoc test shows that the tendency of external locus of control of students from family with annual income of RMB 160,000-240,000 is significantly higher than that of 80,000-160,000 ($I-J=0.327$, $p=0.024$); and the tendency of external locus of control of students from family with annual income of RMB 160,000-240,000 is significantly higher than that of RMB 80,000 or less ($I-J=0.561$, $p=0.000$).

There is no significant difference in the tendency of internal locus of control among college students from Mainland China who went to universities in

Taiwan for exchange study with different family socioeconomic level ($F=1.461$, $p=0.213$).

In many studies, the influence of material wealth on locus of control has not been emphasized, and the conclusion obtained in this study is still a special case.

It can be seen from the analysis that there are no different cognitive differences in career adaptability, future time perspective and the various dimensions of college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level. While there is significant difference in the overall perception of learning motivation, locus of control among college students from Mainland China who went to universities in Taiwan for exchange study with different family socioeconomic level. Students from family with annual income of RMB 80,000-160,000 and 160,000-240,000 have a significantly higher perception of self-development than that of others; and students from family with annual income of RMB 240,000 or above have a significantly higher perception of self-development than that of RMB 80,000 or less. the tendency of external locus of control of students from family with annual income of RMB 160,000-240,000 is significantly higher than that of 80,000-160,000 and that of RMB 80,000 or less. Therefore, the research hypothesis H1-4 in this study is partially supported.

Based on the above analysis, it can be seen that in the studies on the learning motivation, career adaptability, future time perspective and internal-external locus of control of exchange students from Mainland Chinese colleges and universities in Taiwan, only the future time perspective is affected by gender; these four variables are all affected by grade and have differences; the difference of birth order can only affect the difference of locus of control; the difference of family

socioeconomic level results in the difference of learning motivation and locus of control. Therefore, the research hypothesis H1 in this study is partially supported.

4.3 Correlation Analysis

The purpose of this section is to analyze and discuss the overall and multi-level relationships among learning motivation, career adaptability, future time perspective and internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study by using the statistical method of Pearson product-moment correlation. When the correlation coefficient is positive, the correlation between the two variables is positive. When the correlation coefficient is negative, it means the variables are negatively correlated (David S. Moore, & William Notz., 2013). Whether the correlation of the two variables is significant or not is determined by the p -value tested by the significance of the correlation coefficient. If $p < 0.05$, the correlation between the two variables is significant. On the contrary, if $p > 0.05$, the correlation between the two is not significant. A correlation coefficient less than 0.40 indicates a low correlation, between 0.40 and 0.70 indicates a moderate correlation, and greater than 0.70 indicates a high correlation (David S. Moore, & William Notz., 2013; Wu, 2009).

4.3.1 Correlation Analysis of Learning Motivation and Career Adaptability

This part presents the correlation between learning motivation and career adaptability of college students from Mainland China who went to universities in Taiwan for exchange study, and the correlation among dimensions. The correlation matrix table is shown in Table 4.21.

Table 4.21 Correlation Analysis of Learning Motivation and Career Adaptability

Variable/ Dimension	Career Adaptability	Career Concern	Career Control	Career Cooperation	Career Confidence
Learning Motivation	0.520***	0.400***	0.378***	0.452***	0.371***
Interest of Seeking Knowledge	0.441***	0.350***	0.302***	0.377***	0.329***
Self- development	0.333***	0.253***	0.218***	0.290***	0.263***
Tour Interest	0.309***	0.227***	0.272***	0.275***	0.177***

Source: researchers collate.

Note: *** $p < 0.001$.

It can be seen from the table that:

On the whole, learning motivation and career adaptability have a significant and moderate positive correlation ($r=0.520$, $p=0.000$). In terms of the whole learning motivation and dimensions in career adaptability, the whole learning motivation has a significant and moderate positive correlation with career concern ($r=0.400$, $p=0.000$) and career cooperation ($r=0.452$, $p=0.000$), and has a significant and low positive correlation with career control ($r=0.378$, $p=0.000$) and career confidence ($r=0.371$, $p=0.000$). In terms of the whole career adaptability and dimensions in learning motivation, the whole career adaptability has a significant and moderate positive correlation with interest of seeking knowledge ($r=0.441$, $p=0.000$), and has a significant and low positive correlation with self-development ($r=0.333$, $p=0.000$) and tour interest ($r=0.309$, $p=0.000$).

In terms of various dimensions in learning motivation and career adaptability, interest of seeking knowledge has a significant and low positive correlation with career concern ($r=0.350$, $p=0.000$), career control ($r=0.302$, $p=0.000$),

career cooperation ($r=0.377$, $p=0.000$) and career confidence ($r=0.329$, $p=0.000$); self-development has a significant and low positive correlation with career concern ($r=0.253$, $p=0.000$), career control ($r=0.218$, $p=0.000$), career cooperation ($r=0.290$, $p=0.000$) and career confidence ($r=0.263$, $p=0.000$); tour interest has a significant and low positive correlation with career concern ($r=0.227$, $p=0.000$), career control ($r=0.272$, $p=0.000$), career cooperation ($r=0.275$, $p=0.000$) and career confidence ($r=0.177$, $p=0.000$).

It can be seen that the stronger the learning motivation of Chinese Mainland exchange students in Taiwan, the higher their career adaptability will be. This is similar to the results of Gotfried (1990); and Jiaying-Cui, (2013), Makayla (2013); Zhang (2012).

4.3.2 Correlation Analysis of Learning Motivation and Future Time Perspective

Table 4.22 presents the correlation between learning motivation and future time perspective of college students from Mainland China who went to universities in Taiwan for exchange study, and the correlation among the dimensions.

Table 4.22 Correlation Analysis of Learning Motivation and Future Time Perspective

Variable/ Dimension	Future Time Perspective	Value	Future Goal	Speed
Learning Motivation	0.237***	0.168***	0.154***	0.211***
Interest of Seeking Knowledge	0.207***	0.149***	0.134***	0.182***
Self-development	0.152***	0.160***	0.020	0.150***
Tour Interest	0.133***	0.040	0.165***	0.107***

Data Source: researchers collate.

Note: *** $p < 0.001$.

It can be seen from the table that:

On the whole, learning motivation and future time perspective have a significant and low positive correlation ($r=0.237, p=0.000$).

In terms of the whole learning motivation and dimensions in future time perspective, the whole learning motivation has a significant and low positive correlation with value ($r=0.168, p=0.000$), future goal ($r=0.154, p=0.000$) and speed ($r=0.221, p=0.000$).

In terms of the whole future time perspective and dimensions in learning motivation, the whole future time perspective has a significant and low positive correlation with interest of seeking knowledge ($r=0.207, p=0.000$), self-development ($r=0.152, p=0.000$), tour interest ($r=0.133, p=0.000$).

In terms of various dimensions in learning motivation and future time perspective, interest of seeking knowledge has a significant and low positive correlation with value ($r=0.149, p=0.000$), future goal ($r=0.134, p=0.000$) and speed ($r=0.182, p=0.000$); self-development has a significant and low positive correlation with value ($r=0.160, p=0.000$) and speed ($r=0.150, p=0.000$), but the correlation coefficient with future goals does not reach a significant level ($r=0.020, p=0.601$); tour interest has a significant and low positive correlation with future goal ($r=0.165, p=0.000$) and speed ($r=0.107, p=0.000$), but the correlation coefficient with value does not reach a significant level ($r=0.040, p=0.296$).

There are also scholars (Alvos, Gregson, & Ross, 1993; Dong-Ho Kang, 1999) get the same result in their research, believing that the stronger the learning motivation is, the stronger the future time perspective is.

4.3.3 Correlation Analysis of Future Time Perspective and Career Adaptability

The correlation between future time perspective and career adaptability of college students from Mainland China who went to universities in Taiwan for exchange study, and the correlation among the dimensions are shown in Table 4.23.

Table 4.23 Correlation Analysis of Future Time Perspective and Career Adaptability

Variable/ Dimension	Career Adaptability	Career Concern	Career Control	Career Cooperation	Career Confidence
Future Time Perspective	0.413***	0.282***	0.340***	0.332***	0.323***
Value	0.300***	0.185***	0.210***	0.268***	0.261***
Future Goal	0.303***	0.211***	0.314***	0.197***	0.222***
Speed	0.322***	0.241***	0.246***	0.273***	0.232***

Source: researchers collate.

Note: *** $p < 0.001$.

It can be seen from the table that:

On the whole, future time perspective and career adaptability have a significant and moderate positive correlation ($r=0.413$, $p=0.000$).

In terms of the whole future time perspective and dimensions in career adaptability, the whole future time perspective has a significant and low positive correlation with career concern ($r=0.282$, $p=0.000$), career control ($r=0.340$, $p=0.000$), career cooperation ($r=0.332$, $p=0.000$) and career confidence ($r=0.323$, $p=0.000$).

In terms of the whole career adaptability and dimensions in future time perspective, the whole career adaptability has a significant and low positive correlation with value ($r=0.300$, $p=0.000$), future goal ($r=0.303$, $p=0.000$) and speed ($r=0.322$, $p=0.000$).

In terms of various dimensions in future time perspective and career adaptability, value has a significant and low positive correlation with career concern ($r=0.185, p=0.000$), career control ($r=0.210, p=0.000$), career cooperation ($r=0.268, p=0.000$) and career confidence ($r=0.261, p=0.000$); future goal has a significant and low positive correlation with career concern ($r=0.211, p=0.000$), career control ($r=0.314, p=0.000$), career cooperation ($r=0.197, p=0.000$) and career confidence ($r=0.222, p=0.000$); speed has a significant and low positive correlation with career concern ($r=0.241, p=0.000$), career control ($r=0.246, p=0.000$), career cooperation ($r=0.273, p=0.000$) and career confidence ($r=0.232, p=0.000$).

Many scholars have pointed out in their studies that when learners have a strong future time perspective, it is beneficial to the realization of future goals, so as to improve their confidence and development in their future career.

4.3.4 Correlation Analysis of Locus of Control and Career Adaptability

In this study, as the moderator variable, internal-external locus of control is transformed to category variable of the two levels involved, so that the study can more clearly distinguish whether a person belongs to internal or external locus of control. The correlation between internal-external locus of control and career adaptability of college students from Mainland China who went to universities in Taiwan for exchange study, and the correlation among the dimensions are shown in Table 4.24.

It can be seen from the table that:

External locus of control and career adaptability have a significant and low negative correlation ($r=-0.257, p=0.000$). While internal locus of control has a significant and low positive correlation with career adaptability ($r=0.500, p=0.000$).

In terms of the dimensions in career adaptability, external locus of control has a significant and low negative correlation with career concern ($r=-0.254$, $p=0.000$), career control ($r=-0.176$, $p=0.000$), career cooperation ($r=-0.158$, $p=0.000$) and career confidence ($r=-0.213$, $p=0.000$). While internal locus of control has a significant and low positive correlation with career concern ($r=0.370$, $p=0.000$), career control ($r=0.324$, $p=0.000$), career cooperation ($r=0.406$, $p=0.000$) and career confidence ($r=0.437$, $p=0.000$).

Table 4.24 Correlation Analysis of Locus of Control and Career Adaptability

Variable/ Dimension	Career Adaptability	Career Concern	Career Control	Career Cooperation	Career Confidence
External Locus of Control	-0.257***	-0.254***	-0.176***	-0.158***	-0.213***
Internal Locus of Control	0.500***	0.370***	0.406***	0.437***	0.324***

Source: researchers collate.

Note: *** $p<0.001$.

There are many studies (Ghasemzadeh & Saadat, 2011; Rubin, 1993; Wang, 2006; Wolk & Bloom, 1978; Zhang renjie, 2001) also reach a similar conclusion, suggesting that locus of control has a positive impact on individual's career adaptability or a certain dimension of it.

In summary, correlation analysis results show that there are significant positive or negative correlations among dimensions and the whole of learning motivation, career adaptability, future time perspective, and internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study.

4.4 Mediation Model Test

In this section, normal distribution test, construct validity test and structural model test are adopted to verify the mediating effect of future time perspective on learning motivation and career adaptability of college students from Mainland China who went to universities in Taiwan for exchange study.

As can be seen from the results of CFA of learning motivation, there is a moderate low correlation among the three dimensions, indicating that each dimension is relatively independent. In order to more clearly and accurately verify the mediating effect of future time perspective, the researcher adopts three dimensions of learning motivation, that is interest in seeking knowledge, self-development, tour interest, to analyze respectively, to test the mediating effect and degree of future time perspective in different dimensions of learning motivation.

In this study, the dimensions of learning motivation are interest in knowledge seeking, self-development, and tour interest. The correlation among the three dimensions, future time perspective and career adaptability is shown in Table 4.25.

Table 4.25 Summary Table of Correlation Coefficients of Each Variable

Variable/ Dimension	Interest of Seeking Knowledge	Self- development	Tour Interest	Career Adaptability
Future Time Perspective	0.207***	0.152***	0.133***	0.413***
Career Adaptability	0.441***	0.333***	0.309***	

Source: researchers collate.

Note: *** $p < 0.001$.

It can be seen that the correlation coefficient between the dimensions of learning motivation, that is interest of seeking knowledge, self-development and tour interest, future time view and career adaptability is between 0.203 and 0.441, showing a significant low or moderate positive correlation (David S. Moore, & William Notz., 2013; Wu, 2009).

4.4.1 Mediating Effect Model Test of Future Time Perspective between Interest of Seeking Knowledge and Career Adaptability

Before verifying the model fit of the theoretical model, normal distribution of the official sample data is verified. According to Kline (1998), absolute value of skewness greater than 3.0 is an extreme skewness, and if the absolute value of kurtosis coefficient is greater than 10.0, it indicates that there is something wrong with kurtosis. Once the skewness or absolute value of kurtosis is too large, it violates the assumption of normality.

The normal distribution test results show that the absolute value of skewness coefficient of each observation variable (that is in interest of seeking knowledge, future time perspective and career adaptability) is between 0.003 and 0.319, less than 3.00. The absolute value of kurtosis coefficient is between 0.271 and 0.790, less than 10.00. It indicates that it conforms to the normal unit distribution. Its Mardia coefficient is 0.287, which is less than the standard of $(item*item+2)$ and conforms to the multivariate normal distribution. In conclusion, according to the standard proposed by Kline (1998), the data analyzed are in accordance with the requirements of structural equation model (SEM) for normality assumption, and subsequent analysis can be carried out.

In this study, the theoretical model is constructed through the linear

structural equation model, and the statistical software AMOS 22.0 is adopted to verify the causal model. The overall analysis results are shown in Figure 4.1.

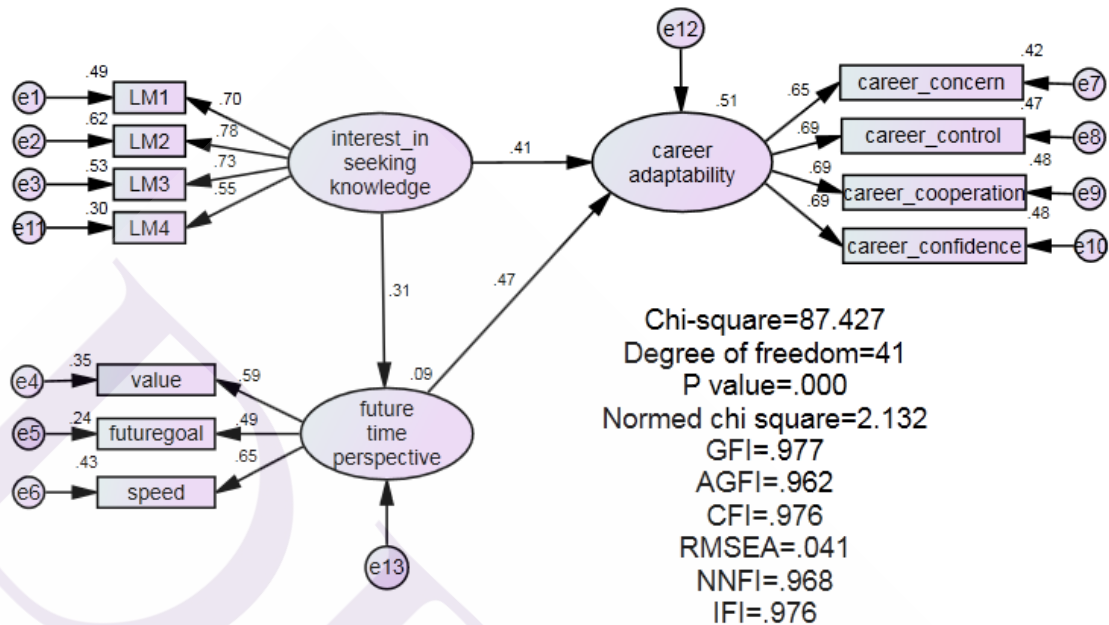


Figure 4.1 Cause-and-effect Model of Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability

Source: researchers collate.

1. Overall Model Fit Test

During overall model fit test, absolute fit test is to determine the degree to which the overall model of the theory can predict the observed variables or correlation matrix. The purpose of incremental fit test is to measure the rate of improvement in fitness by comparing a strict or nested baseline model with the theoretical model. Parsimonious fit test is to present the estimated coefficients of the model fitness required to reach a particular level (Huang, 2004).

As shown in Table 4.26 below, a summary of the overall model fitness of interest of seeking knowledge, future time perspective and career adaptability is

presented.

Table 4.26 Overall Model Fitness Summary of Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability

Indices		Fit Criteria	Result	Fitness Judgment
	χ^2	the smaller the better ($p > 0.05$)	87.427 ($p = 0.000$) (df=41)	No
Absolute Fit Indices	χ^2/df	1-3	2.132	Yes
	GFI	>0.90	0.977	Yes
	AGFI	>0.90	0.962	Yes
	RMR	<0.05	0.010	Yes
	RMSEA	<0.08	0.041	Yes
Incremental Fit Indices	NFI	>0.90	0.956	Yes
	NNFI	>0.90	0.968	Yes
	CFI	>0.90	0.976	Yes
	RFI	>0.90	0.941	Yes
Parsimonious Fit Indices	IFI	>0.90	0.976	Yes
	PGFI	>0.50	0.607	Yes
	PNFI	>0.50	0.713	Yes
	CN	>200	439	Yes

Source: researchers collate.

As can be seen from the table, in terms of absolute fit indices, it reaches significant level with $\chi^2=87.427$ (df=41, $p=0.000$, $\chi^2/df=2.132$), indicating that the theoretical model does not match the observed data. χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference. Moreover it is acceptable (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004) when $\chi^2/df=2.132$. Other indices, GFI=0.977, AGFI=0.962, RMR=0.010, RMSEA=0.041, all reached the adaptive level. Thus in terms of absolute fit indices, the model fitness is good. In terms of incremental fit indices, NFI=0.956, NNFI=0.968, CFI=0.97, RFI=0.941, IFI=0.976, all indices reach above 0.90 and meet the appropriate standard, indicating that the model fitness is very reasonable. And

PGFI=0.607, PNFI=0.713, both reach above 0.50; CN=439, greater than 200; according to the fit criteria proposed by many scholars (Hair Jr. et al., 2006; Hu, L., & Bentler, P. M., 1999; Martens, M. P., 2005; Weston, R., & Gore, P. A., Jr., 2006), it shows good model fitness in parsimonious fit indices, conforming to the requirements of model simplification.

2. Fitness Test of Internal Structure Model

The verification of the internal structure model fitness of the CFA model for interest of seeking knowledge, future time perspective and career adaptability is shown in Table 4.27.

Table 4.27 Internal Structure Model Fitness Summary of the CFA model for Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability

Dimension	Measurement Index	Factor Loading	Reliability Coefficient	C.R.
	Fit Criteria	0.45-0.95	>0.20	Reach Sig.
Interest of Seeking Knowledge	LM1	0.701	0.492	14.153***
	LM2	0.785	0.616	11.400***
	LM3	0.730	0.534	13.351***
	LM4	0.549	0.301	16.536***
Future Time Perspective	Value	0.592	0.351	12.959***
	Future Goal	0.489	0.239	15.310***
	Speed	0.652	0.426	11.035***
Career Adaptability	Career Concern	0.650	0.423	14.977***
	Career Control	0.688	0.473	14.200***
	Career Cooperation	0.693	0.480	14.075***
	Career Confidence	0.691	0.478	14.113***

Source: researchers collate.

Note: *** $p < 0.001$.

As can be seen from the summary in the table that the factor loadings of all the observed items are between 0.489 and 0.785, consistent with the criteria of 0.45 to 0.95. The R² value of item reliability is between 0.239 and 0.616, all of which are greater than 0.20. The combined reliability of the latent variables is between 0.601 and 0.787, all of which are greater than 0.60 (Bentler & Wu, 1993; Jöreskog & Sörbom, 1989). In addition, all error variances are positive, and the estimated values of parameter statistics all reach the significant level (Huang, 2004), indicating that the internal structural fitness is good.

3. Convergent Validity and Discriminate Validity

Convergent validity refers to that all the observed variables of the same potential traits are on the same dimension, and there are significant correlations between the observed variables. The factor loading of observed variable must be greater than 0.45 and reach a significant level (Bentler & Wu, 1993; Jöreskog & Sörbom, 1989), indicating that the observed variable has convergent validity.

Factor loadings (standardized regression coefficients) in the CFA model for interest of seeking knowledge, future time perspective and career adaptability are between 0.601 and 0.787, all above 0.60 and reach significant level, the AVE of the latent variables are all close to or greater than 0.40. That means it has convergent validity. Discriminate validity refers to the low or significant difference in different dimensions. In this study, the following two methods are adopted for verification.

The first is the AVE method which requires the AVE of each dimension be greater than the square of its correlation coefficient (Fornell & Larcker, 1981). As shown in Table 4.28, all three dimensions are verified by AVE method, indicating that there is discriminate validity among them.

Table 4.28 Summary of AVE Analysis among Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability

	Interest of Seeking Knowledge	Future Time Perspective	Career Adaptability
Interest of Seeking Knowledge	0.696		
Future Time Perspective	0.307	0.581	
Career Adaptability	0.411	0.468	0.680

Source: researchers collate.

Note: The diagonal value is square root of AVE, the values in the lower triangle are Pearson correlation coefficients.

The AVE of each dimension is greater than the square of its correlation coefficient (Fornell & Larcker, 1981), indicating that there is discriminate validity among them.

The second method named Bootstrapping technique is adopted to further test after CFA model for interest of seeking knowledge, future time perspective and career adaptability has passed the AVE test. By bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008). The result is shown in Table 4.29.

Table 4.29 The 95% Confidence Interval by Bootstrapping Technique

Latent Variable	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
Interest of Seeking Knowledge → Future Time Perspective	0.121	0.272	0.120	0.272
Interest of Seeking Knowledge → Career Adaptability	0.281	0.441	0.282	0.442
Future Time Perspective → Career Adaptability	0.359	0.635	0.358	0.635

Source: researchers collate.

In this study, a sample size of 2000 times is taken for model test. The verification results show that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

4. Mediating Effect of Future Time Perspective on the Influence of Interest of Seeking Knowledge on Career Adaptability

In this study, structural equation model (SEM) is adopted to explore the causal relationships among variables. When the relationships among the variables reaches significant, it means that there is a direct effect between the two variables. If not significant, there is no direct effect between them. In addition, besides the possibility of direct effect between two variables, there may also be an indirect effect, that is, there may be a mediator between two variables.

However, the premise is that the direct effect between variables should be significant. If any direct effect is not significant, the indirect effect cannot be established, that is, there is no mediating effect (Qiu, 2003). Baron and Kenny (1986) believe that the mediating effect is verified by three regression models. The first is that the independent variable significantly predicts the dependent variable; the second is that the independent variable significantly predicts the mediator; and the third is that the mediator significantly predicts the dependent variable.

This section is to explore the relationships among interest of seeking knowledge, future time perspective and career adaptability. Among them, the independent variable refers to interest of seeking knowledge, the mediating variable is future time perspective, and the dependent variable is career adaptability. As can be seen from Table 4.30 below, interest of seeking knowledge has a direct and significant impact on career adaptability, interest of seeking knowledge also has a direct and

significant impact on future time perspective, and future time perspective has a direct and significant impact on career adaptability.

It can be seen that the causal model in this section conforms to the three verification methods proposed by Baron and Kenny (1986). So it can be said that future time perspective has a mediating effect on the relationship between interest of seeking knowledge and career adaptability. Therefore, the research hypotheses H2, H3 and H4 are verified.

Table 4.30 Causal Effect Value of Interest of Seeking Knowledge, Future Time Perspective and Career Adaptability

	Standardized Regression Coefficient	S.E.	C.R.
Interest of Seeking Knowledge→ Future Time Perspective	0.307	0.036	5.250***
Future Time Perspective→ Career Adaptability	0.468	0.068	7.118***
Interest of Seeking Knowledge→ Career Adaptability	0.411	0.034	7.798***

Source: researchers collate.

Note: *** $p < 0.001$.

However, some scholars (Cheung & Lau, 2008; MacKinnon, 2008; Shrout & Bolger, 2002) think that such a statistical procedure is somewhat ambiguous and cannot be applied to most studies. In fact, verifying mediation effects in these three ways can only be described as "very likely", as Baron and Kenny (1986) mention in the original text, the last test condition is that the effect of the independent variable is weakened after adding the mediator. If the mediator is added, the effect of independent variable on dependent variable is completely insignificant, indicating that it is a complete mediation; on the contrary, if the effect is weakened but still

significant, it is partially mediated.

Before adding future time perspective as a mediator, the direct impact of interest of seeking knowledge on career adaptability is 0.56***, reaching a significant level. After adding future time view as a mediator, the effect weakened to 0.411***, which also reaches a significant level. Therefore, it can be seen that future time perspective plays a mediating effect between interest of seeking knowledge and career adaptability.

Now, the current common method is Sobel test (1982), which is the exact formula for testing this last condition. This test is a direct test of whether "interest of seeking knowledge \rightarrow future time perspective \times future time perspective \rightarrow career adaptability" is significant. In other words, Sobel test is to see whether the indirect effect is significant. In other words, the mediating effect of mediator can only be confirmed by measuring the significance of indirect effects in addition to the significant direct effects among independent variables, mediator and dependent variables (Preacher & Hayes, 2008).

Table 4.31 shows the Sobel test results of the indirect effect between interest of seeking knowledge and career adaptability in causal models of interest of seeking knowledge, future time perspective and career adaptability.

Table 4.31 Sobel Test Results of the Indirect Effect between Interest of Seeking Knowledge and Career Adaptability

Test statistic	Std. Error	<i>p</i> -value
4.251	0.022	0.000

Source: researchers collate.

In addition, Shrout and Bolger (2002) introduce the concept of Bootstrapping to test the significance of indirect effects. The main concept is to regard the sample itself as the participant (target population), and then sample repeatedly (for example, 1,000 or 2,000 times), and the thousand-time estimate present a new distribution. So we can figure out the confidence interval, and then check if this confidence interval goes through 0. If not, it can be confirmed to be statistically significant (Cheung & Lau, 2008).

In this study, 2,000 repeated samples are taken. With the two methods of bias-corrected and percentile, it is found that the upper and lower limits of the confidence interval do not contain 0, indicating significant indirect effect. Table 4.32 presents the confidence interval (standardized coefficient) of interest of seeking knowledge on career adaptability.

Table 4.32 Confidence Interval of Indirect Effect (Interest of Seeking Knowledge → Career Adaptability)

Indirect Effect	Bias-corrected			Percentile		
	Lower	Upper	<i>p</i> -value	Lower	Upper	<i>p</i> -value
Interest of Seeking Knowledge → Career Adaptability	0.301	0.501	0.001	0.307	0.507	0.001

Source: researchers collate.

As can be seen from the above table that in causal models of interest of seeking knowledge, future time perspective and career adaptability, the direct effects between variables (interest of seeking knowledge→future time perspective, future time perspective→career adaptability, interest of seeking knowledge→career adaptability) are significant. Both Sobel test and Bootstrapping test show significant

indirect effects of interest of seeking knowledge on career adaptability.

It can be seen that interest of seeking knowledge positively affects career adaptability through future time perspective, which has an mediating effect on career adaptability. Moreover, the addition of future time perspective (mediating variable) does not affect the direct significant effect of interest of seeking knowledge (independent variable) on career adaptability (dependent variable), which verifies the partial mediating effect of future time perspective.

4.4.2 Mediating Effect Model Test of Future Time Perspective between Self-development and Career Adaptability

The normal distribution test results show that the absolute value of skewness coefficient of each observation variable, that is in self-development, future time perspective and career adaptability, is between 0.003 and 0.306, less than 3.00. The absolute value of kurtosis coefficient is between 0.271 and 0.794, less than 10.00. It indicates that it conforms to the normal unit distribution. Its Mardia coefficient is 0.376, which is less than the standard of $(item*item+2)$ and conforms to the multivariate normal distribution. In conclusion, according to the standard proposed by Kline (1998), the analyzed data are in accordance with the requirements of structural equation model (SEM) for normality assumption, and subsequent analysis can be carried out.

In this study, the theoretical model is constructed through the linear structural equation model, and the statistical software AMOS 22.0 is adopted to verify the causal model. The overall analysis results are shown in Figure 4.2.

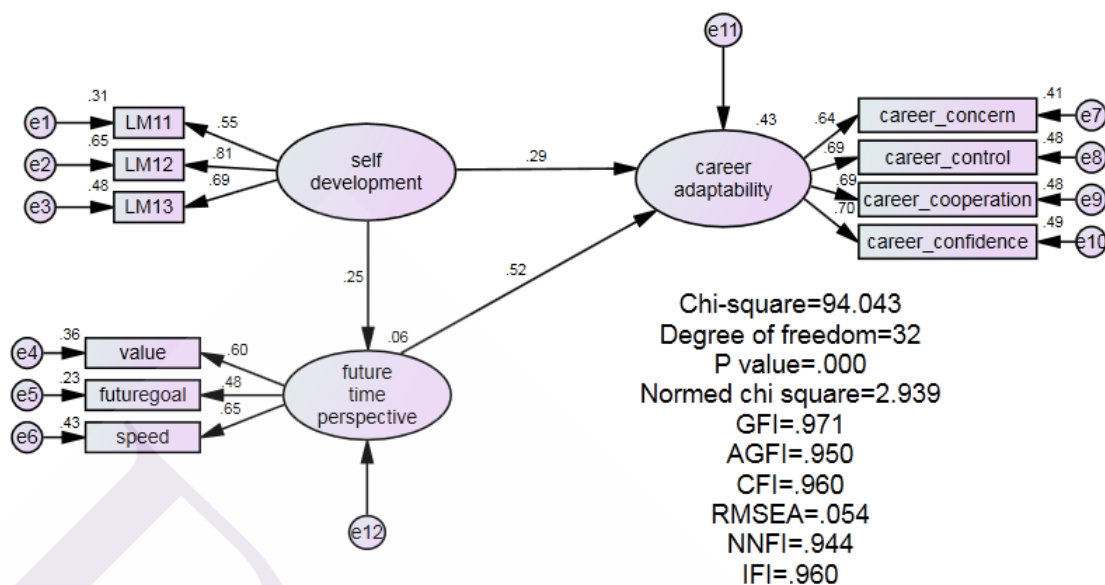


Figure 4.2 Cause-and-effect Model of Self-development, Future Time Perspective and Career Adaptability

Source: researchers collate.

1. Overall Model Fit Test

The summary of the overall model fitness of self-development, future time perspective and career adaptability is presented in Table 4.33.

As can be seen from the table, in terms of absolute fit indices, it reaches significant level with $\chi^2=94.043$ ($df=32$, $p=0.000$, $\chi^2/df=2.939$), indicating that the theoretical model does not match the observed data. χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference. Moreover it is acceptable (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004) when $\chi^2/df=2.939$. Other indices, GFI=0.971, AGFI=0.950, RMR=0.013, RMSEA=0.054, all reached the adaptive level. Thus in terms of absolute fit indices, the model fitness is good. In terms of incremental fit indices, NFI=0.941, NNFI=0.944, CFI=0.960, RFI=0.917, IFI=0.960, all indices reach above 0.90 and meet the appropriate standard, indicating that the model fitness is very reasonable.

And PGFI=0.565, PNFI=0.669, both reach above 0.50; CN=331, greater than 200; according to the fit criteria proposed by many scholars (Hair Jr. et al., 2006; Hu, L. & Bentler, P. M., 1999; Martens, M. P., 2005; Weston, R., & Gore, P. A., Jr., 2006), it shows good model fitness in parsimonious fit indices, conforming to the requirements of model simplification.

Table 4.33 Overall Model Fitness Summary of Self-development, Future Time Perspective and Career Adaptability

Indices	Fit Criteria	Result	Fitness Judgment	
	χ^2	94.043 ($p=0.000$) (df=32)	No	
	χ^2/df	2.939	Yes	
Absolute Fit Indices	GFI	>0.90	Yes	
	AGFI	>0.90	Yes	
	RMR	<0.05	0.013	Yes
	RMSEA	<0.08	0.054	Yes
	NFI	>0.90	0.941	Yes
Incremental Fit Indices	NNFI	>0.90	0.944	Yes
	CFI	>0.90	0.960	Yes
	RFI	>0.90	0.917	Yes
	IFI	>0.90	0.960	Yes
Parsimonious Fit Indices	PGFI	>0.50	0.565	Yes
	PNFI	>0.50	0.669	Yes
	CN	>200	331	Yes

Source: researchers collate.

2. Fitness Test of Internal Structure Model

The verification of the internal structure model fitness of the CFA model for self-development, future time perspective and career adaptability is shown in Table 4.34.

Table 4.34 Internal Structure Model Fitness Summary of the CFA model for Self-development, Future Time Perspective and Career Adaptability

Dimension	Measurement Index	Factor Loading	Reliability Coefficient	C.R.
	Fit Criteria	0.45-0.95	>0.20	Reach Sig.
Self-development	LM5	0.554	0.307	15.652***
	LM6	0.807	0.652	7.167***
	LM7	0.691	0.478	11.897***
Future Time Perspective	Value	0.597	0.357	12.815***
	Future Goal	0.482	0.233	15.424***
	Speed	0.653	0.427	11.006***
Career Adaptability	Career Concern	0.643	0.414	14.933***
	Career Control	0.690	0.476	13.931***
	Career Cooperation	0.692	0.478	13.889***
	Career Confidence	0.697	0.486	13.750***

Source: researchers collate.

Note: *** $p < 0.001$.

As can be seen from the summary in the table that the factor loadings of all the observed items are between 0.482 and 0.807, consistent with the criteria of 0.45 to 0.95. The R2 value of item reliability is between 0.233 and 0.652, all of which are greater than 0.20. In addition, all error variances are positive, and the estimated values of parameter statistics all reach the significant level (Huang, 2004), indicating that the internal structural fitness is good.

3. Convergent Validity and Discriminate Validity

Factor loadings (standardized regression coefficients) in the CFA model for self-development, future time perspective and career adaptability are between 0.601 and 0.775, all above 0.60 and reach significant level, the AVE of the latent variables are all close to or greater than 0.40. That means it has convergent validity.

The result of AVE (Average Variance Extracted) method which is adopted to test discriminate validity is shown in Table 4.35. And the AVE of each dimension be greater than the square of its correlation coefficient (Fornell & Larcker, 1981), indicating that there is discriminate validity among them.

Table 4.35 Summary of AVE Analysis among Self-development, Future Time Perspective and Career Adaptability

	Self-development	Future Time Perspective	Career Adaptability
Self-development	0.691		
Future Time Perspective	0.250	0.581	
Career Adaptability	0.290	0.520	0.680

Source: researchers collate.

Note: The diagonal value is square root of AVE, the values in the lower triangle are Pearson correlation coefficients.

And then by bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008), and the result is shown in Table 4.36.

Table 4.36 The 95% Confidence Interval by Bootstrapping Technique

Latent Variable	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
Self-development→ Future Time Perspective	0.082	0.289	0.081	0.289
Self-development→ Career Adaptability	0.125	0.309	0.124	0.308
Future Time Perspective→ Career Adaptability	0.392	0.701	0.391	0.700

Source: researchers collate.

The verification results show that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

4. Mediating Effect of Future Time Perspective on the Influence of Self-development on Career Adaptability

This section is to explore the relationships among self-development, future time perspective and career adaptability. Among them, the independent variable refers to self-development, the mediating variable is future time perspective, and the dependent variable is career adaptability.

As can be seen from Table 4.37, self-development has a direct and significant impact on career adaptability, self-development also has a direct and significant impact on future time perspective, and future time perspective has a direct and significant impact on career adaptability. It can be seen that the causal model in this section conforms to the three verification methods proposed by Baron and Kenny (1986). So it can be said that future time perspective has a mediating effect on the relationship between self-development and career adaptability.

Table 4.37 Causal Effect Value of Self-development, Future Time Perspective and Career Adaptability

	Standardized Regression Coefficient	S.E.	C.R.
Self-development → Future Time Perspective	0.245	0.044	4.103***
Future Time Perspective → Career Adaptability	0.523	0.070	7.520***
Self-development → Career Adaptability	0.285	0.040	5.365***

Source: researchers collate.

Note: *** $p < 0.001$.

Before adding future time perspective as a mediator, the direct impact of self-development on career adaptability is 0.415***, reaching a significant level. After adding future time view as a mediator, the effect weakened to 0.285***, which also reaches a significant level. Therefore, it can be seen that future time perspective plays a mediating effect between self-development and career adaptability.

Sobel test is a direct test of whether "self-development \rightarrow future time perspective \times future time perspective \rightarrow career adaptability" is significant. In other words, Sobel test is to test whether the indirect effect is significant. Table 4.38 shows the Sobel test results of the indirect effect between self-development and career adaptability in causal models of self-development, future time perspective and career adaptability.

Table 4.38 Sobel Test Results of the Indirect Effect between Self-development and Career Adaptability

Test statistic	Std. Error	<i>p</i> -value
3.645	0.027	0.000

Source: researchers collate.

In this study, Bootstrapping technique is adopted to verify the significance of indirect effects by taking 2,000 repeated samples (Shrout & Bolger, 2002). With the two methods of bias-corrected and percentile, it is found that the upper and lower limits of the confidence interval do not contain 0, indicating significant indirect effect (Cheung & Lau, 2008). Table 4.39 presents the confidence interval (standardized coefficient) of self-development on career adaptability.

Table 4.39 Confidence Interval of Indirect Effect (Self-development→Career Adaptability)

Indirect Effect	Bias-corrected			Percentile		
	Lower	Upper	<i>p</i> -value	Lower	Upper	<i>p</i> -value
Self-development →Career Adaptability	0.170	0.387	0.001	0.171	0.390	0.001

Source: researchers collate.

As can be seen from the above table that in causal models of self-development, future time perspective and career adaptability, the direct effects between variables (self-development → future time perspective, future time perspective → career adaptability, self-development → career adaptability) are significant.

Both Sobel test and Bootstrapping test show significant indirect effects of self-development on career adaptability. Therefore, it can be seen that self-development positively affects career adaptability through future time perspective, which has a mediating effect on career adaptability. Moreover, the addition of future time perspective (mediating variable) does not affect the direct significant effect of self-development (independent variable) on career adaptability (dependent variable), which verifies the partial mediating effect of future time perspective.

4.4.3 Mediating Effect Model Test of Future Time Perspective between Tour Interest and Career Adaptability

The normal distribution test results show that the absolute value of skewness coefficient of each observation variable, that is in interest of seeking knowledge, future time perspective and career adaptability, is between 0.003 and 0.306, less than 3.00. The absolute value of kurtosis coefficient is between 0.271 and

1.090, less than 10.00. It indicates that it conforms to the normal unit distribution. Its Mardia coefficient is 0.496, which is less than the standard of $(item*item+2)$ and conforms to the multivariate normal distribution.

In conclusion, according to the standard proposed by Kline (1998), the data analyzed are in accordance with the requirements of structural equation model (SEM) for normality assumption, and subsequent analysis can be carried out.

In this study, the theoretical model is constructed through the linear structural equation model, and the statistical software AMOS 22.0 is adopted to verify the causal model. The overall analysis results are shown in Figure 4.3.

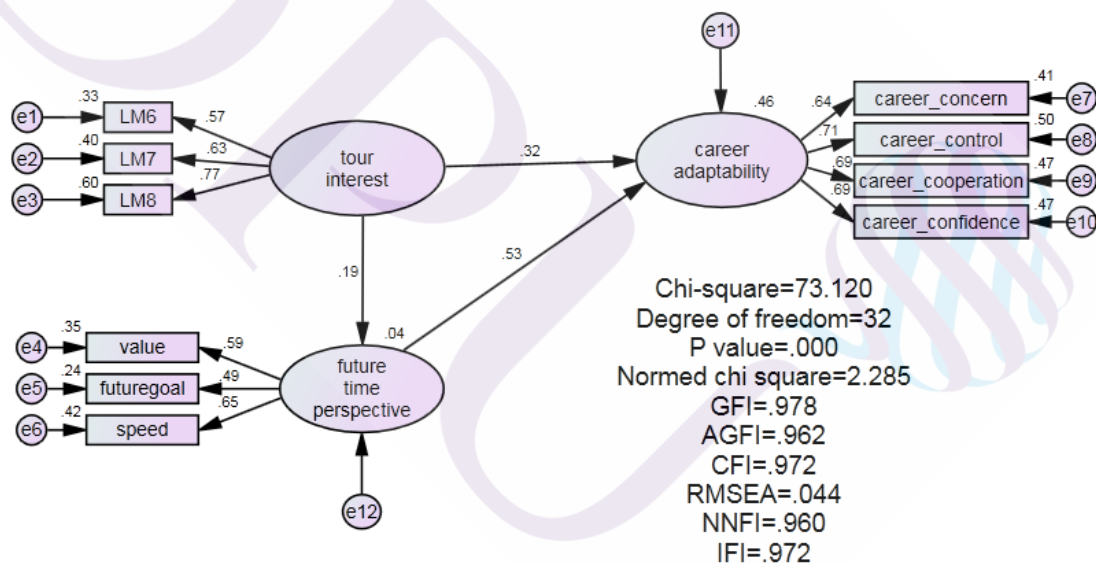


Figure 4.3 Cause-and-effect Model of Tour Interest, Future Time Perspective and Career Adaptability

Source: researchers collate.

1. Overall Model Fit Test

The summary of the overall model fitness of tour interest, future time perspective and career adaptability is presented in Table 4.40.

Table 4.40 Overall Model Fitness Summary of Tour Interest, Future Time Perspective and Career Adaptability

Indices	Fit Criteria	Result	Fitness Judgment	
	χ^2	73.120 ($p=0.000$) (df=32)	No	
	the smaller the better ($p>0.05$)			
	χ^2/df	2.285	Yes	
Absolute Fit Indices	GFI	>0.90	0.978	Yes
	AGFI	>0.90	0.962	Yes
	RMR	<0.05	0.012	Yes
	RMSEA	<0.08	0.044	Yes
	NFI	>0.90	0.951	Yes
Incremental Fit Indices	NNFI	>0.90	0.960	Yes
	CFI	>0.90	0.972	Yes
	RFI	>0.90	0.931	Yes
	IFI	>0.90	0.972	Yes
Parsimonious Fit Indices	PGFI	>0.50	0.569	Yes
	PNFI	>0.50	0.676	Yes
	CN	>200	426	Yes

Source: researchers collate.

As can be seen from the table, in terms of absolute fit indices, it reaches significant level with $\chi^2=73.120$ (df=32, $p=0.000$, $\chi^2/df=2.285$), indicating that the theoretical model does not match the observed data. χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference. Moreover it is acceptable (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004) when $\chi^2/df=2.285$. Other indices, GFI=0.978, AGFI=0.962, RMR=0.012, RMSEA=0.044, all reached the adaptive level. Thus in terms of absolute fit indices, the model fitness is good. In terms of incremental fit indices, NFI=0.951, NNFI=0.960, CFI=0.972, RFI=0.931, IFI=0.972, all indices reach above 0.90 and meet the appropriate standard, indicating that the model fitness is very reasonable.

And PNFI=0.569, PNFI=0.676, both reach above 0.50; CN=426, greater than 200; according to the fit criteria proposed by many scholars (Hair Jr. et al., 2006; Hu, L. & Bentler, P. M., 1999; Martens, M. P., 2005; Weston, R., & Gore, P. A., Jr., 2006), it shows good model fitness in parsimonious fit indices, conforming to the requirements of model simplification.

2. Fitness Test of Internal Structure Model

The verification of the internal structure model fitness of the CFA model for tour interest, future time perspective and career adaptability is shown in Table 4.41.

Table 4.41 Internal Structure Model Fitness Summary of the CFA model for Tour Interest, Future Time Perspective and Career Adaptability

Dimension	Measurement Index	Factor Loading	Reliability Coefficient	C.R.
	Fit Criteria	0.45-0.95	>0.20	Reach Sig.
Tour Interest	LM8	0.570	0.325	14.756***
	LM9	0.634	0.402	13.025***
	LM10	0.772	0.596	7.859***
Future Time Perspective	Value	0.593	0.351	12.921***
	Future Goal	0.491	0.241	15.260***
	Speed	0.649	0.422	11.117***
Career Adaptability	Career Concern	0.642	0.412	14.985***
	Career Control	0.708	0.501	13.486***
	Career Cooperation	0.686	0.470	14.061***
	Career Confidence	0.685	0.470	14.075***

Source: researchers collate.

Note: *** $p < 0.001$.

As can be seen from the summary in the table that the factor loadings of all

the observed items are between 0.491 and 0.772, consistent with the criteria of 0.45 to 0.95. The R² value of item reliability is between 0.241 and 0.595, all of which are greater than 0.20. And all error variances are positive, and the estimated values of parameter statistics all reach the significant level (Huang, 2004), indicating that the internal structural fitness is good.

3. Convergent Validity and Discriminate Validity

Factor loadings (standardized regression coefficients) in the CFA model for tour interest, future time perspective and career adaptability are between 0.601 and 0.775, all above 0.60 and reach significant level, the AVE of the latent variables are all close to or greater than 0.40. That means it has convergent validity.

The result of AVE (Average Variance Extracted) method which is adopted to test discriminate validity is shown in Table 4.42.

Table 4.42 Summary of AVE Analysis among Tour Interest, Future Time Perspective and Career Adaptability

	Tour Interest	Future Time Perspective	Career Adaptability
Tour Interest	0.662		
Future Time Perspective	0.190	0.581	
Career Adaptability	0.320	0.530	0.683

Source: researchers collate.

Note: The diagonal value is square root of AVE, the values in the lower triangle are Pearson correlation coefficients.

The AVE of each dimension is greater than the square of its correlation coefficient (Fornell & Larcker, 1981), indicating that there is discriminate validity

among them.

And then by bootstrapping technique, the correlation coefficients of the 95% confidence interval of the dimensions are calculated (MacKinnon, 2008), and the result is shown in Table 4.43.

Table 4.43 The 95% Confidence Interval by Bootstrapping Technique

Latent Variable	Bias-corrected Percentile method		Percentile method	
	Lower	Upper	Lower	Upper
Tour Interest→ Future Time Perspective	0.050	0.233	0.047	0.231
Tour Interest → Career Adaptability	0.158	0.338	0.154	0.334
Future Time Perspective→ Career Adaptability	0.411	0.705	0.408	0.703

Source: researchers collate.

The verification results show that the values between variables do not contain 1, indicating that there is discriminate validity (Torkzadeh, Koufteros, & Pflughoeft, 2003).

4. Mediating Effect of Future Time Perspective on the Influence of Tour Interest on Career Adaptability

This section is to explore the relationships among tour interest, future time perspective and career adaptability. Among them, the independent variable refers to tour interest, the mediating variable is future time perspective, and the dependent variable is career adaptability.

As can be seen from Table 4.44 below, tour interest has a direct and significant impact on career adaptability, tour interest also has a direct and significant

impact on future time perspective, and future time perspective has a direct and significant impact on career adaptability. Therefore it can be seen that the causal model in this section conforms to the three verification methods proposed by Baron and Kenny (1986). So it can be said that future time perspective has a mediating effect on the relationship between tour interest and career adaptability.

Table 4.44 Causal Effect Value of Tour Interest, Future Time Perspective and Career Adaptability

	Standardized Regression Coefficient	S.E.	C.R.
Tour Interest → Future Time Perspective	0.190	0.044	3.168*
Future Time Perspective → Career Adaptability	0.534	0.071	7.684***
Tour Interest → Career Adaptability	0.324	0.041	5.928***

Source: researchers collate.

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Before adding future time perspective as a mediator, the direct impact of tour interest on career adaptability is 0.425***, reaching a significant level. After adding future time view as a mediator, the effect weakened to 0.324***, which also reaches a significant level. Therefore, it can be seen that future time perspective plays a mediating effect between tour interest and career adaptability.

Sobel test is a direct test of whether "tour interest → future time perspective × future time perspective → career adaptability" is significant. In other words, Sobel test is to see whether the indirect effect is significant. Table 4.45 shows the Sobel test results of the indirect effect between tour interest and career adaptability

in causal models of tour interest, future time perspective and career adaptability.

Table 4.45 Sobel Test Results of the Indirect Effect between Tour Interest and Career Adaptability

Test statistic	Std. Error	<i>p</i> -value
2.921	0.026	0.003

Source: researchers collate.

In this study, Bootstrapping test is adopted to verify the significance of indirect effects by taking 2,000 repeated samples (Shrout & Bolger, 2002). With the two methods of bias-corrected and percentile, it is found that the upper and lower limits of the confidence interval do not contain 0, indicating significant indirect effect (Cheung & Lau, 2008). Table 4.46 presents the confidence interval (standardized coefficient) of tour interest on career adaptability.

Table 4.46 Confidence Interval of Indirect Effect (Tour Interest→Career Adaptability)

Indirect Effect	Bias-corrected			Percentile		
	Lower	Upper	<i>p</i> -value	Lower	Upper	<i>p</i> -value
Tour Interest→ Career Adaptability	0.213	0.428	0.001	0.213	0.428	0.001

Source: researchers collate.

As can be seen from the above table that in causal models of tour interest, future time perspective and career adaptability, the direct effects between variables (tour interest → future time perspective, future time perspective → career adaptability, tour interest →career adaptability) are significant. Both Sobel test and Bootstrapping

test show significant indirect effects of tour interest on career adaptability. It can be seen that tour interest positively affects career adaptability through future time perspective, which has a mediating effect on career adaptability. Moreover, the addition of future time perspective (mediating variable) does not affect the direct significant effect of tour interest (independent variable) on career adaptability (dependent variable), which verifies the partial mediating effect of future time perspective. Therefore, it supports the research hypothesis H5.

Based on the results of the above analysis and verification, future time perspective shows significant partial mediating effects in the dimensions of interest of seeking knowledge, self-development and tour interest, with path coefficients of 0.19, 0.25 and 0.31. It can be seen that among the three dimensions of learning motivation, future time perspective has the largest degree of mediating effect between interest of seeking knowledge and career adaptability.

In summary, during the process of validating the mediating effect of future time perspective between learning motivation and career adaptability, it also verifies that all dimensions of learning motivation have a significant positive impact on future time perspective and career adaptability, as well as significant positive impact of future time perspective on career adaptability. Therefore the research hypothesis H2, H3, H4 and H5 are all supported in this study.

4.5 Verification of Moderating Effect

In this study, internal-external locus of control is taken as moderating variable, and is verified by the statistical analysis software AMOS 22.0, to explore its

moderating effect of learning motivation on career adaptability.

According to the aforementioned literature, internal-external locus of control, as a criterion to judge the commonality and difference between a person and others (Luo & Tang, 2003; Schmitz et al., 2000), is a persistent trait (Guliford, 1959). Rotter divided personality traits into internal locus of control and external locus of control (Mahajan & Kaur, 2012; Schmitz et al., 2000; Yilmaz & Kaya, 2010).

Therefore, in this study, before verification of moderating effect, the samples are divided into two categories: internal locus control (In-group) and external locus of control (Ex-group) according to the concept of high and low cluster partition of samples mentioned by LaBahn and Krapfel (2000). By comparing the original average scores of internal locus of control and external locus of control, the personality trait tendency of each participant is distinguished with the higher score. In the analysis of the multi-group structural equation model, the fitness of the single-sample model is firstly verified to ensure that the fitness of the model is up to the standard, and it is suitable for the follow-up path coefficient identity test, through which to determine the moderating effect of the moderator on the influence relationship between independent variable and dependent variable (Chen & Wang, 2010).

In order to verify the moderating effect of internal-external locus of control more clearly and accurately, the researcher adopts three dimensions of learning motivation to analyze, so as to test the moderating effect of internal-external locus of control between different dimensions of learning motivation and career adaptability.

4.5.1 Influence of Locus of Control on Career Adaptability

AMOS is adopted in this section to verify the influence of internal-external

locus of control personality traits on career adjustment ability. In order to more clearly verify its influence effect, this section respectively adopt external locus of control and internal locus of control as independent variable to verify its influence on career adaptability. The structural equation modeling is shown in Figure 4.4 and 4.5.

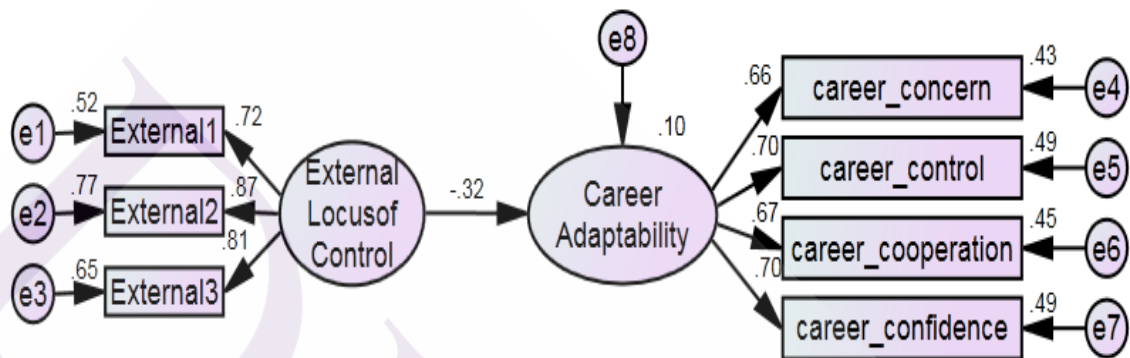


Figure 4.4 Structure Equation Modeling of the Relationship between External Locus of Control and Career Adaptability

Source: researchers collate.

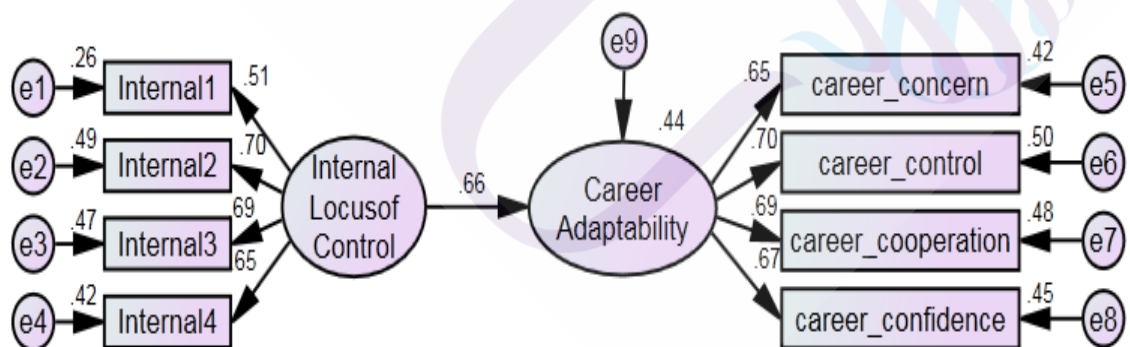


Figure 4.5 Structure Equation Modeling of the Relationship between Internal Locus of Control and Career Adaptability

Source: researchers collate.

According to the overall model suitability test standard proposed by Huang (2004), the absolute fit indices, incremental fit indices and parsimonious fit

indices of the two models are compared, and a summary table of the two fitness indices is obtained. As shown in Table 4.47.

Table 4.47 Summary of Overall Model Fitness

Indices	Fit Criteria	Result (External)	Result (Internal)	Fitness Judgment	
Absolute Fit Indices	χ^2	the smaller the better ($p > 0.05$)	20.159 (df=13, $p=0.091$)	60.495 (df=19, $p=0.000$)	No
	χ^2/df	1-3	1.551	2.184	Yes
	GFI	>0.90	0.992	0.978	Yes
	AGFI	>0.90	0.982	0.959	Yes
	RMR	<0.05	0.013	0.014	Yes
	RMSEA	<0.08	0.029	0.057	Yes
Incremental Fit Indices	NFI	>0.90	0.987	0.958	Yes
	NNFI	>0.90	0.993	0.957	Yes
	CFI	>0.90	0.995	0.971	Yes
	RFI	>0.90	0.980	0.939	Yes
	IFI	>0.90	0.995	0.971	Yes
Parsimonious Fit Indices	PGFI	>0.50	0.616	0.516	Yes
	PNFI	>0.50	0.611	0.650	Yes
	CN	>200	747	336	Yes

Source: researchers collate.

As can be seen from the table that in terms of absolute fit indices, χ^2 is 20.159 ($p=0.091$) and 60.495 ($p=0.000$) respectively, both reaching significant levels, indicating that the theoretical model does not match the observed data. χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004). And other indices meet the adaptation standard. In terms of incremental fit indices and parsimonious fit indices, they all reach the appropriate standard. Thus,

both models show good fitness.

Through the test and analysis of structural equation model, the influence coefficients of external locus of control and internal locus of control on career adaptability are obtained, and as shown in Table 4.48.

Table 4.48 Influence Coefficient of Locus of Control on Career Adaptability

Path	Influence Coefficient
External Locus of Control→Career Adaptability	-0.319***
Internal Locus of Control→Career Adaptability	0.662***

Source: researchers collate.

Note: *** $p < 0.001$.

The results show that external locus of control has a significant negative effect on career adaptability, while internal locus of control has a significant positive impact on career adaptability. In other words, the higher the external locus of control of Chinese Mainland college students who went to Taiwan for exchange study, the weaker their career adaptability.; the higher the internal locus of control, the stronger the career adaptability will be. It can be known from the above analysis that hypothesis H6 in this study is supported.

4.5.2 Moderating Effect of Locus of Control between Interest of Seeking Knowledge and Career Adaptability

1. Model Fit Test

In the fitness test stage of one-sample model, three one-sample models are firstly made, they are full-sample model (F-model), internal group model (In-model)

and external group model (Ex-model). And then carry out fitness test. The results are shown in Table 4.49.

Table 4.49 Model Fit Summary (Interest of Seeking Knowledge Dimension)

Indices	Fit Criteria	F-model	In-model	Ex-model	
	χ^2	87.427 ($p=0.000$)	57.127 ($p=0.048$)	73.673 ($p=0.001$)	
	χ^2/df	2.132	1.393	1.797	
Absolute Fit Indices	GFI	>0.90	0.977	0.967	0.961
	AGFI	>0.90	0.962	0.946	0.938
	RMR	<0.05	0.010	0.013	0.013
	SRMR	<0.08	0.032	0.038	0.042
	RMSEA	<0.08	0.041	0.033	0.051
	NFI	>0.90	0.956	0.934	0.929
Incremental Fit Indices	NNFI	>0.90	0.968	0.973	0.955
	CFI	>0.90	0.976	0.980	0.967
	RFI	>0.90	0.941	0.912	0.905
	IFI	>0.90	0.976	0.981	0.967
Parsimonious Fit Indices	PGFI	>0.50	0.607	0.600	0.597
	PNFI	>0.50	0.713	0.696	0.693
	CN	>200	439	367	235

Source: researchers collate.

As can be seen from the results in the above table, χ^2 in F-model is 87.427 ($p=0.000$), In-model 57.127 ($p=0.048$), and Ex-model 73.673 ($p=0.001$) which all reach significant level, indicating that the theoretical model does not match the observed data. But χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004). χ^2/df in F-model is 2.132, In-model 1.393, and

Ex-model 1.797, which are all acceptable. And all the other indices in the three one-samples meet the appropriate standard, indicating reasonable fitness according to the fit criteria proposed by many scholars (Hair Jr. et al., 2006; Hu, L., & Bentler, P. M., 1999; Martens, M. P., 2005; Weston, R., & Gore, P. A., Jr., 2006). That is to say, fitness of the three one-samples are all good, and the subsequent analysis of follow-up path coefficient identity test can be continued.

2. Path Coefficient Identity Test

In order to test the moderating effect of the interference variables, additional restrictions must be adopted. Firstly, the participants are grouped according to their characteristics. During the analysis, the structural coefficients of the two groups are estimated freely to obtain the chi-square value (χ^2), which is an unrestricted model. Then, the regulated path to be tested is set as no difference between the two groups to obtain another chi-square value (χ^2), which is the restricted model. Then the chi-square values of the two models are subtracted to obtain a difference ($\Delta \chi^2$). If $\Delta \chi^2$ reaches the significant level, it means that the moderating effect of the interference variable significantly affects the structural coefficient in grouping estimation of this path (Babin & Boles, 1998).

Based on the original models of interest in seeking knowledge, future time perspective and career adaptability as benchmark model, an interference model is presented which contains two groups of internal locus of control and external locus of control and the influence coefficients of interest in seeking knowledge on career adaptability in the two groups are set equal. By establishing the unrestricted model (the Benchmark Model) and the restricted model (the interference model) and comparing the chi-square value and the degree of freedom of the two models, the

difference chi-square value ($\Delta\chi^2$) of the two models is obtained. If the chi-square test result of this difference is statistically significant, then the moderating effect can be inferred to be significant (Chen & Wang, 2010). As shown in Table 4.50.

Table 4.50 Comparison between Benchmark Model and Assuming Model

Model Comparison	DF	$\Delta\chi^2$	Sig.(<i>p</i>)	Judgment of Moderating Effect
	1	5.960	0.015	Yes

Source: researchers collate.

After confirming that the moderating effect of locus of control really exists, it is necessary to test the transformation of path coefficient and the significance of the moderating effect under the interference effect (Chen & Wang, 2010). As shown in Table 4.51.

Table 4.51 Summary of Path Coefficient Identity Test

Model	Notes for Model	χ^2	DF	$\Delta\chi^2$
Model-1	Benchmark Model	130.808	72	5.960*
Model-2	Interference model	136.768	71	

Source: researchers collate.

Note: * $p < 0.05$.

It can be seen from this, χ^2 in the benchmark model and the interference model is 130.808 (df=72) and 136.768 (df=71). And the $\Delta\chi^2$ is 5.960 ($p=0.015$) which is greater than the chi-square of one degree of freedom (when $\alpha=0.05$). It can

be seen that difference chi-square value is significant. Therefore, the moderating effect certainly exists. According to Lin (2007), whether the causal relationship between potential variables reaches a significant level can be judged by verifying the statistical CR-value among potential variables. The path coefficients of multi-group model established in this study are shown in Table 4.52.

Table 4.52 Path Coefficients in the Multi-group Model

Path	Path Coefficients	
	Internal Group	External Group
Interest of Seeking → Career Adaptability	0.341***	0.177***

Source: researchers collate.

The results show that the In-model and the Ex-model in the influence path of interest of seeking knowledge on career adaptability both reach significant, and there is a significant difference between them. The path coefficient of interest of seeking knowledge to career adaptability in the In-model is greater than that in the Ex-model. That is to say, the positive influence of internal locus of control on interest of seeking knowledge on career adaptability is higher than that of external locus of control. It can be inferred that the moderating effect of internal-external locus of control does exist. This also verifies the moderating role of internal-external locus of control in the relationship between learning motivation and career adjustment ability.

3. Slope Verification

The fitness test of the single-sample model and the path coefficient identity test above can determine the moderating effect of internal-external locus of control between interest of seeking knowledge and career adaptability. In this section, simple

slope test is further carried out to check whether the moderating effect reaches the significant level according to the view of Cohen et al. (2003) and the calculation formula of Soper (2019) on the network.

Reset on the basis of the original interference model. In other words, the hypothesis of the identity test of path coefficient is removed and at the same time, the path coefficient of interest of seeking knowledge to future time perspective and future time perspective to career adaptability in the two groups is set to be equal.

By judging whether there is a difference in path coefficient of internal-external locus of control between interest of seeking knowledge and career adaptability in the two groups, whether internal-external locus of control plays a role of moderator between interest of seeking knowledge and career adaptability is verified. The slope, standard error and sample size of the two models are calculated and verified, and the results are shown in Table 4.53.

Table 4.53 Summary of Slope Verification

Model	Sample Size	Slope	S.E.	t-value	DF
In-model	305	0.344	0.052	2.607*	670
Ex-model	369	0.172	0.040		

Source: researchers collate.

Note: * $p < 0.05$.

It can be seen from the above analysis that in the set model, the path coefficients between interest of seeking knowledge and career adaptability of the internal group and the external group are 0.344 and 0.172, and the corresponding standard errors are 0.052 and 0.040. The t-value, degree of freedom and p -value

obtained through calculation are 2.607, 670 and 0.009, reaching significant level which shows that there is significant difference in the slope of interest of seeking knowledge to career adaptability between the two groups of models, indicating that the moderating effect of internal-external locus of control is significant. The interaction is shown in Figure 4.6.

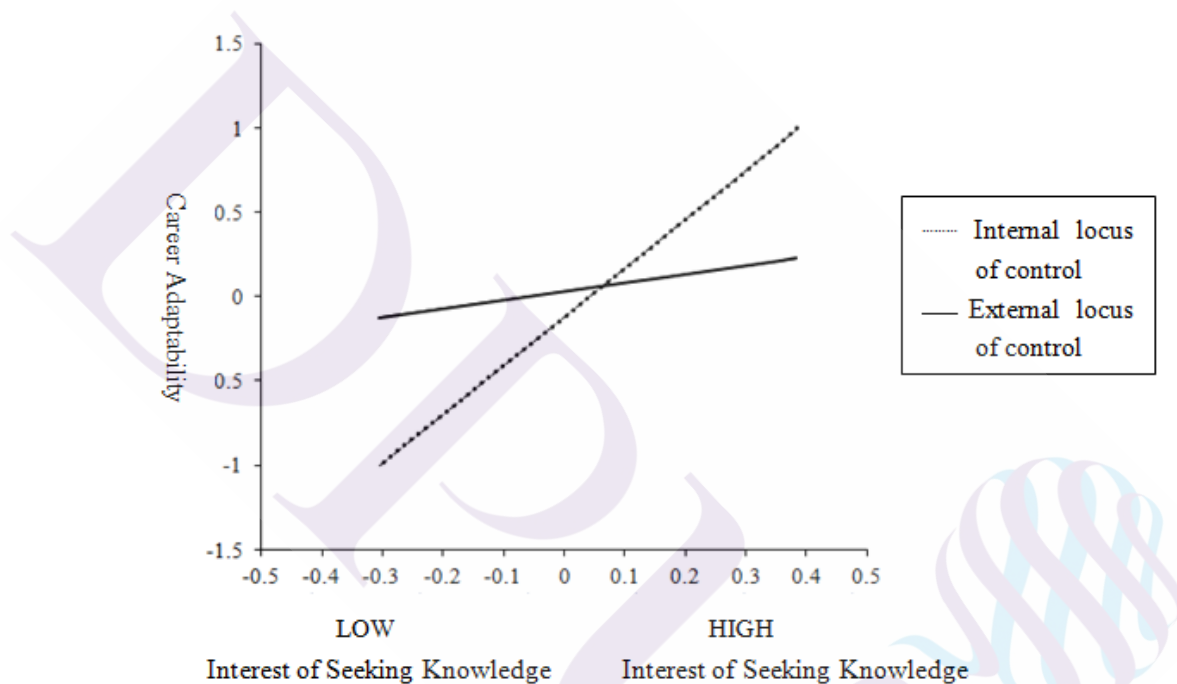


Figure 4.6 Interaction Diagram of Moderating Effect

Source: researchers collate.

As can be seen from the above interaction diagram of moderating effect that both the external locus of control and the internal locus of control play a moderating role in the influence of interest in seeking knowledge on career adaptability.

Among them, the moderating effect of internal locus of control in interest in seeking knowledge on career adaptability is more obvious than that of external

locus of control. When the interest in seeking knowledge is low, the career adaptability of those with external locus of control is better than that of those with internal locus of control.

With the increase of interest in seeking knowledge, the career adaptability of those with internal locus of control will be significantly improved. This fully shows that internal-external locus of control has a moderating effect between the interest in seeking knowledge and the career adaptability.

4.5.3 Moderating Effect of Locus of Control between Self-development and Career Adaptability

The first step of testing the moderating effect of internal-external locus of control between self-development and career adaptability is to carry out fitness test of full-sample model (F-model), internal group model (In-model) and external group model (Ex-model). The results are shown in Table 4.54.

As can be seen from the results in the table, χ^2 in In-model is 42.853 ($p=0.095$) which meets the fitness requirements. χ^2 in F-model is 94.043 ($p=0.000$) and Ex-model 89.818 ($p=0.000$) which both reach significant level, indicating that the theoretical model does not match the observed data. But χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004). χ^2/df in F-model is 2.939, In-model 1.339, and Ex-model 2.807, which are all acceptable. And all the other indices in the three one-samples meet the appropriate standard, indicating reasonable fitness (Hair Jr. et al., 2006; Hu, L. & Bentler, P. M., 1999; Martens, M. P., 2005; Weston, R., & Gore, P. A., Jr., 2006).

Table 4.54 Model Fit Summary (Self-development Dimension)

Indices		Fit Criteria	F-model	In-model	Ex-model
	χ^2	the smaller the better ($p>0.05$)	94.043 ($p=0.000$)	42.853 ($p=0.095$)	89.818 ($p=0.000$)
	χ^2/df	1-3	2.939	1.339	2.807
Absolute Fit Indices	GFI	>0.90	0.971	0.977	0.939
	AGFI	>0.90	0.950	0.960	<u>0.895</u>
	RMR	<0.05	0.013	0.012	0.020
	SRMR	<0.08	0.039	0.038	0.057
	RMSEA	<0.08	0.054	0.030	0.077
	NFI	>0.90	0.941	0.937	<u>0.894</u>
Incremental Fit Indices	NNFI	>0.90	0.944	0.976	<u>0.899</u>
	CFI	>0.90	0.960	0.983	0.928
	RFI	>0.90	0.917	0.911	<u>0.851</u>
	IFI	>0.90	0.960	0.983	0.929
Parsimonious Fit Indices	PGFI	>0.50	0.565	0.568	0.546
	PNFI	>0.50	0.669	0.666	0.636
	CN	>200	331	397	<u>157</u>

Source: researchers collate.

That is to say, fitness of the three one-samples are all good, and the subsequent analysis of follow-up path coefficient identity test can be continued.

2. Path Coefficient Identity Test

By establishing the unrestricted model (the Benchmark Model) and the restricted model (the interference model) and comparing the chi-square value and the degree of freedom of the two models, the difference chi-square value ($\Delta\chi^2$) of the two models is obtained which is shown in Table 4.55.

Table 4.55 Comparison between Benchmark Model and Assuming Model

Model Comparison	DF	$\Delta\chi^2$	Sig.(<i>p</i>)	Judgment of Moderating Effect
	1	0.006	0.936	No

Source: researchers collate.

It can be seen from the above table that the $\Delta\chi^2$ of the benchmark model and the interference model is 0.006 ($p=0.936$), which is not up to a significant level. Therefore, it can be inferred that the moderating effect is not significant, and then no further analysis and validation can be performed (Chen & Wang, 2010). This conclusion may be related to the range of sample selection, the special identity of subjects, and the number of samples, which need to be further studied in the future.

4.5.4 Moderating Effect of Locus of Control between Tour Interest and Career Adaptability

The first step of testing the moderating effect of internal-external locus of control between tour interest and career adaptability is to carry out fitness test of full-sample model (F-model), internal group model (In-model) and external group model (Ex-model). The results are shown in Table 4.56.

As can be seen from the results in the above table, χ^2 in F-model is 73.120 ($p=0.000$), In-model 47.330 ($p=0.040$) and Ex-model 67.164 ($p=0.000$), which all reach significant level, indicating that the theoretical model does not match the observed data. But χ^2 is often influenced by the sample size, which is 674 as formal samples in this study, and can be adopted as a reference (Raykov & Marcoulides, 2002; Schumacker & Lomax, 2004). χ^2/df in F-model is 2.285, In-model 1.479, and Ex-model 2.099, which are all acceptable. And all the other indices in the three

one-samples meet the appropriate standard, indicating reasonable fitness (Hair Jr. et al., 2006; Hu, L. & Bentler, P. M., 1999; Martens, M. P., 2005; Weston, R., & Gore, P. A., Jr., 2006). That is to say, fitness of the three one-samples are all good, and the subsequent analysis of follow-up path coefficient identity test can be continued.

Table 4.56 Model Fit Summary (Tour Interest Dimension)

Indices	Fit Criteria	F-model	In-model	Ex-model
Absolute Fit Indices	χ^2	73.120 ($p=0.000$)	47.330 ($p=0.040$)	67.164 ($p=0.000$)
	χ^2/df	1-3	2.285	2.099
	GFI	>0.90	0.978	0.976
	AGFI	>0.90	0.962	0.958
	RMR	<0.05	0.012	0.014
	SRMR	<0.08	0.035	0.043
	RMSEA	<0.08	0.044	0.036
Incremental Fit Indices	NFI	>0.90	0.951	0.924
	NNFI	>0.90	0.960	0.963
	CFI	>0.90	0.972	0.973
	RFI	>0.90	0.931	<u>0.893</u>
	IFI	>0.90	0.972	0.974
Parsimonious Fit Indices	PGFI	>0.50	0.569	0.568
	PNFI	>0.50	0.676	0.657
	CN	>200	426	360

Source: researchers collate.

2. Path Coefficient Identity Test

By establishing the unrestricted model (the Benchmark Model) and the restricted model (the interference model) and comparing the chi-square value and the degree of freedom of the two models, the difference chi-square value ($\Delta\chi^2$) of the

two models is obtained which is shown in Table 4.57.

Table 4.57 Comparison between Benchmark Model and Assuming Model

Model Comparison	DF	$\Delta\chi^2$	Sig.(<i>p</i>)	Judgment of Moderating Effect
	1	3.299	0.069	No

Source: researchers collate.

It can be seen from the above table that the $\Delta\chi^2$ of the benchmark model and the interference model is 3.299 ($p=0.069$), which is not up to a significant level. Therefore, it can be inferred that the moderating effect is not significant, and then no further analysis and validation can be performed (Chen & Wang, 2010).

This conclusion may be related to the range of sample selection, the special identity of subjects, and the number of samples, which need to be further studied in the future. It can be seen from the above verification results that in the three dimensions of learning motivation, interest of seeking knowledge plays a significant moderating effect between learning motivation and career adaptability, while the moderating effect of self-development and tour interest is not significant. Therefore, this conclusion partially verifies the hypothesis H7 in this study.

4.6 Summary of Hypothesis Verification

The research hypotheses proposed in this study are analyzed and verified one by one through status analysis, difference analysis, correlation analysis, mediation mode verification and moderating effect verification. The results of the research hypothesis are sorted out and presented in Table 4.58.

Table 4.58 Summary of Hypothesis Verification

Research Hypothesis	Result
H1: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different background variables.	Partially Support
H1-1: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different genders.	Partially Support
H1-2: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different grades.	Support
H1-3: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different birth order.	Partially Support
H1-4: There are significant differences in learning motivation, future time perspective, internal-external locus of control and career adaptability among college students from Mainland China who went to universities in Taiwan for exchange study with different family socio-economic level.	Partially Support
H2: The learning motivation of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on their career adaptability.	Support
H3: The learning motivation of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on their future time perspective.	Support
H4: The future time perspective of college students from Mainland China who went to universities in Taiwan for exchange study has a significant positive impact on their career adaptability.	Support
H5: The future time perspective of college students from Mainland China who went to universities in Taiwan for exchange study plays a mediating effect between learning motivation and career adaptability.	Support
H6: The internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study has a significant impact on their career adaptability.	Support
H7: The internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study plays a moderating effect between learning motivation and career adaptability.	Partially Support

Source: researchers collate.

CHAPTER 5

DISCUSSIONS

Based on the relevant theories and literature in the past, this chapter shows the discussions of the results in Chapter 4.

This study took Mainland Chinese exchange students from universities in Taiwan as participant (target population), and focused on the current status, difference, correlation of learning motivation, future time perspective, locus of control, and career adaptability, as well as the relationships among them. In the current situation analysis, the average and standard deviation are described by descriptive statistics for the overall variable and the dimensions of learning motivation, future view of time, locus of control and career adaptability.

And then, t-test, one-way ANOVA and post-hoc test are adopted, so as to understand differences in learning motivation, future time perspective, locus of control, and career adaptability of college students from Mainland China who went to universities in Taiwan for exchange study with different background variables. Furthermore, the overall and various dimensions of the four variables are explored by means of correlation analysis.

At last, AMOS is adopted to verify the mediating role of future time perspective in the relationship between learning motivation and career adaptability and the moderating role of locus of control in the relationship between learning motivation and career adaptability. In this section, the research results are summarized,

and the following discussion is made by combining the previous literature and theories.

5.1 Current Status of Participants

This study took Mainland Chinese exchange students from universities in Taiwan as participants (target population). And the number of valid participants is 674 among which 303 are male (45%), and 371 are female (55%). The proportion of female students is significantly higher than that of male students. For a long time, the proportion of female college students in Mainland China is generally high (Zhao, 2007). According to the data (2016) of National Bureau of Statistics of China, female students account for 52.53% among college students. The gender distribution in this research also conforms to the current situation that the proportion of female college students in general colleges and universities in the Mainland China is generally higher than that of male students.

In terms of grade distribution, there are 434 junior students, accounting for 64.40%; 140 sophomore students accounting for 20.80%. As freshmen are entering universities, they are still in the stage of exploring and adapting to the university life; and as seniors are facing the pressure of employment and further study, the number of students from this two grades who choose to go to Taiwan for exchange study is relatively small, resulting in a small number of samples. In terms of proportion, all grades are similar, which is also consistent with the actual situation.

In the distribution of birth order, there are 276 only children, accounting for 40.90%. 233 students, accounting for 34.60%, are the eldest. The youngest is

altogether 123, accounting for 18.20%. There are 42 students of other birth orders, accounting for 6.20%. According to the sampling distribution, only children and first-born children make up nearly 75% of the students. This situation is in line with the "one-child policy" carried out by Mainland China in the 1980s and the "two-child policy" that has been open for the past three years.

In terms of family socio-economic level, 211 students from families with annual income below RMB80,000, accounting for 31.30%; the number of students from families with annual income of RMB80,000 to 160,000 is 227, accounting for 33.70%. These two types of students account for more than half of the participants. As for other types, there are 147 students (21.80%) with annual family income of RMB160,000 to 240,000, 72 students (10.70%) with annual family income of RMB240,000 and 17 students (2.50%) with other conditions. It can be seen that students from ordinary families account for more than half of the participants, which also shows that at present, the cost of exchange study in Taiwan can be borne by ordinary families in Mainland China. Therefore, it can be inferred that Chinese Mainland students who choose to go to Taiwan for exchange study will not be troubled by financial problems.

5.2 Current Situation Analysis of Each Variable

In this study, the scores of the four variables in the research framework, namely learning motivation, future time perspective, locus of control and career adaptability, are investigated by the method of descriptive statistics. The results are discussed as follows.

1. Learning Motivation

The total average score of the learning motivation of Chinese Mainland students who went to Taiwan for exchange study is 4.001, which shows that Chinese Mainland students who went to Taiwan for exchange study have quite positive feelings about their learning motivation. Jeffrey (2010) and Yang (2015) both get the similar result of learning motivation of college exchange students. As for the average score of each dimension, the lowest is the dimension of tour interest, with a score of 3.891. At the dimension of self-development, the score is 4.052, and the highest score is 4.052 in terms of interest in seeking knowledge.

It can be seen that the motivation of Chinese Mainland students to go to Taiwan colleges and universities for exchange study is not purely for tourism experience, but more for self-development and interest in seeking knowledge. This also reflects that Chinese Mainland students go to Taiwan for exchange study and study in pursuit of higher personal level.

According to the self-actualization needs contained in psychologist Maslow's (1943) theory of need satisfaction, when the physiological, safety, love and self-esteem needs are satisfied, individuals continue to grow and develop in the future, give play to their inner potential, and show their unique personality, so as to achieve the highest ideal of self-realization.

It can be seen that the conclusion in this study is consistent with Maslow's theory. In general, Chinese Mainland college students who went to Taiwan for exchange study have a considerable degree of feelings on all dimensions of learning motivation, and have a certain degree of consensus on the overall positive cognition of learning motivation.

2. Career Adaptability

The average score of career adaptability of Chinese Mainland college students who went to Taiwan for exchange study is 4.103, and above 4.056 in all dimensions, indicating that Chinese Mainland exchange students have strong positive feelings on career adaptability and all its dimensions. Most of the relevant research also show that the overall cognitive perception of college students' career adaptability is in the middle or above level (Wu, 2008; Zhao, 2011; Zhu, 2010). Among all dimensions, career concern scores the highest, followed by career control and career confidence, while career cooperation scores the lowest. This also shows that college students are at a special stage of career exploration (Super, 1984) and pay more attention to career development and begin to pay attention to cultivation and development in this aspect (Kenny & Bledsoe, 2005). As a new dimension proposed by Savickas (2009), career cooperation emphasizes the importance of communication and cooperation in the workplace, which is undoubtedly lack of too much experience and cognition for college students, so it also gets the lowest score.

3. Future Time Perspective

The future time perspective belongs to the concept of cognitive motivation, and it changes with time or situation (Carstensen, 2006; Cate & John, 2007). In this study, the average score of future time perspective of Chinese Mainland college students who went to Taiwan for exchange study is 3.900, indicating that they show a positive cognitive performance in future time perspective and can envision and plan for the future. As for the scores of all dimensions, the highest is dimension of speed, the second highest is dimension of value, and the lowest is dimension of future goal. However, the overall results show that exchange students in Taiwan have a high level

of positive understanding of future time perspective. In other words, they have a strong view of future time, just as Gjesme (1983) mentioned, future time perspective is just like a searchlight, which can guide students to go forward with a direction and a goal, so as not to get lost in the crisis of adolescent development. From this perspective, the current situation of Chinese Mainland exchange students in Taiwan's universities is pretty good.

4. Internal-external Locus of Control

The average scores of the Chinese Mainland college students who went to Taiwan for exchange study are 2.611 and 3.869, respectively. It can be seen that the score of students with internal locus of control is higher than that of students with external locus of control. That is to say, a small number of students in the tested group tend to have external locus of control, believing that success are influenced by luck, power and other external factors, and that they are difficult to master and control, and their behaviors are more negative, dependent and resigned to fate. However, more students tend to have internal locus of control, and they believe that success is under their own control and their behaviors are relatively active, autonomous and positive (Rotter, 1966).

Peters, O'conner and Wise (1984) ever suggest that the mean of the posttest score of the internal-external locus of control can be taken as the discriminating benchmark, and according to the score above or below this mean, the participants can be divided into two groups, namely internal locus of control and the external locus of control. This method is adopted in this study, and the subjects are divided into two groups as internal group and external group.

According to Pintrich, Smith, and McKeachie (1989), the control beliefs refer to the learner's belief in the attribution mode of the success or failure of learning results. People with strong internal control beliefs are more likely to attribute success or failure in learning to personal factors such as effort and ability. While people with a strong belief in external control are more likely to attribute success or failure in learning to factors such as luck, opportunity, and fate that are not under the control of individuals. From this point of view, internal-external locus of control is similar to this control beliefs to a certain extent, which is also one of the theories referred to in this study.

5.3 Difference of Background Variables

Four background variables are adopted in this research: gender, grade, birth order and family socioeconomic level of college students from Mainland China who went to Taiwan for exchange study. In this part, the researcher analyzes and discusses the results of the differences in the learning motivation, future time perspective, locus of control and career adaptability of exchange students from Mainland China with different background variables.

1. Gender

It can be found from the analysis in chapter four that there is no significant difference in the overall perception and each dimension of learning motivation among college students from Mainland China who went to universities in Taiwan for exchange with different gender. Perhaps because the subjects are all Chinese students, this result is consistent with Cheng's (1991) study that there is no difference in

learning motivation between male and female students. In the studies of many scholars (Chen, 2003; Lu, 1992; Ye, 2002), students of different gender show differences in learning motivation. Such different results may be caused by different characteristics of student groups or different age composition, and the exact reasons need to be further analyzed and demonstrated.

In this study, the average of career adaptability of male students is 4.118, and that of female students is 4.091. The career adaptability of male students is slightly higher than that of female students, but does not reach the significant difference level. Tian (2010) finds there is no difference in the overall career adaptability of adults and college students with different genders. Some studies on college students and teenagers also show that gender can not cause difference in career adaptability (Kenny & Bledsoe 2005; Hirschi, 2009; Rottinghaus et al., 2005; Zhu, 2010).

However, some studies show that male students are superior to female students in terms of their overall career adaptability, and in terms of career control and career confidence, males are superior to females (Kenny & Bledsoe, 2005; Wu, 2008; Zhao, 2011). Hua (2012) points out that career adaptability is related to age and gender; the overall and partial subscales of career adaptability of college students of different genders are different (Shen, 2015). It can be seen that the results of the influence of gender on career adjustment ability are not always the same. The reason may be related to the particularity of the research object, sampling method, sample size and other factors, which still need further analysis and demonstration.

Greene and DeBacker (2004) point out in their research that men are better at thinking about the future than women, that is, men expect the future to a longer

term. Padawer, Jacobs-Lawson, Hershey, and Thomas (2007) investigate the current status of future time perceptiveness of Americans aged 24 to 74 and find that men are more likely to think about future events and can anticipate long-term future events. Similar results are presented in this study.

According to the results of this study, there is a difference in the overall perception of future time perceptiveness among exchange students from Chinese Mainland to Taiwan's universities with different gender. The future time perceptiveness of males is significantly higher than that of females, and there is also a gender difference in the cognition level of value, and male students are higher than female students. There is no gender difference in the future goal dimension and dimension of speed.

However, some scholars (Adelabu, 2007; Padawer et al., 2007; Zheng, 2011) find in their studies that women's perception of future time is higher than that of men, and some researchers (Peetsma, 2000) conclude that there is no gender difference in future time perspective. It can be seen that the difference of future time perspective due to different gender is also related to the research subjects and environmental factors, and can not be generalized.

In this study, the subjects are divided into external locus of control and internal locus of control. According to the research results, there is no difference in the influence of gender on locus of control. That is to say, for college students from Chinese Mainland who went to Taiwan for exchange study, the tendency of external locus of control or internal locus of control shows no difference by taking gender into account. This conclusion is consistent with the research conclusions of He (1981) and Lai (2002), they both believe that gender has no obvious influence on locus of control.

Such a relatively consistent result is probably due to the fact that the research subjects are all Chinese college students.

However, there is no consistent conclusion about the influence of gender on the individual's locus of control. Gurin et al. (1978) and Itzhaky et al. (1999) believe that women are more inclined to external locus of control than men. While the research conclusion of Jayaratne et al. (1983) is just the opposite, believing that men are more inclined to external locus of control than women. Holder et al. (1998) and Lengua et al. (2000) concluded that there is no difference for male and female in tendency of locus of control.

It can be seen from the above that gender has no difference in the learning motivation, career adaptability and internal-external locus of control of exchange students from Mainland China to Taiwan; the difference of gender's influence on future time perspective is that male students have higher cognition of value than that of female students.

2. Grade

In this study, students of different grades have differences in their overall learning motivation. The learning motivation of freshmen and sophomores is higher than that of juniors. There are also differences in all dimensions of learning motivation of students with different grades. In dimension of interest in seeking knowledge, sophomores are higher than juniors; in terms of self-development, sophomores are higher than juniors; in the tour interest dimension, freshmen are higher than juniors.

As can be seen from the results, as freshmen are just entering the university and there is no great academic pressure or employment pressure, their interest in

tourism is significantly higher than that of students of other grades. Sophomores and juniors are in the most burdensome periods for university courses.

At the same time, they have to face many problems like whether to take the postgraduate entrance exam or not; whether to obtain relevant certificates; and so on. As a result, they are more interested in self-development and seeking knowledge.

In many student-oriented studies, some scholars (Cheng, 1991; Li, 2002) also draw the conclusion that different grades lead to different learning motivations. Some scholars (Chen, 2003; Huang, 2003; Lu, 1992) conclude that there is no difference in learning motivation among students of different grades. It is speculated that the reason may be related to the particularity and region of the research object group, which need further research and analysis.

Most studies find that grade is an important factor affecting one's career adaptability. The higher the grade, the higher the career adaptability (Deng, Deng, Li, 2008; Rottinghaus et al., 2005; Wu, 2008). In terms of career curiosity, career confidence and overall career adaptability, seniors are higher than freshmen and juniors (Wu, 2008). There is no significant difference in career adaptability among different grades of master students (Wu, 2012).

Another study (Shen, 2015) finds that there is no significant difference in career adaptability among college students of different grades, but the performance of senior students in the total table and subtables of career adaptability are higher than that of students of other grades. However, according to Zhao's study (2011), the career adaptability of college students decreases with the increase of grades. Super's theory (1990) of career development also proposes that with the growth of age, individuals'

cognition of career development will also be strengthened and show different behavioral expressions.

It is found in this study that there are differences in career adaptability of Chinese Mainland college students who went to Taiwan for exchange study. In terms of scores, the score of seniors is the highest, while the score of freshmen is the lowest. The difference between sophomores and juniors is small, showing that the career adaptability of students who went to Taiwan for exchange study increases with their grade increase. It can be seen that the grade difference of Mainland Chinese students is consistent with Super's (1990) theory.

Trommsdorff (1983) points out that as individuals mature, the extent of their cognitive structure develops. Similarly, the individual's outlook on the future changes as the age increases. In general, elder people tend to consider external factors and realistic conditions, and plan feasible long-term future goals.

This study took exchange students from Chinese Mainland to Taiwan universities as research participants. Although they are mostly in the same age group, students from different grades still show differences in their cognition and feelings about the future time perspective. In terms of the overall concept, sophomores and seniors are significantly higher than junior students; in terms of value, seniors are significantly higher than freshmen; at the dimension of future goal, freshmen and sophomores are significantly higher than juniors.

According to Qiu's (2007) study, with the increase of grades, students tend to have low degree of future goals. It can be inferred that juniors are faced with a variety of exams and choices at this stage, and they are busy coping with the pressure of schoolwork and postgraduate entrance examination, which, on the contrary,

interferes with the opportunity to construct and achieve future goals. In the study of Horstmanshof and Zimitat (2007), there is no difference between students of different ages in their outlook on future time. It can be seen that the difference of future time perspective in grade is not consistent in all situations, which is related to the individual's physiological maturity, self-identity, educational experience, and other factors.

Different grades of exchange students from Mainland China to Taiwan have different personality tendency in external locus of control. The results show that the tendency of external locus of control of freshmen is higher than that of juniors. That is to say, compared with juniors, freshmen are more likely to believe that their life and study are controlled by some external forces, and they believe that events are not caused by their own actions, but by luck, opportunity, fate or the authority of others (Robbins, 1998; Super, 1966).

There are also differences in the personality tendency of internal locus of control among exchange students from Mainland China to Taiwan. The results show that the tendency of internal locus of control of junior students is higher than that of sophomores. It can be seen that juniors are more inclined to internal locus of control than sophomores, and they usually consider themselves as the master of fate and tend to explain the results of things with their own behaviors, and they are more active and positive (Robbins, 1998; Super, 1966). Furnham et al. (1993) find that individuals' internal and external locus of control changes with their learning experience. Li (1990) believes that with the growth of age, individuals can develop personality traits that tend to be controlled internally.

It can be inferred that grade factors have different effects on individuals' locus of control. Of course, this may have something to do with the current research population in the field of education. If the research population changes, it may also lead to different results.

It can be seen from the above analysis that different grades have different effects on the learning motivation, future time perspective, internal-external control and career adaptability of exchange students from Mainland China to Taiwan.

Among them, the learning motivation of freshmen and sophomores is stronger than that of juniors. The cognitive ability of senior students to career adaptability is stronger than that of juniors. Sophomore and seniors have a stronger outlook on future time than juniors. Freshmen tend to have more external locus of control than juniors, while juniors are more likely to have internal locus of control than sophomores.

3. Birth Order

It is found in the process of consulting literature that there are few studies on learning motivation with birth order as the background variable. Gu (2008) finds that the learning motivation of first-born students is significantly higher than that of middle children and youngest children. Liang (2015) points out that there is no significant difference between family ranking and learning motivation. In this study, the result shows that there is no difference in the overall and various dimensions of the learning motivation of Chinese Mainland students who went to Taiwan for exchange study with different birth order.

It can be seen that whether only child or not has little influence on the degree of their learning motivation, and there is no significant correlation between learning motivation and birth order.

In this study, there is no difference in the overall and various dimensions of career adaptability between Chinese Mainland students of different birth order who went to Taiwan for exchange study. However, it can be seen from the data that the scores of all dimensions of the career adaptability of only children are comparable to those of non-only children. The results of this study show that whether the only child or not has little impact on their career adaptability. Only children and non-only children are likely to have a higher degree of career adaptability (Hua, 2012).

Platt, Eisenman, and DeGross (1969) analyze the differences in the future time perspective of college students with different birth orders, and point out that the eldest children and the only children are more able to predict long-term future events than those of other birth orders, which shows that the individuals with different birth orders are different in their concern about the future.

The results of this study are consistent with the results of Fuligni and Zhang (2004)'s study on Chinese students, and there is no difference in the degree of expectation for future events among students of different birth orders. That is to say, there is no difference in the overall cognition and various dimensions of the future time perspective of exchange students from Chinese Mainland who went to Taiwan with different birth orders. The study of Tavares, Fuchs, Diligenti, Abreu, Rohde, and Fuchs (2004) also find that only children, first children and children of other birth orders are equally likely to anticipate the future.

The results of this study show that the exchange students from Mainland China with different birth orders have different tendency in external locus of control and no differences in internal locus of control. The results show that the youngest children are more likely to have a tendency of external locus of control than the eldest and only children. That is, the youngest children, perhaps because of the special love and attention they receive at home, are more likely than children of other birth orders tend to attribute events to external causes. They believe that it is all because of external reasons that things happen and results present. This result is consistent with Lefcourt's (1972) research result, showing that birth orders have an impact on individual's locus of control.

It can be seen from the above analysis that birth orders have no difference on the learning motivation, career adaptability and future time perspective of exchange students from Mainland China to Taiwan. The difference between birth orders and locus of control is that the youngest children are more likely to have external locus of control than the first and only children.

4. Family Socioeconomic Level

There is no difference in overall learning motivation among students of different socioeconomic levels. However, in dimension of self-development, students from family of annual economic income of RMB 80,000 to 160,000 and those of annual economic income of RMB 160,000 to 240,000 are higher than other types of students. Students from family of annual economic income of RMB 80,000 to 160,000 and students from family of annual economic income of RMB 240,000 or more have more interest in tour interest than students from family of annual economic income of RMB 80,000.

However, the difference in family socioeconomic level have no impact on students' interest in seeking knowledge. Some scholars (Chen, 2003; Cheng, 1991; Liu, 2003) draw the same conclusion that students' learning motivation varies with their family socioeconomic levels. It can be seen that the influence of students' family socioeconomic levels on their learning motivation is not entirely absolute, which needs to be demonstrated by further studies.

According to Wu (2008), college students with higher family socioeconomic status score higher than those with lower family socioeconomic status in terms of overall career adaptability and its subscales. The research of Zhao (2011) shows that college students with higher and lower family socioeconomic status both have better career adaptability and career development, while those of medium socioeconomic status is relatively poor. Some scholars (Hirschi, 2009; Shen, 2015) also point out that students with different family socioeconomic levels have different career adaptabilities. Tian (2010) finds that the elders play different roles, which also affect personal career adaptability of their children, and some may have different career decisions influenced by parental support or disapproval. According to the results of this study, there is no significant difference in the whole and different dimensions of career adaptability among students with different family socioeconomic levels.

People with different family socioeconomic levels have different views on future time perspective in different studies. Some scholars (Lamm, Schmidt, & Trommsdorff, 1976) find that people with different family socioeconomic levels have different views on future time perspective. And some researchers (Agarwal, Tripathi,

& Srivastava, 1983) find that in terms of material aspects, there is no difference in individuals' view of future time, no matter in the case of satisfaction or scarcity.

The results of this study also show that there is no difference in the future time perspective and its various dimensions among students with different family socioeconomic levels. Therefore, it can be seen that the scarcity of materials does not necessarily have a positive or negative impact on the expectation of future situation of individuals. Even if the family is unable to provide abundant material resources, it still can be a motivating force for individuals to encourage them to plan their ideal life and meet their needs.

It can be seen from the results that family socioeconomic levels also bring differences in the tendency of external or internal locus of control for the exchange students from Chinese Mainland to Taiwan. The results show that students from family of annual income between RMB 160,000 and 240,000 are more likely to have external locus of control than those of annual income between RMB 80,000 and 160,000.

Many studies do not emphasize the influence of material wealth on locus of control, while most studies (Ryckman, Robbins, Thornton, & Cantrell, 1982; Saadat, Ghasemzadeh, Karami, & Soleimani, 2012) find that mental health affects individuals' tendency of locus of control. The results of this study may be related to the age and experience of the subjects, but the relationship between material level and locus of control remains to be further studied.

From the above analysis, it can be seen that family socioeconomic levels have no influence on the career adaptability and future time perspective of exchange students from Mainland China. And there is no significant difference between family

socioeconomic level and learning motivation; but in self-development dimension, students from family of annual income of RMB 80,000 to 160,000 and RMB 160,000 to 240,000 are higher than other types of students; and in dimension of tour interest, students from family of annual income of RMB 80,000 to 160,000 and above RMB 240,000 are higher than those of annual family income of RMB 80,000 and below. The difference between family socioeconomic level and locus of control is that students from family of annual income of RMB 160,000 to 240,000 are more inclined to external locus of control than those of annual income of less than RMB 80,000 and those of annual income of RMB 80,000 to 160,000.

To sum up, the influence of background variables on learning motivation, career adaptability, future time perspective and locus of control in this study can be summarized in the following Table 5.1.

Table 5.1 Summary of the Differences with Various Background Variables

	Gender	Grade	Birth Order	Family Socio-economic Level
Learning Motivation	-	Freshmen>Juniors Sophomores> Juniors	-	SD: B>E, C>E TI: B>A, D>A
Career Adaptability	-	Seniors> Juniors	-	-
Future Time Perspective	Male> Female	Sophomores > Juniors Seniors > Juniors	-	-
Locus of Control	-	IN: Juniors>Sophomores EX: Freshmen>Juniors	EX: Youngest>Only-child, Youngest >Eldest	EX: C>A, C>B

Source: researchers collate.

Note: SD: self-development; TI: tour interest; IN: internal locus of control; EX: external locus of control; A: annual family income of RMB 80,000 or less; B:

annual family income of RMB 80,000-160,000; C: annual family income of RMB 160,000-240,000; D: annual family income of RMB 240,000 or above; E: others.

5.4 Correlation Analysis

This part mainly discusses the correlation analysis results presented by the Pearson product-moment correlation in Chapter 4, so as to more clearly show the overall and multi-dimension relationships among learning motivation, future time perspective, locus of control and career adaptability of exchange students from Chinese Mainland to universities in Taiwan.

1. Learning Motivation and Career Adaptability

The analysis of this study shows that there is a moderate positive correlation between learning motivation and career adaptability. In other words, the learning motivation of college students from Chinese Mainland to Taiwan for exchange study positively affects their career adaptability. The higher the learning motivation, the stronger the career adaptability.

In terms of the whole learning motivation and dimensions in career adaptability, the whole learning motivation has a significant and moderate positive correlation with career concern and career cooperation, and has a significant and low positive correlation with career control and career confidence. It can be seen that the improvement of learning motivation of college students from Chinese Mainland to Taiwan for exchange study will also positively promote the improvement of career adaptability at all dimensions to varying degrees, so as to improve their career adaptability as a whole.

According to the above, there is a moderate positive correlation between learning motivation and career adaptability in this study. That is to say, whether the improvement of overall or the dimensions of learning motivation of college students from Chinese Mainland to Taiwan colleges and universities for exchange study will have a positive effect on the overall or its dimensions of career adaptability to varying degrees.

Makayla (2013) finds that college students with strong course learning motivation have better academic career development and stronger career confidence and career control. Zhang (2012) points out in his research that the learning motivation of students has an impact on career planning. Michael (2015) draws a conclusion in his research that the active degree of college students participating in learning is conducive to the improvement of their academic success and thus improve their ability of career preparation. There are also many scholars (Gotfried, 1990; Jiaying-Cui, 2013; Lin, 2017) draw similar conclusion in their research. The conclusions of these studies are consistent with this study.

2. Learning Motivation and Future Time Perspective

It can be seen from the analysis, on the whole, there is a significant and low positive correlation between learning motivation and future time perspective of college students from Mainland China to Taiwan.

In terms of the overall learning motivation and the dimensions of future time perspective, the learning motivation has a low positive correlation with the dimension of value, future goal and speed. In terms of various dimensions in learning motivation and future time perspective, interest of seeking knowledge has a significant and low positive correlation with value, future goal and speed;

self-development has a significant and low positive correlation with value and speed, but the correlation coefficient with future goals does not reach a significant level; tour interest has a significant and low positive correlation with future goal and speed, but the correlation coefficient with value does not reach a significant level.

It can be seen that the improvement of the learning motivation of college students from Mainland China to Taiwan for exchange study will positively affect the overall or certain dimension of their future time perspective to a moderate or low degree.

Kang (1999) studies college students' foreign language learning motivation and its changes in English context, and the results show that college students with stronger learning motivation are more able to perceive their future learning goals and expectations, thus achieving better learning effects and having a positive impact on future development.

When discussing the effect of treatment plan for drug addiction withdrawal, Alvos, Gregson and Ross (1993) find that the behavior motivation of individuals affects their future time perspective. Some scholars also point out that the intervention of educational behavior have an impact on the future time perspective of individuals (Miller & Brickman, 2004).

The conclusions obtained in this study are similar to those of previous scholars, and the results show that there is a moderate or low correlation between learning motivation and future time perspective and some dimensions. This provides a basis for the subsequent discussion on the influence of learning motivation on future time perspective of Chinese Mainland college students who went to Taiwan for exchange study.

3. Future Time Perspective and Career Adaptability

The analysis of this study shows that there is a moderate positive correlation between future time perspective and career adaptability. In terms of the whole future time perspective and dimensions in career adaptability, the whole future time perspective has a significant and low positive correlation with career concern, career control, career cooperation and career confidence. In terms of various dimensions in future time perspective and career adaptability, value has a significant and low positive correlation with career concern, career control, career cooperation and career confidence; future goal has a significant and low positive correlation with career concern, career control, career cooperation and career confidence; speed has a significant and low positive correlation with career concern, career control, career cooperation and career confidence.

Savickas (1997) mentions that people with high career adaptability have future-oriented characteristics. They explore and anticipate potential future roles and environments, and prepare for future needs. In this study, the improvement of future time perspective of Chinese Mainland college students who went to Taiwan for exchange study can positively affect their career adaptability, but in terms of all dimensions, the positive impact is relatively low. This result is consistent with Savickas (1997).

The variable of future time perspective is widely adopted in the field of education, and is mostly adopted to discuss the relationship between the future time and academic performance. Many studies show that students with future time perspective invest more in their academic endeavors, through personal self-efficacy, or by increasing their own investment in learning resources, in order to achieve

academic excellence and thus enhance their confidence in career development (Peetsma, 2000; Peetsma & van der Veen, 2011; Phan, 2015).

Husman and Lens (1999) point out that when learners have a strong view of future time, they are more able to regard the current input and effort as an important way to achieve future goals, so they will be able to focus on the future results. Bembenuddy and Karabenick (2004) believe that the future time perspective is beneficial to the realization of future goals and thus enhances his confidence in his future career. Eccles & Wigfield (2002) and Feather (1990) mention in relevant studies that the stronger the future time perspective of individuals, the more they will perceive their current learning behavior, which is beneficial to the realization of their goals, and the more they will be engaged in their current work to achieve their confidence and career control for their future career.

4. Locus of Control and Career Adaptability

It can be seen from the analysis that there is a significant and low negative correlation between external locus of control and career adaptability; while there is a significant and low positive correlation between internal locus of control and career adaptability. In terms of the dimensions in career adaptability, external locus of control has a significant and low negative correlation with career concern, career control, career cooperation and career confidence. While internal locus of control has a significant and low positive correlation with career concern, career control, career cooperation and career confidence. In other words, the more prominent the external locus of control of Chinese Mainland college students who went to Taiwan for exchange study, the lower their career adaptability and development of all dimensions will be. On the contrary, the higher the tendency of internal locus of control of

Chinese Mainland college students who went to Taiwan for exchange study, the higher their career adaptability and development at all dimensions will be.

Lin and Li (2008) take 240 on-the-job students of master's degree in Taiwan institute of physical education and the in-service students of the university's advanced department as participants, in order to study the relationships among personality traits, learning motivation and career, and it is found that different locus of control significantly influence their career. Li, Li, and Zeng (2005) find that locus of control is an important factor to explain individual career adaptation, and has significant influence on individual career adaptation. Spector (1982) point out in his study that those with internal locus of control are more confident in their abilities. Their performance and career achievements tend to be better than those of the external locus of control, as they strive to gather intelligence and information in complex environments and actively seek solutions to problems. The research results of Yu (2003) show that employees' self-directed learning is affected by the tendency of internal and external locus of control, and the more internal tendency, the higher work performance, and the better career development. Many other studies (Ghasemzadeh & Saadat, 2011; Rubin, 1993; Wang, 2006; Wolk & Bloom, 1978; Zhang, 2001) also draw similar conclusions to this study, suggesting that locus of control has a positive impact on one or other aspects of an individual's career adaptability.

Heider (1958) divides behavioral results into person factors and environment factors in his attribution theory. Personal factors are caused by the individual's efforts or ability, also known as internal attribution; environmental factors refer to external circumstances, also known as external attribution. The self-attribution

theory put forward by Weiner (1985) puts forward its causal attribution mainly from the cognitive viewpoint to attribution-related behaviors. People with different achievement motives also make a distinction between internal cause and external cause in their interpretation of success or failure. The manifestation of locus of control just corresponds to Heider's (1958) attribution of success and failure theory and Weiner's (1985) theory of attribution. External locus of control and internal locus of control, as two characteristics of personality traits (Rotter, 1966), are often adopted in many studies as moderator. Through the correlation analysis in this study, it is found that there is a positive or negative correlation between the locus of control and career adaptability, which also shows the characteristics of the moderating effect of locus of control to some extent.

5.5 Mediating Effect of Future Time Perspective

In this study, SME causality test, Sobel-test and Bootstrapping technique are adopted to verify the mediating effect of future time perspective between the learning motivation and their career adaptability of college students from Mainland China who went to Taiwan for exchange study. In order to verify the mediating effect of future time perspective more clearly and accurately, three dimensions of learning motivation are taken as independent variables for verification in this study.

According to the discussion in the first chapters, many scholars (Gotfried, 1990; Jiaying-Cui, 2013; Lin, 2017; Xu, 2003; Yang, 2015; You, 2015) draw consistent conclusion that learning motivation can significantly affect career adaptability. When Makayla (2013) studies and measures the curriculum learning

motivation of the entire academic career in American colleges, he finds that college students with strong curriculum learning motivation have better academic career development and stronger career confidence and career control. Zhang (2012) point out in his research on college students of Taiwan army command and staff college that the learning motivation of the cadets in the military advanced education have an impact on career planning.

Michael (2015) studies the influence between American college students' participation in learning behavior, learning success skills and college students' career preparation, and concluded that the active degree of their participating in learning is conducive to the improvement of their academic success and thus improve their ability of career preparation. There are also many scholars (Gotfried, 1990; Jiaying-Cui, 2013; Lin, 2017) draw similar conclusion in their research.

Meanwhile, by referring to the achievement motivation theory proposed by McClelland (1961), the description of the need for achievement indicates that a person with a strong need for achievement is eager to do things perfectly, improve efficiency and achieve greater success and achievement. It is for the sake of better self-development and realization that college students from Chinese Mainland who went to Taiwan for exchange study show good learning motivation and thus promote their career adaptability.

Based on the above theoretical and empirical studies, combined with the influence coefficient of the learning motivation in this study on the career adaptability (0.555***, 0.415***, 0.425***), it can be concluded that there is a significant positive impact on the learning motivation and career adjustment ability of Mainland

Chinese college students who went to Taiwan for exchange study. Therefore, the hypothesis H2 in this study is supported.

Psychologist Maslow (1943) proposes self-actualization needs in his theory of need satisfaction, and points out that when physiology, safety, love and self-esteem needs are satisfied, individuals continue to grow and develop in the future, give play to their inner potential, and show their unique personality, so as to achieve the highest ideal of self-realization. It shows the course of the human needs levels from low degree to high ones.

McClelland (1961) proposes the achievement motivation theory, which describes the need for achievement, and points out that a person with a strong need for achievement is eager to do things perfectly, improve efficiency and achieve greater success and achievement. They value the joy of overcoming obstacles, solving problems, and striving for success, and the sense of accomplishment that comes with success.

It can be seen that both the self-realization of individual's continuous growth and development and the need to strive for perfection and achieve achievements need to be put into action to urge individuals to plan and organize for the future. College students from Chinese Mainland who went to Taiwan for exchange study are in an important period of pursuing personal goals and life beliefs, and their learning motivation is also in line with the above theories. Therefore, their higher learning motivation is bound to play a positive role in the understanding and achievement of future goals. Through this process, they also effectively enhance their future time perspective. It can be seen that this analysis supports the research hypothesis H3.

Many past studies show that future temporal focus is an important predictor of career adaptability (Ebberwein, Krieshok, Ulven, & Prosser, 2004; Phillips & Blustein, 1994; Savickas, 1997; Super & Knasel, 1981; Zacher, 2014). People with a focus on future time will plan and actively shape their future career development, and adapt to career tasks and career transitions (Super & Knasel, 1981). Super's (1990) career development stage theory points out that the college years are in the stage of career exploration, which is the golden period of life. The main development task in this period is to explore personality traits and interests, develop relationships, enhance professional competence, build their own values, know about their own needs, look for career advancement and meaning in life from the learning of schoolwork, skills at school and in the trends of family and social environments.

During this critical period, Mainland Chinese students go to Taiwan for exchange study. They are far away from their hometown and family, and step into a totally unfamiliar learning and living environment. They need to arrange daily life, manage time, control money, manage emotions, and express emotions independently (Chen, 1998; Jian, 1986). The pressures on learning to adapt to different living environments and academic activities may affect their mental health and academic performance (Chou, Chao, Yang, Yeh, & Lee, 2011).

From this points of view, in the learning course of college students at this critical stage from Mainland China who went to universities in Taiwan for exchange study, adaptability is an important factor to achieve the tasks at this stage of their career, as well as the driving force for current and future development. Their perception and pursuit of future goals, as well as their expectations and speed of realization in the future, reflect the degree of their future time perspective. And this

degree also becomes an effective way to promote their career adaptability. This is a strong support for hypothesis H4 of this study.

The results show that when the future time perspective is not included as a mediating variable, the direct influence coefficient of the three dimensions of learning motivation on career adaptability is 0.555***, 0.415***, and 0.425***, respectively, all reaching significant levels. After adding future time perspective as mediator, the influence of the three dimensions of learning motivation on career adaptability is weakened correspondingly, with the influence coefficient reduced to 0.411***, 0.285***, and 0.324***, respectively, but still reach the significant level. Therefore, it can be explained that the future time perspective plays a partial mediating effect on the three dimensions of learning motivation, namely, interest in seeking knowledge, self-development, tour interest, and career adaptability. The following Sobel test and Bootstrapping technique also confirm this conclusion. Therefore, it also conforms to the phenomenon that future time perspective is often adopted as an mediating variable in the field of education (Eccles & Wigfield, 2002; Lens, 2001; Xu, 2016).

It can be seen from the above analysis that the improvement of the learning motivation of college students from Mainland China who went to Taiwan for exchange study is conducive to the improvement of their career adaptability. At the same time, the three dimensions of learning motivation, namely, interest in seeking knowledge, self-development and tour interest, can promote the enhancement of their future time perspective, so as to effectively promote their career adaptability. Therefore, the future time perspective plays a partial mediating role in the effects of interest in seeking knowledge on career adaptability, self-development on career

adaptability, and tour interest on career adaptability. Thus the hypothesis H5 in this study is verified.

5.6 Moderating Effect of Locus of Control

AMOS is adopted to test the influence of two different levels of locus of control, that is external locus of control and internal locus of control, on career adaptability. It can be seen from the test results that the influence coefficient of external locus of control of exchange students from Mainland China to Taiwan on their career adaptability is -0.319^{***} , showing a significant negative impact, while the influence coefficient of internal locus of control on career adaptability of exchange students from Mainland China to Taiwan is 0.662^{***} , showing a significant positive effect.

Guliford (1965) defines locus of control as the combination of personality and traits. Individuals are different from each other, and it is the combination of personal traits, habits and characteristics. Rotter (1966) points out that internal locus of control is an internal motivation, believing that they can bring about changes through their own efforts and are more likely to participate in some specific activities. In contrast, individuals with external locus of control are less likely to engage in active activities (Hines, et al, 1987). People with internal locus of control believe that success comes from hard work and personal responsibility for failure; while people with external locus of control do not believe that success or failure is related to ability or effort (Kren, 1992).

Therefore, there is difference in attitude and behavior of people with

internal locus of control and those with external locus of control. People with internal locus of control are more active, autonomous and positive, while people with external locus of control are more dependent and negative. Especially when suffering setbacks, people with internal locus of control often take a constructive way to adapt, while those with external locus of control are prone to take a destructive way (Lin, 1985).

It can be seen that locus of control is a stable personality trait, which can distinguish individual differences in behavior. People with external locus of control believe that achievement has nothing to do with one's ability and efforts, so they ignore many opportunities for learning and growth; while people with internal locus of control face up to goals and challenges, regard them as opportunities for personal learning and growth, take advantage of all available information to achieve goals, and then gain opportunities for career development. In addition, many studies (Nauta et al., 2009; Nauta, Van Vianen, Van Der Heijden, Van Dam, & Willemsen, 2009; Van Dam, 2004) find that employees with positive attitude generally take more actions to participate in various capacity development activities, in order to maintain and develop their employability, and there is a positive relationship between employee participation ability development and their employability.

Through testing and analysis, it can be found that the internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study has a significant impact on their career adaptability. And the hypothesis H6 in this study is supported.

A moderator is a variable that affects the strength or direction of the relationship between independent and dependent variables. In order to make the verification more clearly and accurately, in this study three dimensions of learning

motivation are adopted respectively to examine the moderating effect of internal-external locus of control between the three dimensions of learning motivation and career adaptability of college students from Mainland China who went to Taiwan for exchange study. By means of path coefficient identity test and slope verification, the moderating effect of locus of control between learning motivation and career adaptability is verified. The results show that the locus of control of college students from Mainland China who went to Taiwan for exchange study plays a moderating effect between their interest in seeking knowledge and career adaptability; while in the relationship between self-development and career adaptability, as well as tour interest and career adaptability, the moderating effect of internal-external locus of control does not reach a significant level.

In the field of education, the research results of many scholars (Davis & Palladino, 2000; Ghasemzadeh & Saadat, 2011; Huang & Huang, 2009; Judge, 2001; Kitsantas, 2004; Rezabek, 1998; Xie, 2013; Zhang et al., 2008) prove the moderating effect of internal-external locus of control. Zhang (2001) finds in his research that internal locus of control has a significant impact on work performance. Dong (2011) finds in his study that the more college students tend to be internal locus of control, the more willing they are to assume their own responsibilities and have a clear goal of self-development, and students who tend to be internal locus of control are better able to cope with pressure, so they will do better in academic performance than those who tend to be external locus of control, and their career development will be much better (Wolk & Bloom, 1978).

Similar conclusion is also drawn in this study. Exchange students from Mainland China with internal locus of control are more likely to take active part in

learning and actively seek various exercises for career adjustment, so they can improve their career adaptability more effectively than those with external locus of control. Super (1990) points out in the career arch model that different locus of control plays a positive or negative role in leading one's career choice and development. Weiner's (1992) attribution theory believes that attribution affects the expectation of success and all kinds of emotional responses. This theory is similar to the classification of internal-external locus of control, which is attributed to internal and external causes. It can be seen from the moderating interaction diagram that both the external locus of control and the internal locus of control play a moderating role between interest in seeking knowledge and career adaptability.

Among them, the moderating effect of internal locus of control is more obvious than that of external locus of control. When the interest in seeking knowledge is low, the career adaptability of students with external locus of control is better than those with internal locus of control. With the increase of the interest in seeking knowledge, the career adaptability of students with internal locus of control will be greatly improved. It fully shows that internal-external locus of control plays a moderating role between the interest in seeking knowledge and their career adaptability.

In the foregoing discussion and analysis (Ghasemzadeh & Saadat, 2011; Robbins, 1998; Spector, 1982; Super, 1966), it is mentioned that people with internal locus of control perform better than those with external locus of control in most cases. And in general, it is believed that the performance of people with internal locus of control is better than those with external locus of control in all aspects. However, the results of this study show that, under certain conditions, students with external locus

of control perform better than those with internal locus of control. And there are still similar results in some of the previous studies.

Kabanoff and O'rien (1980) point out in their study that people with internal locus of control prefer to work in environments they can control, while people with external locus of control performed better than those with internal locus of control in environments they can not control. Lefcourt (1972) finds that people with internal locus of control are more suitable for tasks with high complexity, while people with external locus of control are more suitable for tasks with high routine or standardization. It can be seen that in routine work or standardized work, the external controllers perform better than the internal controllers. Blau (1993) points out in his study that the compliance performance of people with external locus of control is relatively higher than those with internal locus of control, and in the administrative jobs requiring higher compliance, the work performance of the external controller is much higher.

It can be inferred from the above conclusions that among the college students from Mainland China who went to Taiwan for exchange study, when their learning motivation is generally low, students with external locus of control show better career adaptability than those with internal locus of control because they are used to being arranged by teachers and colleges.

In the research conducted by Li, Meng, and Ling (2005), it is also pointed out that people with external locus of control are easily attracted by incentive factors in work environment. Therefore, people with external locus of control give priority to incentives in job selection and perform better than those with internal locus of control in this environment. This kind of situation may inevitably encountered to college

students. It can be speculated that when the interest of seeking knowledge is low, the career performance of students with external locus of control may be better than those with internal locus of control due to the external attention, recognition or encouragement. This also explains the reason why the career adaptability of students with external locus of control is higher than those with internal locus of control under the condition of low interest of seeking knowledge presented in the moderating interaction diagram.

In terms of slope comparison, there is a significant difference between the slope of the internal locus tendency and the external locus tendency. The moderating effect of external locus of control between interest of seeking knowledge and career adaptability is relatively flat, while the moderating effect between interest of seeking knowledge and career adaptability of internal locus of control is stronger with the increase of learning motivation, and its slope shows much more obvious effect.

Therefore, it can be concluded that the internal-external locus of control of college students from Mainland China who went to universities in Taiwan for exchange study plays a moderating effect between interest of seeking knowledge and career adaptability. Thus the hypothesis H7 in this study is partly supported.

CHAPTER 6

CONCLUSIONS

Based on the results and discussions in Chapter 4 and 5, the conclusions and limitations of this research are sorted out in this chapter, and suggestions are put forward for the relevant departments and the follow-up research. This chapter is divided into three sections. The first section is about the theoretical and practical significance; the second section is about suggestions to education practice; the third section is about research limitations and suggestions for follow-up studies.

6.1 Theoretical and Practical Significance

In view of the literature in field of education, most studies (Jiaying-Cui, 2013; Makayla,2013; Zhang,2012) focus on the influence of learning motivation on career adaptability, or just discuss the mediating effect of future time perspective (Eccles & Wigfield, 2002; Lens, 2001; Xu, 2016) or the moderating effect of locus of control (Davis & Palladino, 2000; Judge,2001; Xie, 2013).

There is little research to analyze the relationships among learning motivation, future time perspective, locus of control and career adaptability in one study. Based on the current situation of learning motivation, future time perspective, locus of control and career adaptability of college students from Mainland China who went to Taiwan for exchange study, this researcher attempts to take future time

perspective as mediating variable to explore the relationship between learning motivation and career adaptability.

At the same time, the relevant theories of locus of control are added to construct a research framework of discussing the relationship between learning motivation and career adaptability by taking future time perspective as the mediator and locus of control as moderator, and obtain the verification of the above hypotheses. This researcher expects to complement the deficiencies of existing research, and provide references for future studies.

For the test of mediating effect, previous researchers tend to analyze the influence of independent variables on dependent variables after the addition of mediating variables. In this study, the mediating effect is verified by test the influence relationship between different dimensions of independent variables and dependent variable. The results show that the future time perspective of college students from Mainland China who went to Taiwan for exchange study plays a mediating role between the three dimensions of learning motivation, namely, interest in seeking knowledge, self-development, tour interest, and their career adaptability.

For the moderating effect of moderator, it is often verified in previous research by testing the influence relationship between independent variables and dependent variables with moderating variables. In this study, the moderating effect of internal-external locus of control is examined by analyzing the influence relationship of the three dimensions of learning motivation (interest in seeking knowledge, self-development, and tour interest) and career adaptability.

The results show that the internal-external locus of control of college students from Mainland China who went to Taiwan for exchange study plays a

moderating role between interest in seeking knowledge and career adaptability, while there is no significant moderating effect on the relationship between both dimensions of self-development and tour interest and career adaptability. These two findings in this study provide new ideas and perspectives for future research, and provide empirical references for further research in the future, which have certain practical significance.

6.2 Suggestions to Education Practice

Based on the above summary and analysis of the conclusions of this study, advice and suggestions are put forward in this section, from the perspective of education practice, to education authorities or colleges, as well as students and parents. In this study, the objects of practical suggestions were divided into two parts: educational management departments and colleges, students and family. It is stated as follows.

1. Suggestions to Educational Management Departments and Colleges

The results of this study show that in terms of learning motivation, college students from Mainland China who went to Taiwan for exchange study score the highest in the dimension of interest in seeking knowledge, which is higher than self-development and tour interest. This shows that the main motivation of Mainland Chinese exchange students to Taiwan for exchange study is to study in Taiwan's curriculum and experience Taiwan's education methods, which is the demand for self-realization. This kind of demand is also described in the demand satisfaction theory of Maslow (1943).

It can be seen that college students should further strengthen their cognition of academic identity, cultivate and maintain their desire and demand for learning. Therefore, it is suggested that colleges and universities in Taiwan offer more courses with professional characteristics to strengthen the interaction between teachers and students, so as to enhance the interest motivation of Mainland Chinese students to study in Taiwan. At the same time, it is suggested that colleges and universities and relevant education departments often organize interactive activities for students from both sides of the straits to increase mutual understanding and establish more platforms and channels for exchange study and learning, so as to meet the needs and aspirations of students studying abroad.

From the scores of career adaptability of college students from Mainland China who went to Taiwan for exchange study, we can see that they have a certain degree of concept and cognition of career development. The career development theory of Super (1984) shows that college students are at an important stage of career exploration. Therefore, it is suggested that colleges and universities continue to strengthen the students practical learning and career development mechanism, set up career planning curriculum, guide students to explore and make career planning, and also suggests that teachers master social development and the workplace pulsation, emphasize interdisciplinary knowledge integration and innovation, increase the case sharing guide and practice, in order to make the students get more abundant information and knowledge of career development in this period, and improve their overall career adaptability as well.

We can see from the result that the learning motivation of Chinese Mainland exchange students positively influences their career adaptability. Therefore,

in order to enhance their learning achievement in Taiwan, it is suggested that during the period of Mainland Chinese college students studying in Taiwan, colleges and universities in Taiwan open career counseling courses or invite local people with successful experience to share with them, so as to help them develop in the period of career exploration, and to build and enhance their confidence in future careers.

Currently, Mainland Chinese students studying in Taiwan are bound by local laws and cannot participate in the local work experience in any way (Li & Cai, 2015; Zhou, 2015). It is suggested that Taiwan's colleges and universities strengthen the establishment of relevant off-campus curriculum experience in the name of learning experience, and provide opportunities for Mainland Chinese exchange students to cooperate with local enterprises or internship, so as to meet their needs in career self-development.

At all stages of education, it is also very important to guide students' self-directed learning in order to stimulate and improve their learning motivation (Michael, 2015). Therefore, during the teaching process, teachers should provide more choice of learning tasks, enhance students' autonomous learning opportunities, and stimulate students' learning motivation through external forces such as rewards and restrictions, to improve their future time perspective (Kang, 1999; Park & Jung, 2015), so as to find the way and methods, by engaging in learning and improving competence, to further enhance their career adaptability.

In view of the mediating effect of future time perspective between learning motivation and career adaptability, it is suggested that during the process of organizing teaching, colleges and teachers should advocate a future-oriented way of thinking, encourage students to think more about possible future events, to make plans,

and to think about the benefits of present learning to achieve future goals. Once students identify with the learning task, stimulate the learning motivation, coupled with the enthusiasm for the future goal, it becomes a natural thing for them to achieve good results and improve their ability in the process of learning.

The results of this study show that students of different genders and grades have differences in the degree of future time perspective (Greene & DeBacker, 2004; Horstmanshof & Zimitat, 2007), while there is no difference in the influence of birth orders and family socioeconomic levels on future time view. Thus it can be seen that the future time perspective comes more from the acquired experience and cultivation. Therefore, it is suggested that colleges and teachers, in the course setting and teaching process for students of different ages, add relevant educational guidance in different forms, so that students can maintain a positive attitude towards future and current schoolwork.

The results of most previous studies (Ghasemzadeh & Saadat, 2011; Mahajan & Kaur, 2012; Schmitz et al., 2000) and the conclusions show that students with internal locus of control perform better than those with external locus of control in learning initiative and career development. In addition, the influence coefficient of internal-external locus of control on career adaptability is big, which indicates that the internal-external locus of control has a strong influence on career adaptability.

Therefore, it is suggested that colleges and teachers, during the teaching process for students of all ages, pay more attention to the development of their personality development, guide students to establish a positive, optimistic and hardworking spirit through colorful activities and different forms, and encourage students to correctly face and actively seek solutions to problems when they suffer

from difficulties and setbacks, so as to help them build a much better and more conducive to personal development of personality.

It is found in this study that locus of control plays a moderating role between students' interest in seeking knowledge and their career adaptability. According to the two different slope, the following suggestions are put forward. For students with external locus of control, teachers should give them timely recognition and praise, and encourage them to keep moving in the right direction, so as to achieve good academic performance and personal development. They can be given the experience of routine work to enhance their confidence in their future career. While for students with tendency of internal locus of control, teachers should pay attention to their study and psychological changes at any time, and remind them in time about the uncompleted academic tasks, and offer some help and guidance to finish them, so as to give their subjective initiative into full play in their studies, and continue to make progress.

Teachers, as important participants and guides in the process of students' growth and development, should give students correct guidance, love and positive response, and provide necessary help and guidance in their career cognitive formation and career choice. When students encounter difficulties or get into trouble, teachers should give guidance and help with a positive attitude to enhance their understanding of "human effort is the decisive factor". And in due course, language motivation and attitude recognition will also make students feel valued and affirmed, which will easily lead to satisfaction and self-confidence. This will not only be more conducive to the development of students in all aspects, but also achieve the real purpose of education.

2. Suggestions for Students and Family

For the Mainland Chinese exchange students to Taiwan for the first time, many of them cannot accept the diversified, critical and creative thinking way of life and learning of Taiwan students, which is mainly caused by the difference of educational environment between the two sides. Even though the two sides share the same language, their different ways of logical thinking may cause some misunderstandings (Luo & Wang, 2013; Zhang, 2010; Zhang & Pan, 2016).

Therefore, it is suggested that college students from Mainland China who went to Taiwan for exchange study try to think about Taiwan's democratic and diversified social development model from a broader perspective, so that they can gain deeper understanding and get more out of it during the overseas exchange experience. It is suggested that Mainland Chinese students studying in Taiwan should interact with local teachers and students, and actively participate in various exchange activities, so as to increase interaction and improve the overall learning effect.

Through a large number of literature conclusions (Cheng, 2013; David, 2014; William, 2015; Wu, 2013), it can be seen that participating in overseas or international exchange learning is of great help to improve students' learning ability and future development. Therefore, it is suggested that in combination with their own actual conditions, students and their parents should break the shackles of conventional educational concepts and ideas, and choose suitable overseas learning programs with an open and developmental perspective. Through such experience, students can enrich their learning experience, broaden their horizon and thinking, which is also conducive to career development and future achievements.

From the perspective of age, college students from Mainland China who

participate in the exchange in Taiwan are in an important stage of career exploration, just as described in Super's (1984) career development theory. Therefore, we suggest that during the period of learning, students should pay special attention to and attaches great importance to the relevant information; on the one hand, learning professional courses knowledge, on the other hand, actively seeking for path of personal career development. Whether to choose jobs or to continue studies, students should actively collect relevant information and be prepared for all kinds of situations.

Although the results of this study do not show the influence of family factors on students' future time perspective, the role of family, as an environment in which a child is exposed from birth to growth, cannot be ignored. Therefore, it is suggested that parents should pay attention to the planning and guidance for the future when getting along with their children, so that children at different ages can recognize the goals and ideals to be achieved in the future and put them into action. Parents need to demonstrate the power of role models, and their examples will serve as a textbook for their children. And helping children build a good character will benefit them for all the life.

It is found in the study that the internal-external locus of control of exchange students from Mainland China has a strong influence on their career adaptability, and the positive influence of internal locus control is very obvious and prominent. Therefore, it is suggested that parents should pay attention to the cultivation and development of children's internal locus of control in family education, so as to help them improve their career adaptability and lay a good foundation for career development.

Based on the slope of the moderating effect of external and internal locus

of control between learning motivation and career adaptability, it is suggested that parents give timely guidance and encouragement to students with strong tendency of external locus of control, so as to help them enhance their career adaptability; while for students with tendency of internal locus of control, parents should provide timely career development guidance and direction guidance to help them show the best career adaptability and be better adaption to the future career.

It can be seen from the results of this research that birth orders and family socioeconomic levels have significant influence on individuals' locus of control (Jamal & Vishwanath, 1990; Nevid & Rathus, 2003). In other words, family factors play an important role in the individual's tendency of locus of control. Therefore, it is suggested that parents should not spoil and favor their children, should not let the child develop freely, and should give correct guidance during the process of their growth. This is the right way of family education for children's growth and progress.

Entering the college stage, students are in an important stage of forming their outlook on life and values (Super, 1980; Zhang, 2007; Zhou, 2011), and begin to take responsibility for their own behaviors. Therefore, it is suggested that students should timely examine their cognition and behavior, objectively view external things, objectively evaluate the things happening around them and the things they are facing, correctly understand the relationship between giving and receiving, and strive hard instead of complaining. At the same time, students are suggested to identify and make friends with people with positive energy, and try to make themselves have good character, outlook on life and values. This is conducive to personal growth and progress.

6.3 Study Limitations and Suggestions for Follow-up Studies

This study took Mainland Chinese exchange students from universities in Taiwan as participants. However, due to the limitation of personnel, supplies and time, the samples are only collected from 11 universities in northern, central and southern Taiwan by means of convenient sampling, and these universities are all private universities that accept exchange students from Mainland China.

From this perspective, the participants representativeness of this study are slightly inadequate. Therefore, it is suggested that in future studies, researchers can expand the scope of study to more colleges and universities of different types, such as public and private colleges, for more detailed studies. Degree students and postgraduates can also be taken as participants in the follow-up research, and even graduates with exchange experience in Taiwan can also be taken, not just limited to short-term exchange students. This will make the whole study more complete and incisive.

This study took learning motivation as independent variable, career adaptability as dependent variable, future time perspective as mediating variable, and internal-external locus of control as moderating variable, and focus on exploring the relationships among these variables. Quantitative research is adopted to analyze the data, but qualitative research and discussion are rare. In order to improve the questionnaire effect and recovery rate, teachers from the international department of the target universities in Taiwan are specially entrusted to organize students and make unified explanation to them, these teachers help distribute and collect questionnaires.

However, due to some limitation of the actual situation, the researcher

cannot communicate with the students who received the questionnaires, so relevant materials and analysis of in-depth interview are lacked in this study. It is suggested that researchers consider using the combination of quantitative and qualitative methods for more in-depth discussion and analysis in the future studies. In terms of research methods, it is suggested that in future studies, on the basis of quantitative analysis and in combination with in-depth interviews, experimental studies and other methods, the research results will be further improved.

In terms of the selection of background variables, this study only involves gender, grade, birth order and family socioeconomic level due to various constraints. In future studies, researchers may also try to add different background variables, such as major, place of origin, type of school, etc., for more detailed analysis, so as to discuss the relationships among variables with much more background variables.

In the field of educational research, future time perspective and locus of control are often adopted as mediating and moderating variables (Davis & Palladino, 2000; Eccles & Wigfield, 2002; Judge, 2001; Lens, 2001; Xie, 2013; Xu, 2016), and the conclusions tend to be mature and stable. In the process of mediating and moderating effect verification, it is found in this study that the basic model constructed shows good fitness. Therefore, it is suggested that researchers consider adding different variables to this model in the future research, so as to find the relationships among more variables and try to examine the influence on each other. There is another suggestion for researchers with interest that they try to put future time perspective and locus of control into different research fields to verify whether they still present mediating or moderating effect in different fields.

It can be seen from the statistical analysis of the data in this study that the

AVE value of a certain aspect of individual variables is slightly lower, but the model suitability indexes are all good. This may be due to the particularity of the study target population, sampling methods or other reasons, which needs further study and discussion.

The conclusion of this study shows that in the verification of internal-external locus of control as moderator, the moderating effect is only verified in the relationship between dimension of interest in seeking knowledge of learning motivation and career adaptability, but not shows significance in the relationship between the other two dimensions of learning motivation and career adaptability. Although this conclusion partially verifies the hypothesis of this study, the specific reasons leading to this result still need further analysis and discussion. It is also suggested that future researchers conduct more in-depth and detailed studies based on this, so as to provide more favorable references for the generation of such conclusions.

BIBLIOGRAPHY

- Adelabu, D. H. (2007). Time perspective and school membership as correlates to academic achievement among African, American, Adolescents. *Adolescence*, 42 (167), 525-538.
- Agarwal, A., Tripathi, K., & Srivastava, M. (1983). Social roots and psychological implications of time perspective. *International Journal of Psychology*, 18 (5), 367.
- Allport, G. W. (1961). *Pattern and growth in personality*. NY: Holt, Rinehart and Winston.
- Alvos, L., Gregson, R. A. M., & Ross, M. W. (1993). Future time perspective in current and previous injecting drug users. *Drug and Alcohol Dependence*, 31, 193-197.
- Anderson, P. H., Lawton, L. Rexeisen, R. J., & Hubbard, A. C. (2006) Short-term study abroad and intercultural sensitivity: A pilot study. *International Journal of Intercultural Relations*, 30, 457-469.
- Ashford, S. J. & Taylor, M. S. (1990). Adaptation to work transitions: an integrative approach. *Research in Personnel and Human Resources Management*, 8, 1-39.
- Atkinson, J. W. (1964). *An introduction to motivation*. Oxford, England: Van Nostrand.
- Atkinson, J. W. & Feather, N. T. (1966). *A theory of achievement motivation*. New York: Wiley.
- Azizli, N., Atkinson, B. E., Baughman, H. M., & Giammarco, E. A. (2015). Relationships between general self-efficacy, planning for the future, and life satisfaction. *Personality and Individual Differences*, 82, 58-60.
- Babin, B. J. & Boles, J. S. (1998). Employee behavior in a service environment: A model and test of potential differences between men and women. *Journal of Marketing*, 62 (2), 77-91.
- Babin, B. J., William, R. D., & Mitch, G. (1994). Work and/or Fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, 20, 644-656.
- Bagozzi, R. P. & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16 (1), 74-94.
- Ball, D. L. (1990). The mathematical understandings that prospective teachers bring to teacher education. *Elementary School Journal*, 90 (4), 449-466.
- Ball, S. (1977). *Motivation in education*. New York, NY: Academic Press.
- Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavior change. *Psychology Review*, 84, 191-215.
- Bandura, A. (1977b). *Social learning theory*. New Jersey: Englewood Cliffs.
- Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. New Jersey: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: the exercise of control*. New York: W.H. Freeman.
- Baron, R. & Kenny, D. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51 (6), 1173-1182.
- Bembenuity, H. (2007). Self-regulation of learning and academic delay of gratification: gender and ethnic differences among college students. *Journal of*

- Advanced Academics*, 18, 586- 616.
- Bembenutty, H. & Karabenick, S. A. (2004). Inherent association between academic delay of gratification, future time perspective, and self-regulated learning. *Educational Psychology Review*, 16 (1), 35-57.
- Bembenutty, H. & Zimmermah, B. J. (2003). Relation of motivational beliefs and self-regulatory processes to homework completion and academic achievement. Paper presented at the annual meeting of the American Educational Research Association. Chicago. IL.
- Bentler, P. M. (1983). Some contributions to efficient statistics in structural models: specification and estimation of moment structures. *Psychometrika*, 48 (4), 493-517.
- Bentler, P. M. & Wu, E. J. C. (1993). EQS: Windows user's guide. Los Angeles, CA: MDP Statistical Software.
- Blau, G. (1993). Testing the relationship of locus of control to different performance dimensions. *Journal of Occupational and Organizational Psychology*, 66 (1), 125-138.
- Bluedorn, A. C. (2002). The human organization of time: temporal realities and experience. Stanford University Press.
- Blustein, D. L. (1997). A context-rich perspective of career exploration across the life roles. *The Career Development Quarterly*, 45 (3), 260-274.
- Boudreau, J. W., Boswell, W. R., & Judge, T. A. (2001). Effects of personality on executive career success in the United States and Europe. *Journal of Vocational Behavior*, 58 (1), 53-81.
- Bourke, A. (2000). A model of the determinants of international trade in higher education. *The Service Industries Journal*. 20 (1), 110-138.
- Brickman, S. J., Miller, R. B., & Roedel, T. D. (1997). Goal valuing and future consequences as predictors of cognitive engagement. *Paper Presentation at the Annual Meeting of the American Educational Research Association*, Chicago, IL.
- Brissett, M. & Nowicki, S. Jr. (1973). Internal versus external of reinforcement and reaction to frustration. *Journal of Abnormal and Social Psychology*, 25, 35-39.
- Brophy, J. (1987). On motivating students. In D. Berliner., & Rosen-shine. (Eds.). *Talks to Teacher's*, 201-245. New York: Random House.
- Burger, A. K. (2007). Is the World Ready for Mobile Marketing? *E-Commerce Times*. Retrieved from: <http://www.ecommercetimes.com/story/5673i.htm>welcome 1209150997.
- Burger, A. K. (2007). M-commerce hot spots. Part I: Beyond ringtones and wallpaper. *E-Commerce Times*. Retrieved from: <http://www.commercetimes.com/story/57109.html>.
- Butterfield, E. C. (1964). Locus of control, test anxiety, reactions to frustration, and achievement attitudes. *Journal of Personality*, 32 (3), 355-362.
- Carlson, J. S., Burn, B. B., Useem, J., & Yachimowicz, D. (1990). Study abroad: the experience of American undergraduates. New York: Greenwood.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312 (5782), 1913-1915.
- Carstensen, L. L. Lang, F. R. (1996). Future time perspective scale. Unpublished manuscript, Stanford University.

- Cate, R. A. & John, O. P. (2007). Testing models of the structure and development of future time perspective: maintaining a focus on opportunities in middle age. *Psychology and Aging*, 22 (1), 186-188.
- Caudrey, T., Petersen, M., & Shaw, P. (2008). The motivations of exchange students at Scandinavian Universities. In Byram, M. & Dervin, F. (Eds.). *Students, Staff and Academic Mobility in Higher Education*. Newcastle, UK: Cambridge Scholars Publishing.
- Chen, A. X. (2010). *The study on the students' internship performance relation between two factor theory: with industrial-academic cooperation plan*. Master dissertation. Industrial Education Department of National Taiwan Normal University.
- Chen, B. C. (2010). *The influence of supervisor's perception of leadership style and employee's personality traits on performance*. Master dissertation. National Kaohsiung Normal University.
- Chen, J. & Wang, L. (2007). Locus of control and the three components of commitment to change. *Personality and Individual Differences*, 42 (3), 503-512.
- Chen, K. Y. & Wang, Z. H. (2010). Analysis practice of structural equation model: application of AMOS. Taipei: Wunan Book Publishing House.
- Chen, L. C. (1998). College students' physical and mental adaptation scale. Taipei: Psychology Press.
- Chen, P. H. (2006). The motivation dilemma of technical college students' self-adjustment learning. *Taiwan Journal of educational psychology*, 38 (1), 37-50.
- Chen, P. W. (2005). *The relationships among self-efficacy, career barrier factors, and career development of students of institute of technology*. Master Dissertation. Institute of Education, Taiwan Ming Chuan University.
- Chen, S. J. (2003). *A study on the relationship between vocational self-concept and learning motivation of the students at vocational high school in Taipei*. Master Dissertation. National Taipei University of Technology.
- Chen, X. B. (2013). The reflection on learning and competitiveness of Taiwan students from the perspective of Mainland Chinese students to study in Taiwan. Retrieved from: <http://www.npf.org.tw/post/1/12336>.
- Chen, Y. L. (2016). *The influence of locus of control personality traits, emotional labor and job satisfaction on organizational commitment: a case of net generation nurses*. Master Dissertation. Tainan University of Technology.
- Chen, Y. L., Hsu, L. L., & Hsieh, S. I. (2012). Clinical nurse preceptor teaching competencies: relationship to locus of control and self-directed learning. *The Journal of Nursing Research*, 20 (2), 142-150.
- Chen, Y. W. (2003). A study on the relationships among self-concept, learning motivation and academic achievement of elementary school students. Master dissertation. Institute of Counseling and Educational Psychology, Taichung Normal College.
- Chen, Z. H. (2002). *A study of the motivational and barrier factors for adults attending technology vocational*. Master dissertation. Institute of Industrial Education, Taiwan National Changhua University of Education.
- Cheng, B. L. (1991). *Research on learning strategies of motivation for elementary and middle school students*. Master Dissertation. Institute of Education, Taiwan

- National Chengchi University.
- Cheng, B. L. & Lin, Q. S. (2001). Study on the construction and reliability and validity of self-adjusting learning scale for middle school students. *Taiwan Detection Annuals*, 48, 1-41.
- Cheng, Q. H. (2013). Educational observation on the number of students from Mainland China studying in Taiwan. *Taiwan Educational Review Monthly*, 2 (1), 40-43.
- Cheng, Y. F. (2012). *A study of life adjustment and learning satisfaction of Chinese students in Taiwan*. Master Dissertation. Taiwan Da-Yeh University.
- Cheung, G. W. & Lau, R. S. (2008). Testing mediation and suppression effects of latent variables: Bootstrapping with structural equation models. *Organizational Research Methods*, 11(2), 296-325.
- Chirkov, V., Safdar, S. J., & Playford de Guzman, K., Further. (2008). Examining the role motivation to study abroad plays in the adaptation of international students in Canada. *International Journal of Intercultural Relations*, 32, 427-440.
- Chirkov, V., Vansteenkiste, M. Tao, R., & Lynch, M. (2007). The role of self-determined motivation and goals for study abroad in the adaptation of international students. *International Journal of Intercultural Relations*, 31, 199-222.
- Chou, P. C., Chao, Y. M. Y., Yang, H. J., Yeh, G. L., & Lee, T. S. (2011). Relationships between stress, coping and depressive symptoms among overseas university preparatory Chinese students: a cross-sectional study. *BMC Public Health*, 11 (1), 352.
- Chubb, N. H., Fertman, C. I., & Ross, J. L. (1997). Adolescent self-esteem and locus of control: A longitudinal study of gender and age differences. *Adolescence*, 32 (125), 113-129.
- Chun-Chin Ying. (2015). *The relationships among learning motivation, internship outcomes, career decision self-efficacy and career preparation behavior of hospitality undergraduates*. Master Dissertation. Tainan University of Technology.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences (3rd ed.)*. Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Cooper, D. (1998). *Improving safety culture: a practical guide*. England: John Wiley & Sons Inc..
- CUI-Jiaying (2013). Social networks, intercultural adjustment and self-identities: multiple-case studies of PRC students from a Hong Kong University who participated in a semester-long exchange program in an English-speaking country. Doctoral dissertation. Chinese University of Hong Kong.
- Daltrey, M. H. & Langer, P. (1984). Development and evaluation of a measure of future time perspective. *Perceptual and Motor Skill*, 58, 719-725.
- David S. Moore, & William Notz. (2013). *Statistics: Concepts and Controversies (8th ed.)*. New York: Freeman.
- David, M. A. (2014). Travel abroad: a study of the perceived influence of high school students' experiences of short-term travel or study abroad prior to college. *Capella University*, 49-66.
- Davis, S. F. & Palladino, J. J. (2000). *Psychology (3rd ed.)*. Upper Saddle River, NJ.

Prentice Hall.

- De Bilde, J., Vansteenkiste, M., & Lens, W. (2011). Understanding the association between future time perspective and self-regulated learning through the lens of self-determination theory. *Learning and Instruction, 21*(3), 332-344.
- Deng Bihui, & Deng Wei (2008). Empirical research on vocational adaptability of college students and related countermeasures: *Journal of Chongqing University, 14* (4), 59-63.
- Deng Bihui, et al. (2008). An empirical research on the vocational adaptability of college students and related countermeasures: *Journal of Chongqing University, 4*, 59-63.
- DeVellis, R. F. (2003). *Scale development: theory and applications* (2nd ed., Vol.26). CA: Sage Publications.
- DeVolder, M. & Lens, J. (1982). Academic achievement and future time perspective as a cognitive-motivational concept. *Journal of Personality and Social Psychology, 42* (3), 566-571.
- Deyon Christi Nagato. (2014). Short-term study tours and global competence development. *University of Southern California, 56-82*.
- Doherty, W. J. (1983). Impact of divorce on locus of control orientation in adult women: a longitudinal study. *Journal of Personality and Social Psychology, 44* (4), 834.
- Dong, Y. Y. (2011). *The study on correlation among positive emotion, belief in inter-external control and stress coping strategies of the university students*. Master Dissertation. Taiwan National Kaohsiung Normal University.
- Dong-Ho Kang (1999). *Motivation and its change in EFL contexts (foreign language learning motivation)*. Doctor dissertation. Indiana University.
- Ebberwein, C. A., Krieshok, T. S., Ulven, J. C., & Prosser, E. C. (2004). Voices in transition: lessons on career adaptability. *The Career Development Quarterly, 52* (4), 292-308.
- Eccles, J. S. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review, Psychology, 53*, 109-132.
- Eccles, J. (1983). Expectancies, values and academic behaviors. In Spence, J. I. (Ed.), *Achievement and Achievement Motives*. San Francisco: Freeman.
- Eren, A. (2009). Exploring the effects of changes in future time perspective and perceived instrumentality on graded performance. *Electronic Journal of Research in Educational Psychology, 7* (3), 1217-1248.
- Erikson, E. H. (1956). The problem of ego identity. *Journal of the American Psychoanalytic Association, 4*, 56-121. doi: 10.1177/000306515600400104.
- Fang, H. Q. (2013). *A study of the relationship among student's characteristics, satisfaction and learning effectiveness for internship: a case of hospitality related departments of vocational high school in Kaohsiung*. Master Dissertation. Taiwan National Kaohsiung University of Applied Sciences.
- Fang, S. Y. (2010). *A study of the learning motivations, barriers, and satisfactory degrees of the students taking information technology courses in the community Colleges in Taiwan*. Master dissertation. Taiwan Fo Guang University. doi: 098FGU05205001.
- Feather, N. T. (1990). *The psychological impact of unemployment*. New York: Springer.

- Feather, N. T. (1992). Values, valences, expectations, and actions. *Journal Social Issues*, 48, 109-124.
- First cross-strait economy and trade BBS. (2006). Five consensus. *People's Network*. Retrieved from: <http://tw.people.com.cn/GB/26741/60915/>.
- Fornell, C. & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18 (1), 39-50.
- Frank, L. D. (1939). Projective methods for the study of personality. *Journal of Psychology*, 8, 389-413.
- Frost, T. F. & Wilson, H. G. (1983). Effects of locus of control and A-B personality type on job satisfaction within the health care field. *Psychological Reports*, 53 (2), 399-405.
- Fu, G. Y., Vogel, E. F., & Feng, K. L. (2012). *Deng Xiaoping Changed China*. Tianxia Culture Press.
- Fulgini, A. J. & Zhang, W. (2004). Attitudes toward family obligation among adolescents in contemporary urban and rural China. *Child Development*, 75 (1), 180-192.
- Furnham, A., Bond, M., Heaven, P., Hilton, D., et al. (1993). A comparison of protestant work ethic beliefs in thirteen nations. *The Journal of Social Psychology*, 133 (2), 185-197.
- Furnham, A., Drakeley, R. (1993). Work locus of control and perceived organizational climate. *European Work and Organizational Psychologist*, 3 (1), 1-9.
- Gao, K. L. (2009). Current situation and future prospect of cultural and educational exchanges. Public Policy BBS by Taiwan National Chengchi University, Higher Education Series (12): Opening up the Conflict between Mainland Students and Taiwan's Domestic Education. *Culture and Economy*, 8-22.
- Garrison, D. R. (1997). Self-directed learning: toward a comprehensive model. *Adult Education Quarterly*, 48 (1), 18-33.
- Ghasemzadeh, A. & Saadat M. (2011). Locus of control in Iranian university student and its relationship with academic achievement. *Procedia-Social and Behavioral Sciences*, 30 (1), 2491-2496.
- Ginzberg, E., Ginsburg, S. W., Axelrad, S., & Herma, J. L. (1951). *Occupation choice: an approach to a general theory*. New York: Columbia University Press.
- Ginzberg, E. (1972). Toward a theory of occupational choice: a restatement. *Vocational Guidance Quarterly*, 20 (3), 169-175.
- Gjesme, T. (1979). Future time orientation as a function of achievement motives, ability, delay of gratification, and sex. *The Journal of Psychology*, 101, 173-188. doi: 10.1080/00223980.1979.9915069.
- Gjesme, T. (1983a). On the concept of future time orientation: considerations of some functions' and measurement' implications. *International Journal of Psychology*, 18, 443-461. doi:10.1080/0020759830824749386.
- Gjesme, T. (1983b). Introduction: an inquiry into the concept of future orientation. *International Journal of Psychology*, 18, 347-350. doi: 10.1080/00207598308247486.
- Gotfried, A.E. (1990). Academic intrinsic motivation in young elementary school children. *Journal of Educational Psychology*, 82, 525-538.
- Green, L., Fry, A. F., & Myerson, J. (1994). Discounting of delayed rewards: a

- life-span comparison. *Psychological Science*, 5, 33-36.
- Greene, B. A. & DeBacker, T. K. (2004). Gender and orientations toward the future: links to motivation. *Educational Psychology Review*, 16, 91-120.
- Gu, B. L. (2008). *The study on parent-children relationship, teacher-student relationship and learning motivation of the high grade elementary students*. Master dissertation. Department of social work, Taiwan Shih Chien University.
- Guan, Y., Guo, Y., Bond, M. H., Cai, Z., Zhou, X., Xu, J., ... & Wang, Y. (2014). New job market entrants' future work self, career adaptability and job search outcomes: examining mediating and moderating models. *Journal of Vocational Behavior*, 85 (1), 136-145.
- Guan, Y., Zhou, W., Ye, L., Jiang, P., & Zhou, Y. (2015). Perceived organizational career management and career adaptability as predictors of success and turnover intention among Chinese employees. *Journal of Vocational Behavior*, 88, 230-237.
- Guilford, J. P. (1965). *Fundamental statistics in psychology and education*. (4th ed.). New York: McGraw-Hill
- Guliford J. (1959). *Personality*. New York: McGraw-Hill.
- Guo, T. C. (2013). The impact of Taiwan's increasing recognition of Mainland academic qualifications on Taiwan and Mainland students. *Taiwan Education Review*, 682, 48-51.
- Guo, Y. T. (2010). *A study of the relationships among learning motivation, learning satisfaction, and teaching willingness of college students: a case study of department of education transformed from teacher college*. Master dissertation. National University of Tainan. doi: 098NTNT5576004.
- Gurin, P., Gurin, G., Morrison, B. M. (1978). Personal and ideological aspects of internal and external locus of control. *Social Psychology*, 41 (4), 275-296.
- Guthrie, L.C., Butler, S. C., & Ward, M. M. (2009). Time perspective and socio-economic status: a link to socioeconomic disparities in health? *Social Science & Medicine*, 68 (12), 2145-2151.
- Hair, J. F. Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Hair, J. F. Jr., Black, W.C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis*, (6th ed.). London, UK: Prentice-Hall.
- Han, J. Z. (1989). *Outline of educational psychology*. Beijing: Beijing People's Education.
- He, D. Z. (2015). Associated press news network. Retrieved from: <http://udn.com/news/story/6885/944131>.
- He, J. X. (2011). *Future time perspective, social support of learning resources, learning motivations, learning achievements*. Master Dissertation of National Taiwan Normal University.
- He, Y. Q. (1981). The relationship between gender role and self-concept of college students. *Bulletin of Educational Psychology*, (14), 221-230.
- Heider, F. (1958). *The psychology of interpersonal relation*. New York: John Wiley & Sons Inc..
- Henson, R. K. (2001). The effects of participation in teacher research on teacher efficacy. *Teaching and Teacher Education*, 17, 819-836.
- Higher Education and Technical Post Newsletter (2009). Retrieved from:

- <http://www.doc88.com/p-383479507501.html>
- Higher Education Department of Taiwan Ministry of Education (2010). The third reading of the draft amendment to the three laws of Mainland Chinese students was adopted. Retrieved from: http://www.edu.tw/news.aspx?news_sn=3794
- Higher Education Department of Taiwan Ministry of Education (2011). Regulations and orders issued by this ministry in 2010. Retrieved from: http://www.edu.tw/content.aspx?site_content_s1n=%2022598
- Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: a meta-analysis. *The Journal of Environmental Education*, 18 (2), 1-8.
- Hirschi, A. (2009). Career adaptability development in adolescence: multiple predictors and effect on sense of power and life satisfaction. *Journal of Vocational Behavior*, 74 (2), 145-155.
- Ho, P. (2009). *U.S. College Students and Study Abroad: Examining Motivation, Outcomes, and Ethnic Differences*. Master's Thesis. Stanford University, California.
- Holder, J. C., Vau, X. A. (1998). African American professionals: coping with occupational stress in predominantly white work environments. *Journal of Vocational Behavior*, 53 (1), 315-333.
- Holland, J. L. (1985). *Making vocational choices: a theory of vocational personalities and work environments*. Englewood Cliffs, NJ: Prentice Hall.
- Hong, Y. Y. (1975). Introduction of internal-external locus of control and Rotter's locus of control scale. *Detection Annuals*, 22, 99-103.
- Hong, E., Peng, Y., & Rowell, L. L. (2009). Homework self-regulation: grade, gender, and achievement-level differences. *Learning and Individual Differences*, 19, 269-276.
- Horstmanshof, L., & Zimitat, C. (2007). Future time orientation predicts academic engagement among first-year university students. *British Journal of Educational Psychology*, 77, 703-718.
- Houle, C.O. (1979). Motivation and participation with special reference to non-traditional forms of study. *Learning opportunity for Adults*, 8 -34.
- Houle, C.O. (1961). *The inquiring mind*. Madison: University of Wisconsin Press.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55.
- Hua, D. (2012). *A study on the relationship between career adaptability, locus of control and life satisfaction*. Master dissertation, Henan University.
- Huang, P. T. (2012). *A study on the future time, perception and self-adjustment of college students*. Taiwan: National Taiwan Normal University.
- Huang, F. M. (2004). *Structural equation model: theory and application*. Taipei: Wunan Book Publishing House.
- Huang, F. S. (2002). A new milestone towards learning society: discussion, content and characteristics of lifelong learning method. *Adult Education*, 68, 2-12.
- Huang, J. H. (1979). A study on the internal and external control beliefs of elementary and middle school students. *Bulletin of Educational Psychology*, 12, 1-14.
- Huang, J. H. (1999). *Personality psychology*. Taipei: Psychology Press.
- Huang, K. X. (2016). *An action research on enhancing partnership between rural*

- schools and communities for sustainable development: a case study of the Lichi and Fuyuan communities, Taitung*. Master Dissertation. Institute of ecology and environmental education. Taiwan National Hualien University of Education.
- Huang, K. Y., Dai, B. F., & Lin, Z. M. (2011). The effects of personal traits on physical and mental health of technical and vocational college students in central Taiwan. *Hsiuping Journal of Humanities and Social Sciences*, 16, 57-88.
- Huang, P. T. & Chen, H. J. (2016). Relationship between future time perspective and self-regulated learning in college students: test of perceptual instrumental mediating effect. *Bulletin of Educational Psychology*, 47 (3), 329-354.
- Huang, R. B. (2009). *A study on first aid education of accident injuries in college students*. Master dissertation. Industrial education and technology department, Taiwan National Changhua University of Education.
- Huang, S. J. (2003). *The relationships among learning motivation, learning strategies and academic achievement of aboriginal junior high school students*. Master Dissertation of Education Institute, Taiwan National Changhua University of Education.
- Huang, T. Z. & Xue, W. T. (1998). Selecting right personality and improving job design which is more important. *Journal of Labor Studies*, 7, 125-152.
- Huang, W. J. & Huang, T. Z. (2009). Study on the effect of internal marketing on organizational commitment: a case study of nurses in a medical institution in northern Taiwan. *T.S.M.H Medical Nursing Journal*, 15 (4), 211-224.
- Huang, Y. X. (2002). *The study on learning motivation and learning satisfaction degree in community college learners*. Master Dissertation. Adult and continuing education institute, Taiwan National Chung Cheng University.
- Hunley, H. A., (2010). Students' functioning while studying abroad: the impact of psychological distress and loneliness. *International Journal of Intercultural Relations*, 34, 389-392.
- Husman, J. (1998). *The effect of perceptions of the future on intrinsic motivation*. Doctoral Dissertation. Austin: University of Texas.
- Husman, J. & Lens, W. (1999). The role of the future in student motivation. *Educational psychologist*, 34 (2), 113-125.
- Husman, J. & Shell, D. F. (2008). Beliefs and perceptions about the future: a measurement of future time perspective. *Learning and Individual Differences*, 18 (2), 166-175.
- Husman, J., McCann E., & Crowson, H., M. (2000). Volitional strategies and future time perspective: embracing the complexity of dynamic interactions. *International Journal of Educational Research*, 33, 777-799.
- Itzhaky, H., Ribner, D. S. (1999). Gender values and the work place: considerations for immigrant acculturation. *International Social Work*, 42 (1), 127-138.
- Jamal & Vishwanath. (1990). Shift work, burnout, and well-being: a study of Canadian nurses. *International Journal of Stress Management*, 4 (3), 197-204.
- Jason Hsu. (1996). *Multiple comparisons: theory and methods* (1st ed.). New York: Chapman and Hall/CRC.
- Jayaratne, S., Ivey, V. (1983). The world view of clinical social workers and some related gender differences. *Journal of Social Service Research*, 1, 75-87.
- Jeffrey D. Burrow. (2010). *Motivations and learning outcomes: a study of incoming exchange student at Queen's University*. Doctoral dissertation. Queens

- University.
- Ji, C. L. (2002). *Study on the relationships among locus of control, characteristics of job and work stress of the elementary teachers concurrently holding administrative posts*. Master dissertation. Department of education, National University of Tainan.
- Jian, M. F. (1986). Chinese college students' adjustment problems and related factors. National Taiwan Normal University. *Collected Papers of Institute of Education*, 28, 1-18.
- Jian, M. Z. (2002). *Learning motivation and satisfaction degree of dancing class students: a case study on the students of junior high school in Taiwan*. Master Dissertation. Physical Education Institute, National Taiwan Sport University.
- Jiang, G. L. (2000). *The study of relations on primary school teacher self-concept, locus of control, and job satisfaction*. Master dissertation. Education Department, Taiwan National Pingtung University of Education.
- Jiang, Y. H. (2010). Using AHP on the determinants of China's students to study in Taiwan. *East Asia Forum*, 12 (470), 75-89.
- Jin, S. R. (2011). *Career counseling and counseling*. Taipei: Tung Hua Book Co., Ltd..
- Jin, S. R., Lin, Q. S., & Tian, X. L. (1989). Research on career development orientation of junior college students in Taiwan. *Bulletin of Educational Psychology*, 22, 167-190.
- Jin, Y. (2010). Comments on the Taiwan authorities' policy of opening Mainland Chinese students to Taiwan. *Cross-Straits Relations*, 6, 12-13.
- Joint Admission Committee for Mainland Chinese Students. (2015, 2016). Retrieved from: <https://rusen.stust.edu.tw/spf/index.html>.
- Joint Admission Committee for Mainland Chinese Students. Statistical data. Retrieved from: <https://rusen.stust.edu.tw/spf/RecruitData.html>.
- Joint Admission Committee for Mainland Chinese Students. The announcement. Retrieved from: <https://rusen.stust.edu.tw/spf/RecruitData.html>.
- Jöreskog, K. G. & Sörbom, D. (1993). *LISREL 8: Structural Equation Modeling with SIMPLIS Command language*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Judge, T. A., Cable, D. M., Boudreau, J. W., & Bretz Jr, R. D. (1995). An empirical investigation of the predictors of executive career success. *CAHRS Working Paper Series*, 233-237.
- Judge, T. A., Higgins, C. A., Thoresen, C. J., & Barrick, M. R. (1999). The big five personality traits, general mental ability, and career success across the life span. *Personnel Psychology*, 52, 621-652.
- Judge, Timothy A. & Joyce, E. Bono. (2001). Relationship of core self-evaluation, self-esteem, generalized self-Efficacy, locus of control and emotional stability-with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, 86 (1), 80-92.
- Kabanoff, B. & O'Brien, G. E. (1980). Work and leisure: A task attributes analysis. *Journal of Applied Psychology*, 65 (5), 596-609.
- Kastenbaum, R. (1961). The dimensions of future time perspective: an experimental analysis. *The Journal of General Psychology*, 65 (2), 203-218.
- Kabanoff, B. & O'Brien, G. E. (1980). Work and leisure: A task attributes analysis. *Journal of Applied Psychology*, 65 (5), 596-609.

- Kauffman, D., & Husman, J. (2004). Effects of time perspective on student motivation: introduction to a special issue. *Educational Psychology Review*, 16, 1-7.
- Ke, Z. Y. (2005). *A study on the relationship between personality traits, organizational commitment and job performance: a case study of a telecom salesman*. Master Dissertation, Taiwan National Central University.
- Kenny, M. E. & Bledsoe, M. (2005). Contributions of the relational context to career adaptability among urban adolescents. *Journal of Vocational Behavior*, 66, 257-272.
- Kitsantas, A. (2004). Studying abroad: the role of college students' goals on the development of cross-cultural skills and global understanding. *College Student Journal*, 38, 441-452.
- Kline, R. B. (1998). Principles and practices of structure equation modeling. New York, NY: Guilford.
- Kooij, D. M., de Lange, A. H., Jansen, P. W., & Dikkers, J. E. (2013). Beyond chronological age: examining perceived future time and subjective health as age-related mediators in relation to work-related motivations and well-being. *Work & Stress*, 27, 88-105. doi:10.1080/02678373.2013.769328.
- Kooij, D. T., Bal, P. M., & Kanfer, R. (2014). Future time perspective and promotion focus as determinants of intra-individual change in work motivation. *Psychology and aging*, 29 (2), 319.
- Kooij, D. & Van De Voorde, K. (2011). How changes in subjective general health predict future time perspective, and development and generativity across the lifespan. *Journal of Occupational and Organizational Psychology*, 84, 228-247. doi: 10.1111/j.2044-8325.2010.02012.
- Kooij, D., de Lange, A., Jansen, P., & Dikkers, J. (2008). Older workers' motivation to continue to work: five meanings of age: a conceptual review. *Journal of Managerial Psychology*, 23, 364-394. doi: 10.1108/02683940810869015.
- Kren, L. (1992). The moderating effects of locus of control on performance incentives and participation. *Human Relations*, 45 (9), 991-1012.
- Krumboltz, J. D. (1994). Improving career development theory from a social learning perspective. In M. L. Savickas & R. W. Lent (Eds.), *Convergence in Career Development Theories: Implications for Science and Practice*. CA: Consulting Psychologists.
- Krzaklewska, E. (2008). Why study Abroad? An analysis of Erasmus students' motivations. In Byram, M. & Dervin, F. (Eds.). *Students, Staff and Academic Mobility in Higher Education*. Newcastle, UK: Cambridge Scholars Publishing.
- LaBahn, D. W. & Krapfel, R., (2000). Early supplier InVol. Vement in customer new product development: a contingency model of component supplier intentions. *Journal of Business Research*, 47, 173-190.
- Lai, J. W. (2002). *A Study of the relationship between locus of control and eating behavior inclination among adolescents*. Master dissertation. Taiwan National Yang-Ming University.
- Lai, S. F. (2005). *A study on the motivation and satisfaction of students in Taoyuan Community College*. Master dissertation. National Taiwan Normal University.
- Lai, W. R. (2017). *The effect of organization's support for competency development on employability and self-efficacy of military personnel: the moderating effect*

- of locus of control*. Master dissertation. Taiwan National Defense University.
- Lamm, H., Schmidt, R. W., & Trommsdorff, G. (1976). Sex and social class as determinants of future orientation in adolescents. *Journal of Personality and Social Psychology*, 34, 317-326.
- Lau, V. P. & Shaffer, M. A. (1999). Career success: the effects of personality. *Career Development International*, 4 (4), 225-231.
- Lefcourt, H. M. (1972). Internal versus external control of reinforcement. *Psychological Bulletin*, 65 (4), 206-220.
- Lefcourt, H. M. (1972). Internal versus external control of reinforcement revisited: recent developments. In B. A. Maher (Ed), *Progress in Experimental Personality Research: 6*. New York: Academic Press.
- Lefcourt, H. M. (1972). Recent developments in the study of locus of control. In B. A. Maher (Ed.), *Progress in experimental personality research*. Oxford, England: Academic Press.
- Lengua, L. J. & Stormshak, E. A. (2000). Gender, gender roles, and personality: gender differences in the prediction of coping and psychological symptoms. *Sex Roles*, 3 (1), 787-820.
- Lens, W. (1986). Future time perspective: a cognitive-motivational concept. In D. R. Brown & J. Veroff (Eds.), *Frontiers of motivational psychology*, 173-190. New York, NY: Springer.
- Lens, W. (2001). How to combine intrinsic task motivation with the motivational effects of the instrumentality of present tasks for future goals. In A. Efklides, J. Kuhl, & R. Sorrentino (Eds.), *Trends and Prospects in Motivation Research*, 23-36. Netherland: Kluwer Academic Publishers.
- Lens, W. & Gailly, A. (1980). Extension of future time perspective in motivational goals of different age groups. *International Journal of Behavioral Development*, 3, 1-17. doi: 10.1177/016502548000300102.
- Lens, W., Simons, J., & Dewitte, S. (2002). From duty to desire: the role of students' future time perspective and instrumentality perceptions for study motivation and self-regulation. In F. Pajares & T. Urdan (Eds.), *Academic Motivation of Adolescents*, 221-245. Greenwich, CT: Information Age Publisher.
- Lessing, E. E. (1968). Demographic, developmental, and personality correlates of length of future time perspective. *Journal of Personality*, 36, 183-201.
- Lewin, K. (1936). *Principles of topological psychology*. New York: McGraw-Hill.
- Lewin, K. (1951). *Field theory in social science: selected theoretical papers*. Edited by Dorwin Cartwright.
- Li, J., Meng, X. Z., Ling, W. S. (2005). On the relationship between employee motivation and Eysenck's personality theory. *Economic Forum*, 20, 81-82.
- Li, M. H. (2002). *The relationships among self-efficacy, expectancy for success, academic task value, and academic motivational regulation strategies of senior high school students*. Master Dissertation. Department of counseling and counseling, Taiwan National Changhua University of Education.
- Li, X. L. & Cai, J. M. (2015). The fourth anniversary of Chinese Mainland students arrival in Taiwan: three things that 80,000 Chinese Mainland students troops changed about Taiwan. *Common Wealth Magazine*, 570, 124-133.
- Li, Y. Y. (1990). *A study on the influence of supervisor personality traits and leadership behaviors on class atmosphere in Taipei junior high school*. Taipei:

- Taiwan National Chengchi University.
- Li, Y. Y. (2001). *Learning guidance*. Taipei: Psychology Press.
- Li, Y. Y. & Shan. W. J. (2001). *Powerful principles of instruction*. Taipei: Yuan-Liou Publishing Co., Ltd..
- Li, Z. Z., Li, J. J., & Zeng, Y. F. (2005). A study of the relationships among organizational management of large enterprises, individual career planning, personality traits, and job satisfaction. *Journal of Human Resources*, 5 (1), 53-76.
- Liang, L. (2015). *A study of relationships among learning motivations, peer-assisted learning and study achievement*. Master Dissertation. Institute of Management, Taiwan Kao Yuan University.
- Liang, Y. X. (1986). *Research on achievement motivation, gender role and career development of college students*. Master Dissertation. Education department, Taiwan National Chengchi University.
- Liao, Y. Z. (2010). *The soonest Chinese Mainland master and doctoral students will come to Taiwan in September*. Taiwan Lihpao. Retrieved from: <http://tw.news.yahoo.com/article/url/d/a/100422/131/24bbh.html>.
- Liao, Z. S. (2004). *The relationship between learning motivation and learning satisfaction of graduate students: take in-service education master teachers as an example*. Master Dissertation. Education department, National Pingtung University of Education.
- Likert, R. (1967). *The human organization: its management and value*. New York: McGraw-Hill.
- Lin, C. D. (1995). *Senior high school psychology*. Taipei: Wunan Book Publishing House.
- Lin, C. R. (1985). *The relationship between employees' locus of control, demographic characteristics and computerized attitudes*. Taipei: Taiwan National Chengchi University.
- Lin, C. Z. & Li, Z. D. (2008). A study of the relationship among personality traits, learning motivation and career motivation of students in the department of physical education: a case study of in-service students in National Taiwan Institute of Physical Education. *Journal of Leisure Sports*, 7, 17-32.
- Lin, J. P. (2010). A study on family environment and self-regulated learning of underachievement elementary school students. *Educational Journal of NHCUE*, 27, (1), 93-125.
- Lin, L. F. (2009). *The relationship between future time perspective and motivational regulation of senior high school students*. Master Dissertation. Counseling and Counseling Department. Taiwan National Changhua University of Education.
- Lin, L. Y. (2015). *A study of relationships among learning motivation, emotion management, and learning satisfaction of vocational high school students*. Master dissertation. Business Administration Department, University of South China.
- Lin, Q. C. (2009). The relations among future time perspective, achievement goal, and adaptive learning behavior of Taiwanese vocational high school students. *Journal of Educational Practice and Research*, 22 (1), 81-112.
- Lin, S. C. (1994). A study on the stratification of senior middle schools in China. *Educational Research Information Bimonthly*, 2 (3), 48-69.

- Lin, S. W. (2011). *The soonest Chinese Mainland master and doctoral students will come to Taiwan in September*. Taiwan Higher Education Department of the Ministry of Education: Measures approved by the Executive Yuan for people from Mainland China to study in colleges and universities in Taiwan. Retrieved from: <http://blog.xuite.net/newtaiwannet/667/41650438>.
- Lin, X. T. (1987). *The theory and practice of livelihood guidance (1st ed.)*. Taipei: Wunan Book Publishing House.
- Lin, X. T. (1992). *Specific measures of high school career guidance*. Taipei: Ministry of Education.
- Lin, X. T., Tian, X. L., Zhang, X. F., & Zhang, D.C. (2003). *Career guidance (2nd ed.)*. Taipei: Taiwan National Open University Publication Center.
- Lin, Y. X. (2017). *Evaluating the learning effectiveness of a field-service-oriented principles and practice of guidance course among pre-Service teachers*. Master Dissertation. Department of Psychology and Counseling, College of Education, National Taipei University of Education.
- Lin, Z. Y. (2007). *Multivariate Analysis: SPSS Operation and Application*. Best-Wise Publishing Co., Ltd., Taipei.
- Liu, J. Y. (2002). *The relationships among learning motivations, learning strategies, help-seeking behaviors, and academic performance of senior high school students*. Master Dissertation. Institute of Education, Taiwan National Changhua University of Education.
- Liu, S. M. (2005). *Organizational commitment and job satisfaction of nursing staff in nursing home: a case study of Taipei City, Taiwan*. Master dissertation. Institute of Community Care. Taiwan National Yang-Ming University.
- Locke, E. A. (1991). The motivation sequence, the motivation hub, and the motivation core. *Organizational Behavior and Human Decision Processes*, 50, 288–299.
- Locke, E. A. & Latham, G. P. (2002). *A theory of goal-setting and task performance*. Englewood, NJ: Prentice-Hall.
- Lomranz, J., Shmotkin, D., & Katznelson, D. B. (1983). Coherence as a measure of future time perspective in children and its relationship to delay of gratification and social class. *International Journal of Psychology*, 18, 407-413.
- Lu, Q. Y. (1992). *The relationship between learning motivation, strategy and academic achievement of post secondary school students in Taiwan*. Master Dissertation. Department of Social Education, National Taiwan Normal University.
- Luo, J. Y. & Wang, J. G. (2013). The life and study of Chinese Mainland exchange students in Taiwan. *Taiwan Education Review Monthly*, 2 (1), 51-54.
- Luo, J. Y. & Wang, J. G. (2013). The life and study of Mainland Chinese exchange students in Taiwan. *Taiwan Educational Review Monthly*, 2 (1), 51-54.
- Luo, L. X. (2007). The impact and challenge of low birth rate on higher education in Taiwan. *Educational Resources and Research*, 74, 133-150.
- Luo, S. H. & Tang, Y. Y. (2003). Effects of locus of control personality traits and empowerment cognition on job satisfaction: a case study of financial insurance industry. *Taiwan Journal of Human Resource Management*, 3 (1), 1-19.
- Lv, C. C. (2010). Comment on the amendment pass of terrestrial three methods. *Reunification Forum*, 5, 22-23.
- MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York,

- NY: Lawrence Erlbaum Associates.
- Maehr, M. L. & Meyer, H. A. (1997). Understanding motivation and schooling: where we've been, where we are, and where we need to go. *Educational Psychology Review*, 9, 371-409.
- Mahajan, N. & Kaur, J. (2012). Relation between locus of control of college teachers and their job satisfaction. *International Journal of Applied Psychology*, 2 (5), 98-103.
- Mainland Affairs Council Public of China (Taiwan). Mainland Chinese policies. Retrieved from: https://www.mac.gov.tw/cn/News_Content.aspx?n=DED5DAB0D6C7BED6&ms=8E0A247A631E0960&s=2EE62F1CA39687D9.
- Mainland Affairs Council. (2011). Policy stance on Mainland students coming to Taiwan. Retrieved from: https://www.mac.gov.tw/cn/News_Content.aspx?n=DED5DAB0D6C7BED6&ms=8E0A247A631E0960&s=57F9B82755DEC328.
- Mainland Affairs Council. (2011). Social communication statistics. Retrieved from: https://www.mac.gov.tw/Content_List.aspx?n=3C17D7B82E55A9B0.
- Mainland Affairs Council. (2013). Cultural and educational exchange statistics. Retrieved from: <https://www.mac.gov.tw/News.aspx?n=4892E8B8F5C0E174&sms=AF44BFB2584887A0>.
- Mainland Affairs Council. (2013). Policy and situation. Retrieved from: <https://www.mac.gov.tw/News.aspx?n=4326BCFE40D0A361&sms=C404745914DD219A>.
- Mainland Affairs Council. (2013). Promote cross-strait cultural and educational exchanges. Retrieved from: https://www.mac.gov.tw/News_Content.aspx?n=DED5DAB0D6C7BED6&ms=8E0A247A631E0960&s=F721F708897E1FEC.
- Makayla Grays (2013). Measuring motivation for coursework across the academic career: a longitudinal invariance study. Doctoral dissertation. James Madison University.
- Marcum, J. A. (2001). Eliminate the roadblocks. Washington: *The Chronicle of Higher Education. The Chronicle Review*, 5 (18), 7-8.
- Martens, M. P. (2005). Future directions of structural equation modeling in counseling psychology. *The Counseling Psychologist*, 33 (3), 375-382.
- Martens, M. P. (2005). The use of structural equation modeling in counseling psychology research. *The Counseling Psychologist*, 33, 269-298.
- Maslow, A. H. (1943). A theory of human motivation. *Psychological Review*, 50, 370-396.
- Maslow, A. H. (1969). The farther reaches of human nature. *Journal of Transpersonal Psychology*, 1-9.
- Maslow, A. H. (1996). Critique of self-actualization theory. In: E. Hoffman (Ed.), *Future Visions: The Unpublished Papers of Abraham Maslow*. Thousand Oaks, CA: Sage, 26-32.
- Maslow, A. H. (1970). *Motivation and personality* (2nd ed.). New York: Harper & Row.
- McArdle, S., Waters, L., Briscoe, J. P., & Hall, D. T. T. (2007). Employability during

- unemployment: adaptability, career identity and human and social capital. *Journal of Vocational Behavior*, 71 (2), 247-264.
- McClelland, D. C., Atkinson, J. W., Clark R. W., & Lowell, E. L. (1953). *The achievement motive*. New York: Appleton Century Crofts.
- McClelland, D. C. (1961). *The achieving society*. New Jersey: Van Nostrand.
- McGinnies, E. (1974). Sex and cultural differences in perceived locus of control among students in five countries. *Journal of Consulting and Clinical Psychology*, 42 (3), 451-455.
- McInerney, D. M. (2004). A discussion of future time perspective. *Educational Psychology Review*, 16 (2), 141-151.
- McKeachie, W. J. (1961). Motivation, teaching methods, and college learning. In M. R. Jones (Ed.), *Nebraska Symposium on Motivation (Vol. 9)*, 111-142. Lincoln, NE: University of Nebraska Press.
- Meera, K., Steven, J. K., & Ronald, R. S. (2009). Role of the big five personality traits in predicting college students' academic motivation and achievement. *Learning and Individual Differences*, 19 (1), 47-52.
- Michael, C. Kane (2015). *The effect of student participation in student success skills on the academic behaviors and key learning skills and techniques associated with college-career readiness*. Doctor Dissertation. Florida Atlantic University.
- Middleton, J. A. (1995). A study of intrinsic motivation in the mathematics classroom: a personal constructs approach. *Journal for Research in Mathematics Education*, 26 (3), 254-279.
- Miller, R. B. & Brickman, S. J. (2003). *A model of future-oriented motivation and self-regulation*. Paper presented as part of a symposium at the 2003 Annual Meeting of the American Educational Research, Chicago, IL.
- Miller, R. B. & Brickman, S. J. (2004). A model of future-oriented motivation and self-regulation. *Educational Psychological Review*, 16 (1), 9-33.
- Ministry of Education of the People's Republic of China. (2011). Educational statistics. Retrieved from: http://www.moe.edu.cn/s78/A03/moe_560/s7382/201305/t20130529_152564.html.
- Ministry of Education of the People's Republic of China. (2011). Retrieved from: http://www.moe.edu.cn/s78/A03/moe_560/s7382/.
- Mitchell, T. R. (1979). Organizational behavior. *Annual Review of psychology*, 30, 243-281.
- Mitchell, T. R., Smyer, C. M., & Weed, S. E. (1975). Locus of control: supervision and work satisfaction. *Academy of Management Journal*, 1 (18), 623-654.
- Murphy-Lejeune, E. (2002). Student mobility and narrative in Europe. *The new strangers*. London: Routledge.
- Nabi, G. R. (2001). The relationship between HRM, social support and subjective career success among men and women. *International Journal of Manpower*, 22 (5), 457-474.
- Nabi, G. R. (2003). Situational characteristics and subjective career success: the mediating role of career-enhancing strategies. *International Journal of Manpower*, 24 (6), 653-672.
- National Education Association (2000). The institute for higher education policy, quality on the line: benchmarks for success in internet-based distance education.

- National Research Council. (2012). Improving adult literacy instruction: options for practice and research. Retrieved from: <http://ww.ride.ri.gov/Portals/0/Uploads/Documents/>.
- Nauta, A., Vianen, A., Heijden, B., Dam, K., & Willemsen, M. (2009). Understanding the factors that promote employability orientation: The impact of employability culture, career satisfaction, and role breadth self-efficacy. *Journal of Occupational and Organizational Psychology*, 82 (2), 233-251.
- Nevid, J. S. & Rathus, S. A. (2007). *Your health*. Mason, OH: Thomson Custom Solutions.
- Nevid, J. S., Rathus, S. A., & Greene, B. (2003). *Abnormal psychology in a changing world (5th ed.)*. Upper Saddle River, NJ: Prentice-Hall, Inc.
- Ng, C. W. W., Chan, S. H., & Lam, S. Y. (2005). Keynote Paper: Centrifuge and numerical modeling of shielding effects on piles in consolidating ground. *Proc. 2nd China-Japan Geotechnical Symposium*, Shanghai, China: 719.
- Nunnally, J. C. (1978). *Psychometric theory (2nd ed.)*. New York: McGraw-Hill.
- Nurmi, J. E. (1991). How do adolescents see their future? A review of the development of future orientation and planning. *Developmental Review*, 11, 1-59. doi: 10.1016/0273-2297 (91) 90002-6.
- Nuttin, J. R. (1964). The future time perspective in human motivation and learning. *Act Psychologica*, 23, 60-82.
- Nuttin, J. R. (1985). *Future time perspective and motivation: theory and research method*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Nuttin, J. (2014). *Future time perspective and motivation: theory and research method*. New York, NY: Psychology Press.
- Nuttin, J. & Lens, W. (1985). Future time perspective and motivation: theory and research method. *Leuven, Belgium*: Leuven University Press.
- Ormrod, J. E. (2003). Educational psychology: developing learners. *Upper Saddle River, N.J*: Merrill/Prentice Hall.
- Padawer, E. A., Jacobs-Lawson, J. M., Hershey, D. A., & Thomas, D. G. (2007). Demographic indicators as predictors of future time perspective. *Current Psychology*, 26, 102-108.
- Park, I. J. & Jung, H. (2015). Relationships among future time perspective, career and organizational commitment, occupational self-efficacy, and turnover intention. *Social Behavior and Personality: an International Journal*, 43 (9), 1547-1561.
- Parsons, O. A. & Schneider, J. M. (1974). Locus of control in university students from eastern and western societies. *Journal of Consulting and Clinical Psychology*, 42 (3), 456-461. doi: 10.1037/h0036677.
- Peetsma, T. T. (2000). Future time perspective as a predictor of school investment. *Scandinavian Journal of Educational Research*, 44 (2), 177-192.
- Peetsma, T., & Van der Veen, I. (2011). Relations between the development of future time perspective in three life domains, investment in learning, and academic achievement. *Learning and Instruction*, 21, 481-494.
- Peng, H. L. (2012). The status of the counseling industry across Taiwan straits: a personal lecture report. *Guidance Quarterly*, 48 (1), 72-74.
- Peng, Y. Q. (2012). *Evaluation on the determinants of the undergraduate students to study in the short-term study abroad: the application of analytic hierarchy process*. Master Dissertation. Management Institute, Taiwan Minghsin

- University of Science and Technology.
- People's Daily. (2009, July 13). *The cross-strait economic and trade cultural forum was successfully concluded*. Retrieved from: http://paper.people.com.cn/rmrbhwb/html/2009-07/13/content_294600.htm.
- Peter, A. Johnson. (2001). *College students' intrinsic motivation to learn mathematics and beliefs about the nature of mathematics in a mathematics course rich in socially relevant content*. Doctor dissertation. Pennsylvania State University.
- Peters, L. H., O'Connor, E. J., & Wise, S. L. (1984). The specification and testing of useful moderator variable hypotheses. In *Method and Analysis in Organizational Research* (Eds.), Bateman, T.S. and Ferris, C. R., 129-139. Reston, VA: Reston Publishing Co.
- Petri, H. L. (1986). *Motivation: theory and research*. California: Wad Sworth.
- Phan, H. P. (2015). The impact of FTP on commitment to career choices: situating within a social cognitive perspective. *Higher Education Research & Development*, 34 (2), 368-382.
- Phillips, J. M. & Gully, S. M. (1997). Role of goal orientation, ability, need for achievement, and locus of control in the self-efficacy and goal-setting process. *Journal of Applied Psychology*, 82, 792-802.
- Phillips, S. D., & Blustein, D. L. (1994). Readiness for career choices: planning, exploring, and deciding. *The Career Development Quarterly*, 43 (1), 63-73.
- Pierce, J. L. & Dunham, R. B. (1987). Organizational commitment: pre-employment propensity and initial work experiences. *Journal of Management*, 13, 163-178.
- Pintrich, P. R., Smith, D. A., & Mckeachie, W. J. (1989). *A manual for the use of the motivated strategies. For Learning Questionnaire (MSLQ)*. Mich: National Center for Research to Improve.
- Platt, J. J., Eisenman, R., & DeGross, E. (1969). Birth order and sex differences in future time Pperspective. *Developmental Psychology*, 1 (1), 70.
- Ployhart, R. E. & Bliese, P. D. (2006). Individual adaptability (I-ADAPT) theory: conceptualizing the antecedents, consequences, and measurement of individual differences in adaptability. *Advances in human performance and cognitive engineering research*, 6, 3-39.
- Preacher, K. J. & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40 (3), 879-891.
- Qiu, H. Z. (2000). *Quantitative research and statistical analysis in social & behavioral sciences*. Taipei: Wunan Book Publishing House.
- Qiu, H. Z. (2003). *Structural equation model: theoretical technique and application of LISREL*. Taipei: Yeh Yeh Book Gallery.
- Qiu, H. Z. (2011). *Quantitative research and statistical analysis (5th ed.)*. Taipei: Wunan Book Publishing House.
- Qiu, Y. H. (2007). *The study of future time perspective for junior high school Students*. Master Dissertation. Taiwan National Changhua University of Education.
- Qiu, Y. Q. (2004). Discussion on inclusive teaching method of mosston teaching spectrum from the perspective of individual differences and learning motivation. *Junior College Sports Journal*, 74, 34-41.
- Raykov, T. & Marcoulides, G. A. (2002). *A first course in structural equation modeling*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Raynor, J. O. (1969). Future orientation and motivation of immediate activity: an elaboration of the theory of achievement motivation. *Psychological Review*, 76 (6), 606-610.
- Raynor, J. O. (1970). Relationships between achievement-related motives, future orientation, and academic performance. *Journal of Personality and Social Psychology*, 15 (1), 28-33.
- Rezabek, R. J. (1998). *A study of the motives, barriers, and enablers affecting participation in distance education classes in an Iowa community college*. University of Northern Iowa.
- Robbin, Derry. (1989). An empirical study of moral reasoning among managers. *Journal of Business Ethics*, 8, 855-862.
- Robbins, S. (1993). *Organizational behavior (6th ed.)*. Englewood Cliffs, NJ: Prentice Hall.
- Rotter, J. B. (1954). *Social learning and clinical psychology*. Englewood Cliffs, NJ: Prentice-Hall.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80 (1), 1-27.
- Rotter, S. (1996). Biophysical aspects of cortical networks. In: Torre, V., Conti, F. (Eds.), *Neurobiology: Ionic Channels, Neurons, and the Brain*, 355-369. New York: Plenum.
- Rottinghaus, P. J., Day, S. X., & Borgen, F. H. (2005). The career futures inventory: a measure of career-related adaptability and optimism. *Journal of Career Assessment*, 13 (1), 3-24.
- Rowell, L. L. & Hong, E. (2013). Academic motivation: concepts, strategies, and counseling approaches. *Professional School Counseling*, 16, 158-171.
- Ruan, P. Y. (2007). *A study of learning motivation and satisfactions for the students in the university of older adult: case of Chang-Hua the University of Older Adult*. Master Dissertation. Department of Industrial Engineering and Technology Management, Taiwan Da-Yeh University. doi: 95DYU01030017.
- Rubin, A. M. (1993). The effect of locus of control on communication motivation, anxiety, and satisfaction. *Communication Quarterly*, 41 (2), 161-171.
- Ryckman, R. M., Robbins, M. A., Thornton, B., & Cantrell, P. (1982). Development and validation of a physical self-efficacy scale. *Journal of Personality and Social Psychology*, 42 (5), 891-900. doi: 10.1037/0022-3514.42.5.891.
- Sánchez, C. M., Fornerino, M., & Zhang, M. (2006). Motivation and the intent to study abroad among U.S., French, and Chinese students. *Journal of Teaching in International Business*, 18 (1), 27-52. doi:10.1300/J066v18n01_03.
- Savickas, M. L. (1991). The meaning of work and love: career issues and interventions. *The Career Development Quarterly*, 39 (4), 315-324.
- Savickas, M. L. (1997). Career adaptability: an integrative construct for life-span, life-space theory. *Career Development Quarterly*, 45 (3), 247-259.
- Savickas, M. L. (2003). Advancing the career counseling profession objectives and strategies for the next decade. *Career Development Quarterly*, 52 (1), 87.
- Savickas, M. L. (2005). The theory and practice of career construction. *Career Development and Counseling: Putting Theory and Research to Work*, Hoboken, NJ: Wiley, 42-70.
- Savickas, M. L. & Porfeli, E. J. (2012). Career adapt-abilities scale: construction,

- reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior*, 80 (3), 661-673.
- Savickas, M. L. (2009). *Life design international research group: career adaptability project*. A Report on Framework and Follow-up Studies at the Humboldt University in Berlin.
- Schmitz, B., Schmidt, M., Landmann, M., & Spiel, C. (2007). New developments in the field of self-regulated learning. *Zeitschrift Für Psychologie/Journal of Psychology*, 215 (3), 153-156.
- Schmitz, N., Neumann, W., & Oppermann, R. (2000). Stress, burnout and locus of control in German nurses, *International Journal of Nursing Studies*, 37 (2), 95-99.
- Schumacker, R. E. & Lomax, R. G. (2004). *A beginner 's guide to structural equation modeling*. (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Seginer, R. (2008). Future orientation in times of threat and challenge: how resilient adolescents construct their future. *International Journal of Behavioral Development*, 32, 272-282. doi: 10.1177/0165025408090970.
- Seibert, S. E. & Kraimer, M. L. (2001). The five-factor model of personality and career success. *Journal of Vocational Behavior*, 58 (1), 1-21.
- Seijts, G. H. (1998). The importance of future time perspective in theories of work motivation. *The Journal of Psychology: Interdisciplinary and Applied*, 132, 154-168. doi: 10.1080/00223989809599156.
- Shell, D. F. & Husman, J. (2001). The multivariate dimensionality of personal control and future time perspective beliefs in achievement and self-regulation. *Contemporary Educational Psychology*, 26 (4), 481-506.
- Shell, D. F. & Husman, J. (2008). Control, motivation, affect, and strategic self-regulation in the college classroom: a multidimensional phenomenon. *Journal of Educational Psychology*, 100 (2), 443.
- Shen, Y. T. (2015). *The study on technology university students family function, positive psychological resources and career adaptability: take Tainan city as example*. Master Dissertation. Taiwan Chinese Culture University.
- Sheng, X. M. (2012). *Personality and job performance: test of the moderating effects of leadership style among the head nurses*. Master Dissertation, Taiwan National Sun Yat-sen University.
- Shi, L. F. (1996). *Learning theory*. Kaohsiung: Liwen Publishing Group.
- Shi, S. Z. (2005). Study of correlation between locus of control and life adjustment for cadet- as an example for air force institute of technology. Master dissertation. National Kaohsiung Normal University.
- Shi, Y. J. (2002). *A study of adult participation in community college learning motivation*. Master Dissertation. Institute of adult and continuing education, Taiwan National Chung Cheng University.
- Shipp, A. J., Edwards, J. R., & Lambert, L. S. (2009). Conceptualization and measurement of temporal focus: the subjective experience of the past, present, and future. *Organizational Behavior and Human Decision Processes*, 110 (1), 1-22.
- Shrout, P. E. & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological Methods*, 7 (4), 422-445.

- Simons, J., Dewitte, S., & Lens, W. (2000). Wanting to have vs. wanting to be: the effect of perceived instrumentality on goal orientation. *British Journal of Educational Psychology, 91*, 335-351.
- Simons, J., Dewitte, S., & Lens, W. (2004). The role of different types of instrumentality in motivation, study strategies, and performance: know why you learn, so you'll know what you learn! *British Journal of Educational Psychology, 74*, 343-360.
- Simons, J., Vansteenkiste, M., Lens, M. W., & Lacante, M. (2004). Placing motivation and future time perspective theory in a temporal perspective. *Educational Psychology Review, 16*, 121-139.
- Sivo, S. A., Fan, X. Witta, E. L., & Willse, J. T. (2006). The search for "optimal" cutoff properties: fit index criteria in structural equation modeling. *The Journal of Experimental Education, 74* (3), 267-288.
- Slavin, R. E. (1997). Design competitions: A proposal for a new federal role in educational research and development. *Educational Researcher, 26* (1), 22-28.
- Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*, 290-312. San Francisco: Jossey-Bass.
- Soper, D. S. (2019). Significance of the difference between two slopes calculator [Software]. Available from <http://www.danielsoper.com/statcalc>.
- Spector, P. E. (1982). Behavior in organizational as a function of employee's locus of control. *Psychological Bulletin, 91*, 482-497.
- Spector. (1986). Perceived Control by Employees: A meta-analysis of studies concerning autonomy and participation at work. *Human Relations, 11*, 1005-1016.
- Statistics Department of Taiwan Ministry of Education. (2013). Educational statistics indicators. Retrieved from: <http://www.edu.tw/pages/detail.aspx?Node=1052&Page=16581&wid=31d75a44-efff-4c44-a075-15a9eb7aecdf&Index=1>.
- Steinberg, L., Graham, S., O'Brien, L., Woolard, J., Cauffman, E., & Banich, M. (2009). Age differences in future orientation and delay discounting. *Child Development, 80* (1), 28-44.
- Stipek, D. (1995). Effects of different instructional approaches on young children's achievement and motivation. *Child Development, 66* (1), 209-223.
- Strathman, A., Gleicher, F., Boninger, D. S., & Edwards, C. S. (1994). The consideration of future consequences: weighing immediate and distant outcomes of behavior. *Journal of Personality and Social Psychology, 66* (4), 742-752.
- Su, Y. X. (1998). *A research for the relationship between leadership styles and job performance account management department of CHT*. Master Dissertation of Institute of Business Administration, Taiwan National Sun Yat-sen University
- Super, D. E. (1953). A theory of vocational development. *American Psychologist, 8*, 185-190.
- Super, D. E. (1957). *The psychology of career: an introduction to vocational development*. New York: Harper & Row Publishers.
- Super, D. E. (1976). *Career education and the meaning of work, monographs on career education*. Washington, DC: *The Office of Career Education*, U. S.

Office of Education.

- Super, D. E. (1990). A life span, life-space approach to career development. In Brown, D., Brooks, L. & Associates (Eds.), *Career Choice & Development*, 197-261. San Francisco, CA: Jossey-Bass.
- Super, D. E. (1992). Toward a comprehensive theory of career development. In D. H. Montross & S. J. Shinkman (Eds.), *Career development: Theory and practice*. Springfield, IL: Charles C Thomas.
- Super, D. E., Savickas, M. L., & Super, C. M. (1996). *The life-span, life-space approach to careers*. In D. Brown, L. Brooks, & Associates (Eds.), *San Francisco: Jossey-Bass. Career choice and development* (3rd ed.), 121-178.
- Super, D. C. (1980). A life-span life-space approach to career development. *Journal of Vocational Behavior*, 16, 282-298.
- Super, D. C. (1984). Career and Life Development in D. Brown & L. Brooks (Eds.) *Career Choice and Development: Applying Contemporary Approaches to Practice*. San Francisco: Jossey-Bass.
- Super, D. C. & Knasel, E.G. (1981). Career development in adulthood: some theoretical problems and a possible solution. *British Journal of Guidance & Counseling*, 9 (2), 194-201.
- Taiwan Department of Statistics. (2011). Main education statistics. Retrieved from: http://www.edu.tw/statistics/content.aspx?site_content_sn=27359.
- Taiwan Department of Statistics. (2017). Educational statistics. Retrieved from: <https://depart.moe.edu.tw/ED4500/cp.aspx?n=002F646AFF7F5492&s=1EA96E4785E6838F>.
- Taiwan Department of Statistics. (2018). Statistics and analysis. Retrieved from: <https://depart.moe.edu.tw/ED4500/News.aspx?n=DEBBA96529BE4D55&sms=8EDDA02301435720>.
- Taiwan Ministry of Education Statistics Department. (2017). Analysis and research. Retrieved from: https://depart.moe.edu.tw/ed4500/Content_List.aspx?n=E316EA4999034915
- Taiwan Ministry of Education Statistics Department. (2017). Main statistics table. Retrieved from: <https://depart.moe.edu.tw/ED4500/cp.aspx?n=1B58E0B736635285>
- Taiwan Ministry of the Interior. (2011). Annals of statistics. Retrieved from: https://www.moi.gov.tw/files/site_stuff/321/2/year/year.html.
- Taiwan Ministry of the Interior. (2011). Important internal statistics indicators. Retrieved from: <https://www.moi.gov.tw/stat/node.aspx?sn=6716>.
- Tavares, M. B., Fuchs, F. C., Diligenti, F., Abreu, J. R., Rohde, L. A., & Fuchs, S. C. (2004). Behavioral characteristics of the only child vs. first-born and children with siblings. *Rev Bras Psiquiat*, 26 (1), 17-23.
- Teahan, J. E. (1958). Future time perspective, optimism and academic achievement. *Journal of Abnormal and Social Psychology*, 57, 379-380.
- The 3rd Cross-Strait Economic and Trade Forum. (2007). Retrieved from: <http://www.taiwan.cn/zt/jmkj/3lajmwhlt/index.htm>.
- The 5th Cross-Strait Economic and Trade Cultural Forum. (2009). Retrieved from: <http://www.taiwan.cn/zt/wj/lt/index.html>.
- Thompson, A. S. & Lindeman, R. H. (1988). *Adult career concerns inventory: manual for research and exploratory use in counseling*. Massachusetts: Consulting

- Psychologists Press.
- Thoms, P. & Greenberger, D. B. (1995, August). Training business leaders to create positive organizational visions of the future: is it successful? *Academy of Management Proceedings*, 1995 (1), 212-216.
- Tian, X. L. (2010). Empirical research on career adaptability of ethnic Chinese: related factors and the development and effect verification of consultative scheme. Project research report of national science council, NO. NSC97-2410-H-003-081-SS2.
- Tiedeman, D. V. & O'Hara, R. P. (1963). *Career development: choice and adjustment*. New York: College Entrance Examination Board.
- Tiedemann, J.örg. (1998). *Extraction of translation equivalents from parallel corpora*. Proceedings of the 11th Nordic Conference on Computational Linguistics, 120-128. Center for Sprogteknologi, University of Copenhagen.
- Torkzadeh, G., Koufteros, X., & Pflughoeft, K. (2003). Confirmatory analysis of computer self-efficacy. *Structural Equation Modeling*, 10 (2), 263 - 275.
- Tough, A. (1978). Major learning efforts: recent research and future directions. *Adult Education Quarterly*, 28 (4), 250-263.
- Tough, A. (1982). Some major reasons for learning. Eric Document Reproduction Service, No. ED, 33, 251.
- Tough, A. (1989). Self-directed learning: concepts and practice. *Lifelong Education for Adults: An International Handbook*, 256-260.
- Translated by Wu, Z. Y. (1997). The theory and practice of career development. (originally by Vernon G. Zunker). Taipei: Yang-Chih Book Co., Ltd..
- Travis, R. & Kohli, V. (1995). The birth order factor: ordinal position, social strata, and educational achievement. *The Journal of Social Psychology*, 135, 499-507.
- Trommsdorff, G. (1983). Future orientation and socialization. *International Journal of Psychology*, 18 (5), 381-406.
- Van Dam, K. (2004). Antecedents and consequences of employability orientation. *European Journal of Work and Organizational Psychology*, 13 (1), 29-51.
- Vos, A., Clippeleer, I., & Dewilde, T. (2009). Proactive career behaviors and career success during the early career. *Journal of Occupational and Organizational Psychology*, 82 (4), 761-777.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Walker, T. L. & Tracey, T. J. (2012). The role of future time perspective in career decision-making. *Journal of Vocational Behavior*, 81 (2), 150-158.
- Wallace, M. (1956). Future time perspective in schizophrenia. *Journal of Abnormal and Social Psychology*, 52, 240-245.
- Wang, S. L. (1997). Career planning and time management. Taipei: Nan Hong Book Co., Ltd..
- Wang, Y. Z. (1997). The effect of "career search group" toward vocational construct system and career self-efficacy for female senior high school students. Master dissertation. Institute of educational psychology and counseling, National Taiwan Normal University.
- Wang, Z. H. (2006). *The impact of locus of control, leadership styles and human resource practices on job involvement and performance*. Master Dissertation. Taiwan National Central University.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion.

- Psychological Review*, 92, 548-573.
- Weiner, B. (1992). *Human motivation: metaphors theories and research*. California: Sage.
- Weiner, B., Frieze, I. H., Kukla, A., Reed, L., Rest, S., & Rosenbaum, R. M. (1971). *Perceiving the causes of success and failure*. Morris town, NJ: General Learning Press.
- Wen, S. S. (1986). *Educational psychology*. San Min Book Co., Ltd..
- Wen, S. S. (1997). *Educational psychology*. San Min Book Co., Ltd..
- Weston, R. & Gore, P. A., Jr. (2006). A brief guide to structural equation modeling. *The Counseling Psychologist*, 34 (5), 719-751.
- William, A. (2015). Elements of transformational learning in short-term study abroad programs in part-time MBA programs: a case study. *Wilkes University*, 87-95.
- Wolfe, L. M. & Robertshaw, D. (1982). Effects of college attendance on locus of control. *Journal of Personality and Social Psychology*, 43 (4), 802.
- Wolk, S. & Bloom, D. (1978). The interactive effects of locus of control and situational stress upon performance accuracy and time. *Journal of Personality*, 46 (2), 279-299.
- WTO Online Investment Platform (2005). *A historical summary of Taiwan's application for accession to GATT/WTO*. Retrieved from: <http://cwto.trade.gov.tw/kmi.asp?xdurl=kmif.asp&cat=CAT311>.
- Wu, B. E. (1991). *Shared human resource management*. Taipei: Hanlu Book Publishing Co., Ltd..
- Wu, J. J. (1975). Effects of gender differences and locus of control on verbal fluency. *The National Chengchi University Journal*, 31, 131-141.
- Wu, J. J. & Cherng, B. L. (1992). A revision of the motivated strategies for learning questionnaire. *Psychological Testing*, 39, 54-78.
- Wu, J. J., Pan, Y. Y., & Ding, X. X. (1980). The relationship of locus of control to job satisfaction and performance. *The National Chengchi University Journal*, 41, 61-74.
- Wu, L. Z. (2013). *A pilot study of the professional autonomy and job satisfaction in regional hospital nurses staff*. Master Dissertation. Institute of health care, Taiwan Meiho University of Science and Technology.
- Wu, M. L. (1998). A study on the relationships among physiological and psychological characteristics, perceived stress, and work-family conflict of the high achievement women. *Chung Yuan Journal*, 26 (2), 1-10. doi: 10.6358/JCYU.199805.0001.
- Wu, M. L. (2008). *SPSS operation and application: multivariate analysis practice*. Taipei: Nan Hong Book Co., Ltd..
- Wu, M. L. (2008). *SPSS operation and application: questionnaire statistical analysis practice*. Taipei: A Core Digital Technology Inc..
- Wu, M. L. (2008). *SPSS statistical applied learning practice: questionnaire analysis and applied statistics (3rd ed.)*. Taipei: Eslite Book Publishing House.
- Wu, M. L. (2009). *Structural equation modeling: method and practical application*. Kaohsiung: Liwen Publishing Group.
- Wu, S. H. (2013). University internationalization and enrollment of international and Mainland Chinese students. *Taiwan Educational Review Monthly*, 2 (1), 23-26.
- Wu, S. W. (2008). *A study of university student's career adaptability inventory*. Master

- Dissertation. Department of counseling and counseling, Taiwan National Chiayi University.
- Wu, T. X. (1985). The reliability and validity of the attitude and behavior research: theory, applications, and retrospection. *Public Opinion Monthly*, 29-35.
- Wu, W. D. (1977). Locus of control as related to achievement, self-concept, and social interaction in school children: a review. National Taiwan Normal University: *Bulletin of Educational Research*, 19, 163-175.
- Wu, W. T. (1975). Children's sex, locus of control, and academic achievement. *Bulletin of Educational Psychology*, (8), 107-114.
- Wu, X. L. (2012). *The relationship among big five personality traits, career self-efficacy, and career adaptability in master students of Taiwan*. Master Dissertation. Department of education, National Taiwan Normal University.
- Wu, Y. C. (2002). *The relationships between career maturity and life role salience of students at continuation vocational high school*. Master Dissertation. Department of industrial education and technology, Taiwan National Changhua University of Education.
- Wu, Z. X. (1990). Motivation in education-literature review of Atkinson, Rotter, Seligman, and Weiner's theory. Taiwan National University of Tainan: *Bulletin of Elementary Education*, 3, 277-326.
- Wu, Z. Y. (2000). *Career guidance and counseling: theories and practice*. Chiayi: Waterstone Publishers
- Xiang, B. H. (2002). *The relationship among transformational leadership, locus of control, and job satisfaction: a case study on Taiwanese television reporters*. Master Dissertation, Institute of communication management, Taiwan National Sun Yat-sen University.
- Xiao S. Y. (2014). *The relationships among locus of control, person-group fit, perceived organizational service climate and service attitude of food service employees*. Doctor Dissertation. National Taiwan Normal University.
- Xiao, Y. (2010). Terrestrial three methods: new opportunities for cross-strait cultural and educational exchanges. *Taiwan Work Newsletter*, 9, 15-17.
- Xie, M. Q. (2006). *A study of the relationships among career stages, learning motivation and learning satisfaction of adult students in professional graduate programs: an example of S University*. Master Dissertation. Institute of management, Taiwan Shu-Te University.
- Xie, M. R., Guo, Y. Z., Zheng, Q. Z., & Hu, X. Y. (2013). Correlations between nurses' job satisfaction, professional commitment, and organizational commitment. *Leadership Nursing*, 14 (2), 22-32.
- Xu Y. H. (2016). *Relationship among junior high school teachers' proactive leadership, learning engagement, future positive time perspective, and future negative time perspective: a cross-level multilevel mediation model*. Master Dissertation. Institute of education, Taiwan National Sun Yat-sen University.
- Xu, H. Z. (2007). *Research for learning motivation and satisfaction on students of in-service education at technology and vocational college in Ping Tung County*. Master Dissertation. Institute of adult and continuing education, Taiwan National Kaohsiung Normal University.
- Xu, J. D. (2002). *The effects of internet-assisted instruction and the cognitive styles of sixth graders on English achievement and motivation for learning English*.

- Master Dissertation. Institute of educational technology, National Pingtung Normal University.
- Xu, M. X. (2002). *Research concerning the relationship between work values, achievement motives and career development of maritime vocational high school students*. Master Dissertation. Department of administration, Taiwan National Chengchi University.
- Xu, P. L. (1997). *Junior college students' attachment style holds belief, career interest, career decision-making style and career Identity relationship*. Master Dissertation. Department of education, Taiwan National Chengchi University.
- Xu, S. H. (2009). *A study on the relationship among the locus of control, organizational justice, organizational commitment and job satisfaction in hospital: taking a hospital as example*. Master Dissertation. Institute of medical management, Taiwan National Yang-Ming University.
- Xu, S. W., Lin, L. L., & Zhang, H. Y. (2010). Study of transformational leadership, service climate and service-oriented citizenship behavior of cabin attendants in the international airline: locus of control personality traits as a moderator. *Journal of Human Resource Management, 10* (1)53-77.
- Xue, Z. H. (1996). *A study on the career development of secondary school students in Kaohsiung city Taiwan*. Master Dissertation. Institute of industrial science and technology education, Taiwan National Kaohsiung Normal University.
- Yang Hongwen (2015). *A research on learning motivation, life adaptability and learning satisfaction*. Taiwan: National Kaohsiung Normal University Institute of Adult Education.
- Yang, S. H., Tian, X. L., Wu, X. L., & Zhu, H. Q. (2015). Model verification of career self-efficacy, career adaptability and job adaptation. *The Archive of Guidance & Counseling, 37* (1), 21-42.
- Yang, S. Y. (2009). *An empirical study of cause and effect model on emotional labor—comparative research of nurse and doctors*. Master Dissertation. Department of business and management, Taiwan Chang Jung Christian University.
- Yang, X. Y. (2012). *The impact of job burnout on two-factor theory and locus of clinical nurses in local hospital in Taoyuan*. Master Dissertation. Institute of management, Taiwan Vanung University.
- Ye, B. Y. (2013). Study on the definition of learning motivation and related theories. *Journal of Pingtung University of Physical Education, 16*, 285-293.
- Ye, H. M. (2002). *The relationship among senior high school students' learning motivations, learning strategies, and learning achievements*. Master Dissertation. Institute of education, Taiwan National Changhua University of Education.
- Ye, Y. R. (1994). *The relationship study among career maturity, achievement motivation, job stress and turnover intention on employees of insurance companies*. Master Dissertation. Institute of international enterprise management, Taiwan Chinese Culture University.
- Yilmaz, A. & Kaya, H. (2010). Relationship between nursing students' epistemological beliefs and locus of control. *Nurse Education Today, 30* (7), 680-686.
- You M. T. (2015). *An investigation of self-concept, learning motivation and career*

- development for animal sciences and health care major students in vocational high school.* Graduate institute of animal science, National Pingtung University of Science and Technology.
- You, S. F. (2015). "Three limits and six no" is expected to be lifted for the first batch of Mainland Chinese graduates. Taiwan Awakening News. Retrieved from: <http://www.twsu.org/thread-8337-1-1.html>.
- Yu, G. Z. (2009). Yu Guangzhong talks about "the Cross-Strait Co-edited Chinese Dictionary": cultural unification is not as good as identification. The 5th cross-strait economic and trade BBS. Retrieved from: http://www.taiwan.cn/sy/rdxw/200906/t20090630_934815.htm
- Yu, Y. P. (2002). *A study on the relationships among employee personality, self-directed learning, and work performance.* Master Dissertation. Institute of human resources management, Taiwan National Sun Yat-sen University.
- Yuan, Z. H. (2002). A study of career undecided college students' self-perceived barriers in career development. Taiwan National Changhua University of Education: *Guidance Journal*, 23, 109-130.
- Zacher, H. (2014a). Career adaptability predicts subjective career success above and beyond personality traits and core self-evaluations. *Journal of Vocational Behavior*, 84 (1), 21-30.
- Zacher, H. (2014b). Individual difference predictors of change in career adaptability over time. *Journal of Vocational Behavior*, 84 (2), 88-198.
- Zacher, H. & Frese, M. (2009). Remaining time and opportunities at work: relationships between age, work characteristics, and occupational future time perspective. *Psychology and Aging*, 24 (2), 421-487.
- Zhan, J. L. (2011). *A study of personality and job burnout in workplace.* Master Dissertation. Institute of business administration, Taiwan Yu Da University of Science and Technology.
- Zhan, Y. T. (1996). *The relationships between demographic data, personality traits and intrinsic motivations, extrinsic motivations: an empirical study of the employees of data communication institute.* Master Dissertation. Institute of management science, Taiwan National Chiao Tung University.
- Zhang R. Y. (2016). *The impact of the recognition of the 12-year compulsory education on academic stress for junior high school students: the moderating effect of locus of control.* Master Dissertation. Institute of manpower and knowledge management, National Kaohsiung Normal University.
- Zhang, B. R. & Pan, Z. M. (2016). The history, status Quo and prospect of the communication and cooperation in cross-strait higher education. *The Journal of Chaoyang University of Technology*, 21, 17-33.
- Zhang, C. X. (1996). *Educational psychology: theory and practice of the three-dimensional orientation.* Taipei: Tung Hua Book Co., Ltd..
- Zhang, C. X. (2000). *Modern psychology.* Taipei: Tung Hua Book Co., Ltd..
- Zhang, C. X. (2010). *Educational psychology (2nd ed.).* Taipei: Tung Hua Book Co., Ltd..
- Zhang, C. X. (2011). *Zhang's dictionary of psychology (simplified ed.).* Taipei: Tung Hua Book Co., Ltd..
- Zhang, D. F, Ye, Z. Q., & Wu, H. Z. (2007). Analyses of the effect in higher education in Taiwan by educational market opening commitments of WTO: retrospect and

- prospect of Taiwan joining WTO in the 5th anniversary. *Educational Policy Forum*, 10 (4), 19-52.
- Zhang, F. Q. (2008). Study on the correlation between push and pull factors of universities in Taiwan recruiting students from Mainland China. *Journal of Social and Regional Development*, 1 (1), 111-144.
- Zhang, G. C. (2009). *An overview of cross-straits relations*. Taipei: New Sharing Publishing Co., Ltd..
- Zhang, J. Q. (2015). *The study on teacher-student relationship and learning motivation of senior high schools students in Taichung*. Master Dissertation. Department of education, Taiwan National Taichung University.
- Zhang, J. S., Dai, S. Q., & Shi, Y. L. (2008). Job rotation and job satisfaction of clinical nursing staff: effects on organizational commitment. *The Journal of Health Science*, 10 (1), 15-26. doi: 10.6563/TJHS.2008.10 (1).2.
- Zhang, M. M. (2013). Terrestrial three methods: achieving a win-win situation for cross-strait high education. *Intelligence*, 21, 35-36.
- Zhang, P. (2011). Mainland Chinese students to Taiwan: we need a brainstorm. *Cross-Straits Relations*, 7, 41-42.
- Zhang, R. J. (2014). *The relevant circumstances of personality, self-worth, and involvement of triathlon participants*. Master Dissertation. Department of education, Taiwan National Taitung University.
- Zhang, R. S. (1990). *Organizational behavior and management skills*. Taipei: Wunan Book Publishing House.
- Zhang, R. X. (2010). Comments on Mainland Chinese students to Taiwan. *The Educator Monthly*, 512, 41-45.
- Zhang, S. L. (1969). *Motivational psychology*. Taipei: Chung Hwa Book Co. Ltd.
- Zhang, T. Z. (1997). Discussion on youth career development. *Guidance Newsletter*, 49, 24-26.
- Zhang, T. Z. (2007). *Learning planning and career development*. Taipei: Wunan Book Publishing House.
- Zhang, X. G. (2012). *A study of the motivation, career planning and related factors of cadets in the military training program: a case study of the army command staff college*. Master Dissertation. Department of education, National Taiwan Normal University.
- Zhang, Y. H. (2003). *A study of the job stress, coping strategies and job satisfaction among nursing staff in the hospice ward*. Master Dissertation. University of South China.
- Zhao, J. F. (1997). *Crossing the historical chasm: reviewing and looking forward to the ten years of cross-straits exchanges*. Mainland Affairs Council.
- Zhao, X. Y. (2011). *A research on career adaptability of college students: structure, characteristics and relationship with related factors*. Nanjing: Nanjing Normal University.
- Zhao, X. Y. (2012). The career adaptability of college students and their relationship with family social status. *Modern Education Management Journal*, 2, 111-114.
- Zhao, Y. Z. (2007). *Comparison of women's higher education in Japan, America and China*. Xiamen University Press.
- Zheng, M. S. (2011). *The explorations of college students' gender role identities, personality traits and expected occupational types*. Master Dissertation.

- Institute of education, Taiwan National Sun Yat-sen University.
- Zheng, Z. M. (2011). *A research on locus of control, job characteristics, and job performance: take Taiwan's high-tech industry employees for example*. Master Dissertation. Taiwan National Central University.
- Zheng, Z. W. (1997). *Hairdressing industry employees' personality characteristics, knowledge management behavior, professional competencies and job performance*. Master Dissertation. Department of industrial education and technology, Taiwan National Changhua University of Education.
- Zhou, J. J. (2008). *A study of learning motivation and satisfaction for the students in the arts and humanities curriculum in the primary school-case of the fifth & sixth grade students in ChangHua county*. Master Dissertation. Taiwan Da-Yeh University.
- Zhou, S. F. (2007). *The Analysis of Self-Regulated Learning Process Model of Future orientation*. Master Dissertation. Taiwan National Cheng Kung University.
- Zhou, T. H. (2011). *Career planning and development*. New Taipei: Chuan Hwa Book Co., Ltd..
- Zhou, X. Y. (2015). Analysis of the process and current situation of the policy development of opening up Mainland Students to Taiwan. *Taiwan Educational Review Monthly*, 4 (5), 44-50.
- Zhou, Y. S. (2008). A review of cross-strait academic exchanges: past and present. Public policy BBS: *higher education series (10): review and outlook of cross-strait academic exchanges*, 5-10. Taipei: Taiwan National Chengchi University.
- Zhu Y. P. (2010). *College students' career adaptability sale and related research: the case of senior high school in Wuhan*. Wuhan: Huazhong University of Science and Technology.
- Zhu, J. X. (1997). *Educational psychology: teaching orientation*. Taipei: Wunan Book Publishing House.
- Zimbardo, P. G. & Boyd, J. N. (1999). Putting time in perspective: a valid, reliable individual differences metric. *Journal of Personality and Social Psychology*, 77, 1271-1288. doi:10.1037/0022-3514.77.6.1271.
- Zimbardo, P. G., Keough, K. A., & Boyd, J. N. (1997). Present time perspective as a predictor of risky driving. *Personality and Individual Differences*, 23, 1007-1023. doi: 10.1016/S0191-8869(97)00113-X.

APPENDICES

Appendix I

Expert and Scholar Opinion on Questionnaire

Dear Prof. _____,

Now I am doing my doctoral research with the title Influence of Learning Motivation of Mainland Chinese students to Taiwan Universities on Career Adaptability: with Future Time Perspective as Mediator, Locus of Control as Moderator. In order to understand and establish the expert validity of the research measurements, I sincerely hope that you can provide me with your insights.

This study is divided into five parts: the first part is personal basic information, the second part is learning motivation questionnaire, the third part is career adaptability questionnaire, the fourth part is future time perspective questionnaire, and the fifth part is questionnaire of internal-external locus of control. The purpose of this study is to understand the actual situation of students studying in Taiwan from Mainland China in terms of learning motivation, career adaptability, future time perspective and locus of control, so as to deduce the mediating and regulating effects of future time perspective and locus of control on learning motivation on career adaptability.

I would like to express my heartfelt thanks to you for your assistance during your busy schedule.

Dhurakij Pundit University
 Advisor: Dr. Tu Chia-Ching
 From PhD student: Ning Wang
 E-mail: snowwangning@163.com

Notes: This questionnaire contains five parts: the first part is personal basic information with 8 items; the second part is learning motivation questionnaire with 12 items; the third part is career adaptability questionnaire with 55 items; the fourth part is future time perspective questionnaire with 15 items; and the fifth part is the questionnaire of internal-external locus of control with 8 items. Please provide your valuable insights on the applicability of each topic and dimension, and kindly provide your comments as an important reference for the questionnaire revision. And thank you for your assistance!

I. Personal Basic Information

Item Number	Description of Items	Options
1	Gender	<input type="checkbox"/> Male <input type="checkbox"/> Female
2	University in Taiwan	
3	Grade	<input type="checkbox"/> One <input type="checkbox"/> Two <input type="checkbox"/> Three <input type="checkbox"/> Four
4	Place of Residence	<input type="checkbox"/> Urban <input type="checkbox"/> Rural
5	Whether have been to Taiwan before?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6	Birth Order	<input type="checkbox"/> Only Child <input type="checkbox"/> Eldest <input type="checkbox"/> Youngest <input type="checkbox"/> Other
7	Family Socioeconomic Level (annual income)	<input type="checkbox"/> RMB 80,000 or less <input type="checkbox"/> RMB 80,000 to 160,000 <input type="checkbox"/> RMB 160,000 to 240,000 <input type="checkbox"/> RMB 240,000 or above For other information, please specify:

II. Compilation Illustration of Learning Motivation Scale

In this research, learning motivation refers to a process of thought transformation that leads to driving force for Mainland Chinese students studying in Taiwan and strives for achieving learning goals continuously and steadily. This study refers to the motivation theories of Maslow (1943), McClelland (1961) and Vroom (1964) , and adopts three levels of interest of seeking knowledge, tour interest and self-development to design 12 questions for this questionnaire.

Likert 5-point scale is adopted for scoring, 1 point means strongly disagree and 5 points means strongly agree. The higher the score, the higher the degree of feeling of learning motivation. On the contrary, the lower the score, the lower the degree of feeling of learning motivation.

The dimensions of learning motivation scale are as follows:

Interest of Seeking Knowledge: Learners mainly participate in learning based on their desire and interest for knowledge, so as to satisfy their thirst for knowledge, acquire new knowledge, enrich themselves and avoid falling behind.

Tour Interest: In order to travel to Taiwan, learners participate in education exchange program.

Self-development: Learners participate in learning in order to pursue personal development and self-realization.

Learning Motivation Scale

Dimension	Item Number	Description of Questions	Applicable	Applicable after Modification	Not Applicable	Revised opinion
Interest of Seeking Knowledge	1	I came to Taiwan as an exchange student because I was interested in Taiwanese courses.				
	2	I came to Taiwan as an exchange student to experience the teaching style of Taiwanese teachers.				
	3	I go to Taiwan for exchange study to increase knowledge and enrich myself.				
	4	I came to Taiwan to study as an exchange student to learn more about the culture of Taiwan.				
	5	I go to Taiwan for exchange study mainly because I want to visit Taiwan.				
Tour Interest	6	During my exchange study in Taiwan, I hope to have the opportunity to travel around the island.				
	7	I would like to buy all kinds of Taiwan products during my exchange study in Taiwan.				
	8	I would like to experience Taiwanese food during my exchange study in Taiwan.				
Self-development	9	My desire to visit Taiwan is stronger than my desire to study.				
	10	I want to make friends and expand my social circle in Taiwan.				
	11	I go to Taiwan for study is a personal challenge.				
	12	I came to Taiwan for study as part of my self-study, and a part of my career development as well.				

III. Compilation Illustration of Career Adaptability Scale

In this research, career adaptability refers to the core ability to integrate individual career roles which include 5 dimensions, that is career curiosity, career concern, career confidence, career control and career cooperation. These 5 dimensions are throughout the entire course of personal career adaptability. The researcher chooses the career adaptability scale for Chinese compiled by Tian (2010) as the measuring method in this study. There are altogether five subscales of career curiosity, career concern, career confidence, career control and career cooperation. There are 11 questions in each subscale to form a total of 55 questions. This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree. The higher the score, the greater the learning motivation of the subjects in this direction, and the higher the total score, the stronger the learning motivation.

The description of the dimensions for the preparation of the career adaptability scale is as follows:

Career concern refers to an individual's concern about the current and future study, life and work development, preparation for the future, and awareness of the new environment or career choice he/she faces.

Career control means that an individual has a sense of control over the current and future study, life and work development, and believes that he/she can make decisions and act responsibly.

Career curiosity refers to an individual's curious and open attitude towards the development of his/her study, life and work in the present and future, and his/her willingness to explore and try.

Career confidence refers to an individual's confidence in his/her current and future study, life and work development. An individual can actively face various challenges and overcome obstacles and difficulties.

Career cooperation refers to the cooperation between individuals and various types of people in their current and future study, life and work.

Career Adaptability Scale

Dimension	Item Number	Description of Questions	Applicable	Applicable after Modification	Not Applicable	Revision
Career Concern	1	I will plan the important things in the future in advance.				
	2	I think about my future.				
	3	I know that the choices I make today will affect my future.				
	4	I hope my future is good.				
	5	I will prepare for the future.				
	6	I know what career project I will choose.				
	7	I will plan how to achieve my future goals.				
	8	I can keep optimistic about my future career.				
	9	I will think about the consequences of my decision in the future.				
	10	I look forward to making the necessary changes in the future.				
	11	I will care about my future career.				
Career Control	12	I make my own decisions about my future career.				
	13	In order to develop better, I will think about it before I act.				
	14	I am responsible for my actions in the future.				
	15	In order to have a better future, I can stick to it and be patient.				
	16	I can maintain my faith in my future choices.				
	17	I can depend on myself in my future career.				
	18	I know where I want to go in the future.				
	19	I can learn how to make a better decision for the future.				
	20	For the future development, I will do something good to myself.				
	21	In order to have a bright future, I will do something good to my family.				
Career Curiosity	22	I am responsible for my future.				
	23	In order to plan my future, I will explore my surroundings.				
	24	I will seek opportunities for self-growth.				
	25	I will imagine my future.				
	26	For better development, I will explore different options before making a decision.				
	27	I will observe different ways of doing things to help myself face the future.				

Dimension	Item Number	Description of Questions	Applicable	Applicable after Modification	Not Applicable	Revise opinion
Career Curiosity	28	I will delve into questions about my future career.				
	29	I will collect relevant information about the future choices I make.				
	30	I'm curious about new opportunities.				
	31	For better development, I will consider possible alternatives.				
	32	After forming the plan, I will find someone to give me advice or feedback.				
	33	For better development, I will do self-reflection.				
	34	I can finish the task effectively and get ready for the next step.				
Career Confidence	35	I can learn from my mistakes so that I can develop in the future.				
	36	I can be trusted because I do what I say.				
	37	I take pride in doing a good job.				
	38	I have confidence in myself.				
	39	I will do things carefully in order to get good results.				
	40	I will learn new skills to prepare for my future career.				
	41	I can always motivate myself.				
	42	In the future, I will try to overcome obstacles.				
	43	In the future, I will try to solve problems.				
	44	In order to accumulate various experiences, I will try to accept challenges.				
Career Cooperation	45	I became less self-centered.				
	46	In order to get along well with others, I am very friendly.				
	47	I get along well with any kind of people.				
	48	In the future, I can cooperate with others in the team plan.				
	49	I can play my part well in the team.				
	50	I can compromise with others for a better future.				
	51	In the future, I can learn to be a good listener.				
	52	I can make a contribution to the community.				
	53	I can keep pace with the team for better development.				
	54	In the future development, I can share with others.				
	55	In my career development, I will hide my true feelings for the benefit of the team.				

IV. Compilation Illustration of Future Time Perspective Scale

In this research, future time perspective refers to the degree of individuals expect certain future events and targets (Husaman & Lens, 1999). It is the individual's motivation for future goals, which will encourage them to seek long-term goals for the future and to be able to invest in present activities in exchange for desired results in the future. The scale in this research is formed after comprehensive generalization and screening by the researcher's referring to the views of DeVolder & Lens(1982), Gjesme(1979), Seijts (1998), and referring to the scale of future time perspective of Shell & Husman(2001), Zhou (2007). This scale is divided into three dimensions, namely, future goal, value and speed.

This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree. The higher the score, the greater the learning motivation of the subjects in this direction, and the higher the total score, the stronger the future time perspective.

The dimensions of future time perspective scale are as follows.

Future Goals: predict the distance, planning and organization of future goals.

Value: the degree to which individuals evaluate the value of achieving long-term future goals.

Speed: the speed at which an individual mentally perceives the coming of a future moment.

Future Time Perspective Scale

Dimension	Item Number	Description of Items	Applicable	Applicable after Modification	Not Applicable	Revise Opinion
Future Goal	1	I have made clear plans on how to achieve my future goals.				
	2	I have specific and feasible future goals waiting for me to achieve.				
	3	I can state my future goals clearly and concretely.				
	4	I often think about my future.				
	5	I often plan things for the future in my mind.				
Value	6	I think the future goal is very important, because it can guide the direction of my life.				
	7	I think it is very valuable to achieve future goals.				
	8	Moving towards my future goals gives me a sense of security.				
	9	I know the benefits and advantages of setting goals for the future.				
	10	I think it's important to plan goals for the next five or ten years.				
Speed	11	I don't think a year is a long time.				
	12	I think things about ten years later are not far away from me.				
	13*	I often have a feeling that the days seem to drag on, as if the days never end.				
	14	I think things of the next one or two years will happen very soon.				
	15	I think the time of a term will pass soon.				

* refers to the reverse scoring item.

V. Compilation Illustration of Locus of Control Scale

In this study, the research of internal-external locus of control is based on Rottor's control belief theory (1966). People with internal locus of control believe that they can control success, and their behaviors are relatively active, autonomous and positive. People with external locus of control are influenced by luck and power, and they tend to think it is difficult to control, and behave in a passive, dependent and resigned manner. These two personality traits co-exist in a body which display different behavioral tendencies in the same situation. In this study, the scale of internal and external locus of control is introduced from the original scale developed by Rotter (1966), related scales of Yang (2009), Luo & Tang (2003) are referred to, and then revised according to the needs of this study. There are 4 questions for each of the 2 dimensions in this scale, 8 questions in total. This scale is scored in the form of Likert 5-point scale, and the score is 1, 2, 3, 4 and 5, respectively, according to the five choices of strongly disagree, disagree, common, agree and strongly agree. If the scores obtained are higher than the average, it indicates a tendency to be internal locus of control; while lower than average, a tendency to be external locus of control.

The dimensions of internal-external locus of control scale are as follows:

Internal locus of control is a type of operation. People with internal locus of control believe that fate changes because of their hard work. When encountering setbacks, they tend to be more active, proactive and adopt a constructive approach.

External locus of control is a type of obedience. People with external locus of control believe that fate is determined by the external environment and can not change because of their own efforts. When encountering setbacks, they are usually more passive, dependent on others, passive, and tend to adopt destructive adaptations.

Internal-External Locus of Control Scale

Dimension	Item Number	Description of Items	Applicable	Applicable after Modification	Not Applicable	Revise Opinion
Internal Locus of Control	1	I know how much I get out of my investment.				
	2	My life can be decided by myself.				
	3	My life is always positive and active.				
	4	I believe that man makes things happen.				
External Locus of Control	5	I think a lot of things are not that hard work will be fruitful.				
	6	My life is the arrangement of fate, can not be under my own control.				
	7	My life is always negative and passive.				
	8	I think a lot of things are left to chance.				

**Thank you again for your assistance in your busy schedule!
My deepest thanks!**

Appendix II

Formal Questionnaire

1. Learning Motivation Scale

Dimension	Item Number	Description of Items
Interest of Seeking Knowledge	1	I came to Taiwan as an exchange student because I was interested in Taiwanese courses.
	2	I came to Taiwan as an exchange student to experience the teaching style of Taiwanese teachers.
	3	I go to Taiwan for exchange study to increase knowledge and enrich myself.
	4	I came to Taiwan to study as an exchange student to learn more about the culture of Taiwan.
Self-development	5	I go to Taiwan for study is a personal challenge.
	6	I came to Taiwan for study as part of my self-study.
	7	I went abroad to study as part of my career development.
Tour Interest	8	During my exchange study in Taiwan, I hope to have the opportunity to travel around the island.
	9	I would like to buy all kinds of Taiwan products during my exchange study in Taiwan.
	10	I would like to experience Taiwanese food during my exchange study in Taiwan.

2. Career Adaptability Scale

Dimension	Item Number	Description of Items
Career Concern	1	I think about my future.
	2	I know that the choices I make today will affect my future.
	3	I hope my future is good.
	4	I will prepare for the future.
	5	I will care about my future career.
	6	I am responsible for my actions in the future.
Career Control	7	In order to have a better future, I can stick to it and be patient.
	8	I can learn how to make a better decision for the future.
	9	I will delve into questions about my future career.
	10	I can finish the task effectively and get ready for the next step.
	11	I have confidence in myself.
	12	I can play my part well in the team.
Career Cooperation	13	In the future, I can learn to be a good listener.
	14	I can make a contribution to the community.
	15	I can keep pace with the team for better development.
	16	In the future development, I can share with others.
	17	I can keep optimistic about my future career.
	18	For the future development, I will do something good to myself.
Career Curiosity	19	I am responsible for my future.
	20	I will seek opportunities for self-growth.
	21	After forming the plan, I will find someone to give me advice or feedback.
	22	I became less self-centered.
	23	For better development, I will do self-reflection.
	24	I can learn from my mistakes so that I can develop in the future.
	25	In the future, I will try to solve problems.
	26	In order to get along well with others, I am very friendly.

3. Future Time Perspective Scale

Dimension	Item Number	Description of Items
Value	1	I think the future goal is very important, because it can guide the direction of my life.
	2	I think it is very valuable to achieve future goals.
	3	Moving towards my future goals gives me a sense of security.
	4	I know the benefits and advantages of setting goals for the future.
	5	I think it's important to plan goals for the next five or ten years.
Future Goal	6	I have made clear plans on how to achieve my future goals.
	7	I have specific and feasible future goals waiting for me to achieve.
	8	I can state my future goals clearly and concretely.
	9	I often think about my future.
Speed	10	I often plan things for the future in my mind.
	11	I don't think a year is a long time.
	12	I think things about ten years later are not far away from me.
	13	I think the time of a term will pass soon.

4. Internal-External Locus of Control Scale

Dimension	Item Number	Description of Items
External Locus of Control	1	My life is the arrangement of fate, can not be under my own control.
	2	My life is always negative and passive.
	3	I think a lot of things are left to chance.
	4	I know how much I get out of my investment.
Internal Locus of Control	5	My life can be decided by myself.
	6	My life is always positive and active.
	7	I believe that man makes things happen.