



UNIVERSITAT DE
BARCELONA

Happiness and satisfaction of foreign experts working in China and their influencing factors

Linzhi Gu

ADVERTIMENT. La consulta d'aquesta tesi queda condicionada a l'acceptació de les següents condicions d'ús: La difusió d'aquesta tesi per mitjà del servei TDX (www.tdx.cat) i a través del Dipòsit Digital de la UB (diposit.ub.edu) ha estat autoritzada pels titulars dels drets de propietat intel·lectual únicament per a usos privats emmarcats en activitats d'investigació i docència. No s'autoritza la seva reproducció amb finalitats de lucre ni la seva difusió i posada a disposició des d'un lloc aliè al servei TDX ni al Dipòsit Digital de la UB. No s'autoritza la presentació del seu contingut en una finestra o marc aliè a TDX o al Dipòsit Digital de la UB (framing). Aquesta reserva de drets afecta tant al resum de presentació de la tesi com als seus continguts. En la utilització o cita de parts de la tesi és obligat indicar el nom de la persona autora.

ADVERTENCIA. La consulta de esta tesis queda condicionada a la aceptación de las siguientes condiciones de uso: La difusión de esta tesis por medio del servicio TDR (www.tdx.cat) y a través del Repositorio Digital de la UB (diposit.ub.edu) ha sido autorizada por los titulares de los derechos de propiedad intelectual únicamente para usos privados enmarcados en actividades de investigación y docencia. No se autoriza su reproducción con finalidades de lucro ni su difusión y puesta a disposición desde un sitio ajeno al servicio TDR o al Repositorio Digital de la UB. No se autoriza la presentación de su contenido en una ventana o marco ajeno a TDR o al Repositorio Digital de la UB (framing). Esta reserva de derechos afecta tanto al resumen de presentación de la tesis como a sus contenidos. En la utilización o cita de partes de la tesis es obligado indicar el nombre de la persona autora.

WARNING. On having consulted this thesis you're accepting the following use conditions: Spreading this thesis by the TDX (www.tdx.cat) service and by the UB Digital Repository (diposit.ub.edu) has been authorized by the titular of the intellectual property rights only for private uses placed in investigation and teaching activities. Reproduction with lucrative aims is not authorized nor its spreading and availability from a site foreign to the TDX service or to the UB Digital Repository. Introducing its content in a window or frame foreign to the TDX service or to the UB Digital Repository is not authorized (framing). Those rights affect to the presentation summary of the thesis as well as to its contents. In the using or citation of parts of the thesis it's obliged to indicate the name of the author.

Happiness and satisfaction of foreign experts working in China and their influencing factors

Programa de doctorado en Sociologia

September 12nd of 2022

Student: Ms. Linzhi Gu

Director: Dr. Jose Antonio Rodríguez Díaz



**UNIVERSITAT DE
BARCELONA**

*To my daughter, Lisha, for giving me every day,
with joy and hope,
the energy to fight for life progress.*

Acknowledgement

Firstly, I would like to express my sincere gratitude to my advisor Prof. José Antonio Rodríguez, for his continuous support during my doctoral studies and research, as well as for his patience and for giving me motivation and immense knowledge. His guidance helped me all the time of research and writing of this thesis.

Secondly, I would like to express my special thanks of gratitude to Prof. Josep Lluís Condom Bosch, Prof. Anna Escobedo and Prof. Maria José Rodríguez for taking their time to review the annual reports that I submitted, and for giving me constructive advices to improve the quality of the research and text of my thesis. I also would like to thank all the team of the Doctoral Program in Sociology of University of Barcelona for sending me continuous updates and information through the virtual campus during the COVID-19 pandemic.

Thirdly, I would like to thank all the persons who answered my questionnaire and allowed me to interview them. They have been essential for the correct development of this thesis, and have allowed me to understand how should China improve their conditions. Ultimately, I think their feedback will be very useful to improve my home country.

And finally, I would like to specially thank my family for supporting me during this learning process. I would like to thank my parents and sister for being so supportive, and to my husband and daughter for giving me love and motivation to complete this study.

INDEX

Chapter 1: Introduction	9
Chapter 2: The Chinese context	13
2.1 – Immigration in China	14
2.2 – Chinese policies for foreign experts attraction	16
2.3 – Education as a fundamental pillar	17
Chapter 3: Literature review.....	23
3.1 – Happiness and its influencing factors	24
3.2 – Working satisfaction and its influencing factors	26
3.3 – Study on life satisfaction and its influencing factors	28
3.4 – Relationship between happiness and satisfaction	29
3.5 – Happiness and satisfaction of foreign experts in China	29
Chapter 4: Research design.....	33
4.1 – Definition	33
4.2 – Theoretical model and operational model	34
4.3 – Research goals and questions to solve	35
4.4 – Methodologies	36
4.5 – Hypothesis	36
4.6 – Questionnaire and variables set	36
Chapter 5: Results and discussion	41
5.1 – Descriptive statistics	41
5.1.1 – Dependent variables – happiness	41
5.1.2 – Dependent variables – whole life satisfaction	42
5.1.3 – Dependent variables – work satisfaction	43
5.1.4 – Independent variables	44
5.2 – Bivariate correlate analysis	67
5.3 – The multi-statistics of logit regression result in happiness and satisfaction	73
5.4 – In-depth interviews	84
5.4.1 – Interviews to representative experts	84
5.4.2 – Interviews to high-profile experts	85
5.4.3 – Interview to a Chinese employer	85
5.5 – Highlighted discussions	86
5.5.1 – Description of family-work balance	86
5.5.2 – Discussion on the high participation rate	86

Chapter 6: Scientific production of foreign scientists in China	89
6.1 – Motivation of this study	90
6.2 – Statistical analysis of top publications by national and foreign experts	91
6.3 – Relationship between achievements, happiness and satisfaction	94
Chapter 7: Conclusions	97
Chapter 8: Impact and future studies	101
References	105
ANNEX I: Questionnaire	115
ANNEX II: Interviews to representative experts	123
ANNEX III: Interviews to high-profile experts	133
ANNEX IV: Interview to a Chinese employer	147
ANNEX V: Summary of top national/foreign scientific production	151

Chapter 1: Introduction

Since its foundation in 1949, the People's Republic of China (i.e., all the Chinese territories except Hong Kong, Macau and Taiwan, often referred to as *Mainland China*) has aimed to become a world leading economy, and it has realistic potential to achieve it because: i) it has a massive population of 1.44 billion persons [1], which represents 17.8% of the Earth's population; and ii) it occupies a vast extension of 9,600,000 Km², with 18,000 Km coast [2] and multiple strategic natural resources [3]. In 1978, the former president of the People's Republic of China, Xiaoping Deng, started a series of revolutionary economic policies with the aim of opening the country to the world, initiate a large-scale plan for infrastructure development, and improve the education of Chinese people [4-6].

One common factor that distinguishes the most developed and efficient countries in the world is that they try to attract foreign experts from all around the world. This group of people is very interesting for almost every country because they can import and produce new knowledge that could help to improve the education and industry, and most governments (i.e., national, provincial and local) and institutions (i.e., universities, research institutes, companies) make important bureaucratic and economic efforts to attract them. Note that the number of foreign experts living in a country is normally very small compared to the total number of foreigners living in a country. While there is no much information available about the number of foreign experts living permanently in each country in the world — this may also depend on the definition of foreign expert made by each country —, the Department of State of the United States of America (USA) reported the total number of visas for foreigners issued from 2014 to 2018 [7], as well as the type of visa. By seeing the description of each type of visa one can see that visas of foreign experts correspond to types EB1 and EB2, and that they represent 0.76% of the total in 2014 to 1.3% in 2018 (see Table 1).

Table 1: Number of total immigrant visas and visas type EB1 and EB2 issued by the government of United States of America at Foreign Service Posts, and between 2014 and 2018.

Year	Total visas	Total visas EB1+EB2	Percentage of visas EB1+EB2
2014	467,370	3,560	0.76 %
2015	531,463	3,747	0.70 %
2016	617,752	4,516	0.73 %
2017	559,536	5,752	1.02 %
2018	533,557	6,973	1.30 %

The government of China has expressed in multiple occasions its interest on attracting foreign experts who could work and live in China, and it has launched attractive programs and policies with economic and social benefits [8-10]. However, the percentage of foreigners (of any type, and therefore, the number of foreign experts) living China is still much lower than in other technologically-advanced Western countries like USA, United Kingdom (UK), Germany, France, Italy and Spain. Compared to other technologically-advanced countries and regions in Asia, the percentage of foreigners living in China is much lower than in Singapore, Japan, Korea and Taiwan. Figure 1 shows the comparison of the percentage of foreigners living in the World's 20 biggest economies. As it can be seen, the total population of the People's Republic of China is 1,443,497,378, which means that its foreign population represents only 0.0599%, one of the lowest percentages in the world (see Figure 1). Comparatively, Taiwan has

23,598,776 habitants [11] and 760,680 of them are foreigners [12], which represents 3.22%, and Spain has 46,754,778 habitants [13] and 7,231,195 of them are foreigners, which represents 15.46% [14]. Therefore, it is evident that China has still not developed all its potential on foreign experts attraction, and that it has still a long way until matching the percentages of other leading countries.

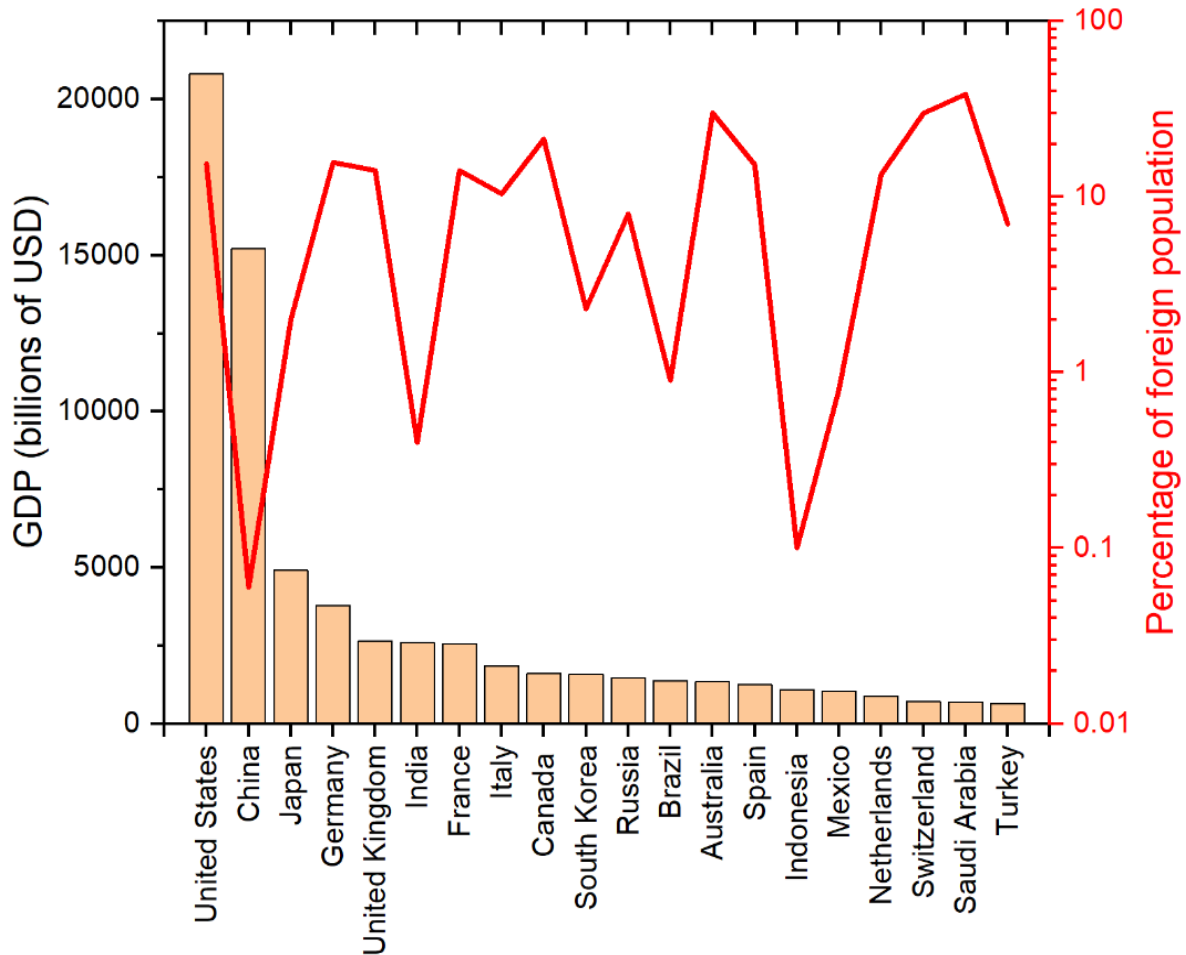


Figure 1: Comparison of the percentage of foreigners for the 20 biggest economies in the world. The data on the economy size has been obtained from the International Monetary Fund [15], and the data on percentage of foreigners (in 2019) from the United Nations [16].

The main factor determining the willingness of foreigners to travel and work to another country is the degree of happiness and satisfaction that they could achieve there; these, at the same time, are strongly linked to the policies started by the governments and institutions. Hence, in order to promote the development of the People’s Republic of China, it is necessary to understand which are the main factors influencing the happiness and satisfaction of foreign experts in China. Important questions in this direction are:

- How do foreign experts feel (happy, satisfied with the work/life) in China?
- What are the influencing factors affecting happiness, work/life satisfaction?

Foreign experts living in China are themselves the best ones who can answer these questions. Hence, in this PhD thesis I have:

- Designed a questionnaire and got it answered by 200 foreign experts working in China
- Conducted interviews in depth for more than one hour each in order to deep into some aspects that the questionnaires cannot arrive.
- Made a statistical analysis of the scientific production of foreign scientists working in China (this is a collective of special interest for the government of China) and I have analyzed the link between their achievements and their satisfaction and happiness.
- All the answers are analyzed statistically, and conclusions and a call-for-action is presented.

Over the past few years, multiple studies have investigated this problem, as happiness and satisfaction are hot research topics in developing countries like China, even though there are limited empirical research on this topic with foreign experts living in China. Hence, the topic of this study is as original as necessary.

In Chapter 2 I will describe the Chinese context, starting by the history of China, its current accelerated economic growth, immigration and education as a fundamental pillar. Chapter 3 will discuss and analyze the most relevant literature in this field, which analyses in depth the trends on happiness and satisfaction in China over the past three decades. I describe, compare and comment the studies, analyzing the main factors contributing to happiness and satisfaction of individuals. Chapter 4 describes the research plan, design the whole research, the methodology used and the questions to look for, specially indicating the main factors considered and the hypothesis formulated. The design of the questionnaire and the variables employed are presented in detail. The tools employed to distribute the questionnaire and the size and demographics of the samples (age, country, academic discipline, working city and job title are presented). In this chapter I also make several hypothesis that will be verified and denied during the statistical and field research. Chapter 5 presents the answers to all the questions proposed in the questionnaire, indicating the general status of happiness and satisfaction by specifying the min, max, most repeated values and standard deviation which belong to descriptive statistic research. Then, the values have been processed with bivariate and logit regression in SPSS software, and the results area discussed in detail. This analysis is complemented with multiple in-depth interviews to different types of foreign experts, including three high-profile foreign experts with special position in China. This chapter is very useful to understand if the hypothesis made are correct or not. Chapter 6 makes a statistical analysis of the scientific production of foreign experts working in China, compared to national ones. This study is based on the number of articles as corresponding author in top journals within the field of science, technology and engineering from Springer Nature, and the results are compared for different countries. These chapters are accompanied by 5 annexes containing multiple additional information about the research carried out. Chapter 7 summarizes the most important conclusions of the study, taking into account all types of analyses: questionnaires, interviews to foreign experts, interviews to highlighted foreign experts, and Chinese employer. Finally, I present the main recommendations to be taken by the Chinese employers, foreign talents working in China and local/provincial/national government in order to enhance the happiness and satisfaction of foreign experts working in China, as well as recommendations on other interesting aspects that future studies could analyze and/or improve.

Chapter 2: The Chinese context

Chinese civilization is one of the oldest in the world with more than 5,000 years of history [17]. In most periods of its history, Chinese civilization achieved high degrees of development compared to other regions of the world, and produced multiple key inventions and goods in human history, such as the compass, tea, porcelain, silk and dynamite, among many others [18]. In most periods of its history, China has been self-sufficient, i.e., capable to produce the goods that it needs. Commerce with other countries was mainly to generate revenue by selling them the aforementioned goods, and the number of goods that Chinese civilization purchased to other countries was much lower, generating almost always net surplus benefit [19]. During the 18th century the British empire started to potentiate the introduction of opium in China for recreational purposes through private smugglers, a very addictive substance that was for bidden in China [20]. The confiscations of illegal opium by the Chinese government provoked a diplomatic conflict that ended up in the Opium Wars (1839–1842 and 1856–1860) [21], which were followed by a series of invasions by France, Germany, Japan and even Russia into Chinese territory that extended until the Second World War [22]. These invasions ended up in a series of humiliating treaties in which China had to transfer some parts of its territory (e.g., Hong Kong) and pay high economic penalties to the foreign invaders. This period is known in China as the “century of the humiliation”, and it ended in 1949 with the victory of Mao Zedong in the Chinese Civil War and the establishment of the People’s Republic of China [23]. After that year, the single-party government imposed stringent restrictions to international travel and commerce that made China to become quite isolated, but this also generated high degrees of poverty and hunger.

It is important to emphasize that, as of today, most Chinese people living in China are conscient of the long history of Chinese civilization, understand that Chinese people had important contributions to mankind, and are very aware of what happened in China during the “century of humiliation”. Despite more than 70 years have passed, a great part of Chinese people living in China feels emotional and irritated about the “century of humiliation”, and several distrust foreigners when interacting with them. This is something that affects the way in which Chinese people interacts with foreigners: it is very difficult that one Chinese communicates with a foreigner in the same way and with the same degree of confidence than he/she does with another Chinese. In general, in most countries, most people tend to have better understanding and higher degrees of confidence with their compatriots; in China, this feeling is in general much more accentuated than in other countries. In the long term, this may affect the happiness and satisfaction of foreign experts working in China.

In 1978, after Mao’s death, the government of China decided that the country should open up to the world in order to improve the economy and quality of life of Chinese people. The new leading president of the Communist Party of China, Xiaoping Deng, started a revolutionary series of economic and trading policies to potentiate the attraction of foreign capital [4-6]. Among them, setting up special economic zones (like Shenzhen, Xiamen and Pudong) and opening coastal and inland cities are the most remarkable. Such policies have been a very strong attraction for foreign companies, which did not want to miss the huge Chinese market and started to invest in the People's Republic of China, offering products, opening branches, opening representative offices and abundant advertisement. As a result, Xiaoping’s opening-and-reform plan has provoked an economic growth with rates averaging 10% over the past 30 years, which is unprecedented in human history. More specifically, the economic growth of the People's Republic of China was 7.59% in 1979, 15.19% in 1984, 14.22% in 1992, 14.23% in

2007, and 10.64% in 2010 [24]. In terms of GDP, in 1952 the economy of the People's Republic of China was only 67.9 billion Chinese Yuan (CNY), while in 1986 it surpassed one trillion CNY. Hence, it took 37 years to reach the level of one trillion CNY. However, the People's Republic of China only needed 14 years to go from 1 trillion to 10 trillion CNY (in 2000); and it only took 19 years to raise from 10 trillion CNY to nearly 100 trillion CNY in 2019 [25]. This positioned the People's Republic of China as the second largest economy in the world, and it is expected to become the number one by 2028 [26].

Initially, economic growth was only concentrated in large cities like Beijing, Shanghai, Guangzhou and Shenzhen, but in the past ten years other second-tier Chinese cities have raised as economic and industrial hubs capable to rival with foreign capital cities; that is the case of Suzhou and Hangzhou, among others. In the past decade, multiple institutions based in these Chinese cities have raised in world rankings until topping the highest positions. That is, for example, the case of companies like Tencent and Alibaba, which have a market value of 735 and 615 billion USD (respectively) and rank 7th and 9th in the world (respectively) [27]. Similarly, while in 2011-2012 there was only two Chinese universities among the world top 100 according to most reputed international rankings, in 2021 many of them were positioned amongst the very best, not only Tsinghua University and Peking University, but also many others like University of Science and Technology of China, Fudan University, Shanghai Jiaotong University, Soochow University and Zhejiang University (among others). According to reference [28], the average annual salary in big Chinese cities like Shanghai have raised from 15,420 RMB in 2000 to 85,580 in 2017. Nowadays, the economic development born in big Chinese cities is being spread to rural areas, and the quality of life of their population is being remarkably improved. As an example, on February 25th of 2021 the Chinese government announced that, according to its own standards, poverty has been eradicated in the country [29].

The economic development in Chinese cities has been enabled by an improvement of the cultural level of Chinese society. Education in Chinese schools has improved, and multiple students who were sent abroad in the early 80s, 90s and 00s have come back to reshape the country and apply the knowledge learned abroad. The consequence of all these social transformations is that nowadays Chinese cities offer much better services (e.g. hospitals, schools, transportation) than decades ago, and life is more similar to that in developed countries. Every time more and more Chinese citizens have habits that are similar to those of foreigners living in cities of developed countries, and they also can speak fluent English (and even other languages). The transformation of China brought associated an increase of the number of non-Chinese professionals living in China, some of them highly qualified and bringing-in multiple highly-demanded skills (i.e., foreign experts).

2.1 – Immigration in China

Historically, China has been an emigrant country. During the 20th century millions of Chinese citizens have travelled abroad in the search of a better life, and many of them managed to get established and have prosperous descendants. In 2020, it was estimated that the number of Chinese emigrants living in other countries was around 60 million [30]. However, nowadays this trend is shifting due to the great economic development of the People's republic of China, and more and more foreigners are aiming to travel there to find a better job and life. This statement is supported by the recent reports from Xiuming Zhang, the deputy director of the Institute of Chinese and Overseas Chinese Studies [31]. Complementarily, Zhao Huijun, the deputy inspector of the Ministry of Science and Technology of China pointed in 2019 that of the People's republic of China has established scientific and technological relations with more than 160 countries, it signed more than 110 inter-governmental cooperation agreements,

arranged 340 agreements related to personnel exchange, and participated in more than 200 international organizations and multilateral mechanisms [31].

According to the Bulletin of the Seventh Chinese population census [32], published on May 11th of 2021, the total population of the People’s Republic of China is 1,443,497,378 persons; that includes the 1,411,788,724 persons living in Mainland China (i.e., the 31 provinces plus all the autonomous regions and municipalities), the 7,474,200 persons living in the Hong Kong Special Administrative Region, the 683,218 persons living in the Macao Special Administrative Region, and the 23,561,236 persons living in Taiwan. Among the total of 1,411,788,724 persons living in Mainland China, 845,697 are foreigners (402,026 males and 443,671 females); while the number of foreigners has been increasing constantly over the past decade [33], the total number of 845,697 reached in 2020 represents only 0.0599% of the total population of the country, which according to the United Nations is one of the lowest percentages in the world [34]. According to reference [34], in 2015 the largest group of foreigners living in China was from Korea (21%), followed by United states (12%) and Japan (11%). India, the second most populated country in the world only provided 3% of foreigners, similar to other smaller countries like Germany (3%), France (3%) and Canada (3%). Vietnam and Myanmar also occupy remarkable positions I this list with 7% and 6%, respectively. The rest (31%) is formed by many other countries with smaller contributions (see also Figure 2).

In a survey extended among the population of foreigners on November 1st of 2020, 47.44% answered that they moved to China motivated by employment purposes, 23.46% did it for studying and learning, and 8.22% for businesses establishment and enforcement. This indicates that nearly 80% of the foreigners living in China travelled there to improve their career, while only 20% did it for other personal reasons (i.e., visiting relatives, retirement). The top 10 provinces that have hosted the highest amounts of foreigners are: Shanghai, Beijing, Guangdong, Yunnan, Jiangsu, Shandong, Fujian, Zhejiang, Liaoning, Guangxi [36]. It is important to highlight that these provinces spread all around China from north to south, from east to west, indicating that there is not a preferred region. All these data unequivocally indicate that the main motivation of foreigners to come to China is to improve their career, and that family/leisure and other geographic factors like weather and food are less important.

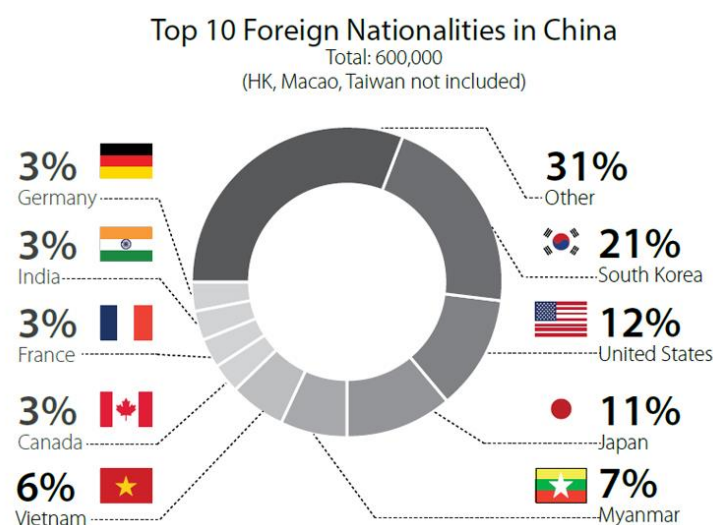


Figure 2: Distribution of foreigners living in China by country of origin in 2015, according to reference [34]. Note that the total number of foreigners living in China by that time was around, 600,000, while the recent report from 2021 persons indicates 845,697 [32].

2.2 – Chinese policies for foreign expert attraction

In the last decade the National Government of the People's Republic of China has been establishing lots of policies to attract foreign professionals with high degree of education and skills in different fields considered as strategic by the country [8]. In this thesis, I will from now on refer to these persons as *foreign experts*. The flagship program for foreign experts attraction was the high-end foreign experts' program (formerly known as Thousand Talents program) which was initiated by the Ministry of Science and Technology of China. This scheme includes a complete package of policies to attract scientists (of any nationality, including Chinese) and help them to establish a scientific career in the People's Republic of China. Such policies not only include long-term research funding (of up to 3 million CNY) to found and maintain a research group, but also funding to buy an apartment, special policies in hospitals, banks, schools, attractions and even permanent residence permission (often referred to as green card). The Chinese government also established the Friendship Award in 1991 to recognize foreign experts who have made outstanding contributions to the economic and social progress of the country. The Friendship Award is the highest prize given by the government of the People's Republic of China to foreign experts. Other especially significant examples are the following: First, in June 2011, the "Measures for Participating in Social Insurance for Foreigners Employing in China" was released; this agreement allowed foreign experts working in China to enter in the Chinese social security system and made the benefits of foreign experts insured after retirement the same as those of Chinese citizens. Second, in December 2015, the State Council integrated the entry permit for foreigners and the work permit for foreign experts in China into the "Work Permit for Foreigners in China". And third, in October 2017, the work permit system for foreigners in China was implemented nationwide, and the R-type visa for international experts was also launched in the same year, as well as the other national policies. [9].

Similar strategic policies are being implemented at the provincial level. Shanghai, where the number of foreign experts working there reached 215,000, accounting for 23.7% of total in China (ranking first in the country), came out with its specific foreign expert strategy and policy, named as the "Shanghai accelerated the implementation of the talent Peak project action plan". This program pretends to constantly improve the quality of life of the foreign expert community through the construction of infrastructure that matches international standards, as well as residential and commercial facilities, as well as to provide a harmonious and candid multicultural atmosphere of mutual fusion, so that all kinds of overseas experts can find a sense of identity and belonging to the city [10]. Moreover, on March 1st 2021 Shanghai government published a notice that facilitates the online application of short-term visas. These policies were strongly needed because, according to the data collected by the Ministry of Science and Technology in 2018, a total of 336,000 work permits for foreign experts were issued [37].

Beijing is also applying similar policies to attract foreign experts working there. Liu Minhua, deputy director of the Beijing Municipal Bureau of Human Resources, introduced that "Beijing aims to build a favorable environment for the development of experts focusing on the strategic goal of being a first-class, harmonious and livable city in the world" [38]. In particular, he said that Beijing is making every effort to build an international expert community with an overseas atmosphere, a diverse culture, innovative undertakings, and considerate services for a better life for overseas experts. The construction of an international expert community has been established as a high priority into the new general regulations of Beijing. Given the big success of the first four pilot social projects in different districts of the city (Chaoyang-Wangjing, Zhongguancun Street, Future Science City and New Shougang) four more pilot projects are

being developed (this time at Economic and Technological Development Zone, Huairou Science City, Shunyi Airport Economic Zone, and Tongzhou Universal Film City), realizing the full coverage of "three cities and one district".

It is worth noting the government of the People's Republic of China has since 2009 promoted a social credit system to evaluate Chinese citizens according to their trustworthiness and attitude [39-40]. In a similar way, the government has clearly communicated that is only interested on attracting highly qualified foreigners with skills that could contribute to the economic and social development of the country [41]. To do so, different types of visas depending on factors such as education degree and level of Chinese language are given.

2.3 – Education as a fundamental pillar

Multiple factors evidence that investing in education is a strategic pillar for the government of the People's Republic of China to modernize the country. The main reason is to bring knowhow that results in technological advancements that produce benefits for the economy, wellness and national security. One of the factors exhibiting the importance of education for the government of the People's Republic of China is the spectacular raise of most of the Chinese universities in the world rankings, such as Nature Index [42], QS ranking [43], Times Higher Education Ranking [44], Center for World University Ranking [45] and US News [46] Ranking. Table 2 summarizes the position occupied in the most reputed world rankings by the top 15 universities within the People's Republic of China in two specific years, with a minimum interval of three years between them. The progress achieved by all these universities can be clearly seen. It is worth noting that these rankings have been constructed based on very different criteria —i.e., Nature Index focuses on academic papers, and Times Higher Education gives specially importance to gender equality; hence, only general trends are meaningful.

It is also worth noting that in many cases the institutions (both companies and universities) focus on strategic fields according to the needs disclosed by the Government [47-49], which are:

1. Information Technology (artificial intelligence, internet of thing, smart appliances)
2. Robotics (artificial intelligence, machine learning)
3. Green energy and green vehicles, energy efficiency, electric vehicles
4. Aerospace equipment
5. Ocean engineering and high tech ships
6. Railway equipment
7. Power equipment
8. New materials
9. Medicine and medical devices
10. Agriculture machinery

The fact that the public funding for research available in China concentrates in the ten aforementioned research fields makes that, in many cases, the position of Chinese universities in the global rankings varies a lot depending on the field. As good example is Soochow University, a fast-rising university located in the city of Suzhou tops international rankings the fields of Nanoscience and Nanotechnology (rank #4), Physical Chemistry (rank #6) and Materials Science and Engineering (rank #13), but that is much farer in other fields like Biology and Biochemistry the university (rank #365), as shown in Figure 3.

However, the presence of foreign students, researchers and professors in most of those Chinese universities is too scarce, and the percentage among the total Chinese counterpart is very low (<1%). In order to fulfill this gap, the Ministry of Education of the People’s Republic of China started multiple Chinese-foreign cooperative universities and schools, as well as Chinese-foreign cooperative educational programs [50]. The main goal of these entities is to provide a more western-style education to Chinese students, which should in the long term promote exchange and collaboration with other countries. Focusing only on the higher education, the People’s Republic of China has now 9 Chinese-foreign cooperatively-run independent universities [51] (see Table 3). In these institutions the percentage of foreign staff is much higher than in the aforementioned purely Chinese traditional universities.

Table 2: Position in the world ranking of the top fifteen universities in the People’s Republic of China according to different world rankings for the first and last year available. The detailed criteria of each ranking is available from the website of each institution, in references [42-46].

Institution	Nature index		QS		CWUR		THE		US news	
	2016	2021	2019	2022	2014	2021	2011	2022	2018	2022
Tsinghua University	23	13	17	17	87	58	58	16	64	26
Peking University	9	8	30	18	55	59	37	17	65	45
University of Science and Technology of China	28	7	98	98	270	139	49	88	145	110
Soochow University	69	53	-	601-650	713	277	-	601-800	479	327
Zhejiang University	35	17	68	45	206	110	197	75	159	115
Nankai University	59	38	338	358	349	249	-	301-350	333	289
Shanghai Jiaotong University	101	25	59	47	195	102	-	84	156	105
Fudan University	40	28	44	31	189	115	-	60	148	141
Nanjing University	20	10	122	124	217	162	120	105	190	135
Sun Yat-Sen University	80	30	295	260	292	153	171	251-300	237	159
University of Chinese Academy of Sciences	98	9	-	-	-	73	-	-	189	159
Wuhan University	93	49	257	225	438	215	-	157	321	209
Xiamen University	85	54	476	407	354	222	-	401-500	344	278
Southern University of Science And Technology	491	41	-	275	498	253	-	162		350
Sichuan University	120	43	601-650	451	515	240	-	401-500	519	354



Figure 3: Screenshot of the Best Global Universities ranking published by US News, for the case of Soochow University. The ranking is very inhomogeneous depending on the field.

The University of Nottingham is one of the earliest foreign universities that entered into China. In 2004, it co-founded China's first Sino-foreign university with Zhejiang Wanli University. The president of China (Xi Jinping) explicitly said that the establishment of the University of Nottingham and Ningbo has created a new model for Chinese education to take to the next world by combining Chinese higher education with foreign high-quality education resources. The fact that the number one leader of China publicly comments the impact of this starting point indicates its importance for the country, as his communications are very limited. In 2006, the University of Nottingham Ningbo was listed by the Ministry of Education as one of the 60 major events in Founding China —60 Years of education in new China. It now has more than 7,300 students from more than 70 countries, and its foreign teachers account for about 75% in its 2020 report [52]. More and more sino-foreign universities established afterwards (see Table 3 and Figure 4) with collaborations of different countries, and many foreign scientist and teachers working here. For example, the Guangdong Technion – Israel Institute of Technology indicates in its website more than 90% of the faculty working there are recruited abroad.

Table 3: List of the most remarkable Sino-foreign universities in the People’s Republic of China by the end of 2020.

Item	University name	Department in charge	Province City	Level of studies	Year started	Partner country
1	New York University Shanghai	Shanghai Municipal Education Commission	Shanghai Pudong	Bachelor	2012.10.15	USA
2	Xi’an Jiaotong - Liverpool University	Jiangsu Provincial Department of Education	Jiangsu Suzhou	Bachelor	2006.05	England
	http://www.xjtlu.edu.cn					
3	Duke Kunshan University	Jiangsu Provincial Department of Education	Jiangsu Kunshan	Bachelor	2012.12.19	USA
	https://dukekunshan.edu.cn/					
4	University of Nottingham Ningbo China	Zhejiang Provincial Department of Education	Zhejiang Ningbo	Bachelor	2005.5.20	England
	https://www.nottingham.edu.cn/					
5	Wenzhou - Ken’en University	Zhejiang Provincial Department of Education	Zhejiang Wenzhou	Bachelor	2014.3.31	USA
	http://www.wku.edu.cn					
6	Shenzhen MSU-BIT University	Government of Guangdong Province	Guangdong Shenzhen	Bachelor	2016.10.27	Russia
	www.smbu.edu.cn					
7	Guangdong Technion Israel Institute of Technology	Government of Guangdong Province	Guangdong Shantou	Bachelor	2016.12.5	Israel
	https://www.gtiit.edu.cn/					
8	Beijing Normal University-Hong Kong Baptist University United International College	Guangdong Provincial department of education	Guangdong Zhuhai	Bachelor	2005	Hongkong
	https://www.uic.edu.cn/en/					
9	The Chinese University of Hong Kong, Shenzhen	Government of Guangdong Province	Guangdong, Shenzhen	Bachelor	2015	Hongkong
	https://www.cuhk.edu.cn/					

Coincidentally, the number of international schools (including kinder gardens, primary schools, middle schools, high schools, and universities) has been emerged and developed rapidly in China. The approval of the first international school which is specially for the children of Embassy staff, with an expand to be allowed for expats later. By the end of 2008, there were 98 schools in 16 provinces and municipalities. According to the survey of China’s international school development report in 2019 [53], there were 351 international schools in China in 2010, and nowadays the number of international schools had doubled, reaching 821 in 2019. Around 513,000 students are currently studying in international schools, with an average of 392 students per school. The cost of the tuition fee is around 108,000 RMB (\$16,135) per student per year, and on top of that the students have to cover housing, dining, transportation, books, supplies, and other expenses. The total market size of tuition was estimated to be 55.4 billion RMB (\$8.27 billion) in 2019, and is expected to be 79.7 billion RMB (\$11.9 billion) in 2021 [54]. The international schools are adopting different curriculum including those from United Kingdom, United States of America and Canada (among others). By 2019, Chinese-foreign cooperatively-run schools and programs has covered almost all the Chinese provinces, the international partner institutions are spread over almost 40 countries and districts, and touch more than 800 foreign schools and multiple majors. Each year, they teach 600,000 students, being 150,000 (~25%) of them newcomers and 540,000 (~90%) in higher education [55].

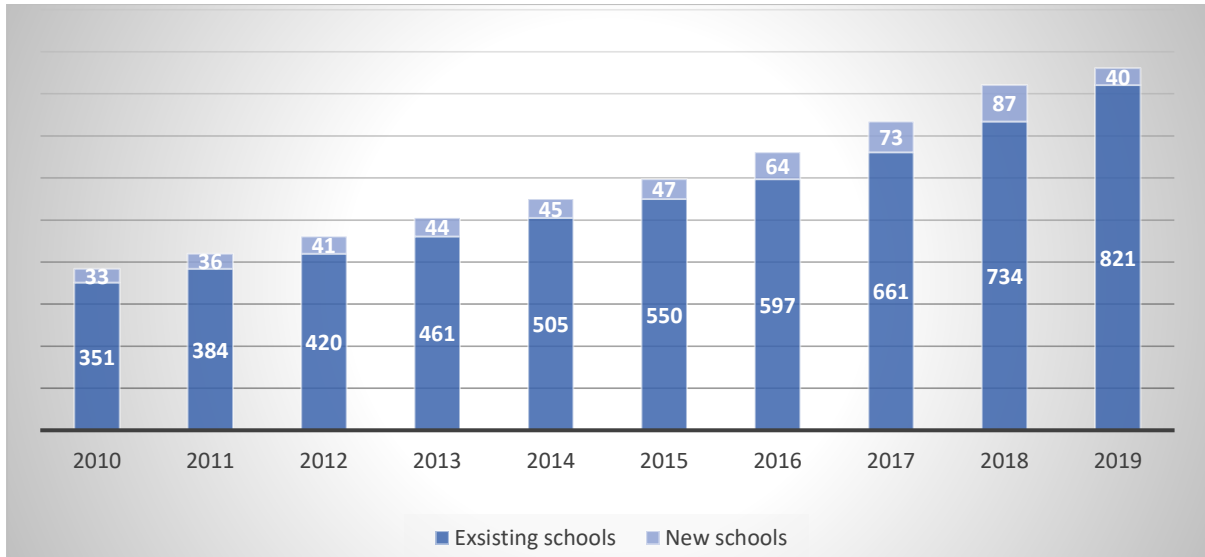


Figure 4: Evolution of the number of international schools in the People's republic of China during the period 2010-2019. Reproduced from reference [53].

Chapter 3: Literature review

Modern international studies on happiness began to be popular after the Second World War, and gradually became more and more sophisticated during the 1960's. The most modern and complete happiness reports are published annually in the website of the World Happiness Report [56], which is prepared by the Sustainable Development Solutions Network, powered by data from the Gallup World Poll [57], the Lloyd's Register Foundation, and the World Risk Poll. This ranking (see Figure 5) is based on a poll made in more than 160 countries (which all together represent more than 98% of the world population) via telephone if $\geq 80\%$ of the population of the country has access to telephone or face-to-face if $\leq 80\%$ of the population has access to telephone. For each country, 1,000 civilian and non-institutionalized persons with age ≥ 15 years are selected. One of the most relevant questions asked is: *"Imagine a ladder with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"*. This self-reported methodology to evaluate happiness has showed some interesting trends over the years. First, persons with higher income tend to be happier than those with more limited resources; hence, richer countries often report higher degrees of happiness than the poorer ones, and the countries which economy experience significant growth over the years also exhibit an increasing degree of happiness. Second, life events of significant importance (e.g., marriage, divorce) significantly affect the degree of happiness, but in general only for relatively short and medium periods, keeping a nearly unaltered long-term impact. Indeed, this observation reveals that individuals can adapt to life changes.

Self-reported Life Satisfaction, 2019

"Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?"

Our World
in Data

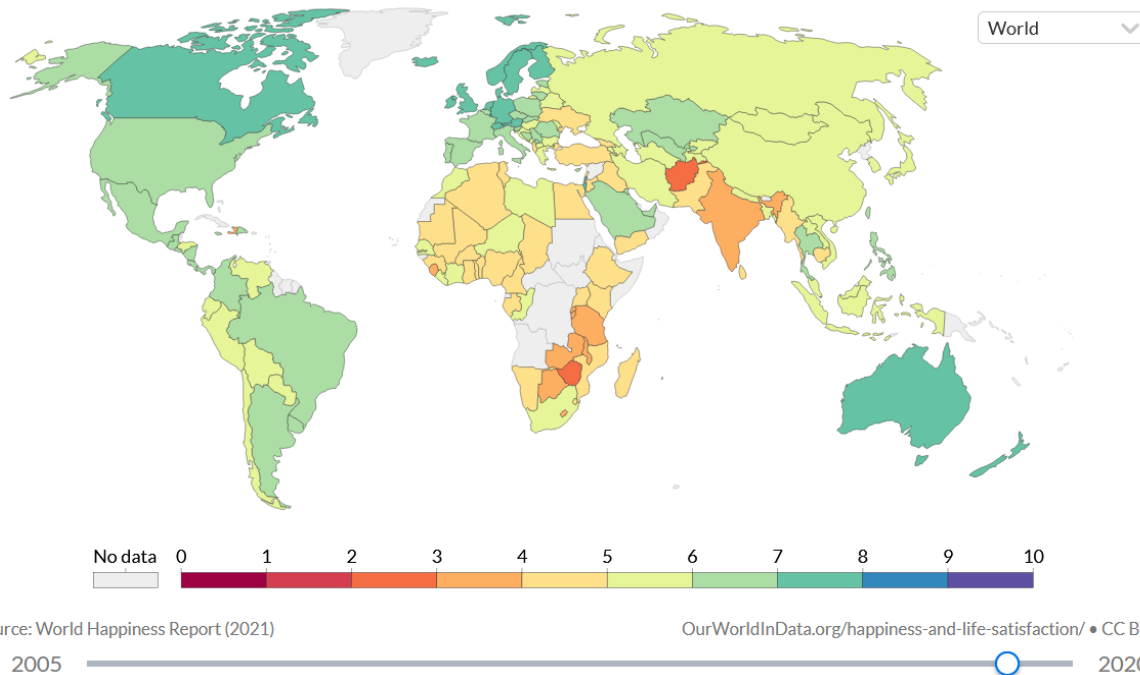


Figure 5: World map colored according to the happiness of each country in 2019. The highest values indicate the maximum degree of happiness. Reprinted from reference [56].

The life satisfaction in China has analyzed in depth in many other studies, with more or less optimistic views. Reference [58] gave a pessimistic view of the life satisfaction in China, and reported that the overall trend is declining despite the evident increase of income. The main explanation given was based on the relative deprivation theory, which indicates that the income inequality made that the financial position of most population (relative to the average) got worse as the country develops. In other words, inequalities made people more unhappy. Reference [59] reported that between 1994 and 2005 the income of the habitants of China remarkably increased in a factor 2.5, which allowed them to acquire multiple goods like televisions and telephones, but the life satisfaction in that period decreased when asked: “Overall, how satisfied or dissatisfied are you with the way things are going in your life today? Would you say you are very satisfied, somewhat satisfied, somewhat dissatisfied, or very dissatisfied?” Interestingly, in 1994 the number of people who answered satisfied was higher than in 2005, and the number of people who answered dissatisfied was lower in 1994 than in 2005. Reference [60] attributed such behavior to the fact that the aspirations in life of most individuals rise with the income, making them unhappier despite being wealthier.

References [61-63] indicated that the degree of happiness of China exhibited a flat trend during its unique economic development. The main factors backing such theory were surveys to more than 15,000 Chinese habitants. These studies also supported the theory that higher life expectations as the income increase prevent individuals from being happier. This was detected by comparing the happiness of poor people from rural areas and rich people from urban areas. It was detected that the satisfaction with the living place and community in rural areas was much higher than in urban areas. Reference [64] gave a much more optimistic view of the degree of satisfaction of Chinese citizens. Most of them (>80%) agreed that family was the main reason of satisfaction of their lives. In terms of job and income, the values were more modest (64% and 58% respectively), but still more than 50%. Nevertheless, these values were considered moderate or low when compared to other countries, and China ranked 29th among the 47 countries analyzed regarding family satisfaction, the 33rd in terms of income and the 35th in terms of job satisfaction.

3.1. Happiness and its influencing factors

The research of happiness in China started when the country started to develop its economy, i.e., after 1978. Since then, Chinese and foreign researchers have conducted many discussions on happiness, including a variety of methods to measure it and policies to promote happiness. The unprecedented economic growth of China during the period 1990-2010 [65] promoted a profound analysis of happiness, as generally people tend to think that better economic conditions produce a higher degree of happiness. By that time a study from Richard Easterlin [66] suggested that, at least in the USA, economic development does not necessarily produces an increase of the happiness of the individuals. This observation, often called the “*Happiness Paradox*”, states that happiness increases with income at a certain moment, but it does not increase over time as income continuously growing. These conclusions were mainly based on a set of data collected in USA between 1946 and 1970, and they have been strongly criticized by many other scientists [67-70]. The reason may be related to the fact that economic growth also brings associated an increase of pressure in the work, unemployment rate, family fragmentation, generation of inequality, and increase of insecurity. Hence, many scientists during the period 1990-2010 have asked themselves if how happy is the people living in China and how this is affected by the opening and reform policies and economic growth. This is especially important in a country with a single political party that has complete control, as providing high degrees of happiness could be used to legitimate its power among the population.

Jianhua Duan made a detailed overview and summary of investigations on happiness in China and observed that most of them focused on the influencing factors [71]. Previous studies show that individual subjective happiness is affected by many factors, such as demography, economy, society, family environment and personality.

A - Demographic factors. Several demographic factors have been analyzed:

i) Age. Studies have reported that there is a clear U-shaped relationship between age and subjective well-being, the lowest point of which is around the age of 40 [72]. With the increase of age, people's satisfaction not only does not decline, but also tends to increase, and in the worse cases it will remain stable [73].

ii) Marital status. Many studies in China showed that marriage has a significant impact on happiness and well-being, individuals who are in the state of marriage have a higher happiness than those who are not in the state of marriage [74].

iii) Education. The consensus is that with the improvement of education level, people's sense of happiness also increases correspondingly. For example, Based on 2012 national data from the China general social survey, Binbin Kan and Rongri Lin studied whether education can improve individual happiness and the mechanism by which it works. The results show that education can promote individual happiness. Individual health level, individual social status, individual leisure level and individual interpersonal relationship can partly explain the role of education in promoting individual well-being index [75].

iv) Gender. The reports indicate that the happiness of men is higher than that of women [76]. The reason is that in almost every country, statistically, women receive less income, access to education, are less healthy and may become widow more easily than men [77]. However, reference [77] indicated that, for similar life circumstances, women tend to be happier.

v) Health. There is a significant positive relationship between health status and happiness. The better the health status is, the higher the degree of happiness will be [78]. This is quite intuitive because, for the same other conditions, maintaining better biological and psychological status produces happiness.

B - Economic factors. A large number of studies have shown that income and wealth have statistically significant effects on subjective happiness [79]. High-income and affluent people generally have higher subjective happiness [80]. However, some studies have shown that the increase of income can help improve the subjective happiness of poor people to some extent, but for the upper-middle income people it does not play such an important role. A recent international study [81] has also revealed that, once a specific income is achieved (which slightly differs from one region or another, the degree of happiness does not increase anymore or even reduces. In the specific case of China, this threshold is located at 110,000 USD/year for the region of East Asia, which in that study encompasses China, Japan and South Korea. Other recent studies also support the idea that more money does not make happier [82].

In recent years, due to the development of real estate economy, housing has also become an important factor affecting residents' happiness [83]. Chinese *vox pópuli* has often severely criticized that "*it is very difficult to buy a house*", "*house is very expensive*", "*speculation strongly complicates buying a house*", and "*one family needs to invest its entire income and efforts on acquiring a house*". Inequality of urban residents' housing affects their happiness. The number of houses significantly improves residents' subjective well-being.

C - Social and family factors. Good social support and harmonious interpersonal relationship can provide people with material, information and emotional help, increase healthy behavior patterns and effectively prevent the decrease of subjective happiness [84]. Mutual trust, communication and tolerance among family members are also the most important influencing factors. Individuals who grow up in a positive family environment generally have a higher life satisfaction level [85].

D - Personality factors. Research results consistently show that easy-going, cheerful, optimistic, confident and friendly people tend to have higher subjective well-being and happiness [86].

3.2. Work satisfaction and its influencing factors

Work satisfaction not only directly affects employees' job performance, attitude and turn over intention, but also indirectly affects customers' satisfaction, which in turn affects the operation and development. There are four main concerns in the study of job satisfaction: i) the definition, ii) the measurements, iii) factors affecting the job satisfaction level, and iv) consequences of job satisfaction level.

There is still no agreement on the concept of job satisfaction, both in China and abroad, as many scholars have given different definitions from different perspectives. Cuixia Huang reported that job satisfaction in China is compared to life satisfaction and general satisfaction, particularly referred to the degree of satisfaction of workers, which is the evaluation of employees' satisfaction by comparing their comprehensive expectation and actual income [87]. A Taiwanese scholar named Guangzhong Xu concluded all the different definitions of job satisfaction into three categories: one is the overall satisfaction, which is a general attitude towards the work and its overall environment, not involving all aspects and the process. The second is the expectation discrepancy, this kind of definition considers the gap between employee satisfaction and the value employees expect to obtain and the actual value. If the gap is small, the degree of satisfaction is large. The third is the frame of reference. Scholars who support this definition believe that the most important factor influencing people's attitude and behavior is not the objective characteristics in the organization or work environment, but people's subjective perception and interpretation of these objective characteristics, which are influenced by the individual self-reference framework [88]. For example, whether a certain work situation affects satisfaction will involve demand factors, such as employees' comparison of work quality, as well as their personal ability and past experience.

The way of measuring job satisfaction can be divided into one-dimensional measurement and multi-dimensional measurement. Single dimension measurement considers job satisfaction as a single concept, and makes an overall evaluation of job-related situations without making distinctions in each dimension. For example, *what is your overall evaluation of your work? How do you like your job?* Multi-dimensional measurement is to measure the relevant dimensions of job satisfaction, and finally synthesize the overall employee satisfaction according to the measurement results of different scales. However, there is no unified conclusion in academic circles.

The factors affecting job satisfaction were profoundly studied by Herzberg, who believes that the main factors leading to satisfaction are achievement, recognition, interest on the tasks carried out, responsibility and development. On the contrary, the main factors leading to dissatisfaction include policy and administration, supervision, wage interpersonal relationship and working conditions [89]. The study by Porter concluded that job satisfaction depends on

the gap between personal expected outcomes and actual earnings [90]. Adams put forward the theory of fairness. The basic idea of the theory of fairness is that when a person makes achievements and gains remuneration, he not only cares about the absolute amount of compensation, but also about the relative amount [91]. Seashore et al. organized variables related to employee satisfaction into a conceptual framework, which covered the causes (environmental factors and personal attributes) and consequences (demographic variables, organizational variables and social variables) [92]. Locke has done a lot of research on employee job satisfaction, and enumerated ten dimensions of job satisfaction: tasks carried out, compensation, promotion, recognition, working conditions, welfare, self, supervisor, colleagues and non-organizational members [93]. Balze et al. highlighted the following six aspects: tasks carried out, promotion, salary, supervision and management, colleagues and employees' overall evaluation of work [94]. Bucking and Coffman believe that the factors affecting job satisfaction mainly include four aspects: employee acquisition, employee dedication, employee ownership and the growth of the organization and employees [95].

Many researchers in China have also studied the factors affecting employee's job satisfaction and achieved some results. Shupu Li and Mian Zhang think that the main factors affecting job satisfaction are: management, remuneration, environment, personal ability and development opportunities, company development, welfare and interpersonal relationship [96]. Hu Bei studied the job satisfaction of workers whose main activity are related to intellectual tasks (not physical tasks, such as professors and designer, among others) in China, and concluded that job satisfaction can be divided in three major categories: type of tasks carried out, relationship with other workers, and working environment. The type of tasks carried out include work content and work autonomy; relationship with other workers includes colleague relationship, superior-subordinate relationship, collective activities within the organization; and working environment includes working conditions, working hours, organizational culture and management policies [97]. Weijun Zhao considered that the order of importance of factors affecting knowledge-based job satisfaction was environment, system and management, corporate culture, individual growth, job autonomy, job achievement, fairness and salary system [98]. Gao Feng viewed influencing factors including management and organizational policies, work characteristics, work remuneration and benefits, work assessment system, employee development and training, work support, work relationship, work environment and safety [99]. However, one should bear in mind that references [73-76] discuss the factors affecting Chinese workers in China, and that the specific factors affecting foreigners are not spotted. In particular, there is no existing literature that spots which factors are especially important for foreigners working in China, which in part is good to emphasize the novelty and relevance of this thesis.

Based on the above abundant research results, the basic factors affecting job satisfaction can be summarized as follows:

1. Working environment: a good working environment brings physical comfort, thus enhancing work enthusiasm and satisfaction.
2. Type of tasks to be carried out including promotion: the work itself includes interest in the work, challenge and sense of accomplishment. The promotion includes fairness and rationality of promotion.
3. Economic situation: it is mainly reflected in the quantity, fairness and rationality of remuneration.

4. Interpersonal relationship: A good relationship can supply a strong support.
5. Personal style: it is mainly connected with the personal factors, for example, if he feels valued, he can participate in the organization's decision-making, which is conducive to improving his satisfaction.

3.3. Study on life satisfaction and its influencing factors

If one searches “life satisfaction” in Chinese (生活满意度) in the CNKI database of China, one will get around 4274 results, and most of the papers came out after the year of 2000 – date of search January 23rd of 2021. In the recent ten years, many Chinese researchers have done empirical research on the life happiness of different districts and different people, including young and old persons in villages and cities, farmers who have lost the lands, college students, doctors, teachers, and their influencing factors based on the sample survey, among which most are about the life satisfaction of the elderly persons and its factors.

Diener et al. [100-102], who studied happiness, pointed out that life satisfaction is a key indicator of subjective well-being/happiness. Chinese scholars normally divided life satisfaction into whole life satisfaction and special-area life satisfaction. No matter life satisfaction overall or specific areas, they are related to both objective living conditions and three subjective reference frames: i) take the ideal state in people's mind as the basic frame of reference for comparison; ii) a horizontal frame of reference that compares people around you; iii) a vertical frame of reference that compares past and former conditions. For the measurements, the researchers mainly used the evaluation questions in the form of Richter scale, or a simple question to do a general measurement, some of the scholars made up their own scale according to self-understanding. The influencing factors, can be divided into several groups:

A - Objective factors. 1) Demographic variables. Y. Li et al. reported that the investigation on people of Tianjin showed the significant influencing factors are age, occupation, marriage status and income [103]. The research of P. Wang and H. Yi confirmed that the influencing factors of life satisfaction of urban residents are shifting from the previous micro level to the current macro level, which reflects that their leading demand starts to change from economic type to development type. Moreover, linear regression analysis shows that individuals with different marital status, income, age, and education level have significant differences in life satisfaction in different fields [104]. 2) Family factors. Intergenerational support is seen as the factor to influence the elder's life happiness, and the peer relationships and parent-child relationships are regarded as the two factors that influence the youth's life satisfaction. 3) Life events. Yun Li and Zhenni Luo's research on medical college students indicated that, dormitory life events not only directly affect individual life satisfaction, but also indirectly affect life satisfaction through the impact on dormitory satisfaction [105]. McCullough's research found that positive daily experiences had the greatest impact on teens' general life satisfaction [106]. Gilman indicated that Life events in the living environment significantly affect life satisfaction [107].

B - Subjective factors. It mainly focuses on personality and cognition. Huilan Xu reported that the main factors affecting the life satisfaction of the elderly are not only occupation, marital status, economic status, living conditions, sources of livelihood, family relations, self-assessment of health status, daily life ability, but also psychological factors such as inferiority, depression, loneliness and emotional stability [108]. Lohr and Essex indicated that good psychological adaptation is the premise of keeping high life satisfaction [109]. Rich and Jeffrey

examined the relationship between perfectionism and life satisfaction among adolescents in a cross-cultural study [110].

3.4. Relationship between happiness and satisfaction

If one searches “*satisfaction (满意度) and happiness (幸福感)*” in the Chinese CNKI scholar database [111], the results show totally 9 papers. Most of the limited empirical researches show high correlation between happiness and satisfaction. Moreover, the limited research shows some interesting results. For example, Zhaojian Cai's study on leisure satisfaction and subjective happiness of the elderly shows that there is an extremely significant positive correlation between leisure satisfaction and subjective happiness [112]. Mr. Zhang certifies the correlation coefficient between the two based on his data collected from the survey is 0.549 [113].

However, despite there is a general trend to consider that satisfaction and happiness are closely related, Zhang Wei and Hongjuan Li argue that both may vary remarkably. As an example, population, economic, health, family, interpersonal, and community satisfaction are significantly associated with both happiness and life satisfaction. However, gender, birth cohort, marital status, and political orientation influence on happiness and life satisfaction differently. For example, gender has a significant impact on happiness, and women's happiness is higher than men (for the same life circumstances) [77]. However, gender had no significant effect on life satisfaction. From the perspective of birth cohort, the happiness of the population born in the 1980s was significantly higher than that of other groups, and the happiness of the population born in the 1930s to 1940s was also relatively high. The happiness of the population born in the 1960s was the lowest, and the happiness of the population born in the 1950s was lower than that of the population born in the 1970s. Therefore, there was an obvious U-shaped relationship between birth cohort and happiness. In terms of life satisfaction, people born in the 1930s and 1940s have the highest life satisfaction, followed by those born in the 1980s, while the lowest is for those born in the 1960s. However, people born in the 1950s have higher life satisfaction than those born in the 1970s. Although there is still a U-shaped relationship between birth cohort and life satisfaction, there are some differences between the two u-shaped ones. From the perspective of marital status, marital status is significantly related to subjective well-being, but not significantly related to life satisfaction. Similarly, there was a significant relationship between political status and happiness, but no significant relationship between political status and life satisfaction. So their conclusion is that happiness and life satisfaction are similar but still different [114].

3.5. Happiness and satisfaction foreign experts in China

To the best of my knowledge, there are no research papers studying the happiness and satisfaction of foreign professionals in any country, not only in China. Most of the literature available consists on studies about foreign tourists, management of the foreigners in some cities, and stories/experiences of specific foreigners. This indicates that the topic of this thesis is very innovative and, as explained in Chapter 1, it is very necessary.

The overall literature discussed in sections 3.1, 3.2, 3.3 and 3.4 has been might be applicable in certain degree to foreigners living in China. However, it should be emphasized that happiness and satisfaction are strongly related to the fulfillment of needs [115], and that the needs of foreign scientists living in China may be different to those of nationals and non-expert foreigners living in any country. According to the Maslow Pyramid (see Figure 6), the main

needs of any human being can be divided in physiological needs, safety needs, love and belongings needs, esteem needs, and self-actualization needs. Maslow's theory [115] indicates that these needs are not fulfilled all at the same time, but strictly in the order mentioned.

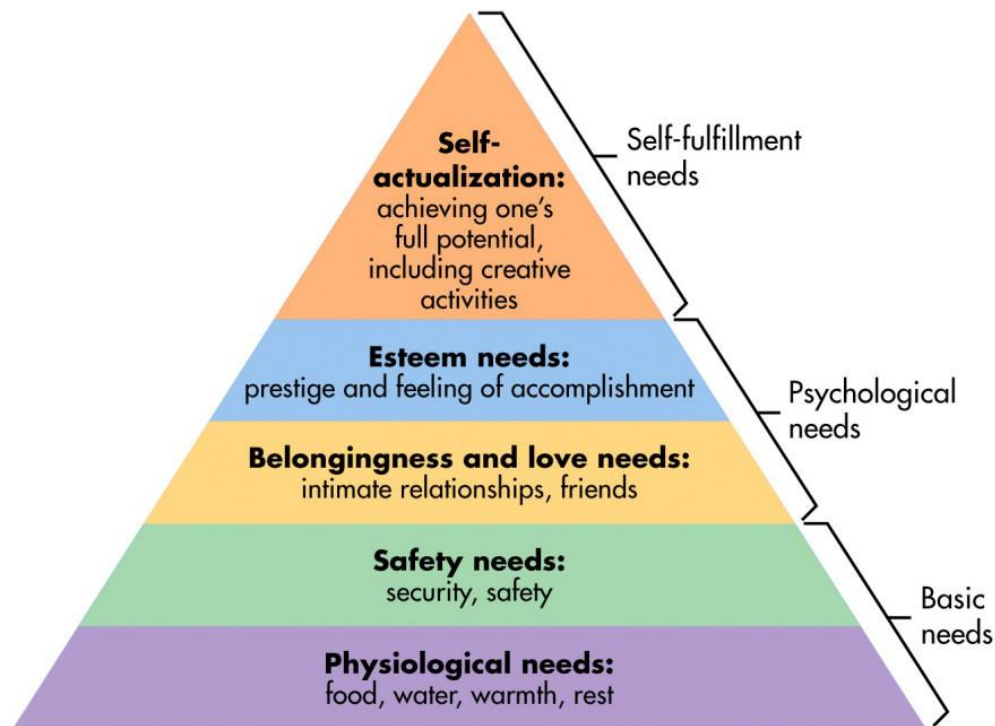


Figure 6: The Maslow Pyramid of human needs. The theory corresponds to that presented in reference [115]. The image is extracted from reference [116]

According to this theory, here I speculate that:

- In developed countries and most developing countries, most people who lives in the country where they were born and grew (i.e., nationals) have most physiological, safety and belongingness needs fulfilled though the support of their family and friends, as well as by their knowledge of the society, country resources and opportunities. This is even more true in China, in which family and connections are extremely important, in contrast with what happens in other western countries where independency and privacy is highly valued. Hence, basic daily routines like going to a shop to buy milk would not produce happiness or satisfaction, and nationals would concentrate on fulfilling the needs on the highest levels (esteem needs and self-actualization needs). However, one foreigner has zero or much lower support from family and friends, as well as language and cultural barriers (these are specially accentuated in China). Hence, ensuring a comfortable and safe accommodation and achieving small daily tasks (such as understanding a seller in a shop) may generate happiness and satisfaction to foreigners. Hence, the life of nationals is in general easier than that of foreigners, but they need to fulfill higher-level needs to become happier/satisfied.
- Experts (both nationals and foreigners) are competitive persons who aim to be leaders in their field, and hence they aim to fulfill the higher level needs of the Maslow Pyramid, i.e., esteem needs and self-actualization. At the same time, happiness and satisfaction are

relative measures that depend on the context and other persons surrounding us. According to a study from Ada Ferrer-i-Carbonell [117], some people is happier with the same or even less conditions as far as those surrounding them are in a worse condition. Moreover, China is a country with a huge population and reaching the highest levels of most disciplines are extremely competitive. Hence, fulfilling the highest levels of the Maslow Pyramid while living in China can be very challenging.

Therefore, in general, foreign experts working in China are in one of the worse scenarios possible when trying to fulfill all the needs within the Maslow Pyramid, as (unlike nationals) they start with the whole pyramid empty (i.e., have less help to fulfill basic needs compared to nationals), and they are ambitious to fulfill the entire pyramid (non-experts may not be so ambitious or accept that they are not qualified to gain recognition from others). Furthermore, China is a specially complex environment for foreigners (difficult language, cultural barriers, some Chinese nationals still reluctant to have close interaction with them due to the “humiliation century”). At the same time, it should be highlighted that many foreign experts working in China are seniors at the end of their career, and hence may have already fulfilled the entire Maslow Pyramid even before arriving to China, and when they work in China they do it under extremely good conditions. Hence, the happiness and satisfaction of foreign experts working in China may also be conditioned by the stage of at which they are in their career.

Chapter 4: Research Design

In this chapter I describe the methodology that I used to evaluate degree of happiness and satisfaction of foreign experts working and living in China. I present the main influencing factors that I want to investigate, and the questionnaire that I design in order to get valuable information. I also describe the sample used for this study, and the communication channels that I employed to grasp the information.

4.1. Definition

Foreign experts working in China are defined as persons who work in China using skills and knowledge that require high level of education and intensive training. The Chinese government has been specially active on attracting such group of non-Chinese workers to its universities, research institutes, and companies, so that they can import and produce useful knowledge for the development of the country. To do so, the Chinese government has issued working permits and certificates for foreign experts (see Figure 7) that give them special benefits, such as access to VIP sections in the hospital, right to register children in better schools, and better financial conditions in banks that cooperate with the government (depending on the province) [118].



Figure 7: (Left) Image of Working Permit as Foreign Expert, which is issued by the State Administration of Foreign Experts Affairs of China. (Right) Foreign expert certificate issued by the National government of China. Multiple persons who have this document are behind Chinese scientists in terms of scientific production. Source: provided by one of the foreign experts interviewed in this study.

The main requirements imposed by the Chinese government to be able to apply for the “foreign expert” certificate are: i) having a Bachelor degree, and ii) having 5 years of experience in the relevant field (this criterion is relaxed to 2 years for English teachers [119]. In this thesis, I have stuck to this definition.

It is worth noting that many English words in China are used to refer to things that are different than in western countries, which often generates confusion and gives foreigners the impression that Chinese people exaggerates a lot. For example, the words “talents” or “experts” in western countries are often reserved to a very selected group of persons with special skills, but in China this word is often used to refer to a much wider percentage of people who, despite being skilled, they are not as unique as the word “talents” or “experts” mean in western countries. Many Chinese people and also the government do this to show respect to the foreigners. In China, the word often used to refer to foreigners with truly unique skills is 高端外国专家, which could be translated a “high-end foreign expert”.

Both the happiness and satisfaction can be classified in ten grades, quantified with numbers from 0 (minimum) to 10 (maximum). For the satisfaction, I tested both the life satisfaction and work satisfaction. Influencing factors can be classified depending on multiple different criteria. A type of classification often used is based on subjective factors and objective factors; classification by macroscopic, mesoscopic and microscopic factors is also often employed.

4.2. Theoretical model and operational model

Based on the literature research presented in Chapter 3, I conclude that (from a theoretical point of view) the most relevant factors influencing the degree of happiness and satisfaction of foreign experts working and living in China are:

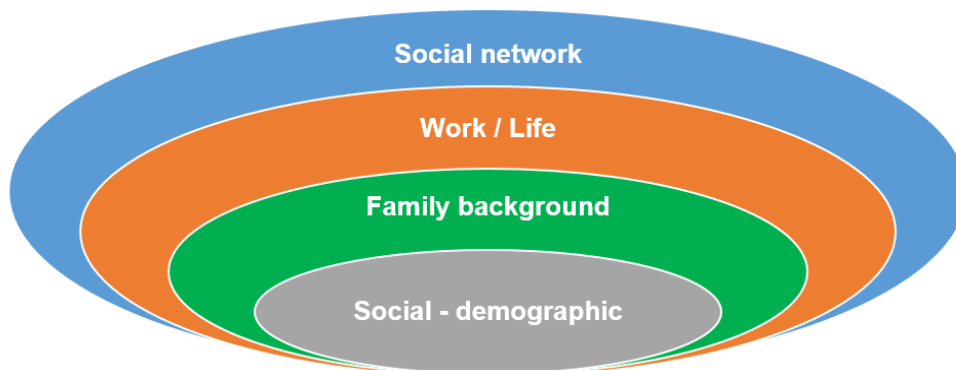


Figure 8: Theoretical model. Schematic summarizing the dimensions of the different factors influencing the happiness and satisfaction of foreign scientists in China.

While the categories presented in Figure 8 (also discussed in Chapter 3) have been employed often in the literature, in this thesis I separate economic factors because they should be enough important to represent an independent category. This method is supported by the World Happiness Report in reference [56]; as mentioned in Chapter 3, this report indicated that richer individuals and countries tend to be happier, although do not follow a mathematical trend. This is also argued in the happiness paradox, as mentioned in reference [66]. For these reasons, I think the economic factors should be analyzed as a whole. Therefore, the definitive distribution of influencing factors analyzed in this thesis (also called operational model) will follow the schematic presented in Figure 9.

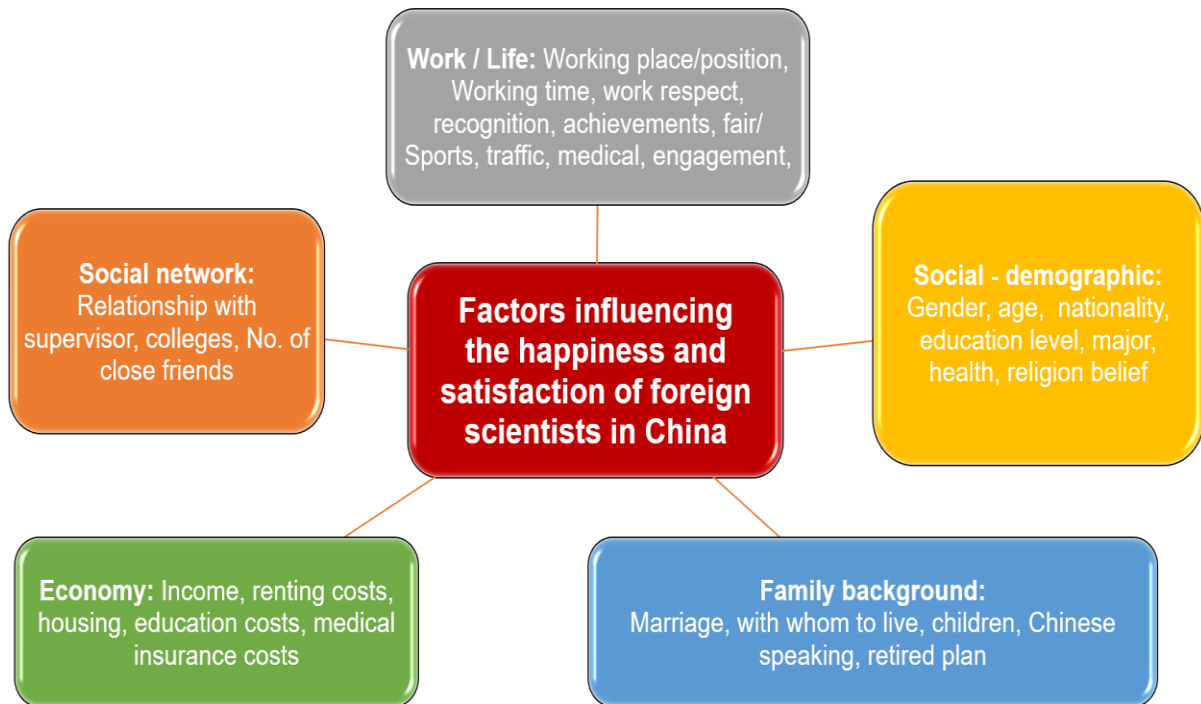


Figure 9: Operational model. Schematic summarizing the factors influencing the happiness and satisfaction of foreign experts working in China

4.3 - Objective

The main objective of my PhD thesis is to understand how is the status of the happiness and satisfaction of foreign experts working in the People's Republic of China. A very important aim of this thesis is to determine strategies on how to improve them, so that this investigation and thesis can be useful for Chinese institutions and for the development of the country. This main objective can be divided into five minor goals, which are:

- To analyze the situation of foreign experts' happiness and life/work satisfaction in China and its influencing factors through empirical research.
- To compare the mutual and different influences of variables on life satisfaction, work satisfaction, and happiness.
- To investigate the functional relationship among variables, including social demographics, family factors, economic factors, work feeling, life style and social supports factors.
- Analyze and verify the directions and sizes of different influencing factors. The conclusions extracted will be compared with the existing literature in the field, and the uniqueness of this collective will be described.
- Analyze the scientific production of foreign experts working in China, as well as how this affects to their satisfaction and happiness.

In order to achieve these goals, I have designed a survey that covers all the aforementioned aspects, and I have used SPSS software (version 23.0) to conduct descriptive analysis and bivariate analysis of the answers. We have also conducted multi-variate analyses in order to deeper quantify the correlation under variables control.

4.4. Methodology

The target sample size should be around 200 non-Chinese foreign experts working in China. I try to maintain a balance on the gender, age, countries of precedence and on. I also collect information about non-Chinese individuals working in China in non-scientific jobs. The research mainly uses quantitative and qualitative research methods. First, I use descriptive statistical analysis to present the basic status. Secondly, I use the interaction table and variance analysis to test the relationship between the two variables. Third, I include variables with significant results as well as the interested variables of the bivariate test in the binary logistic regression analysis model. Under the control of variables, multivariate statistical analysis are carried out to investigate the specific effect and mechanism of each variable on satisfaction:

$$\text{Logit}(Y) = \sum B_i \cdot X_i + e \quad (\text{Equation 1})$$

Where, Y is the dependent variable, and is a binary variable. $Y=1$ indicates happy/satisfied, while $Y=0$ indicates unhappy/dissatisfied. B_i is the coefficient of the independent variable. The positive and negative coefficients mean different things. If the coefficient is positive, it means that people with this characteristic tend to have a better and more positive evaluation of satisfaction/happiness. In other words, this factor has a positive impact compared with the reference group. If the coefficient is negative, it means that there is a worse evaluation, or it has a negative impact. X_i is the independent variable and the influencing factor investigated in this study. There are dummy variables, class variables and distance variables. Finally, e is a random error term beyond the control of this model.

4.5. Hypothesis

According to former studies [103, 114], satisfaction and happiness are closely related to social demographic factors, work status, life status, and social interaction status. The specific assumptions that I made in this study are as follows:

- Hypothesis 1: Gender influences happiness and satisfaction.
- Hypothesis 2: Education level influences happiness and satisfaction.
- Hypothesis 3: Living with a partner influences happiness and satisfaction.
- Hypothesis 4: Having children influences happiness and satisfaction.
- Hypothesis 5: The higher the salary, the higher level of the happiness and satisfaction.
- Hypothesis 6: Discrimination compared with Chinese influence happiness and satisfaction.
- Hypothesis 7: Interaction with boss, co-workers, affects happiness and satisfaction.
- Hypothesis 8: The ability to use smartphone apps influences happiness and satisfaction.
- Hypothesis 9: The better the medical insurance, the happier and satisfied one will be.
- Hypothesis 10: Social interaction with friends affects happiness and satisfaction.
- Hypothesis 11: Progress at work relative to workmates affects happiness and satisfaction.

4.6. Questionnaire and variables set

The final version of the questionnaire is shown in Annex I. It contains 4 parts, the first one with 14 Professional work information questions, the second one with 6 economic questions, the third one with 13 daily life and social aspect questions and the fourth one with 12 personal questions. The questions cover all the influencing factors that I discussed in Figure 9 and hypothesis 1-6. The type of questions is diverse, i.e., multiple choice, input text, etcetera. I take advantage of the powerful social network in China to distribute the questionnaire designed

using a website called Wenjuanxing (问卷星), which can be very easily distributed via WeChat. WeChat is a Chinese social network with more than 1,203 millions of users by the first quarter of 2020 [120]. It is similar to the American Whatsapp, but it includes many other mini-programs to book flights, trains, taxis, order food, charge the phone, send tips to friends and, more importantly for our project, make surveys. It is important to mention that Facebook and Whatsapp are blocked in China. Hence, the use of WeChat to distribute the questionnaire (designed with Wenjuanxing) is essential. Some screenshots of the layout of the questionnaire, as seen in WeChat, are shown in Figure 10.

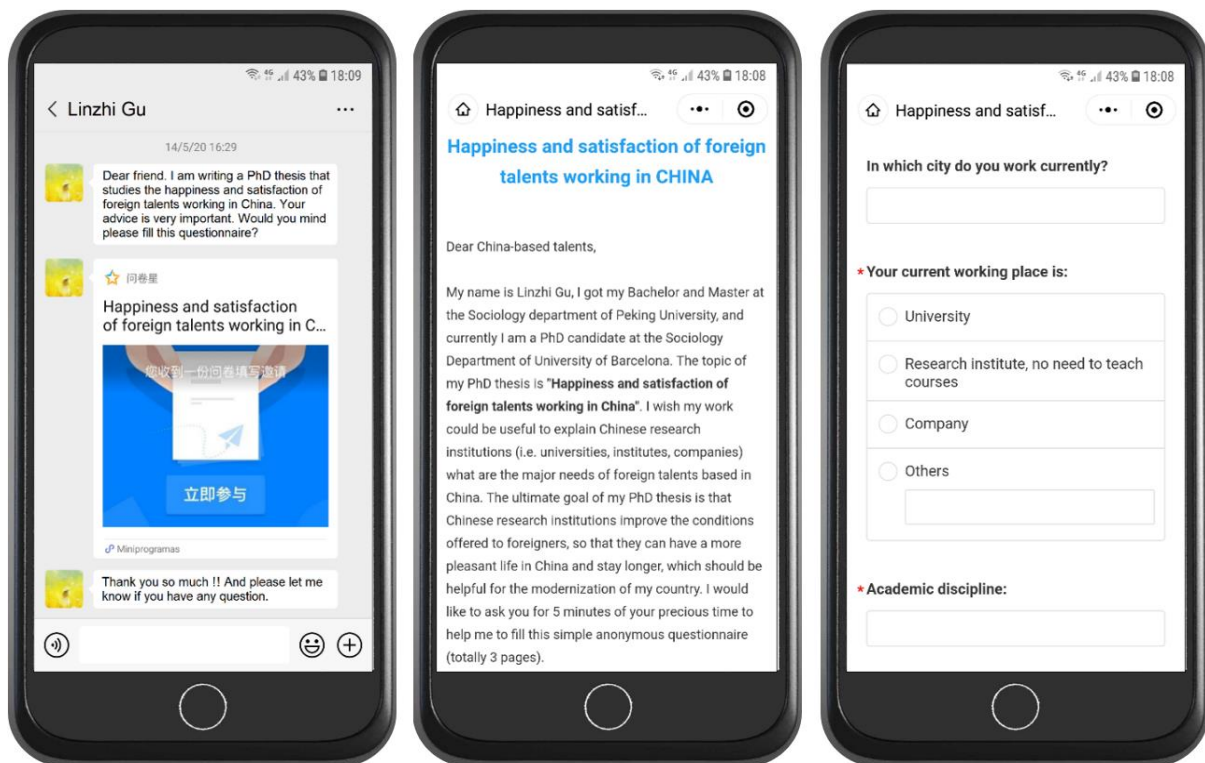


Figure 10: Appearance of the Questionnaire that I designed in the Chinese social network WeChat. (Left) Screenshot of the invitation to participate in the survey, which was sent to each foreign expert individually. (Center) Screenshot of a part of the presentation of the questionnaire. (Right) Screenshot of some of the questions as seen by the foreign experts.

The questionnaire has been spread among people in my network. When I was Bachelor and Master student from Peking University, which is located in the district of Haidian of Beijing. In this area there are many other colleges from Tsinghua University and Chinese Academy of Sciences, as well as students and scientific associations, such as the Network of Researchers China-Spain (RICE, from its acronym in Spanish [121], among others), which are very active on organizing events. During that time I participated in multiple activities, such as seminars in rooms from any of their colleges, discussion meetings [122] and even scientific discussions in cafeterias, which allowed me to keep the contact with some of their members who were still in China. Through them, I could spread my questionnaire in WeChat groups to which only foreign experts (i.e., people with Bachelor degree and 5 years of experience) have access. In total, I sent out 220 invitations and got 200 responses (i.e. 90.9%), which indicates the high interest of the community on this investigation and their willingness to collaborate. Based on the questionnaire and the answers received, I distributed the samples are as follows:

Table 4: Distribution of the samples (N=200)

Variable name	Category	Frequency	Percentage
Gender	Female	60	30
	Male	140	70
Age	Less than 35	56	28
	36-40	88	44
	41-50	28	14
	Older than 51	24	12
Countries	Australia	4	2
	British	8	4
	Canadian	8	4
	Denmark	4	2
	Fuji islander	4	2
	Filipino	4	2
	Finland	4	2
	Holland	8	4
	Indian	8	4
	Israeli	20	10
	Italian	12	6
	Pakistan	8	4
	Polish	4	2
	South Korea	8	4
	Spain	86	43
USA	6	3	
Academic discipline	Biology and related	27	18
	Agricultural sciences	3	2
	Aerospace engineering	3	2
	Archaeology/ European medieval history	6	4
	Design/ communication	6	4
	English/ language/ linguistics/ math	18	12
	Agricultural sciences	3	2
	Electronics and related	15	10
	Chemistry	9	6
	Physics	6	4
	Psychology	6	4
	Politics / economics/ sociology	9	6
	Education	6	4
	Material	9	6
	Engineering and related	18	8
	Confidential	3	2
	N/a	3	2
Working city	Shantou	56	28
	Beijing	36	18
	Shanghai	16	8
	Suzhou	58	29
	Shenzhen	8	4

	Nantong	8	4
	Tianjin	4	2
	Guangzhou	4	2
	Kaifeng	4	2
	Others	2	1
Job title	Professor / chairman/ dean	40	20
	Associate professor/ PI	62	31
	Post doctor	24	12
	Teacher/ expert/ lecture	58	29
	Missing	16	8

In general, as shown above, among all our participants, males are much more than the females, foreign experts that aged around 36-40 are the most, followed by those are below 35 years old. They come from more than 16 countries, with the most come from Spain and Israel, and they are from both social science and science majors, and distributed in both north and south cities, with most ratio work with associate professor and relevant title. It is worth noting that 70% persons work in universities, and 30% work in companies or other non-academic institutions, although this is not employed as variable in this study.

Taking into account these factors, it is better not to measure simply satisfaction. As it can be seen below, I include a more detailed analysis of satisfaction, including whole life satisfaction and work satisfaction. So, I set up three dependent variables (see Table 5). I recode the data for deeper descriptive analysis, bivariate analysis and the multi-variate analysis.

Table 5: Dependent variables set

Happiness	General happiness- <i>“Rate your level of happiness in China, where “1” means completely unhappy, “10” means completely happy. Please indicate your number”</i> , placed in question 19. This index is measured in a scale from 1 to 10. The values from 1-5 are recoded to “0” (which means not happy), and the values from 6-10 are recoded to “1” (which means happy). The detailed distribution is described in 5.1.1.
Life satisfaction	Whole life satisfaction- <i>“How satisfied are you with your life as a whole in China? Where 1 means completely dissatisfied and 10 means completely satisfied, please indicate your number”</i> , placed in question 18. This index is measured in a scale from 1 to 10. The values from 1-5 are recoded to “0” (which means not satisfied in life), that the values from 6-10 are recoded to “1” (which means satisfied in life). The detailed distribution is described in 5.1.2.
Work satisfaction	Overall satisfaction of work- <i>“In general, how satisfied are you with your work in China? Where 1 means completely dissatisfied and 10 means completely satisfied please indicate your number”</i> , placed in question 15. This index is measured in a scale from 1 to 10. The values from 1-5 are recoded to “0” (which means not satisfied in work), and the values 6-10 are recoded to “1” (which means satisfied in work). The detailed distribution is described in 5.1.3.

In the next Chapter, the independent variables used, the type of input given by the user, and the analysis made after collecting the data (e.g., grouping in nominal or binary values) is described with a very high degree of details.

Chapter 5: Results and discussion

In this section, based on the previous data cleaning and data ranking, we will analyze the data by using descriptive statistics, bi – variate analysis and logit regression analysis, which are from one variable, two variables to multi-variables, controlling variables. We demonstrate the results by tables and charts together to better see a detailed result with a general distribution and developing trend, which make it easier to compare different variables. Compared with hypothesis, I have some interesting discoveries based on statistics, followed by an in-depth interview.

5.1 – Descriptive statistics

Below, I have used descriptive statistics to understand the general status of all the dependent variables and independent variables.

Table 6: Statistics of dependent variables for N=200

		Happiness	Life satisfaction	Work satisfaction
N	Valid	200	200	200
	Missing	0	0	0
Mean		7.22	7.40	7.32
Std. Error of Mean		0.308	0.256	0.304
Median		8.00	8.00	8.00
Mode		8	7	8
Std. Deviation		2.179	1.807	2.152
Skewness		-0.874	-1.236	-1.394
Std. Error of Skewness		0.337	0.337	0.337
Kurtosis		-0.298	2.489	1.667
Std. Error of Kurtosis		0.662	0.662	0.662
Range		9	9	9
Minimum		1	1	1
Maximum		10	10	10

5.1.1 – Dependent variables – Happiness

I have obtained this information from the questionnaire, section 2 question 19, which reads as: “Rate your level of happiness in China, where “1” means completely unhappy, “10” means completely happy”.

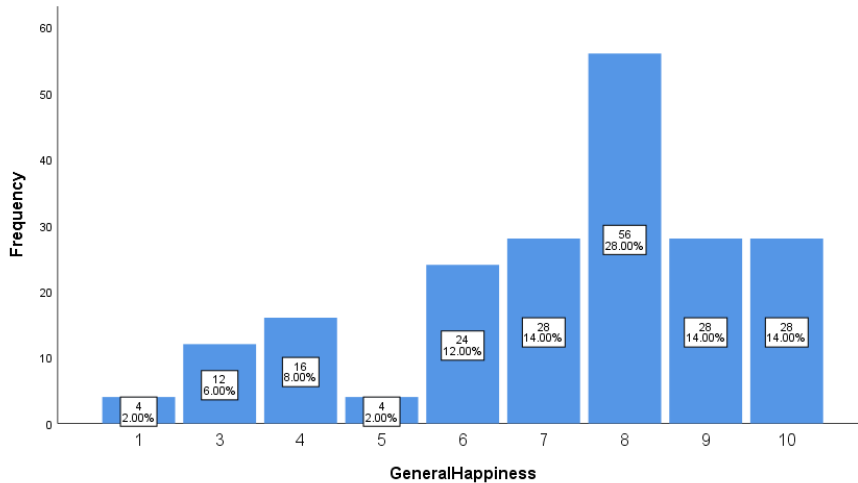


Figure 11: Frequency of happiness

The highest percentage of foreign experts (around 28%) rate their level of happiness as 8, each has around 14% that rates their level of happiness as 7, 9, and 10. Meanwhile, 18% foreign experts raise a low happiness (from 1 to 5) level which is considered to be unhappy working in China compared to the 14% of foreign experts who rate it with 10 points, which means they are very happy working here. If taking 5 as the dividing line, I recode the value of “1-5” to “0” which means “unhappy”, the ratio of happy vs. unhappy is 4:1, which means that in five persons, only one is unhappy and four are happy working in China. The results show that 82% of the experts are generally happy in China. Only 18% experts rate their level of happiness that is less than five which means they are not so happy. The average level of happiness in China is 7.22, the lowest is 1, and the highest is 10, which means that though there are space to improve a lot, foreign experts are generally happy working here. The whole distribution is displayed in Figure 11.

5.1.2 – Dependent variables – Whole life satisfaction

I have obtained this information from the questionnaire, section 2 question 18, which reads as: “How satisfied are you with your life as a whole in China?”

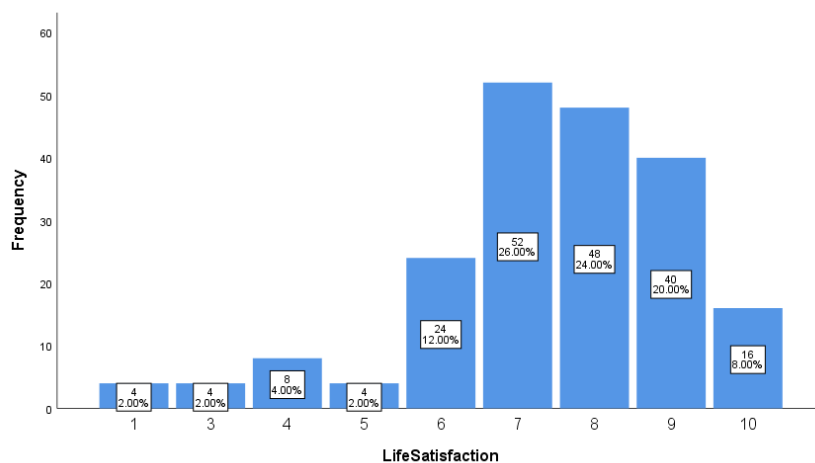


Figure 12: Frequency of whole life satisfaction

The highest percentage foreign experts (around 26%) rate 7 as their level of whole life satisfaction in China, 24% rate 8, 20% rate 9, there are 8% who rate 10 which means a completely satisfaction with their life as a whole here. Generally, 90% experts rate a level of 6-10 which means that they are relatively / very happy with their life here in China. Only ten percent rate it as less than five, which means they are not so satisfied here. The average level of satisfaction here is 7.4. The lowest is 1, the highest is 10. The whole distribution is displayed in Figure 12, and it shows a distribution.

5.1.3 – Dependent variables – Work satisfaction

I have obtained this information from our questionnaire, section 1 question 15, which reads as: “In general, how satisfied you are with your work in China?” This question focuses on the work division which can be differently from that of general life, including the satisfaction towards the boss, the colleagues, the working environment, the working method, working output and on.

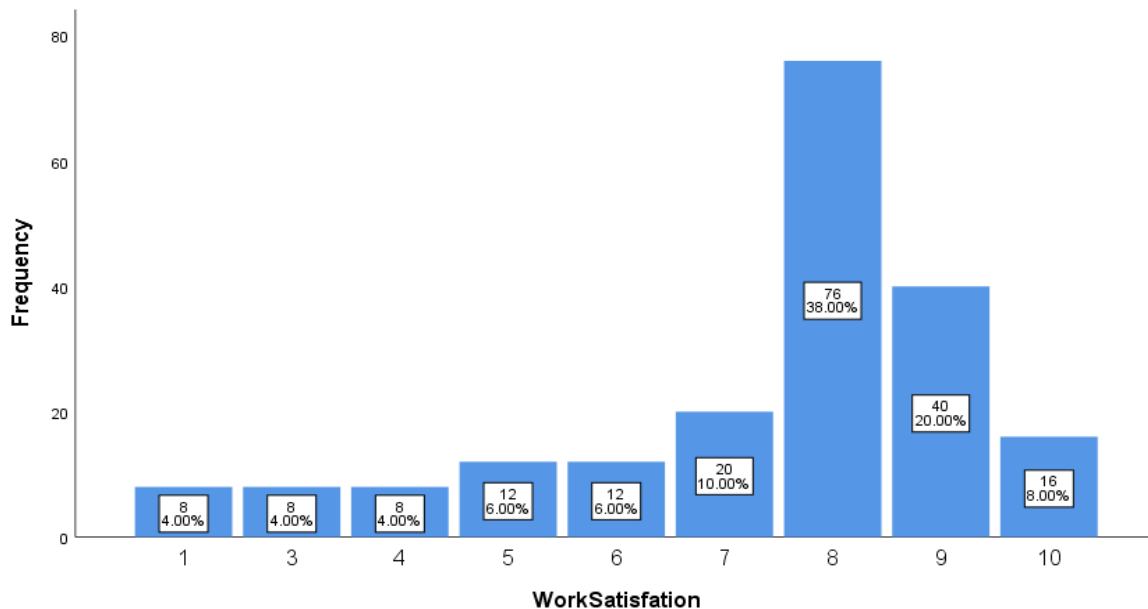


Figure 13: Frequency of work satisfaction

Considering 5 as the borderline, around 18% experts are not satisfied with their work in China (values 1-5), and 82% are satisfied with it (values 6-10). Moreover, 38% experts rate their level of work satisfaction as 8, which is a great proportional advantage than others. There are 20% experts who rate it as 9, and 8% rate it as 10, which means that several people are highly satisfied working here. At the same time, there is still space to improve for many experts.

Summary: From sub-sections 5.1.1, 5.1.2 and 5.1.3 (which analyze the dependent variables), it can be concluded that, for the group of experts working in China asked, satisfaction is slightly different from happiness at mean, mode, and general distribution. Meanwhile according to charts above, they are also sharing some common elements. For example, the Std. are different while the median, min and max are the same. Generally speaking, there are around 10-20% foreign experts who rate their level of Happiness/ Satisfaction below 5 which means that they are not happy/ satisfied, the median is 8, the mode is between 7- 8, the mean is between 7.2- 7.4, the std is around 3, which indicate a generally positive status as well as spaces to improve into a better level.

5.1.4 – Independent variables

Independent variables are very important in order to understand the different factors affecting the happiness and satisfaction of the foreign experts working in China. The around 90 variables that I have used in this investigation have been extracted from different specific questions. They could be divided into six groups including work group, life group, economic group, family background group, personal demographic group, and other groups.

5.1.4.1 Work group including working city, working place, academic discipline, job title, years have been in China, if have Chinese Boss, satisfaction with direct boss, boss contribution to development, help from Chinese colleagues/ friends, daily working hours, if feel respected in work, working in weekend or holidays, work valuable, challenges facing in work, 14 aspects, which are shown below.

* In which city do you work currently?

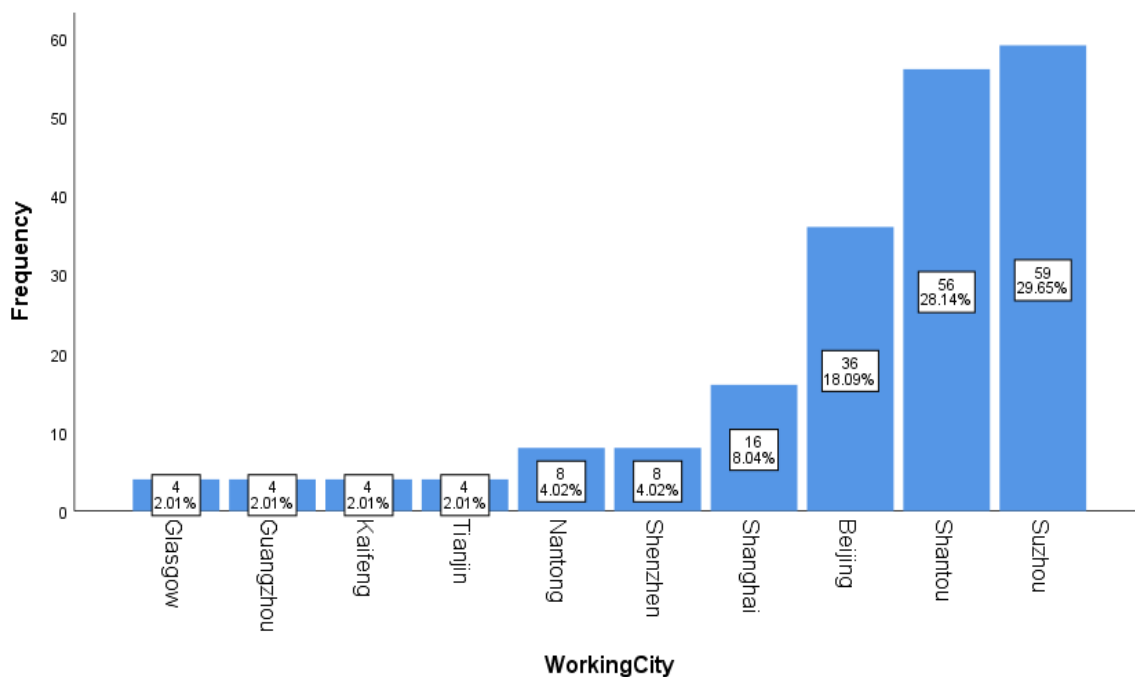


Figure 13: Frequency of work cities

The 200 samples come from ten cities, mainly from Suzhou (it is considered to be the fastest-growing city in China in 2021), Shantou, Beijing, Shanghai, Shenzhen, Hangzhou which are among some of the cities with most foreigners in China.

* Your current working place is:

70% of the surveyed experts work currently in the universities, 5% work in research institutes, and 25% are from companies. Most of foreign experts working in universities, which are three times of that in companies, few experts work in institutes comparing with others.

*** Academic discipline:**

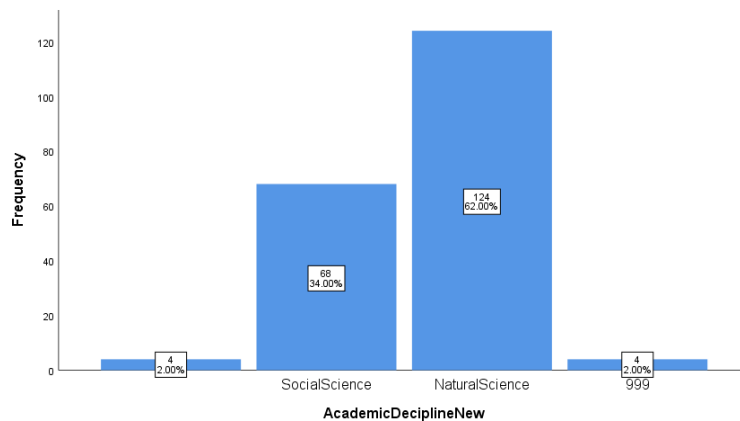


Figure 14: Frequency of academic disciplines

As foreign experts working in China come from several different academic disciplines, I classify them into two wide categories, which are natural sciences (62%) and social sciences (34%). The detailed academic disciplines can be seen below, which include biotechnology, chemistry, materials science, nano-electrical science, English / education (among others). The foreign experts working on natural sciences are two times of that from social sciences, this is in line with Chinese major policies as in its special developing stage, and the country has been paying much more attention on the natural science for many years since its 50s of last century. Among all the disciplines, the bioscience raises highest ratio in natural science, and the English, language and linguistics raise the top one in social science. The answers without label mean that the person who filled the questionnaire did not select any answer (for example, in Figure 14 that is 4 persons). Similarly, the answers with label 999 mean that the persons who filled the questionnaire wrote an inaccurate or confusing answer that cannot be considered for the survey, such as N/A.

*** Job title:**

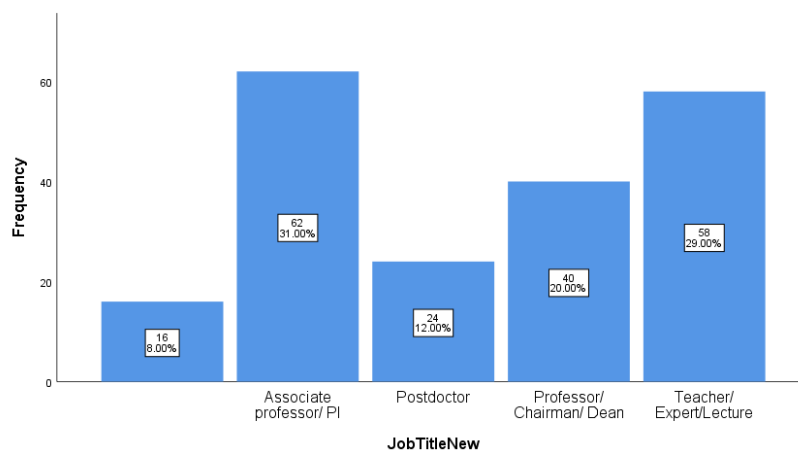


Figure 15: Frequency of job titles

I have classified all the different job titles into four levels of categories. The first level is professor / head / dean/ chairman, who are established persons with wide experience in their field. Despite these individuals suffer from daily pressure, they have learned to deal with it, and they have massive support from their teams. The second level is associate professor, assistant professor, principal investigator and managers, who are fighting for getting established and have a higher degree pressure; however, they have a stable job and do not need to worry too much about economic status. The third level are post doctors who are working with the highest-level pressure because they know they are working under a temporary position. The fourth level is teacher, expert, lecturer who do not expect to get established, and they know they are here temporarily. My study indicates that 20% of foreign experts work at high-rank positions with least pressure, 31% of them are with middle-rank position and high pressure, and 12% are post doctors who are fighting to get established with highest pressure. Another 29% are teachers who have some degree of stress at work, but not high pressure inherent of research positions (such as get research funding and high impact factor publications).

*** How many years have you been living in China?**

The data obtained from this question are presented in the form of a table, as this allows us to indicate some additional information about variability.

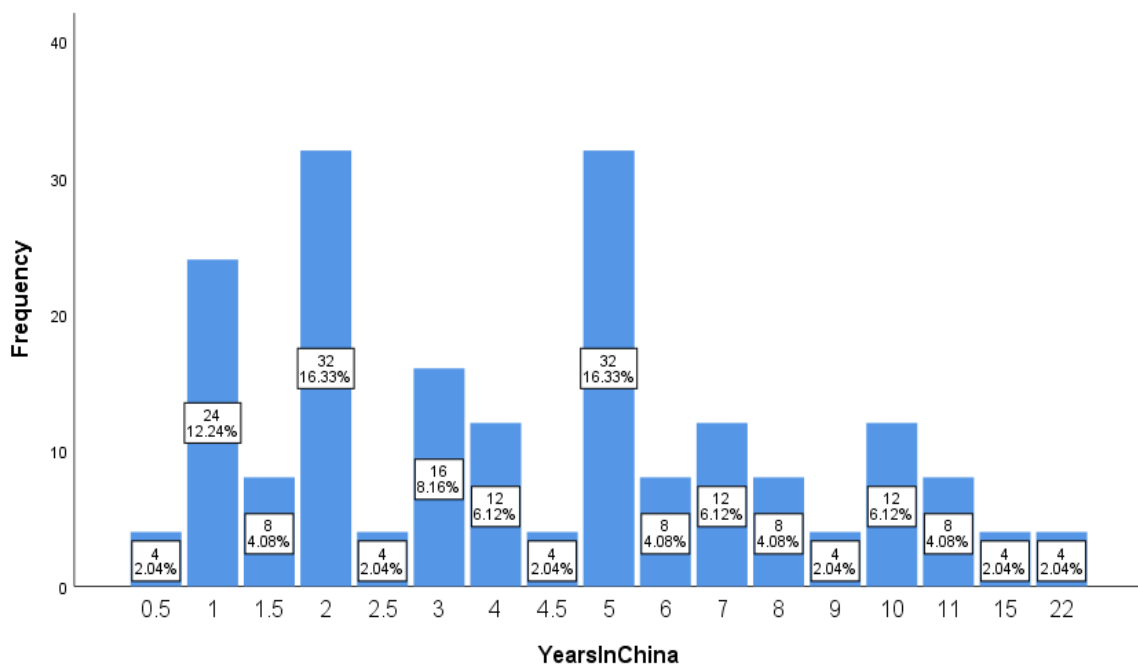


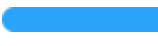

Figure 16: Frequency of years have been working here in China

The average staying time for foreigners is around five (4.97) years, the most repeated time working here are “2” and “5” years, each of them corresponds to 16.08% of asked persons. The median years of working in China is around 4 years, the std. is more than 4 which indicates a high difference among individuals, the shortest living time is half year, there are 6% who has been working in China for 10 years, and few work for more than 20 years. They seem be people who are living like a local resident, working while living here. The detailed distribution could be seen in above chart. The data obtained from this question are presented in the Table 7.

Table 7 Statistics of six Interval Scale



		Years In China	Daily Work Hours	Number of Chinese Friends	Years more Planning in China	Age	Children
N	Valid	196	199	196	191	194	188
	Missing	4	1	4	9	6	12
Mean		4.97	8.817	6.42	6.47	40.86	.53
Std. Error Mean		.293	.1595	.648	1.030	.706	.065
Median		4.00	9.000	3.00	3.00	39.00	.00
Mode		2 ^a	8.0	2	2	40	0
Std. Deviation		4.107	2.2502	9.068	14.236	9.835	.898
Variance		16.866	5.063	82.235	202.672	96.736	.806
Skewness		1.829	-.528	3.062	5.835	1.879	1.963
Std. Error/Skewness		.174	.172	.174	.176	.175	.177
Kurtosis		4.554	.713	10.365	35.755	3.925	3.856
Std. Error Kurtosis		.346	.343	.346	.350	.347	.353
Minimum		1	2.0	0	0	29	0
Maximum		22	13.5	50	99	78	4
Sum		974	1754.5	1259	1236	7926	100
a. Multiple modes exist. The smallest value is shown							

*** Is your direct boss from China?**

Items	Sum	Percentages
Yes	100	 50%
No, please specify his/her country:	100	 50%
Valid	200	




Half of the experts have Chinese bosses; half experts have foreign bosses. For the foreign bosses, it is very interesting to see the diversity of origin countries filled, including that from R.O. Korea, Israel, Denmark, Singapore, Spain, Finland, United States, and on, which also represents a diversity.

*** Are you satisfied with your direct boss generally?**

Items	Total	Percentage
Yes	152	 76%
No (please specify the reason)	48	 24%
Valid	200	

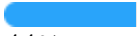



A quarter of foreign experts are not satisfied with their direct boss. Three quarters are satisfied with the boss. The reasons as indicated include that “no good communication, no contact about difficulty to obtain information, boss lies, lack of commitment and responsibility, extra working hours, lab meeting at night, bad organization, not engaged, wish to teach while do other subjects, he doesn’t help at all, meetings are like consultant evaluation, rather than a collaborative work, professional development and training opportunities are not given at all, I am not allowed to attend conferences.”

*** Does your boss contribute to your professional development?**

Items	Total	Percentage
Yes	122	 61%
No	58	 29%
Others	20	 10%
Valid	200	

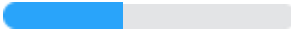
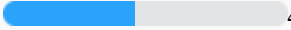


61% experts think the bosses contribute to their professional development. 29% experts think that the bosses don’t contribute to the professional development.

*** Do you have close Chinese colleagues and/or collaborators who help you in your work?**

Items	Total	Percentage
Yes, my Chinese collaborators help me a lot	88	 44%
Yes, I feel collaborating with Chinese researchers is very difficult but I got a bit of support	64	 32 %
No, I feel collaborating with Chinese researchers is very difficult	24	 12%
Others	24	 12%
Valid	200	





About 44% of the experts agree that the Chinese collaborators help a lot, 32% feel difficulty in collaborating with Chinese colleagues/ researchers. Regarding the help from Chinese colleagues, it is very interesting to see the comment that “with people at same level or below they are very helpful, higher ups are very difficult or impossible”, “I work alone”, “I collaborate with one colleague”, which indicate generally not perfect a collaboration status of foreigners with Chinese workers.

*** Do you feel respected in your work?**

Items	Total	Percentage
Very respected	84	 42%
Respected a bit	88	 44%
Neutral	16	 8%
Not respected	12	 6%
Valid	200	

86% experts feel respected working in China, among which 44% feel respected a bit and 42% feel very respected.

*** Do you work after hours or in the weekend?**

Items	Total	Percentage
Never	6	 3%
Rarely	30	 15%
Sometimes	76	 38 %
Often	88	 44%
Valid	200	

44% of the experts often work after hours/ in the weekend, around 38% sometimes work after hours/ in the weekend. It is because most of the experts come here fighting for a good career, so they generally work a lot to survive in Chinese working environments. We believe in China, it is not strange to see people to work overtime before you become bosses, and it is famous to say where work needs us, where we are.

*** On average, how many real hours do you work every day?**

In China, it is very usual to see people work after hours, as we encouraged people to work hard and it is very usual to say, where there is a need from Work, where you will be in need. While we are told that in most foreign countries, it is usual to leave the work in time, which means a standard working time of 8 hours, and no work during weekend. If a foreigner has been adapted to a foreign working time, what will be their working hours in China? According to the data collected, foreign experts working in China work averagely around 8.817 hours every day which is higher than the required standard 8 working hours. However, the standard deviation is 2.2502, which means working hours vary greatly between individuals. There are workers who work remarkably more/less than expected. Nevertheless, most experts work 8 hours per day. The shortest daily working time is 2 hours and the longest is 13.5 hours. One person indicated that he/she works 20 hours every day, which is not possible and I consider to be a typo mistake; for this reason, Table 7 and Figure 17 considered 199 results, not 200. In this way, the average and deviation of the values given are correct (i.e., not distorted). The data obtained from this question are presented in the Table 7. 13.5 hours means is a long working time which means you come to work early morning and go back home in late night.

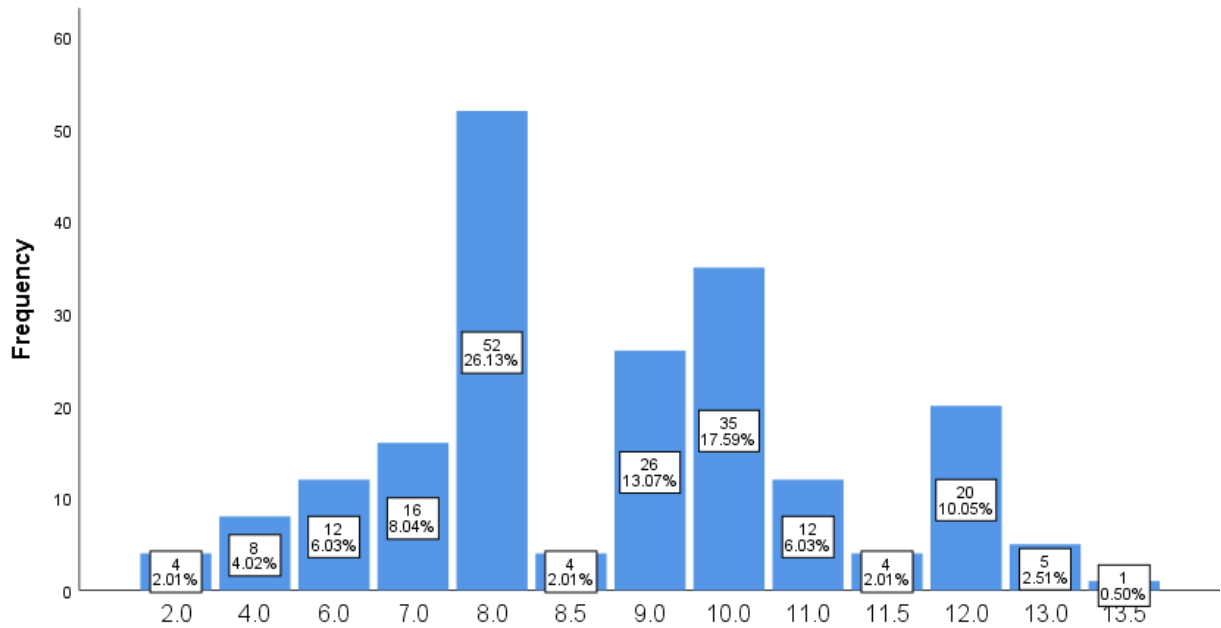


Figure 17: Frequency of average daily working hours everyday

*** How do you rate the amount of holidays you have per year?**

Items	Total	Percentage
I have a lot of holidays	76	38%
I have very few holidays	84	42%
Others	40	20%
Valid	200	

42% of the experts think that they have very few holidays as they work a lot including the weekend and off hours, while 38% think they have a lot of holidays compared to others.

*** Do you feel the work that you produce is valuable?**

Items	Total	Percentage
Yes	184	92%
No	8	4%
Others	8	4%
Valid	200	

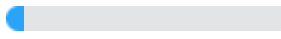
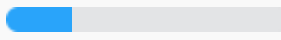

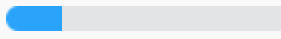
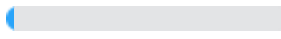
Almost all the experts no doubt that the work they produce is valuable.

Summary: Among all foreign experts working in China, 61.88 % work in well-developed cities like Beijing, Shanghai, Guangzhou, Shenzhen, Suzhou, while the rest (38.12 %) work in less-developed or developing cities (such as Shantou), which are attractive due to the lower

competitiveness. Foreign experts working in the field of natural sciences represent ~66% of the total, while those working in social sciences represent ~33% (a factor 2 to 1). The most solicited majors among natural sciences are: nanoscience, chemistry, and material science. Most foreign experts work as associate professors or principal investigators (PI), and remark that they are exposed to high pressure in their work to achieve difficult milestones. Among all foreign experts consulted, the most repeated working times in China are 2 year (16.33 %) and 5 years (16.33 %), while there is also a significant group that just arrived (2.04 % - 14.28 %) and that are living in China for more than 15 years (4.08 %). The average stay in China is 4.88 years, which is a very interesting data. In the survey, exactly half of the foreign experts have a direct foreign boss and the other half have direct Chinese boss. Among the total, 25% of foreign experts are not satisfied with their boss, and 60% think that their boss contributes to their professional development. Moreover, 44% think they get a lot of help from other Chinese colleagues. More than the half (~52%) of foreign experts admit to work after hours or in the weekend; while the most repeated working hours per day is 8 (26.13%), there are significant peaks at 10, 9 and 12, with percentages of 17.59%, 13.07% and 10.05% respectively.

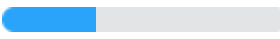

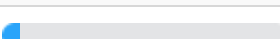
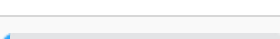
5.1.4.2 Economic group, including monthly salary, payment status of living place, the payment if they pay, the payment/ quality status of medical insurance, if save money and thinking of retired plan, in total 7 questions.

*** What is roughly your monthly salary (after tax, in CNY)?**

Items	Total	Percentage
Below 10,000	12	 6 %
10,000 – 20,000	52	 26%
20,000 – 50,000	100	 50%
50,000 – 100,000	32	 16%
More than 100,000	4	 2%
Valid	200	

Half of the experts (50%) get a monthly salary between 20,000-50,000, 16% get a salary around 50,000 -100,000, 26% get that between 10,000-20,000, and there are persons who get monthly payment more than 100,000, which means that 70% experts are very well-paid working in China. Meanwhile, 32% get a monthly salary below 20,000, among which 6% are paid below 10,000 by month.

*** How much do you pay for your living place?**

Items	Total	Percentage
I pay a monthly rent (fill in the amount in RMB)	76	 38%
I get free accommodation from my employer	92	 46%
I purchased a house	20	 10%
Others, please specify	12	 6%
Valid	200	

Almost half of the foreign experts get free accommodation from employers, more than a third of them pay a monthly rent. Moreover, there are 10% persons who purchase houses in China. For the house they rent to live in, the monthly payment on average is RMB 4,815, the mode is RMB 4,000, the highest is RMB 8000- 10,000, the least is RMB 2,500. One foreigner answers that she pays RMB 2000 as her husband pay RMB 2000 which is not the classical way in China.

*** Which medical insurance do you have?**

Items	Total	Percentage
The regular provided by my employer	104	52%
I got a private one. Paying it represents a big economic effort for me.	24	12%
I got a private one. Paying it does not represent a big economic effort for me.	48	24%
Others please specify	24	12 %
Valid	200	

It seems that medical insurance is not a big problem for the foreign experts, as only 12% get private medical insurance and rate it as a big economic effort, around 88% experts get the insurance either by the employer, or without a big economic effort. It is also surprised to see few foreign experts answer that no insurance.

*** How do you rate the quality of your medical assistance in China?**

Items	Total	Percentage
Excellent	32	16%
Normal	112	56%
Poor	56	28%
Valid	200	




16% of the experts rate the quality of medical assistance in China as excellent. 56% rate it as normal, 28% of the foreign experts rate it as poor.

*** Given your salary and your cost of life in China, are you able to save money every month?**

Items	Total	Percentage
Yes, I am saving a lot	64	32%
Yes, I am saving a bit	116	58%
I spend all I earn; I am not saving	16	8%
I spend all I earn, and I still need to borrow	4	2%
Valid	200	

Given the salary and cost of life in China, almost all experts can save money every month working in China, near 58% of the experts are saving a bit, 32% are saving a lot, 8% spend all the earnings, and 2 % still need to borrow. So in general, foreign experts can save money in China with their work.

*** Do you think a lot on your retirement plan?**


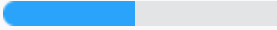


Items	Total	Percentage
Yes, and that makes me worry	124	 62%
Yes, and that doesn't make me worry	28	 14%
No	48	 24%
Valid	200	

Around 62% of the experts think a lot on the retirement plan and they feel worried about it. 38% experts no think on the retirement or worry about it. This is a problem for foreigners working in China as the people who concern it accounting to a ratio of 2/3.

Summary: From the point of view of economy, the most repeated salary range for foreign experts working in China is from 20,000 to 50,000 CNY per month. As of April 8th of 2022, this range equals to 2,893 to 7,233 Euro and 3,142 to 7,856 USD. These values are in general similar than those they would get in Europe and United States for a similar position, but the lower cost of life in China makes them in general be able to have savings (32% saves a lot and 58% saves a bit). One of the factors that contributes for foreign experts to have the perception that the cost of life is lower than in their home country is the fact that many of them (46%) receive free accommodation, plus those who pay a monthly rent only need to use between 2,500 and 10,000 CNY. These amounts represent typically between 12.5% (for lower salaries and rents) and 20% of the salary (for higher salaries and rents) – for this calculation, I considered that people with lower salaries will rent the cheapest accommodation, which is reasonable. These percentages are in general much lower than those in Europe and USA. Around 10% of foreign experts even buy their own houses in China, which indicate of the number of persons who plan to stay long in the country. Regarding medical insurance, only 12% rate it as a big economic effort, meaning that 88% think it is cheap; however, only 16% rate the insurance at an excellent level, and 28% think it is poor. 62% foreign experts feel worried about their retiring plan, indicating that this is an important factor impeding them to be completely happy in China, and this is something that the government and institutions should fix in the future.



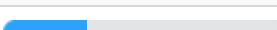

5.1.4.3 Daily life group, including frequency of sports, frequency of going out with friends, the number of good Chinese friends, the often-used transport ways, self-used services, frequency of attending different activities, challenges facing in life, knowledge of Chinese culture, years more plan to live in China, in total 9 aspects.

*** How often do you practice sports?**

Items	Total	Percentage
3 times per week or more	56	 28%
1-2 times per week	96	 48%
1-2 times per month	20	 10%
Almost never	28	 14%
Valid	200	

76% experts practice sports at least 1-2 times per week, which means they have a relatively good habit of sport. However, more than 10% almost never practice sports. Most foreign experts working in China have a sport habit with the frequency above 1-2 times per week, a quarter of them do less than 1-2 times per month.

*** How often do you go out with your friends (bar, cinema, shopping, and travel)?**

Items	Total	Percentage
3 times per week or more	16	 8%
1-2 times per week	92	 46%
1-2 times per month	76	 38%
Almost never	16	 8%
Valid	200	

46% experts go out with friends 1-2 times per week, 38% do it 1-2 times per month, 8% do it more frequently, 8% almost never do it. Compared with sports frequency, the frequency of going out with friends is lower. Near half of the experts go out with friends at around 1-2 times per week, followed by 1-2 times per month.

*** How many good Chinese friends do you have in China? (Please write a number)**

The foreign experts averagely have 6.42 good Chinese friends. However, as the high (>3) standard deviation indicates that this value greatly between individuals. The most repeated value for this question is 2, which rates to 32% of the experts, meaning one out of every three foreign experts working in China has two good Chinese friends. The second most repeated answer is five, a value selected by 14.29% of asked persons, and the third most repeated answer is three good Chinese friends (selected by 12%). Remarkably, 4.08% of the persons asked selected 0 friends, 8.16% selected 1 friend, and 4.02% of persons asked selected 50 friends. There are in total 13% foreign experts who have more than 10 good Chinese friends. I understand the ratio to be acceptable. It is also interesting to see two trends of good Chinese friends: one is below 5, the other is above 9; there is a blank between the number of 6, 7 and 9. The general distribution could be seen at below chart 17 and above table 7.

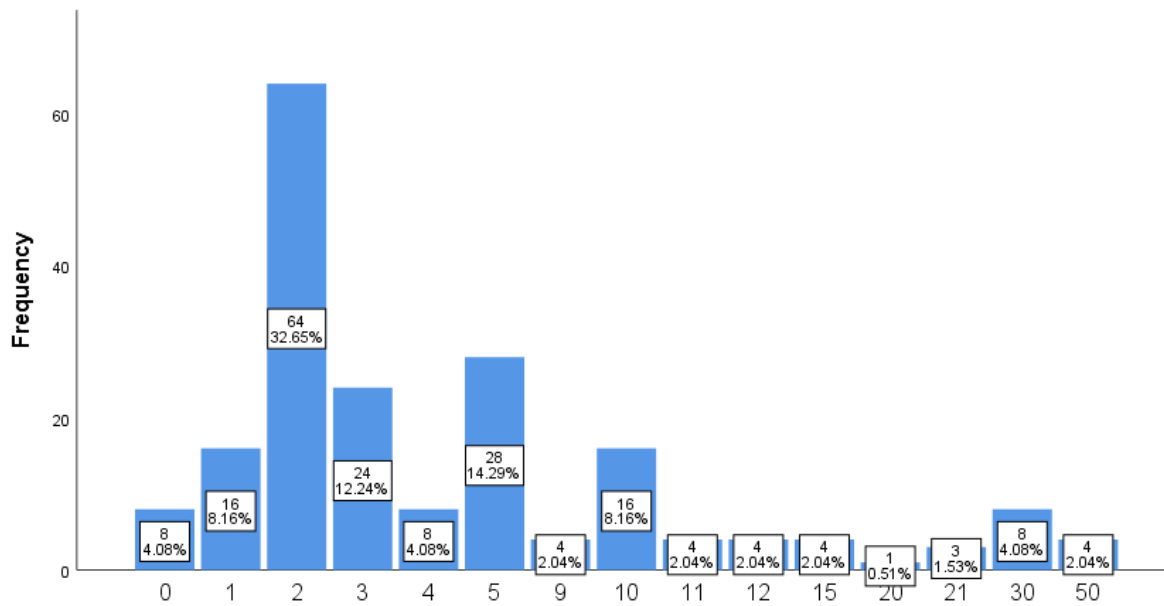


Figure 18: Frequency of No. of good Chinese friends

*** Which means of transport do you often use? (Can select more than one) [Multi-Choice]**

Items	Total	Percentage
I drive	40	20%
Didi	140	70%
Taxi	56	28%
Bus	76	38%
Subway	88	44%
Train	76	38%
Plane	56	28%
Bicycle	68	34%
Others	28	14%
Valid	200	

It is very interesting to see a high percentage of 70% foreign experts can use Didi transport as is Chinese Uber while with very cheap price and abundant and convenient door to door service, and this seems to be the most common form of transportation for the foreign experts. Due to Chinese huge population and cheap labor resource, Didi is very convenient in need. Followed by subway, train, bus, and taxi. Nearly 20% experts drive. For the frequently used transportation, there are choices including Shuttle buses, on foot, Scooter, and E-bike. Scooter is a frequently transport way for foreigners, while it is a new transport way among young Chinese youths.

*** Which of these services do you often use by yourself? [Multi-Choice]**

Items	Total	Percentage
WeChat	196	98%
Taobao	128	64%
Didi	152	76%
Shared bikes	48	24%
Alipay	148	74%
Order food online	56	28%
Others	12	6%
Valid	31	


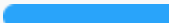







WeChat is Chinese WhatsApp which is popular among all people who live inside China, followed by Didi. Taobao is Chinese online shopping system which represents a huge Made in China products, as well as products from all over the world. 70% experts could use Alipay which represents the popular Chinese online payment systems. 24% can use shared bikes, 28% can order food online which is supposed to be a big progress for the foreigners as most of these services are in Chinese. All these services are considered to be very Chinese. For the frequently used service, there are choices including apple maps, zoom, skype, email, and world news as answered.

*** How often do you attend these activities?**

Items	Often	Occasional	Never
Art, music, education	40 (20%)	140(70%)	20(10%)
Religious activity	12 (6%)	32(16%)	144 (72%)
Political activity	8 (4%)	16(8%)	164 (82%)
Environment activity	16 (8%)	40(20%)	136(68%)
Humanitarian activity	16(8%)	48 (24%)	124(62%)




70% experts occasional attend art/ music/ education activities, 82% experts never attend political activities, around 60-70% never attend religious, environment/ humanitarian activities. It indicates most foreign experts are focusing on their job, and are less involved in politics, religion.

*** At present, the main challenges you are facing in your work and personal life are [multiple choice]:**

Items	Total	Percentage
Language barrier	156	 78%
Cultural differences	108	 54%
Lack of equipment	32	 16%
Intelligence property protection	40	 20%
Lack of expert advice	60	 30%
Discrimination compared to Chinese co-workers	48	 24%
Lack of entertainment activities	48	 24%
No appreciation of my work	44	 22%
Others (Please specify)	52	 26%
Valid	200	

Language barrier and cultural differences are the two biggest challenges for foreign experts working in China. 30% experts have the difficulties of lacking expert advice. Other challenges faced by foreign experts include no appreciation of their work, discrimination compared to Chinese co-workers, lacking of entertainment activities, and intelligence property protection, each of which rates a ratio between 20% - 30%. 16% indicate the lack of equipment. Moreover, there are still experts indicating other challenges working here, especially during the pandemic. For example, the visa is necessary for them to come back to China and to visit the families and friends in the mother countries, foreign experts indicate below difficulties: “Lack of start-up resources”, “lack of funding”, “overload”, “Chinese administration has totally pissed my off”, “Chinese people don’t explain things and don’t know how to explain reasons why, also sometimes insensitive to foreigners”, “Some of people I work with are slow and afraid of taking decisions quickly, as if they are afraid that they might offend me with a negative decision, I prefer to get a decision, I accept any decision, regardless if negative or positive, because it helps to move forward”, “Lack of private, personal life”, “No free access to internet!” “Contamination” and “life-work balance”.

*** How would you describe your knowledge of Chinese culture?**

Items	Total	Percentage
High	64	 32%
Normal	100	 50%
Very limited	36	 18%
Valid	200	

Half of the experts think that their knowledge of Chinese culture is normal, 32% think it as high level, and less than 18% think their knowledge of Chinese culture is very limited.

*** How many years more do you plan to live in China? (Please write a number)**

The average time of staying more in China is 6.47 years, which indicates not a short time, the Std. is 14.2 which means it varies greatly between individuals, meanwhile as it is easily influenced by the extreme data. The most repeated answer is 2 years, the least is less than 1 year, which means that a generally not so positive status as most foreigners don't have a long-term plan to work in China. Meanwhile, as you can see below, there are around 20% persons who plan to live more than 9 years, and four persons saying that they don't plan to leave and they want to live as long as possible (as showed 99, some write no plan to leave). The data obtained from this question are presented in the table 7.

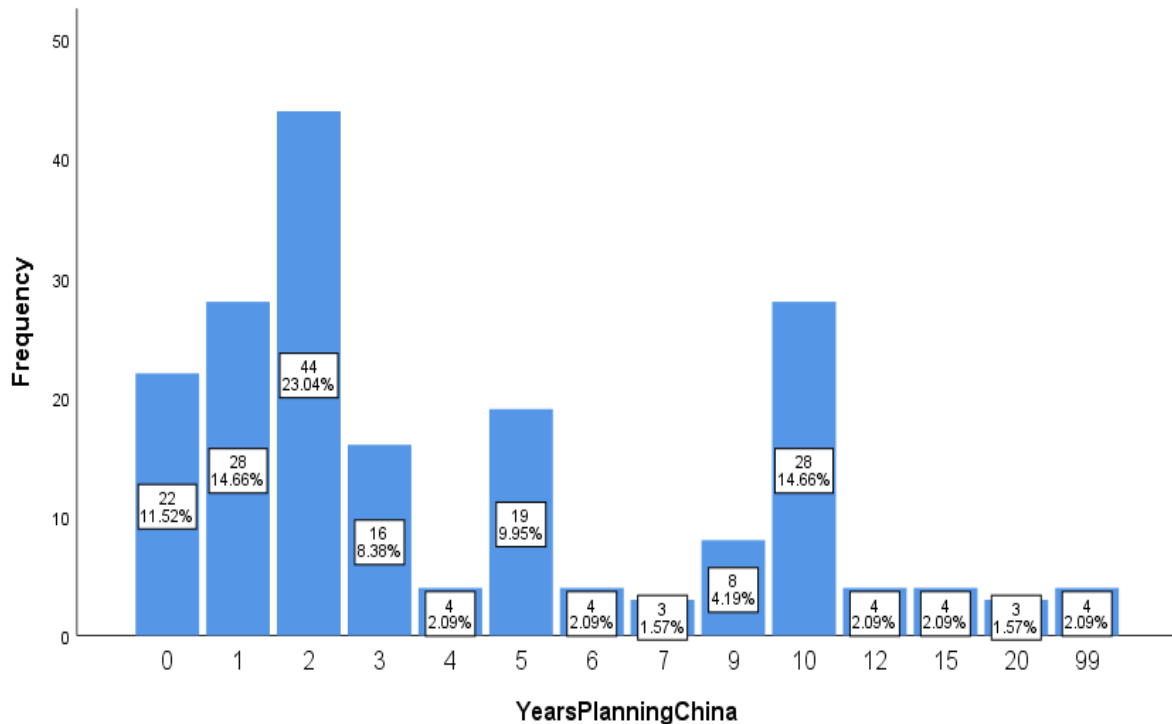


Figure 19: Frequency of years more to plan living in China

Summary: Regarding daily life, it is very interesting to see that ~70% foreigners could use Didi, the Chinese version of Uber to move around, pointing that i) they are capable to use it, and ii) they can afford it. Other public traffic methods are also widely used among foreign experts, including subway, train and bus; this indicates that the difficulties of foreign experts in China (if any) are not related to mobility issues. Only around 20% of the foreign experts usually drive. It is also interesting to see that 64% of foreign experts can use Taobao and that WeChat, Taobao and Didi rank the first, second and third (respectively) among the preferred Apps for daily use in China. Most of foreign experts have the habits of going sport and going out with friends weekly. The most repeated value for number of friends is 2, and the average is 6.2, indicating a very large deviation from one individual to another. During the leisure time, 70% foreigners occasional attend art, music and education activities, and most of them seldom attend any of the religious, political, environmental or humanitarian activities. This really points to the fact that this collective of foreigners (that is, foreign experts) is interested on coming to China for work. The biggest challenges for them are: language barrier, cultural differences, lack of expert advice, discrimination compared with Chinese workers, lack of

entertainment activities, no appreciation of work, intelligence property protection, lack of equipment. This is supported by the fact that only 30% consider to have a high level of understanding of Chinese culture. When asked about how many years more of the stay in China, most people selected 2, 1 and 10 years, indicating a polarization of the mentality: coming for short time (1-2 years) to make business (together they sum 25%) or 10 years (14.66%) or more (7.84%).

5.1.4.4 Personal and demographic group, including gender, age, nationality, religion belief, highest academic degree, health status, Chinese language level, in total 7 aspects.

*** Gender:**

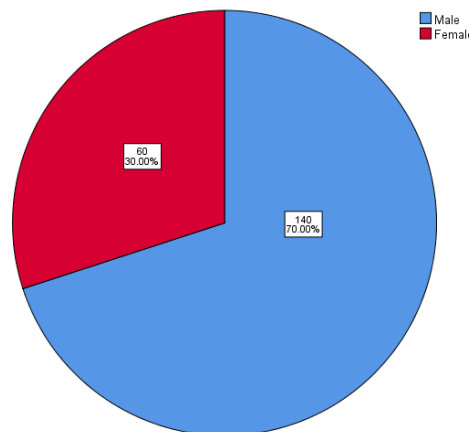


Figure 20: Frequency of gender

30% foreign experts are female, 70% are male. The ratio of female to male among the people investigated is 1:2. We could say that among each 3 foreign experts working in China, there are two males and one female, the male workers count 2 times of females, much more males compared with females.

*** Year of birth**

70% of foreign experts working here are in the age range of 34-47 years old. The average age is 40.86 years' old, which is a golden time for working, as well as the career development. There are also old foreign workers working here, as I can see the 71 years' old expert, while is already a retired working age in China. However, the Std. is very big (around 9) which reminds us of paying attention to the individual differentiation, and those of old ages are not a normal status while just for some special expert cases with special in need skills. As shown Figure 21, there are two peaks, one is 39-40 years old, and the other is 34-35 years old, which could be included into 34- 40 when people are in an age of starting and developing the career. It should be highlighted that the age is strongly connected with Chinese funding programs. For example, the National Science Foundation of China considers 35 years as the limit to apply for several "Young" projects. Many other local agencies also apply similar policies. There are few foreign experts working here between the age of 47-65, which is a later while stable period in career. Most foreign experts working in China at a developing stage of their career which means they should still fight for the competition and obtain their stable seats here, and they should work under pressures, instead of just laying down.

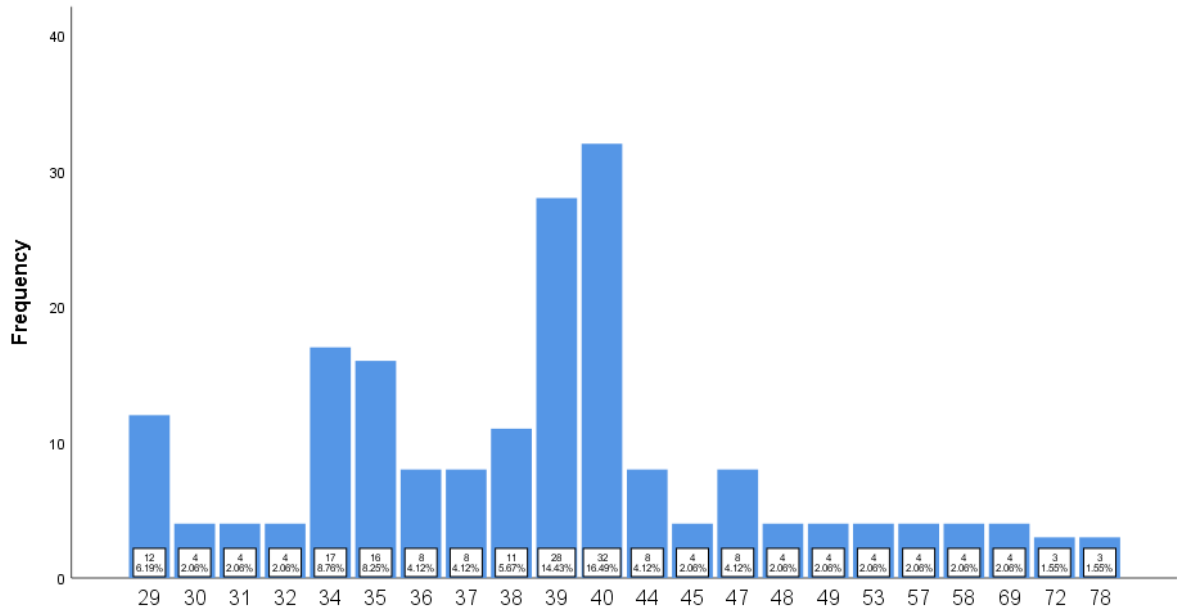


Figure 21: Frequency of year of birth

The data obtained from this question are presented in the form of a table, as this allows us to indicate some additional information about variability. The data obtained from this question are presented in the table 7.

*** Nationality:**

The sample experts are from 16 countries, 43% are from Spain as it is spread firstly among closest friends. Others are from Israel, Italian, USA, Canada, Australia, Italian, Indian and Pakistan.

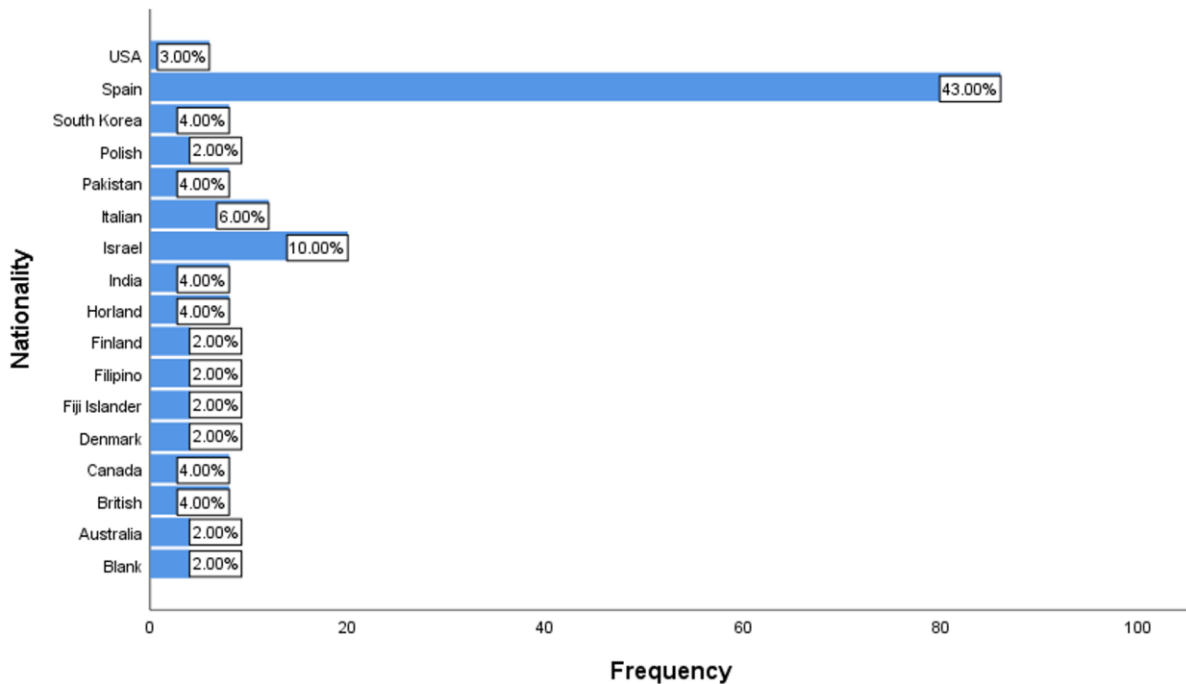


Figure 22: Frequency of nationality

In Figure 1 it can be seen that the percentage of people from Myanmar and Vietnam are amongst the highest (4th and 5th respectively), much higher than those of Germany, Canada, France, Italy, Spain and Israel (these last two don't even appear in Figure 1). However, despite not having official data, during my life and work in China I have met multiple foreign experts from Germany, Canada, France, Italy, Spain and Israel, and I have never met any foreign expert from Myanmar or Vietnam. Moreover, the number of foreigners from Korea is the highest but, again based on my experience, the number of foreign experts from Korea working in Chinese universities is much lower than that of Germans, Canadians, French, Italians, Spanish and Israelis. Hence, the nationality distribution of foreign experts does not match the nationality distribution of foreigners living in China. I have made a deep literature research but local, provincial and national governments have not disclosed statistics of the nationality of the foreign experts working in China. Hence, I cannot know what would be the ideal nationality distribution to follow.

Figure 22 shows that the Spanish collective is overrepresented. Probably the Israelian too. This is the number of persons answering my questionnaire (200) and the diversity achieved, is the best that I could get. I feel this point could be improved in future studies by getting more samples from other developed countries with high amount of people living in China, such as Germany, and France. Nevertheless, I think the Spanish collective is especially interesting because, from a cultural point of view, it is close to both north Europeans and Latin-Americans. Hence, despite the conclusions of my study may be more relevant to Spanish people, I think they are still useful for many more. Moreover the conclusions of this study will be more valuable for my university (University of Barcelona), as it is located in Spain.

*** Highest academic degree:**

70% experts have the doctor degree, and 14% hold master degrees and 16% hold bachelor degrees.

*** Do you believe in any religion?**

Items	Total	Percentage
No	116	58 %
Christianism	28	14 %
Jewish	12	6 %
Muslim	12	6 %
Hindu	0	0 %
Buddhist	12	6 %
Catholicism	20	10 %
Others, please specify	12	6 %
Valid	200	

58% experts don't believe in any religion. It seems that science is relevantly independent with the religion. However, 40% of them believe in Christianity, Jewish, Catholicism, Muslim. Christianity rates the highest which is 14%, Catholicism rates the second highest which is 10%, followed by Muslim (6%).

*** What is your level of Chinese language?**

Items	Total	Percentage
Very good	20	10%
Enough to survive	116	58%
Not enough to ask for basic things (buy at the supermarket, take a taxi, order food)	60	30%
Others	4	2%
Valid	200	

About 10% rate their Chinese level as very good, 58% rate it as “enough to survive”. Only one third experts indicate that their Chinese aren't enough to ask for basic things, which is an acceptable level as Chinese is considered to be one of most difficult language for foreigners.

*** How would you describe your health status?**

Items	Total	Percentage
Very good	80	40%
Good	120	60%
Bad	0	0%
Valid	200	

All the experts think that they are in good health status, more than one third think that their health is in a very good status.

Summary: Most foreign experts working in China are males: among every three foreign experts, one is female, two are male. The most concentrated ages are among 39-40 (30.92 %) years and 34-35 (17.03 %) years old. The median and mean is 39-40 years old which is coherent with the facts that there are few foreign post-doctors working in China. The youngest is 29 years old and the oldest is 78 years old in my survey. I am aware that there are many more foreigners living in China below the minimum of 29 years mentioned in the questionnaire, but they would not belong to the collective of foreign experts (as defined in the introduction section). This indicates that, in order to get such a position in China, one needs to have a good degree of preparation (accompanied by Master/PhD degrees). This is in contrast to what happens in Europe, where one person without Master and PhD can also get a high degree of specialization and receive a good salary after his Bachelor. There is a diversity of origin countries, including around 18 countries, and less than half have religion belief.

5.1.4.5 Family background group, including marriage status, if live with partner/ spouse, if have children, Chinese level of partner, origin country of partner, in total five aspects.

*** Marital status**

Items	Total	Percentage
Single	56	28%
Married	100	50%
I have boyfriend / girlfriend	32	16%
Separated / Divorced	8	4%
Window	0	0%
Others	4	2%
Valid	200	

Half of the foreign experts are married, more than a quarter (28%) experts are single, 16% are in a relationship, 4% are separated / divorced. I may also conclude among every four foreign experts working in China, 2 are married, 1 is single, 1 is in a relationship or separated. The family factors and the science may have a complex relationship. I think the data is very interesting as it shows 50% have close family responsibilities, which may affect their work and productivity (sometimes negatively because it steals them time, sometimes positively because they are happier and then they can work better). This will be also discussed later in section 5.5.1.

*** If you have a partner living with you in China, what is his/her occupation?**

Items	Total	Percentage
Has a job	88	44%
Is studying intensively (15 hours per week or more)	8	4%
Stays at home / care of children / plays with friends	24	12%
Other occupation, please specify:	4	2%
I have no partner living with me in China	76	38%
Valid	200	

38% experts live alone without any partners, 62% of experts have a partner living together in China, among which, 44% live with partners have jobs, 4% live with partners that are still studying, and 19% live with those don't work (take care of Children/ no work).

*** Number of children:**

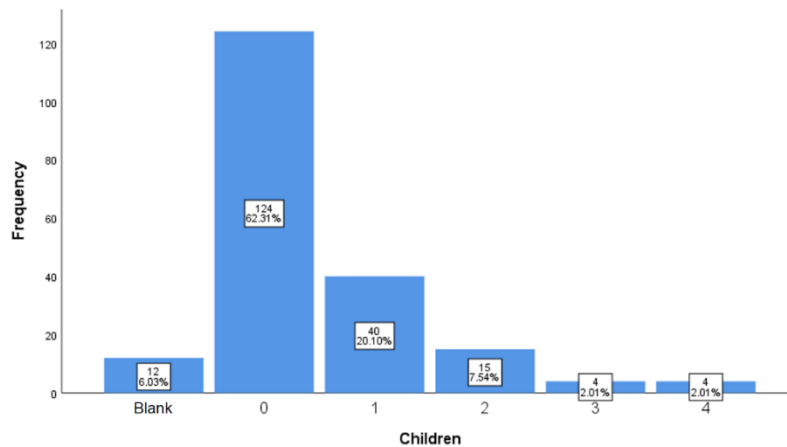


Figure 23: Frequency of number of children

The percentage of foreigners that have kids rates to 32%. 20% experts have only one child, 8% of them have two kids. Little have three or four kids. The data obtained from this question are presented in the table 7.

*** If you have a partner, can he/she speak Chinese?**

Items	Total	Percentage
Yes	68	51%
No	64	49%
Valid	132	

Among the 132 experts who has spouses/ partners, about half of their partners can speak Chinese, half partners couldn't speak Chinese, the ratio is almost 1:1, those who can speak Chinese are a bit more, which is very interesting.

*** Where is your partner from?**

Items	Total	Percentage
China	56	45%
Not China, but Asia	16	13%
Others	52	42%
Valid	124	

Among the 124 foreign experts who have partners (including spouse, boy/girlfriend, partner), 45% of their spouse are from China, 42% are from out of Asia (US, EU, Portugal and many other countries as listed).

Summary: Among all foreign experts, 70% hold a doctor degree, supporting the statements in the summary of the previous sub-section. 66% of the foreigners have a partner, 62% don't live alone. 50% are married, 30% have children (close to the half of the married persons), and a quarter of them are single. Among them, 70% of foreign experts have an enough level of Chinese to survive in China, half of their partners can speak Chinese. Among those who have partners, the percentage of foreign experts who has a partner from China is 45%.

5.1.4.6 Two open questions about three best things and three biggest challenges.

*** Which are the best things of living in China? (Please write at least 3)**

(1) Work/research opportunities: with good position, good salary (several times), good work conditions, good equipment; High work position for young woman; Nice colleagues; Good students; I feel my work value, be part of a meaningful university project", offers working experience/ opportunity to growth and for potential development (several times); Hardworking; Freedom of research;

(2) China and Chinese cultural heritage: China is very safe country with stability and with no drugs; Beautiful traditions; China is one of the biggest economies and countries; Chinese culture: New, Rich, Multicultural, Alternative world, Dynamism, fascinating culture, exotic, Lots of sceneries, biking Lots of parks and nice scenery's.

(3) Daily life: Low cost with lots of choices, everything is very affordable, especially compared with good salary. First frequently mentioned is the Chinese food (mentioned many times): Wonderful cuisines, interesting foods, possibility to try different food, access to fruits and vegetables I never had before, relatively cheap food with low price; Access to Western ingredients and restaurants; Best dumplings in the world; Very good food and restaurants. Second is the easy/ convenient services, including instant and efficient transportation, easy shopping (Taobao, shops no close, efficient WeChat with transportation and payment), there are convenience of services provided by phone apps, as mentioned that the level of digitization of China is amazing. Other mentioned aspects includes their likely cities, Kids education from international school and on.

(4) Inter-personal interactions (mentioned many times): Meeting people from different countries/ my wife is Chinese, People are nice,

In summary, for the best things of living in China, as it can be seen above, foreign talents mentioned several important aspects, including: First, as a developing country, China is providing lots of opportunities, especially working opportunities. The relatively superior working benefits, together with its hard working environment, is providing a good condition for foreigners who grasp the opportunity, several foreign experts mention themselves to be developing together with China as a developing country. Second, as an old traditional country, foreigners generally feel China to be a very safe country, with rich and diverse culture, and friendly Chinese people. The relatively cheap price compared with plenty & diversity choices could provide a fantastic living experience for foreigners in China.

*** What are the main challenges of living in China? (Please write at least 3)**

(1) Work/research challenges: Funding application, Research resources management, Low level of cooperation in academia, Discrimination by administrations, University management, attracting people work with us, bad team work.

(2) Chinese Language (mentioned a lot of times): The detailed aspects include that many Chinese don't know English, most apps are not bilingual, no too much information of English including, difficult to read name labels, instructions, and application of funding couldn't be in English.

(3) Cultural/political barriers :It is difficult for foreigners to integrate due to culture difference/ barriers, no community feeling; Political sensitive, policies keeps changing, Covid not allows to travel freely out of China with strict control, can't be a Chinese citizen, having a Chinese boss, policies keep changing, limited freedom of expression.

(4) Inter-personal interactions: Too much focus on money and property, most people only care about themselves. Many people are with poor habit, manners or behavior (for example, people staring all the time.)

(5) Services: Public environment is relatively dirty, air pollution in big cities, noisy public, bad status of facilities. Information about rules unclear. There are complains about medical facilities, postal services, pre-paid service, and less privacy in hospital. There are complains about banks, including lack of freedom to have a credit card, funds difficult to transfer to home country,

(6) Food: Food hygiene is poor, foreigners may miss western food, especially bread (German/Polish style bread), as well as French cheese.

(7) Internet restrictions (cannot access Facebook etc.). The internet and the integration are big problems for foreign experts in China. The internet restriction during the sensitive days is strict, which is an impressive inconvenient aspect, especially for foreign experts who have been used to Google, Youtube and they may need it every day to keep contact with their families in their home country, as the internet is unavoidable. The integration way ahead is still far and long, as it is a process of differentiation and identification with instant changes from both Chinese and foreigners, as a process of cultural evolution.

In summary, according to the answers collected, the main top challenges mentioned are (1) Language, which is said to be one of the most difficult languages, and is related with all the information in China. (2) Cultural barriers which result in communication problems. (3) General environment is relatively less clean while noisy, with less quality. (3) People's factor include their habit, manner and behavior, Chinese boss is mentioned. (4) Internet restrictions is an impressive inconvenient aspect, especially for foreign talents who have been used to Google, Youtube and they may need it every day to keep contact with their families in their home country, while it is very difficult to be solved in a short time. (5) There are complains about medical treatment/ bank (6) Difficulty to integrate. (7) Discrimination & integration. The integration way ahead is still far and long, as it is a process of differentiation and identification with instant changes from both Chinese and foreigners, as a process of cultural evolution. However, all the aspects mentioned above are all important things for them.

It is also very interesting to see the both sides of one coin. For example, Chinese: when some foreigner see language as a difficult barrier, others see it is a good aspect to learn and improve it in China; Food, when you see it as diversity and cheap, you will accept it is not your home food, and the price may equal to its control quality; People: when you see most of Chinese people are friendly and polite, you should also understand people diversity due to its great population, and understand its behavior/ method. For example, the people who stares at you

for over five seconds or they smile when you are angry, because they themselves don't know that they are offending you. Safety: when most foreigners think China to be a safe country which means there are little drug, gun or criminals, one of the reason is with lots of cameras in public, other foreigners think it to be little privacy in China.

5.2 – Bivariate correlation analysis

Based on the above descriptive analysis, I use Chi-square to test the bivariate correlation of deferent variably type analysis, as this is the most suitable and could be used in small samples of $N = 200$ [123]. For the three dependent variables, I test the bivariate correlation with the recoded data. For the six interval variables (age, daily working hours, number of Children, years in China, years plan in China, number of good friends), I divide the relevant variables into several groups changing to nominal variable. For age, I recode those below 35 to be 0, and those above 36 to be 1, in total 2 catalogues. For the daily working hours, I recode those equal and below 8 to be 0, and those above 9 to be 1. For number of Children, 0 for those no having children, and 1 for those who have Children. For years in China and years plan in China, I recode those from 0-5 to be 0, and those above 6 to be 1. For number of good friends, I recode 0-5 to 0, and 6-10 to 1. The results are displayed in the Table 8 in next page. When the confidence coefficient is between 0.01 and 0.05, the cell will be marked with the symbol *, and that means 95% confidence interval. When the coefficient is between 0.01 and 0.001, the cell will be marked with the symbol **, and that means 99% confidence interval. If the coefficient is positive, it means a positive relation that is to say that both change in the same direction, if the coefficient is negative, it means that variables change in opposite directions. From the data shown in Table 8, interesting trends can be observed.

Based on Chi-Square correlation test, the factors that have significant influences on all three independent variables include 19 variables shown in first column in below Table 9, including heath status, children status rough monthly salary, boss satisfaction and on. Besides this, 5 more variables are significant on Happiness, which include: i) highest degree, ii) Chinese language level, iii) if live with partner, iv) years in China, v) if take taxi transportation; 6 more variables are significant with work satisfaction, which include: i) highest degree, ii) marriage status, iii) if live with partner, iv) daily working hours, v) holiday, vi) if could order food online; 6 more variables are significant with life satisfaction, which include: i) Chinese language level / language barrier, ii) marriage status, iii) daily working hours, iv) lack of entertainment, v) if could use bus service, vi) if could order food online.

Four variables are significant on two of the three dependent variables: i) highest degree seems to be significant on both happiness and work satisfaction, ii) Chinese language level seems to be significant on both happiness and life satisfaction (but not on work satisfaction, iii) if live with partner seems to be significant on happiness and work satisfaction, iv) marriage status seems to be significant on work satisfaction and life satisfaction.

I have found some variables only have significant influence in one of the three independent variables: language barrier, lack entertainment, if use bus services only influence life satisfaction. The holiday status only has significant on work satisfaction. The ability of taking a taxi, the years in China only has significance on the happiness.

Summary: I use the Chi-square test to get results of correlation between independent variables and dependent variables. Chi-square is very stable and I found some variables that have significance on all the three dependent variables including happiness, work satisfaction and life

satisfaction. Some variables show significance on two of the three variables, and several variables show significance on only one of them. Variables with statistically significance are important as belong to our interest into the next steps. More details of the 11 variables selected could be seen below.

Specifically speaking, for the education level, among people who have doctor degree, around 23% are not happy working in China, and 6.7% of experts with Master or lower degree are not happy working in China. The Chi-square test shows that the difference between education degrees is significant at 0.05 level (while it is not significant at life satisfaction). Regarding the living status, among foreigners who live alone (not living together with spouses, or partners), 29.2% of those who live alone are not happy, 25% is not satisfied with working in China. The difference of happiness and work satisfaction between living alone or living with partner/spouse is significant (while it is not significant at life satisfaction). Similarly, the difference between happiness, work satisfaction and life satisfaction among those who have children and no have children also show significance. Regarding salary, the small percentage of foreign experts who get monthly salary below 10,000 RMB are neither happy, nor satisfied with their work or life in China. The small percentage who get monthly salary above 100,000 RMB are both happy and satisfied working in China. After combined the groups, I found that foreign experts who get a monthly salary among RMB 20,000-50,000 are mostly happy and satisfied. The Chi-squared test shows that difference among different salary groups are significant. As foreigners working abroad are far from their home countries, and many of them don't integrate with the local Community, the living status and children status are important variables I feel interested. The marriage status isn't selected into multi-model because it is true that many foreigners working in China care now (if they are living together) more than future (if they will get married).

In work division, regarding the respect feeling, among foreigners who feel well respected, 95.2% are happy/satisfied working in China, which rates the highest among different groups. For foreigners who feel discriminated comparing with Chinese co-workers, 50% are happy, 50% are unhappy; 54.5% are not satisfied with work, 41.7% are satisfied with work; 33.3% are not satisfied with life, 66.7% are satisfied with life in China; while the highest percentage of happiness/satisfaction appear when they feel no discrimination, the difference among different discrimination groups is significant at 0.001 level based on Chi-square test.

In life division, medical and traffic represent two of their most important aspects in the daily life. For the medical insurance status, among foreign experts who get normal/excellent medical insurance, those who feel happy rates to 88.9%, and this amount is 24.6% higher than the group of with poor medical insurance. Chi-square test shows that, the happiness of foreign experts among medical insurance groups is significantly different (sig=0.000). The Chi-square test also shows that medical insurance also have significant influence on work satisfaction and life satisfaction at 0.01 level. Regarding the transportation, 94.7% foreign experts who take Didi (that is, the Chinese version of Uber) are happy, which is 20.5% higher than those who don't take Didi. 89.5% of foreign experts who take Didi feel satisfied in work, which is 12.1% higher than those who don't take Didi; 94.7% foreign experts who take Didi feel satisfied in life, which is 7.6% higher than those who don't use Didi. The Chi-square shows, the ability to use Didi has significant influence.

Table 8: Bivariate Correlation

No.	Aspect	Variables	Catalogue S	Happiness						Work Satisfaction						Life Satisfaction								
				Not happy		Happy		Chi Square	df	sig	Not satisfied		Satisfied		Chi Square	df	sig	Not Satisfied		Satisfied		Chi Square	df	sig
				Count	Line N %	Count	Line N %				Count	Line N %	Count	Line N %				Count	Line N %	Count	Line N %			
1	Demographic	Age	Age ≤ 35	4	7%	28	93%	5.263	1	.022*	12	21.1%	45	78.9%	1.217	1	.270	4	7%	53	93%	.181	1	.688
			Age > 36	53	20.4%	109	79.6%				20	14.6%	117	85.4%				12	8.8%	125	91.2%			
		Highest Degree	Master and Bachelor	4	6.7%	56	93.3%	7.459	1	.005**	4	6.7%	56	93.3%	7.459	1	.005**	4	6.7%	56	93.3%	1.058	2	.304
			Doctor	32	22.9%	108	77.1%				32	22.9%	108	77.1%				16	11.4%	124	88.6%			
		Chinese language level	Good	8	40%	12	60%	13.978	2	.001***	4	20%	16	80%	.240	2	.887	0	0%	20	100%	9.941	2	.007**
			Communicate	12	10.3%	104	89.7%				20	17.2%	96	82.8%				8	6.9%	108	93.1%			
			bad	16	26.7%	44	73.3%				12	20%	48	80%				12	20%	48	80%			
		Health status	1	4	5%	76	95%	15.266	1	.000***	4	5%	76	95%	15.266	1	.000***	4	5%	76	95%	3.704	1	.054+
2	32		26.7%	88	73.3%	32	26.7%				88	73.3%	16	13.3%				104	86.7%					
2	Family background	Marriage New Status	Single	8	12.5%	56	87.5%	2.586	2	.274	12	18.8%	52	81.3%	10.523	2	.005**	4	6.3%	60	93.8%	9.268	2	.010**
			Married	20	20%	80	80%				12	12%	88	88%				8	8%	92	92%			
			Bf/Gf	8	25%	24	75%				12	37.5%	20	62.5%				8	25%	24	75%			
		If live with partner	No partner	28	29.2%	68	70.8%	15.597	1	.000***	24	25%	72	75%	6.129	1	.013*	12	12.5%	84	87.5%	1.282	1	.258
			Have partner	8	7.7%	96	92.3%				12	11.5%	92	88.5%				8	7.7%	96	92.3%			
		If have children	No	20	16.1%	104	83.9%	6.774	1	.037*	28	22.6	96	77.4%	4.639	1	.031*	16	12.9%	108	87.1%	3.056	1	.080+
Yes	16		21.1%	60	78.9%	8	10.5%				68	89.5%	4	5.3%				72	94.7%					
3	Economic factors	Salary Monthly	Below 20000	12	18.8%	52	81.3%	7.573	2	.023**	12	18.8%	52	81.3%	8.198	2	.017**	8	12.5%	56	87.5%	3.123	2	.10+
			20000-50000	16	16%	84	84%				12	12%	88	88%				8	8%	92	92%			
			50000-100000 and more	8	22.2%	28	77.8%				12	33.3%	24	66.7%				4	11.1%	32	88.9%			
4	Work	Daily Working Hours	Equal and below 8 hours	20	21.7%	72	78.3%	1.243	1	.176	24	26.1%	68	73.9%	6.728	1	.015**	16	17.4%	76	82.6%	9.633		.002**
			Above 9 hours	16	15.5%	87	84.5%				12	11.7%	91	88.3%				4	3.9%	99	96.1%			
		Boss Satisfaction	Yes	16	10.5%	136	89.5%	23.967	1	.000***	12	7.9%	140	92.1%	43.817	1	.000***	8	5.3%	144	94.7%	15.789	1	.000***
			No	20	41.7%	28	58.3%				24	50%	24	50%				12	25%	36	75%			
		Language barrier	No	8	18.2%	36	81.8%	.001	1	1.000	8	18.2%	36	81.8%	.001	1	1.000	0	0%	44	100%	6.268	1	.012*
			Yes	28	17.9%	128	82.1%				28	17.9%	128	82.1%				20	12.8%	136	87.2%			
		Holidays	a lot	12	15.8%	64	84.2%	.406	1	.524	20	26.3%	56	73.7%	5.743	1	.022	8	10.5%	68	89.5%	.038	1	.846

			No	24	19.4%	100	80.6%				16	12.9%	108	87.1%			*	12	9.7%	112	90.3%					
		Feel Respected	Very respected	4	4.8%	80	95.2%	17.542	3	.001***	4	4.8%	80	95.2%	40.331	3	.000***	0	0%	84	100%	24.916	3	.000***		
			A bit respected	24	27.3%	64	72.7%				16	18.2%	72	81.8%				16	18.2%	72	81.8%					
			Neutral/ not respected	8	22.2%	28	77.8%				16	57.1%	12	42.9%				4	14.3%	24	85.7%					
		Feel Valuable in work	No	32	17.4%	152	82.6%	7.352	2	.025*	32	17.4%	152	82.6%	7.352	2	.025*	16	8.7%	168	91.3%	15.459	2	.000***		
			Yes	4	50%	4	50%				4	50%	4	50%				4	50%	4	50%					
		Discrimination compared to Chinese	No	12	7.9%	140	92.1%	43.817	1	.000***	8	5.3%	144	94.7%	69.610	1	.000***	4	2.6%	148	97.4%	38.207	1	.000***		
			Yes	24	50%	24	50%				28	58.3%	20	41.7%				16	33.3%	32	66.7%					
		No appreciation of work	No	16	10.3%	140	89.7%	28.807	1	.000***	12	7.7%	144	92.3%	51.043	.	.000***	8	5.1%	148	94.9%	18.700	1	.000***		
			Yes	20	45.5%	24	54.5%				24	54.5%	20	45.5%				12	27.3%	32	72.7%					
		Intelligence Property	0	24	15%	136	85%	4.878	1	.028*	20	12.5%	140	87.5%	16.396	1	.000***	8	20%	32	80%	5.556	1	.018*		
			1	12	30%	28	70%				16	40%	24	60%				20	10%	180	90%					
		Understanding Chinese Culture	High	16	25%	48	75%	14.634	2	.001***	12	18.8%	52	81.3%	23.856	2	.000***	8	12.5%	56	87.5%	33.333	2	.000***		
			Normal	8	8%	92	92%				8	8%	92	92%				0	0%	100	100%					
			Limited	12	33.3%	24	66.7%				16	44.4%	20	55.6%				12	33.3%	24	66.7%					
		Years in China	≤5	16	11.8%	120	88.2%	12.917	1	.000***	24	17.6%	112	82.4%	.154	1	.418	12	8.8%	124	91.2%	.924	1	.236		
			>6	20	33.3%	40	66.7%				12	20%	48	80%				8	13.3%	52	86.7%					
		Years Plan in China	≤ 5 years	36	27.1%	97	72.9%	19.346	1	.000***	36	27.1%	97	72.9%	19.346	1	.000***	20	15%	113	85%	9.742	1	.000***		
			> 6 years	0	0%	58	100%				0	0%	58	100%				0	0%	58	100%					
5	Life patterns	Sports frequency	1-2/week or more	12	7.9%	140	92.1%	64.723	2	.000**	20	13.2%	132	86.8%	26.579	2	.000***	8	0%	144	100%	24.361	2	.000***		
			1-2 /month	16	80%	4	20%				12	60%	8	40%				8	40%	12	60%					
			Almost never	8	28.6%	20	71.4%				4	14.3%	24	85.7%				4	14.3%	24	85.7%					
				Medical Insurance quality	Excellent/ normal	16	11.1%	128	88.9%	16.535	2	.000***	20	13.9%	124	86.1%	5.889	2	.023**	8	5.6%	136	94.4%	11.287	1	.002**
					Poor	20	35.7%	36	64.3%				16	28.6%	40	71.4%				12	21.4%	44	78.6%			
				Retirement Thinking	Worry	32	25.8%	92	74.2%	13.473	1	.000***	32	25.8%	92	74.2%	13.473	1	.000***	16	12.9%	108	87.1%	3.056	1	.080+
					No thinking	4	8.3%	72	91.7%				4	8.3%	44	91.7%				4	8.3%	72	91.7%			
				Frequency Of Going Out with Friends	3 times / week	0	0%	16	100%	82.049	3	.000**	4	25%	12	75%	40.158	1	.000***	0	0%	16	100%	33.511	3	.000***
					1-2/week or more	8	8.7%	84	91.3%				12	13%	80	87%				4	4.3%	88	95.7%			
					1-2 /month	12	15.8%	64	84.2%				8	10.5%	68	89.5%				8	10.5%	68	89.5%			
		Almost never	16		100%	0	0%	12	75%				4	25%	8	50%				8	50%					
			0	32	25.8%	92	74.2%	13.473	1		28	22.6%	96	77.4%	4.639	1	.031	16	12.9%	108	87.1%	3.056	1			

		Didi Transportation	1	4	5.3%	72	94.7%		.000*	8	10.5%	68	89.5%			*	4	5.3%	72	94.7%			.080+	
		Taxi	0	16	11.1%	128	88.9%	16.535	1	.000***	24	16.7%	120	83.3%	.619	1	.431	12	8.3%	132	91.7%	1.587	1	.208
			1	20	35.7%	36	64.3%				12	21.4%	44	78.6%				8	14.3%	48	85.7%			
		If can use Taobao	0	28	38.9%	44	61.1%	33.258	1	.000**	24	33.3%	48	66.7%	17.920	1	.000***	16	22.2%	56	77.8%	18.673	1	.000***
			1	8	6.3%	120	93.8%				12	9.4%	116	90.6%				4	3.1%	124	96.9%			
		Bus Service	No	12	25%	36	75%	2.097	1	.148	12	25%	36	75%	2.097	1	.148	12	25%	36	75%	15.789	1	.000***
			Yes	24	15.8%	128	84.2%				24	15.8%	128	84.2%				8	5.3%	144	94.7%			
		Order Food Online	No	28	19.4%	116	80.6%	.727	1	.394	32	22.2%	112	77.8%	6.212	1	.013*	20	13.9%	124	86.1%	8.642	1	.003**
			Yes	8	14.3%	48	85.7%				4	7.1%	52	92.9%				0	0%	56	100%			
		Often Art Music Education Activities	0	36	23.1%	120	76.9%	12.383	1	.000***	36	23.1%	120	76.9%	12.383	1	.000***	20	12.8%	136	87.2%	6.268	1	.012*
			1	0	0%	44	100%				0	0%	44	100%				0	0%	44	100%			
		Never Humanity Activities	0	0	0%	76	100%	26.908	1	.000***	4	5.3%	72	94.7%	13.473	1	.000***	0	0%	76	100%	13.620	1	.000***
			1	36	29%	88	71%				32	25.8%	92	74.2%				20	16.10%	104	83.9%			
		Never Religious Activities	0	0	0%	56	100%	17.073	1	.000***	0	0%	56	100%	17.073	1	.000***	0	0%	56	100%	8.642	1	.003**
			1	36	25%	108	75%				36	25%	108	75%				20	13.9%	124	86.1%			
		Lack Entertainment Activities	0	24	15.8%	128	84.2%	2.097	1	.148	24	15.8%	128	84.2%	2.097	1	.148	8	5.3%	144	94.7%	15.789	1	.000***
			1	12	25%	36	75%				12	25%	36	75%				12	25%	36	75%			
6	Social Interaction	If Have Chinese Boss	Yes	28	28%	72	72%	13.55	7	.000***	28	28%	72	72%	13.550	7	.000***	16	16%	84	84%	8.000	1	.005**
			No	8	8%	92	92%				8	8%	92	92%				4	4%	96	96%			
		College Help	A lot	4	4.5%	84	95.5%	40.324	3	.000***	4	4.5%	84	95.5%	29.597	3	.000***	4	4.5%	84	95.5%	20.539	3	.000***
			A bit	20	31.3%	44	68.8%				16	25%	48	75%				8	12.5%	56	87.5%			
			difficult	12	50%	12	50%				12	50%	12	50%				8	33.3%	16	66.7%			
		Number of good Chinese friends	≤ 5	36	24.3%	112	75.7%	14.303	1	.000***	36	24.3%	112	75.7%	14.303	1	.000***	20	13.5%	128	86.5%	7.224	1	.005**
>6	0		0%	48	100%	0	0%				48	100%	0	0%				48	100%					

Note: The description of variables are in the sub-sections within this Chapter 4. Those variables with no significance are not presented in Table 8.

Table 9: Significant variables in Chi-square test analysis

Significance Division	Significant on 3 dependent variables	Significant on 2 dependent variables: Happiness and Work Satisfaction	Significant on 1 dependent variable: Life Satisfaction
Social-demographic	Health status	Highest education degree/ Chinese level	
Family background	Children status	Marriage status/ Living status	
Economic	Rough monthly salary		
Work	Boss satisfaction/If feel respected / If feel valuable in work/ Discrimination compared with Chinese workers/ No work appreciation/ intelligence Property/ Understanding Chinese culture/Years plan in China	Daily working hours	Language barrier/Holidays / Years in China
Life	If can use Taobao/ If could take Didi transportation/ Go out with friends/ Retirement thinking/ Medical insurance status/ Sports frequency/		Taxi/ Bus/ Lack Entertainment Activities
Social support	If have Chinese boss/Help from Colleagues/ Number of Chinese friends		

Note: The **bold** variables are selected into further multi statistic model.

In social support division, I include if have Chinese boss, if get colleague help, and number of good Chinese friends, as they contribute a lot as resources of social support for foreign experts working in China. 92% foreign experts who have foreign bosses are happy/work-satisfied, while 72% foreign experts who have Chinese bosses are happy/work-satisfied, with “20%” different percentage. 96% foreign experts who have foreign bosses are life-satisfied, 84% who have Chinese bosses are life satisfied, with a percentage difference of “12%”. The Chi-square test shows, different happiness/life satisfaction/work satisfaction of foreign experts show significant difference in those with Chinese boss and foreign boss. Regarding colleague help, most (95.5%) foreign experts who get most help from Colleagues are happy/ work satisfied and life satisfied, and least (50-66.7%) is happy / work satisfied and life satisfied among those who have difficulties to collaborate with Chinese colleagues. Foreign experts who get different level of help from colleagues shows significant difference on happiness/ work-satisfaction and life-satisfaction. Regarding the number of good Chinese friends, all those with lots of good Chinese friends (above 6) are happy/ satisfied in Chinese work and life. The number of good Chinese friends has influence significantly.

In general, the results of bivariate analysis shows significant influence of 19 variables on all the three dependent variables, 5 variables show significant influence on two of the three dependent variables, and 6 variables show significant influence on one dependent variables. Meanwhile, the results deny significant influence of all the other variables including current working place, job Title, house pay, saving in China, gender, religion, if use subway, if use bicycle and on. The limitation of bivariate relationship is without statistical control, thus there may be complex influence of leading variables, intermediate variables, showing a false correlation. However, most variables which show significant roles in bivariate interaction analysis are variables of interest for further study.

5.3 – The multi-statistics of logit regression result in happiness & satisfaction

Based on above bivariate interaction analysis, in order to overcome inherent flaws, the next step of research is to try to explain the effects on happiness and satisfaction by analyzing the influence of each independent variables controlling others, so that I can elaborate a powerful and useful call- for action and send it to Chinese institutions. The research goal is to see the detailed influencing factors, and the influencing direction, size and its relevant changes after controlling variables. The code of dependent variable: 0 means unhappy/ unsatisfied, 1 means happy/ satisfied. So, if the coefficient $b_i > 0$, $\text{Exp}(b_i) > 1$, which means a higher probability of happiness/ satisfaction. When $b_i < 0$, $\text{Exp}(b_i) < 1$, the influence is opposite. We couldn't input all the significant variables due to the small sample. So I select those with significant variables combined with interested variables into multi-statistic model. We are not only interested in individual variables, but also interested in variable groups, I input variables into model by variables groups. In model 1 there are only socio-demographic variables group. In model 2, there are socio- demographic and family background groups. In model 3, economic group is inputted. In model 4 work variables group are inputted. In model 5 life variables are inputted. In model 6, social support variables group are inputted. Finally, the model includes six groups' eleven variables.

As shown in Table 10: In model 1, variables that belong to socio-demographic division have been included. The overall model is significant at 0.01 level. The coefficient of doctor Degree is 1.349, which means that foreign experts with doctor degree tend to be happier than those with a lower level of education degree; the occurrence rate of its happiness is 3.852 times of non – doctor degree foreign experts, the influence of the education degree is significant at 0.05 level.

In model 2, I add the two variables that represent the family background, including if foreign experts live alone and if have children, as I would like to see the influence of the living status and children status. We don't put inside the marriage variable, as according to what I see for foreigners in China, they may live together/have children before they get married, and for foreigners who work abroad, these represent very important aspects which may influence them every day, and if they have the marriage certificate is not that important. As shown in the fourth column of Table 10, the coefficient of not living alone is 1.314, the occurrence rate of happiness for foreigners who live with partners is 3.721 times of those who live alone. Regarding the children status, the occurrence rate of happiness for foreign experts who have children is 76.5% of those who have no kids. I think this is reasonable as with kids life working/ living abroad will have much more difficulties, not only in money, time and on.

Table 10: The logit regression result in Happiness (n=200)

Catalogue	Variables	Model 1 Social- demogra- phic	Model 2 Family Background	Model 3 Economic	Model 4 Work	Model 5 Life	Model 6 Social Support
Socio demo- graphic	Highest Degree (Reference: “non-doctor”)	1.349 (3.852) *	1.062 (2.893) *	1.202 (3.328) *	1.045 (2.845) +	1.264 (3.541)	1.064 (2.898)
Family background	Living status (Reference: Living alone)		1.314 (3.721) **	1.460 (4.305) **	2.106 (3.212) **	1.409 (4.091) *	1.524 (4.593) *
	If have Children (Reference: No children)		-.268 (.765)	-.284 (.753)	-.355 (.701)	-.944 (.389)	-.665 (.514)
Economic	(20000, 50000) (Reference: ≤20000)			.424 (.1528)	.402 (1.495) *	.228 (1.256) *	.252 (1.287) *
	(< 50000) (Reference: ≤ 20000)			-.605 (.546)	-1.770 (.170) *	-1.594 (.203) *	-1.644 (.193) *
Work	Discrimination compared Chinese coworkers (Reference: No discrimination)				-1.937 (.144) ***	-2.250 (.105) ***	-1.681 (.186) *
	Work Respect (Reference: Well Respected)				-1.609 (.200) *	-.880 (.415)	-.461 (.630)
Life	Medical Insurance Quality (Reference: Excellent)					-1.201 (.301) *	-1.274 (.280) *
	If could use Didi transportation (Reference: No Use Didi)					.117 (1.124)	-.031 (.969)
Social support	If Chinese boss (Reference: Chinese boss)						1.343 (3.831) *
	Help from Chinese Colleagues (Reference: Help a lot)						-.097 (.907)
	Number of good Chinese friends						.089 (1.311)
LRCHIR2		7.620**	19.381***	22.974***	64.293** *	68.899***	81.805***
DF		1	3	5	7	9	12
Notes: N=200		***:P<0.001; **:P<0.01; *:P<0.05; +:P<0.1; Reference Group in Brackets.					

After adding these variables, I don't see a big change of coefficient and significance in first model. Specifically, the occurrence rate of doctors' happiness go down a bit, while the significance keeps at 0.05 level. In general, after controlling living status and children status, the educational level remains statistically significant on happiness. Meanwhile, the living status has significant influence on the happiness, while the children status has no significant influence on happiness. The whole model is significant at level of 0.001.

In model 3, economic variable division is included, in which I select "rough monthly salary (by CHY)". We divide the variable into three different groups, as shown in previous bi-variate analysis, the salary has a significant influence in happiness. After adding this variable in multi-model, the Chi-square of the model improves and the significance is at 0.001 level. The coefficient of rough salary between RMB 20,000-50,000 is .424, the occurrence rate of happiness is 1.528 times of those with lower level salary. While the coefficient of that above 50,000 is -.605, the occurrence rate of happiness is 54.6% of the reference group. This is an interesting phenomenon, meaning that the happiness doesn't keep rising with the salary, while the influence is not significant. This is a complex problem while fits for the facts in society, which I could explain later in the discussion. This is in agreement with references [60-63] described in Chapter 3, and supports the theory that a higher salary brings associated higher expectations that prevent increase of happiness. After adding the rough month salary variable, it doesn't greatly change the coefficient and significance of the previous variables, the education level and living status variables keep significant influence on happiness at above 0.05 level.

In model 4, the influence of work variables division on happiness is analyzed. It includes "if feel respected by the work itself" and "if feel discriminated comparing with other Chinese colleagues", which are two important variables based on their personal feelings, one comes from work itself, the other comes from co-workers. The statistic shows that both variables have significant influence. The coefficient of foreign experts who feel discriminated compared with other Chinese workers is -1.937, while the coefficient of foreign experts who feel less respected in work is -1.609; which means a lower occurrence of happiness. The occurrence rate of happiness for foreign experts who feel discriminated is 14.4% of those who no feel discrimination compared with other Chinese colleagues. The occurrence rate of happiness for foreign experts who feel no respect is 20.0% of those who well feel respected in work. Both are significant at above 0.05 level.

After adding the work division variables, the coefficient of education level becomes lower and its significance goes down to be 0.1 level; the variables from work division may partly explain the education level's effect. The coefficient of living status rises a bit which emphasizes the effect, and keeps at 0.01 level. The children status keeps no significant influence. The coefficient of monthly rough salary between 20,000 to 50,000 RMB is .402, its occurrence rate is 1.495 times of those with salary below 20,000. The coefficient of monthly rough salary above 50,000 is -1.770, the occurrence rate is 20.3% of those with salary below 20,000, both change to be significant at 0.05 level. The whole model keeps significant at 0.001 level.

In model 5, two variables from life division are inputted, one is the medical insurance quality, the other one is if could use Didi transportation, indicating medical and transportation as two important aspects of daily life. The coefficient of foreign experts without good medical insurance is -1.201, the occurrence of happiness for foreigners without satisfied medical insurance is 30.1% of those with satisfied insurance, and the influence is significant at 0.05 level, which verify the influence of medical insurance on happiness. As for the Didi

transportation, foreign experts who could use it tend to be happier, although the influence is not significant.

After adding these two life division variables and controlling variables, the significance of education degree changes from 0.1 level to be not significant. Similarly, the coefficient of living status goes smaller to be 1.409, and its significance goes lower to be at 0.5 level, which means living status still influence happiness. In economic aspect, the salary coefficient goes smaller while keeps significant at 0.05 level. The occurrence rate of happiness for foreign experts who get salary above 50,000 RMB is 20.3% of those who get below 20,000 RMB, those who get a salary between 20,000 and 50,000 RMB is 0.256 times more than those whose salary are below 20,000 RMB. The happiness level goes up with the salary and then goes down with it. The variable “if feel discriminated compared with other Chinese workers” from work aspect keeps at significant level. The happiness occurrence rate of foreign experts who feel discriminated compared with Chinese workers is 10.5% of those who feel no discriminated. The whole model keeps significant at 0.001 level.

In model 6, I mainly do research on influence from social support division, which include three more variables: if boss is from China, help from Chinese colleagues and number of good Chinese friends. The coefficient of Chinese boss is 1.343, and the occurrence rate of happiness for foreign experts with foreign bosses are 2.83 times more than that with Chinese bosses; the influence of Chinese boss is at 0.5 level significance. Foreign experts who get little help tend to be less possibly happy than those who get a lot of help, the occurrence ratio of the former is 90.7% of the latter. Meanwhile, foreign experts who have one more friends, the occurrence ratio of happiness will be 1.311 times than before, that is 0.311 times higher than before. However, the influence of variables colleagues and friends are not significant.

After adding the social support division variables, the living status keeps significant at 0.05 level. The occurrence rate of Happiness for foreign experts who live with partners is 4.593 times of those living alone. Children status is not significant. Education degree from socio-demographic is not significant. Other variables including salary from economic division, if feel discrimination compared with Chinese co-workers from work division, if feel excellent of medical insurance from life division all keep significant at 0.05 level. The coefficient of salary between RMB 20,000 and 50,000 is .252, the occurrence rate of happiness for people who has a salary between 20,000 and 50,000 is 0.287 times higher than those with salary below 20,000, while occurrence rate of happiness for salary above 50,000 is 19.3% of those with salary below 20,000. The influence of salary is significant at 0.05 level. Similarly, the coefficient of foreign experts who feel discriminated compared with Chinese co-workers is -1.681, happiness occurrence rate of those who feel discriminated is 18.6% of those who feel no discrimination. The coefficient of no excellent medical insurance is -1.274, the occurrence rate of foreign experts with not excellent medical insurance is 28% of those with excellent medical insurance. The whole model is significant at 0.001 level.

From model 1 to model 6, I step-by-step inputted variables including one from socio-demographic group, two variables from family background group, one variable from economic group, two variables from work group, two variables from life variable, and three variables from social support group. The influence of education level changes from significant in model 1, 2, 3 (at 0.05 level), 4 (at 0.10 level) to be not significant at model 5 and 6. From family background group, the coefficient of living status keeps significant at 0.01 level, with more life variables and social support variables inputted its significance goes lower to be at 0.05 level. The children status shows negative influence on happiness, while the influence is not

significant. The salary rises to a significant influence at 0.05 level from model 4 to model 6. Moreover, three variables include “the living status”, “if feel discriminated comparing with other Chinese workers”, “if have excellent medical insurance” keep significant influence on happiness. After controlling for variables in logit model, as shown in table 10, the variables that have statistical significance affecting happiness are from 5 division and 5 variables:

Family Background: Living status is statistically significant and those not living alone tend to be happier. Economic aspect: Rough salary per month has significant statistical influence. Experts with monthly salary between 20,000-50,000 RMB tend to be happier than those with salary below 20000, while those with salary above 50,000 RMB tend to be less happy than those of below 20,000 RMB, which means the influence of salary changes from positive to negative in happiness. Work aspect: Experts who feel discrimination compared with other Chinese workers are less happy. Life aspect: Experts who could get worse medical treatments are less happy. Social support aspect: Experts that have no Chinese boss are happier, in other words, experts that have Chinese boss tend to be less happy.

In general, the multi-model verify the significant influence of living status, salary, work discrimination, medical services, and the Chinese boss after controlling variables. Conversely, the statistical results deny the influence of education level, the children status, the work respect, if could use Didi, help from Chinese colleagues and number of good Chinese friends. Generally speaking, those foreign experts who are not living alone, with a salary between 20000-50000, no feel discriminated compared with Chinese workers, get good medical insurance, and have foreign boss tend to be happier working in China.

For work satisfaction, as shown in table 11, in model 1, the coefficient of doctor is 1.349, which means that foreign experts with doctor degree tend to be more satisfied in work than those with a lower level of education degree, the occurrence rate of work satisfaction is 3.852 times of non – doctor degree foreign experts, the influence of the education is significant at 0.05 level.

In model 2, if foreign experts live alone and if has children, as representing the living status and Children status, have been included. As shown in the second columns of Table 11, the coefficient of not living alone is .943, the occurrence rate of work satisfaction for foreigners who live with partners is 1.567 times higher of those who live alone. Regarding the children status, the occurrence rate of work satisfaction for foreign experts who have children is 2.676 times of those who have no kids. Both the influence are significant at 0.05 level. After adding these variables, there isn't a big change of coefficient and significance in the first model. Specifically, the coefficient of doctor goes down a bit, and its significance also goes down at 0.10 level. The whole model is significant at level of 0.001.

In model 3, economic division variable - “Rough monthly salary (by CHY)” is included, with three different groups, it shows a significant influence in work satisfaction, and the Chi-square of the model improves and the significance is at 0.001 level. The coefficient of rough salary between 20,000-50,000 RMB is .698, its occurrence rate of work satisfaction is 2.010 times of those with lower level salary, and its influence is not significant. While the coefficient of that above 50,000 RMB is -1.334, the occurrence rate of work satisfaction is 26.3% of the reference group, and its influence significant. Similar to happiness, work satisfaction does not keep rising with the salary. After adding the rough month salary variable, it doesn't greatly change the coefficient and significance of the previous variables. All the three variables including education degree, living status and children status keep significant influence on work satisfaction.

Table 11: The logit regression result in Work- satisfaction (n=200)

Catalogue	Variables	Model 1 Social- demogra phic	Model 2 Family Background	Model 3 Economic	Model 4 Work	Model 5 Life	Model 6 Social Support
Socio demo- graphic	Highest Degree (Reference: Non doctor)	1.349 (3.852) *	1.004 (2.730) +	1.292 (3.639) *	1.913 (6.776) *	2.052 (7.782) *	1.831 (6.239)
Family background	Living Status (Reference: Living alone)		.943 (2.567) *	1.425 (4.158) **	2.785 (6.207) **	3.101 (10.224) ***	2.252 (9.505) *
	If have Children (Reference: No children)		.984 (2.676) *	1.108 (3.028) *	1.483 (4.404) *	1.740 (5.695) **	2.443 (10.506) **
Economic	Rough Monthly salary (20000- 50000) (Reference: ≤ 20000)			.698 (2.010)	1.431 (4.183) +	1.693 (5.435) *	1.529 (4.613) +
	(more than 50000) (Reference: ≤20000)			-1.334 (.263) *	-3.077 (.046) ***	-3.093 (.045) ***	-3.866 (.021) **
Work	Discrimination compared Chinese coworkers (Reference: No discrimination)				-3.404 (.033) ***	-3.314 (.036) ***	-2.604 (.074) **
	Work Respect (Reference: Well respected)				-1.813 (.163) +	-2.447 (.087) *	-2.379 (.093)
Life	Medical Insurance Quality (Reference: Excellent)					-.190 (.827)	-.588 (.555)
	Didi transportation (Reference: No use Didi)					.643 (1.902)	.566 (1.762)
Social interaction	If have Chinese boss (Reference: Chinese Boss)						1.822 (6.185) *
	Help from Chinese Colleague (Reference: Help a lot)						-2.042 (.130)
	Number of good Chinese friends						.106 (1.111) +
LRCHIR2		7.620**	15.786***	29.592***	69.193***	96.436***	105.540***
DF		1	3	5	8	10	12
Notes: N=200 ***:P<0.001; **:P<0.01; *:P<0.05; +:P<0.1; Reference Group in Brackets.							

In model 4, two subjective variables from work division are inputted. The coefficient of foreign experts who feel discriminated compared with other Chinese workers is -3.404, the coefficient of foreign experts who feel less respected in work is -1.813, which means a lower occurrence rate of work satisfaction. The occurrence of working satisfaction for foreign experts who feel discriminated is 3.3% of those who feel no discrimination compared with other Chinese colleagues, and the influence is significant at 0.001 level. The occurrence rate of work satisfaction for foreign experts who feel no respect is 16.3% of those who feel well respected of work, which is significant at 0.10 level.

After adding the two work division variables, all the previous variables still keep significant. The coefficient of education level, living status and children status all become higher and keep significant. The coefficient of salary between 20,000 and 50,000 RMB is 1.431, the occurrence rate of work satisfaction is 4.183 times of those below 20000, and the coefficient of salary more than 50,000 RMB is -3.077, the occurrence rate of work satisfaction is 4.6% of those below 20,000 RMB, and the influence of salary is significant. The whole model keeps significant at 0.001 level.

In model 5, two variables from life division are inputted, one is the medical insurance quality, the other one is if could use Didi transportation. The coefficient of work satisfaction for foreigners without excellent medical insurance is -1.90, and the occurrence rate of work satisfaction for experts with poor insurance is 82.7% of those with excellent insurance. As for the Didi transportation, the coefficient of foreign experts who can use it is 0.643; those who could use it tend to be more possibly work-satisfied, while influence of these two variables are not significant. The whole model keeps significant at 0.001 level.

After adding these two life division variables, the coefficient of education degree, living status and children status go bigger to be 2.052, 3.101, and 1.740, and their significance keep at 0.5, 0.001 and 0.01 level, which means significant influence. In economic aspect, the salary keeps significant at above 0.5 level. The occurrence rate of work satisfaction for foreign experts who get salary above 50,000 RMB is 4.5% of those who get below 20,000 RMB, and those who get a salary between 20,000 and 50,000 RMB is 5.435 times of those who get below 20,000 RMB. The work satisfaction level goes up with the salary rising, and then go down with it. The work satisfaction occurrence rate of foreign experts who feel discriminated compared with Chinese workers is 3.6% of those feel no discriminated. Feeling discriminated will greatly decrease the work satisfaction, which keeps significant at 0.001 level. Similarly, the coefficient of feeling not respected of their work is -2.447, the occurrence rate of work satisfaction is 8.7% of those who feel well respected in work, and its significance keeps at 0.5 level.

In model 6, three more variables from social support division are inputted, including “if boss is from China”, “help from Chinese colleagues” and “number of good Chinese friends. The coefficient of Chinese boss is 1.822, and occurrence rate of work satisfaction for foreign experts with foreign bosses are 5.185 times more than that with Chinese bosses, the influence of Chinese boss is at 0.5 level significance. Meanwhile, foreign experts who get little help tend to be less possibly satisfied in work than those who get a lot of help, while its influence is not significant. Moreover, foreign experts who have one more friend, the occurrence rate of relevant work satisfaction will be 0.111 times higher than before, and the influence is significant at 0.1 level. Both the foreign boss and the Chinese good friends show positive significant influence in work satisfaction. The whole model keeps significant at 0.001 level.

After adding the social support variables group, the coefficient of education level goes down and its significance changes smaller to be not significant. In family background division, the coefficient of not living alone is 2.252, and keeps significant at 0.05 level. The occurrence rate of work satisfaction for foreign experts who live with partners is 8.505 times more than those living alone. The coefficient of Children status is 2.443 with significance at 0.01 level. The occurrence rate of work satisfaction for foreign experts who have kids is 9.506 times more than those have no kids. Both the living status and children status significantly influence the work satisfaction. In economic division, the coefficient of salary between 20,000 and 50,000 RMB is 1.529, the occurrence rate of work satisfaction for people who has a salary between 20,000 RMB and 50,000 RMB is 3.613 times higher than those with salary below 20,000 RMB, which is significant at 0.1 level; the occurrence rate of work satisfaction for people who has a salary above 50,000 RMB is 2.1% of those with salary below 20,000 RMB, and is significant at 0.01 level. In work division, the coefficient of foreign experts who feel discrimination compared with Chinese co-workers is -2.604, work satisfaction occurrence rate of those who feel discrimination is 7.4 % of those who feel no discrimination, the influence of feeling discriminated is significant at 0.01 level. The coefficient of well feeling respected in work is -2.379, its occurrence rate is 9.3% of those who feel well respected, while it changes to be significant. The whole model is significant at 0.001 level.

In general, after controlling for variables in logit model 6 as shown in table 11, the variables that have statistical significance affecting work satisfaction include 6 variables from 4 aspects:

Social demographic aspect: no; family background: if have spouse/ partners living together, if have children; economic aspect: rough salary per month; work aspect: discrimination compared with other Chinese workers; life aspect: no; social support aspect: if have Chinese boss, the number of Chinese good friends.

In other words, foreign experts who live with spouse/partner, have children, get higher salary, no feeling discrimination compared with Chinese workers, have foreign boss, have more Chinese friends are more satisfied in working in China. The statistic results deny the influence of education degree, work respect, medical insurance quality, Didi transportation, and help from Chinese colleagues.

Moreover, comparing Tables 10 and 11, it is interesting to see the different influencing direction and significance of children status on happiness and work satisfaction. The children status show positive relationship with happiness, while not significant. Conversely, the children status show negative relationship with work satisfaction, and the influence is significant.

For life satisfaction, as shown in Table 12, in model 1, the education degree doesn't show significance influence.

In model 2 when the living status and children status are included, the education degree and living status keep not significant, only the children status is significant. The coefficient of children status is 1.026, which means that having children has a positive effect on life happiness; the occurrence rate of life happiness for foreign experts who have kids is 1.790 times higher of those with no kids, the influence is significant at 0.1 level.

In model 3, the economic variable is included, the influence direction and size is similar to previous, while it is not significant.

Table 12: The logit regression result in Life- satisfaction (n=200)

Catalogue	Variables	Model 1 Social-demo- graphic	Model 2 Family Background	Model 3 Economic	Model 4 Work	Model 5 Life	Model 6 Social Support
Socio demo- graphic	Highest Degree	.517 (1.677)	.209 (1.232)	.213 (1.238)	-.152 (.859)	-.288 (.750)	-.415 (.660)
Family background	Living Status (Reference: Living alone)		.628 (1.875)	.744 (2.104)	.842 (2.322)	.215 (1.240)	.179 (1.196)
	If have Children (Reference: No children) +		1.026 (2.790) +	1.003 (2.728) +	.797 (2.219)	.405 (1.499)	.597 (1.817)
Economic	Rough salary Mont(Reference: less than 20000)						
	Rough salary (20000- 50000)			.539 (1.714)	.399 (1.490)	-.209 (.812)	-.164 (.849)
	Rough salary (more than 50000)			-.008 (.992)	-.297 (.743)	-.921 (.398)	-.687 (.503)
Work	Discrimination compared Chinese coworkers (Reference: No discrimination)				-2.787 (.062) ***	-2.856 (.057) ***	-2.498 (.082) ***
	Work Respect (Reference: No respect)				-1.282 (2.056)	-2.034 (.007)	-1.199 (.285)
Life	Medical Insurance Quality (Reference: Well medical)					-1.553 (.212) *	-1.448 (.235) *
	Didi ransportation (Reference: No use Didi)					.473 (1.605)	.296 (1.345)
Social interaction	If have Chinese Boss (Reference: Chinese Boss)						.704 (2.021) +
	Chinese colleague (Reference: Help a lot)						-.048 (.953)
	Number of good Chinese friends						.041 (1.042)
LRCHIR2		.804	4.928	6.126	42.096* **	44.655* **	47.296** *
DF		1	3	5	7	9	12

Notes: N=200 ***:P<0.001; **:P<0.01; *:P<0.05; +:P<0.1; Reference Group in Brackets.

In model 4, two work group variables are included: the coefficient of Discrimination compared with Chinese coworkers is -2.787 (which means experts who feel discriminated will have less life satisfaction) and the occurrence rate of people who feel discriminated is 6.2% of those who feel no discriminated, and the influence is significant at 0.001 level. All the other variables are not significant in the model, especially the coefficient of children status goes lower and changes to be not significant, which means the discrimination could partly explain the influence of Children status on life satisfaction, and the whole model is significant at 0.001 level.

In model 5, the two life group variables are included, the coefficient of medical insurance is -1.553, which means the bad insurance will have a negative impact on life happiness, the occurrence rate of life satisfaction for foreign experts with not good medical insurance will be 21.2% of those who get an excellent medical insurance, and the influence of medical insurance is at 0.05 level. Foreign experts who could use Didi could may have a higher level of Life happiness while the influence is not significant. The two life group variables don't change significantly the influence of previous variables, and variable "if feel discriminated compared with other Chinese co-workers" keeps a significant influence at 0.001 level. The occurrence rate of life happiness for those who feel discriminated is 5.7% of those who feel no discriminated, work respect variable shows no significant influence, and the whole model keep significant at 0.001 level.

In model 6, the three social support variables are included, the coefficient of "Having foreign boss" is .704, which means foreign experts with foreign boss have higher possibility to feel life satisfied, the occurrence rate of life satisfaction is 2.021 times of those with Chinese boss, and the influence of boss's nationality is significant at 0.10 level. The colleagues' help and the Chinese friends don't show significant influence on life satisfaction.

After controlling variables in logit model, as shown in Table 12, the variables that have statistical significance on life satisfaction are only three: boss from China, discrimination compared with Chinese workers, and medical insurance level. Foreign experts who have Chinese bosses, who feel discrimination compared with Chinese workers, and who get lower level of medical insurance are less satisfied with their life in China.

As shown in Table 13, based on above three Logit regression analysis after controlling variables, the research shows 5 variables that have significant influence on happiness, 6 variables that have significant influence on work satisfaction, and 3 variables on life satisfaction. The demographic factors don't show statistically significant influence, while the living status does. Children status from family aspect shows no significant influence on happiness but significant on work satisfaction, the month salary from economic aspect show significant influence on happiness and work satisfaction. The medical insurance show significant influence in happiness and life satisfaction. The number of good Chinese friends show significant influence in work satisfaction.

There are two common variables that significantly influence all the three dependent variables: if have Chinese boss, if feel discriminated comparing with Chinese co-workers. It shows that the Chinese boss acts as a very important role for foreigners working in China, as Chinese boss acts a greatly different working method from foreign boss. Moreover, foreign experts may not feel unhappy or unsatisfied if they are in a poor situation, while they will feel unhappy or unsatisfied if they are not in a fair situation, indicating a fair/no discriminated environment is very important for foreign experts.

There is one variable that has different influence direction in the two dependent variables (happiness and work satisfaction): the children status (if have children). This variable shows positive influence in happiness, while negative impact in work satisfaction, even the influence in happiness is not significant, the influence direction on happiness and work satisfaction is completely different. That is to say, the kids have the possibility to bring more happiness to foreign experts working in China, meanwhile it will reduce their working satisfaction as it also

bring more pressure for foreign experts to balance work and family (kids), which is a conflict in terms of money, time and freedom.

Table 13: Compare the Logit regressions with three different dependent variables

With significant effects	Happiness	Work Satisfaction	Life Satisfaction
Number of significant factors	5 significant factor	6 significant factors	3 significant factors
Variables with positive effects (ordered by level of impact: from + to -)	If live alone Rough salary (2-50000 RMB) If have Chinese boss	If live alone If have Children Rough salary (20,000-50,000 RMB) If have Chinese boss Number of good friends	If have Chinese boss
Variables with negative effects (ordered by level of impact: from + to -)	If have children (not significant) Rough salary (>50,000 RMB) Discrimination compared with Chinese workers Medical insurance (worse)	Rough salary (>50,000 RMB) Discrimination compared with Chinese workers	Discrimination compared with Chinese workers
Common variables in three models	If have Chinese boss Discrimination compared with Chinese workers		
Unique Variables not in 3 models	If live alone Rough Monthly Salary If have Children (positive, not significant) Medical insurance	If live alone Rough Monthly Salary If have Children (negative, significant) Number of good friends	Medical insurance

The unique factors that have significant influence in happiness include: Living status from family aspect, Rough salary from economic aspect, Medical insurance status from life aspect. Similarly, the unique factors that have significant influence in work satisfaction include: if have children (with negative impact) and the number of good Chinese friends (with positive impact). The unique factor that has significant influence in life satisfaction is medical insurance.

It is very interesting to see that, first, the salary is very important for happiness and work satisfaction, while the happiness and work satisfaction don't go rising with the salary, as the month salary of 20,000-50,000 RMB is higher than those with monthly salary below 20,000 RMB, while those above 50,000 RMB have a lowest level of happiness and work satisfaction. A possible explanation could be that the rise of salary means the rise of work-related pressure and the higher expectations of life and work quality for foreign experts working in China.

Summary: According to the sample survey, foreign experts working in China are 1/3 female and 2/3 male, most concentrated at the age of 34-35 and 39-40, with 70% holding doctor degree,

66% have a partner/ spouse, 50% married, 30% have children, 25% are single. Among those who have partners, 30% has partner is from China.

Regarding the work, nowadays it is very usual to see foreigners working in China from big cities to small cities, from universities to companies, 66% of them are working in natural science, as associate professors or principal investigators (PI), and remark that they are exposed to high pressure in their work to achieve difficult milestones. They normally work in China for around 2-5 years, with an average stay of 4.88 years and average daily working hours is 8.8 hours. Half of them have Chinese boss and half have foreign boss. The most repeated salary is 20,000 to 50,000 CNY per month, and around half of foreign experts get a free accommodation offered by employer, together with a medical insurance. Many foreign experts worry about the retirement plan. In general, the collaboration with other colleagues at work is not good enough.

Regarding the daily life, 64% foreign experts could use Taobao, WeChat and Didi among all the daily apps, which may give them a very convenient living experience in China. Most of foreign experts have a good sports habit and going out with friends habit. 70% foreigners occasional attend art, music and education activities, and most of them seldom attend any of the religious, political, environmental or humanitarian activities. The biggest challenges for them are: language barrier, cultural differences, lack of expert advice, discrimination compared with Chinese workers. The foreign experts could be divided in to two groups regarding the future: coming for short time (1-2 years) to make business (together they sum 25%) or 10 years (14.66%) or more (7.84%). One third has, in average, two good Chinese friends.

Chinese language, cultural barrier, lack professional advice rank as the first three difficulties living in China. The diversity of China (including people, scenery, food and on) with lots of opportunities, convenient labor services are frequently mentioned good aspects of living in China. Covid seems to be a negative related experience for foreigners living in China. There are several objective hardware difficulties mentioned such as the internet restriction, the bank difficulties and on.

Further the study, as shown in Table 13, I find both mutual and unique variables for the dependent variables. After controlling variables, despite other significant variables, there are two important variables that influence all the three dependent variables which are interesting findings: first, if boss is from China or abroad; second, if foreign experts feel they could work fairly as other Chinese experts, which is an interesting finding.

5.4 – In-depth Interviews

In order to complement the information obtained from the questionnaire I have made 7 interviews, three to representative experts, three to high-profile experts, and one to a Chinese employer. The interviews can be found in Annexes III, IV and V. In the following sub-sections, I describe a general overview and straightforward conclusions. For more information, please check the aforementioned Annexes.

5.4.1 – Interviews to representative experts

Representative experts are foreigners that occupy an average rank within China, and that get an average amount of pressure and salary. They are the largest group among all persons asked. My impression is that these persons are in general satisfied with their lives in China no matter which stage of their careers. The first foreign expert interviewed said *“I found things I wasn’t looking for. It is fascinating to learn about Chinese culture through people I encounter and*

personal exploration/ travel, I could spend a lifetime learning and exploring". The second foreign expert interviewed said *"Everyone I work with tries to be helpful and supportive. There are opportunities to travel and to see different parts of country. China for me is an inexpensive country which is continuing joy"*. The third foreign expert interviewed came to China due to his bad situation in Spain and said that *"absolutely found much more than what he was looking for and is having a completely different treatment now"*, and also pointed that *"I like very much the international community in China in which people are very open minded and have been in many countries before, and they are intelligent and in general speak 3 languages or more. I like the students respect the professors"* and *"if you work hard there are opportunities"*. When asking the high-profile experts, an anonymous foreign expert said *"I would highlight that I like China and its culture. Moreover, there are many good opportunities for Europeans, and here you are able to get a position which is impossible in Europe"*. Similarly, Prof. Pedro Laborda said *"I found out something that is better than I was expecting, absolutely it was a good idea to come to China. Europeans like the reputation that is given to researchers in China...we strongly like Chinese government has perfectly managed the Corvid crisis"*. These statements indicate that they know well that they are here temporarily, and they have given me the feeling that they obtained what they were looking for. I do not think they are suffering much pressure, although I do think they are unhappy with some working methodologies in China because: an anonymous foreign expert said *"foreign experts stay in China while they couldn't integrate into Chinese society"*, and *"Chinese people will always see you as an outsider, and will always think that you are going to abandon them and therefore prefer not to make strong bonds."* He also pointed that *"with the Guanxi, you are totally fine, but when it disappears, you can be left in a complex situation"*. He highlighted the important of rumors and unwritten rules: *"Rumors are very useful and common in China"*, *"there are also many unspoken rules"*. Prof. Pedro Laborda said *"the first years are difficult and require some adaption"*. Prof. Mario said *"some heads of institutes, departments of groups are very authoritarian to people under them, foreigners get frustrated and leave"*. For those reasons, many of them do not plan to stay in China for long time, which in the long term is a lost for the country. I think more incentives from Chinese employees are necessary in order to retain this collective.

5.4.2 – Interviews to high-profile experts

High-profile experts are foreigners who have a wide experience working in China, who have a high degree of responsibility, and who act as managers that hire and instruct other Chinese and foreigners. This type of individuals is scarce. I have the impression that these foreigners understand deeply the reality of China, and that they are familiar with some concepts of their work that even some Chinese may be not aware. These are respected professionals and they gave me the impression that they enjoy their work. However, they are finding many difficulties in their daily work that they would not have if they would work in a western country. Among them, getting access to information and miscommunications are two of the most important. I have the feeling that their level of satisfaction is high, as they really enjoy their work and feel that they are progressing. They do not seem to be so interested on cultural and leisure activities, and they pay much more attention to work. I also have the feeling that they see a gap with Chinese collaborators, and that they feel pressure when they are compared to other Chinese colleagues.

5.4.3 – Interview to a Chinese employer

I have tried very hard to interview three Chinese heads of department or research institute who could describe the advantages and disadvantages of hiring foreigners. I have sent several

Emails and made many calls, but one person has agreed. Three other persons answered the phone but said they prefer not to participate. Furthermore, the person that I have interviewed has shown no interest and he wasn't very communicative. As it can be seen in the interview (see Annex V), I had to insist with my questions, and at the end of the interview this person was a bit uncomfortable.

I have the feeling they do not like to talk about the situation of foreigners in China, which might mean that they know that they are doing something not perfectly. It is especially striking that the number of foreigners working in management positions is very low. The interviewed Chinese employer justified it due to the use of Chinese language, but I think research management committees should include more foreigners, as research is done in English. Furthermore, I had the feeling that the Chinese employer didn't value the work of the foreign scientists, as he mentioned in multiple occasions that their number of papers and citations was lower than the average compared to the Chinese professors there.

Overall, I think the environment for foreigners to work on research in China needs to be improved, and I think this might have a very deep impact on their happiness and satisfaction. Given this impression, I have introduced a new analysis in my questionnaire, as follows. Among the total people asked, nearly 50% has a Chinese boss, and nearly 50% has a foreign boss. I have noticed that only 60% of people who has a Chinese boss is satisfied with him, while this percentage increases to 92% for those who have a foreign boss.

5.5 – Highlighted discussions

In this section, I will discuss two very specific points. The first one is the balance between family and work life, and the second is about the high participation rate of foreigners in my study. These two aspects have been discussed during the interviews to the high-profile samples.

5.5.1 – Description of family-work balance

My conclusion for the cases interviewed is that this parameter does not have a very big influence. There are three main reasons. First, in China many times parents come to the house to take care of the children, and they help also to do the shopping and cleaning. Second, in China hiring a house worker to take care of the babies and house is cheap and, unlike in many western countries, they can afford hiring a person. And third, many of the foreign experts are male foreigners who married to a Chinese woman and, despite things are changing, the vision that the man has to work hard outside to bring money to the home is still very widespread. Moreover, only ~32% of the foreign experts living in China have children, which means that a great portion of studied cases have less family responsibilities.

5.5.2 – Discussion on the high participation rate

After the formal questions of the interview, I have also (informally) asked the foreign experts about how they see my work, and if they have any potential explanation for the high participation rate (which is ~91 %). I have been very surprised that they found my study very interesting, and all of them indicated that people (that is, they and other foreign friends) are very eager to see changes in Chinese society, and see that the working conditions for foreigners in China improved. They think that participating in studies like this is positive to widespread the problems of China, and to help the government and institutions to find solutions, with the ultimate goal of retaining the foreign experts.

Chapter remarks

Combining the above quantitative statistical results with qualitative interviews, the research results certify some of the hypothesis and deny some others.

- Hypothesis 1 is incorrect, gender does not show significant influence happiness and satisfaction.
- Hypothesis 2 is incorrect, education does not show significant influence happiness and satisfaction.
- Hypothesis 3 is correct, those living with spouse/ partner will be happier/ more satisfied.
- Hypothesis 4 is partly correct, children status has positive effect on happiness and negative and significant effect on work satisfaction.
- Hypothesis 5 is partly correct, economic affects the happiness and work satisfaction, and the influence firstly is positive, and negative afterwards.
- Hypothesis 6 is correct, if feeling discriminated comparing with Chinese co-workers significantly influence happiness, work satisfaction and life satisfaction, which is also emphasized for several times in open questions.
- Hypothesis 7 is partly correct, Chinese boss shows to be a very important factor influencing happiness, work satisfaction and life satisfaction, and the number of friends show special influence on work satisfaction. The influence of co-worker is not significant.
- Hypothesis 8 is incorrect, the smartphone APP- Didi's influence is not significant.
- Hypothesis 9 is correct, medical insurance significantly influence happiness/ life satisfaction.
- Hypothesis 10 is partly correct, friends show positive influence in work satisfaction.

Please note that these conclusions apply to the sample analyzed in this study in this specific moment. A way of improving the accuracy of this study (as the accuracy of any other statistical analysis) would be to increase the size and diversity of the sample, as it will be discussed extensively in Chapter 8.

Chapter 6: Scientific production of foreign experts in China

Happiness and job satisfaction are highly affected by the recognition received at work [124]. The recognition can be defined as the benefits that one gets for good performance (in all senses), and it can be divided in two parts:

- The first type of benefits is abstract, and it is related to respect, admiration, connections, and non-written advantages that one could get within his institution and network. China is a very hierarchical collective society based in networking, and in which regulations can often be flexible for people on the top of the social/institutional pyramid (and their friends). Therefore, the abstract benefits linked to recognition at job in China are larger than in most western countries. On the contrary, in Chinese collective society fitting badly within a group can often bring associated a high degree of mental pressure. One well-known example are women who decide not to marry and have children, who receive extremely high pressure from relatives and friends [125]. In the domain of academia and research, the high degree of pressure can be observed by the large number of students suicide after receiving bad evaluation results or little progress [126]. For a scientist working in China abstract benefits related to recognition would be being listened by students (i.e., they follow strictly instructions when doing experiments) and administrative staff (i.e., getting requests related to facilities status and logistics accepted), attracting the interest of other scientists who may ask for collaboration, membership of committees and invited talks, as well as influence more effectively in reviewers of scientific articles and project proposals.
- The second type of benefit is tangible, and it can be understood an economic bonuses and improvement of the working conditions. This type of benefit is also very important in China in most jobs, much more than in other countries. According to Jinping Xi's words [127], any child in China, even those from the poorest families, could progress to the highest positions if he/she has enough talent, as the system is designed to detect it and potentiate it. In this sense, the definition of expert is extremely important, as it will be discussed in the following. The economic bonuses for publication is something well-known that has been recently a matter of discussion [128]. For some scientists, the annual bonus can even surpass the annual salary. Regarding the working conditions, tangible benefits can take the form of an increase of the promotion, tenure, students quota, additional research funding, better facilities, and reduction of the teaching load to promote research output — this is seen as a benefit by most professors. The degree of tangible benefits that a scientist working in China receives for good performance is much higher than in other countries. For example, many professors working in Spanish universities have claimed that the current academic and scientific system does not promote enough motivation for doing research [129], and that one professor having good performance would receive similar salaries and compensation than another one that simply does no research. In China, the entire scientific system is bonus-based, and meritocracy is one of its fundamental pillars [128].

In the specific context of this study, recognition can produce happiness and satisfaction by mainly two collectives of persons. The first one is family, friends and workmates, who interact often with us and who will do it with more respect and kindness if the person is successful in its work. The second one is persons within the community who will also respect us more; traditionally this factor was much less important because those interactions were less frequent.

However, the development of social networks makes this interaction much more frequent, and offers another degree of evaluation of its impact by the number of views, likes and dislikes. Therefore, analyzing quantitatively how successful foreign experts working in China are is mandatory to understand their degree of happiness and job satisfaction.

6.1 – Motivation of this study

The most important factors that determine how much recognition one scientist working in China will receive are: i) how important the research topic is for the country, and ii) what are the key performance indicators. Regarding the topic, it is very simple because the Chinese government has published the main strategic research directions, all of them in the field of natural sciences [47-49]. These directions are:

- Information Technology (artificial intelligence, internet of thing, smart appliances)
- Robotics (artificial intelligence, machine learning)
- Green energy and green vehicles energy efficiency, electric vehicles
- Aerospace equipment
- Ocean engineering and high tech ships
- Railway equipment
- Power equipment
- New materials
- Medicine and medical devices
- Agriculture machinery

As it can be observed, science, technology, engineering and mathematics (STEM) are the fields that attract the most interest, as the government considers them extremely important for the development of the country and help to improve the economy, health, national security, transportation, and etcetera. Therefore, in this statistical analysis I will focus on this field.

In this area, the key performance indicators, including research articles published (and their impact factor and citations), patents and technology transfer (not only raising investment from business angels and venture capital firms for the creation of startups but also commercialization and revenue). The importance of these key performance indicators is very well-known and even explicitly mentioned in job offers [130]. For scientists working in universities, teaching quantity and quality, successful direction of doctoral, master and even bachelor theses, as well as administrative service are also key performance indicators. However, foreign scientists in China cannot perform administrative service due to the stringent requirement of native Chinese language speaking, something that almost nobody achieved. Hence, this performance indicator will be discarded.

Among all other mentioned key performance indicators, China has shown to put special attention to the number of high-impact-factor research articles published by scientists as corresponding author and with first affiliation being the one of the corresponding author (meaning that the work has been majorly done by one student of such institution) [131]. This very specific policy tries to ignore all those scientists that participate as co-authors in investigations lead by other scientists (often from other institutions) based on friendship and networking, and often with little or no contribution — this happens often in many other countries, but China tries to exclude those cases from its bonus system. Multiple institutions publish lists of bonus by specifying a specific amount for each impact factor threshold, and in

many cases they even specify the name of the journals. The importance of high-impact-factor publications in China to receive recognition is much more important than in any other country, and the difference with other key performance indicators is very big. Prof. Mario Lanza, full professor and research group leader for from 2013 to 2020 at Soochow University in China and corresponding author of more than 50 high-impact-factor research articles, mentioned that: *“The publication of high-impact-factor research articles as corresponding author is the thing that brought me most recognition and benefits during my work in China: their importance is much higher than in any other country, and I would say their weigh compared to all other key performance indicators is ~90%”*.

Based on these facts, in the following statistical analysis I am going to compare the number of high-impact-factor research articles published by Chinese and non-Chinese scientists working in China.

6.2 – Statistical analysis of high-impact-factor articles by national and foreign scientists

First, I need to determine which are the high-impact-factor journals in the key disciplines published by the government (i.e., natural sciences). According to the Journal Citation Reports (JCR) [132], there are hundreds of journals. However, by asking many scientists working in China and by seeing the names of the journals recommended by the institutions (i.e., specified in the bonus list and job advertisements), the most desired are Nature and Science, and after them all the specialized Nature journals, such as Nature Materials, Nature Nanotechnology and Nature Electronics. Many other journals in the broad field of natural sciences are also highly desired, such as Cell, New England Journal of Medicine and Advanced Materials. But for this study I cannot select all journals, so I make a selection based on the feedback from most of the persons interviewed. Our selection of high-impact-factor journals are:

- **Nature.** Its website is www.nature.com. The impact factor is 49.962, and it ranks 1st in the JRC category of Multidisciplinary Sciences.
- **Nature Materials.** Its website is <https://www.nature.com/nmat/>. The impact factor is 43.841, and it ranks 1st among 162 journals in the JRC category of Chemical Physics.
- **Nature Nanotechnology.** Its website is <https://www.nature.com/nnano/>. The impact factor is 39.231, and it ranks 2nd among 106 journals in the JRC category of Nanoscience and Nanotechnology. It should be mentioned that the 1st one is Nature Reviews Materials, a journal that only publishes reviews, no original papers. Therefore, I discarded that and selected Nature Nanotechnology instead.
- **Nature Electronics.** Its website is <https://www.nature.com/natelectron/>. The impact factor is 33.686, and it ranks 1st among 273 journals in the JRC category of Engineering, Electrical & Electronic.

It is worth noting that Chinese institutions are mostly interested on the journals that top the categories of the JRC, independently on the “nationality” of the journal, i.e. from which country is the publishing group. In the case of this study, the publishing group is Nature, a UK-based publisher that has also offices in other parts of the world like USA and China. Other top publishers in the broad field of natural sciences are Wiley-VCH and societies from the USA like American Chemical Society (ACS) and the Institute of Electrical and Electronics Engineers (IEEE). It should be also noted that: i) in the past few years high-impact-factor Sino-German journals like InfoMat (impact factor 25.405) and Nano Research (10.269) have raised interest among the scientific community; and ii) the Chinese government has recently established a new policy that obligates scientists who received public funding to publish at least

33% of their representative articles (i.e., those used for individuals evaluation) in Chinese journals [133]. However, this has (still) not changed the fact that Nature, Nature Materials, Nature Nanotechnology and Nature Electronics publish some of the best research in the strategic fields of interest for the Chinese government.

Readers of this study working in other fields within natural sciences (such as medicine and biology) may find themselves excluded and may think that this study is not representative of the entire community of non-Chinese scientists working in China, and I fully agree. But, as in any other statistical analysis, I need to take a sample because I cannot analyse journals and articles in all fields. Note that this study has been done manually by checking the website of each publisher, I didn't use any bibliometric software or API, as that used in the popular scientists ranking published by Stanford University (see reference [134]). In any case, objectively, these are the journals with the highest impact factor in their field, as well as the most reputed worldwide (in their field) and demanded in China (in their field).

The main difficulty of this study is to determine which of the corresponding authors are Chinese and which not. Only by the name, one could make a rough distinction, as Chinese names and surnames are often mono- or-bi-syllabic. However, this would not be a rigorous process. Initially, I considered to contact each one of these scientists via Email; however, these are normally very busy persons who do not answer survey Emails, and many others have privacy concerns and prefer not to say it. Therefore, I had to employ a feasible yet useful definition of “national” and “foreign”. I noted that , for most of the cases analysed (84.62%), I can find online where they got their bachelor, master and doctoral degrees. Taking into account that most scientists who travel to other countries for research purposes do it after the bachelor, I could define expatriate scientists as those whose primary affiliation is not in the country where they obtained their bachelor degree. Note that, according to this definition, scientists who migrated to another country before entering to college and stay working there are not considered expatriate scientists (at that age, such individuals migrated for education or social purposes, not for scientific purposes). For example, one scientist of any nationality who migrated to China with his family when he was 13 years old, studied the bachelor in China and end ups working in China is counted as Chinese (even if he is not) because the reason to migrate is not scientific. However, one scientist of any nationality who did the Bachelor outside China and ends up working in China and publishing with a Chinese affiliation is counted as non-Chinese, because he moved to China with the aim of doing science (he is an expatriate scientist).

Table 14 shows the summary of the data obtained doing this statistical analysis, which has been collected as follows. First, I checked the website of each journal. For Nature Electronics, Nature Materials and Nature Nanotechnology I check the volumes of 2018 and 2019, each of them having 12 issues because they are monthly journals. For each issue (24 for each journal), I check all the articles and I write down the name of all the corresponding authors, their affiliation in that paper, and their Email. This shows us where they are working currently. Then, I check where did they get the Bachelor degree. This information is the most difficult to obtain. To do this, I had to check if they have any website in which their education is indicated. This is very normal among scientists, and I found it for ~60% of the corresponding authors by simply typing their name and Email in Google (this combination is a unique identifier and worked out very well). Here one can find an example of such personal websites (<https://www.kaust.edu.sa/en/study/faculty/thomas-anthopoulos>). For those who do not have such a website, I searched in Web of Science articles that include a short biography. This is normal in many types of articles, such as all articles from IEEE – Transactions on Electron Devices and review articles from Advanced Materials family (from Wiley-VCH publisher).

Using this method, I still could determine the university where some other corresponding authors obtained the Bachelor. Using this method, from a total of 1366 corresponding authors I could find more than 1160 them, which represents more than 85%. I think this is a very representative number. Then, for each corresponding author I compare the current affiliation with the university which they got the bachelor. If both institutions are in the same country, they count as Nationals, and if not, they count as Expatriates. For the case of Nature journal, as this is not a monthly journal but it is published weekly and it publishes many more articles per issues than all others, there are many more articles and it would be very time consuming. Therefore, I only counted January and February of 2019, which represents 147 articles (this is even more than the number of articles published by Nature Electronics in years 2018 plus 2019, which was 128). A complete detail of the articles is shown in Annex VI.

Table 14: Number of scientists (per region) who published at least one paper in Nature Materials, Nature Nanotechnology and Nature Electronics (in 2018 and 2019) and Nature (in January and February of 2019). In the case of Nature, I only counted two months because it is a weekly journal that publishes many more papers than its sister journals. Additional information about the survey can be found in the supplementary information. Only the countries that published 5 or more papers are shown, so that percentages are meaningful. *Countries with <5 papers are grouped in the row *Others*.

Region	Number of Scientists						
	Total	Nationals	%	Expats	%	Not found	%
Australia	43	15	34.88	20	46.51	8	18.60
Austria	14	3	21.43	5	35.71	6	42.86
Belgium	7	6	85.71	1	14.29	0	0.00
Canada	26	10	38.46	15	57.69	1	3.85
China (main)	168	142	84.52	11	6.55	15	8.93
Denmark	8	3	37.50	3	37.50	2	25.00
France	50	15	30.00	11	22.00	24	48.00
Germany	86	45	52.33	19	22.09	22	25.58
Israel	8	5	62.50	2	25.00	1	12.50
Italy	27	16	59.26	6	22.22	5	18.52
Japan	58	33	56.90	10	17.24	15	25.86
Korea	40	27	67.50	6	15.00	7	17.50
Netherlands	32	12	37.50	11	34.38	9	28.13
Saudi Arabia	5	0	0.00	4	80.00	1	20.00
Singapore	36	3	8.33	27	75.00	6	16.67
Spain	24	12	50.00	7	29.17	5	20.83
Sweden	25	3	12.00	13	52.00	9	36.00
Switzerland	60	8	13.33	40	66.67	12	20.00
Taiwan	13	6	46.15	3	23.08	4	30.77
United Kingdom	104	34	32.69	52	50.00	18	17.31
United States	556	196	35.25	319	57.37	41	7.37
<i>Others*</i>	23	5	21.74	13	56.52	5	21.74
TOTAL	1417	599	42.27%	600	42.34%	218	15.38%

In total, I have analyzed 880 papers published by 1366 corresponding authors (many papers share corresponding authorship), and they carry in total 1417 affiliations (some corresponding authors have more than one affiliation). Please see Annex VI for more details. Among all of them, >42.34% are expatriates, and the regions with highest and lowest percentage of expatriates among their top scientists are Saudi Arabia (80.0%) and mainland China (6.55%). The results in Table 14 reveal that some of the regions/countries with the highest percentage of expatriate top scientists also exhibited the highest percentage of manuscripts accepted in multiple journals during the past decade [135]. This statistically demonstrates/points to the relevance of having expatriates among their top scientists in the production of good investigations.

All English-speaking countries seem to be more effective attracting top scientists from other regions, although the cases of Singapore (75.00%) and Switzerland (66.67%) indicate that non-English-speaking countries may be able to develop expatriates-attractive educational and research systems in order to enhance the quality of their teaching and research. The big gap between Switzerland (66.67%), which potentiates single-professor research teams, and other European countries (37.5%-14.29%), in which hierarchical groups are common, indicate that expatriate top scientists may prefer not to report to senior colleagues. A similar situation is given in Singapore (75.00%) compared to other Asian regions like Korea (15.00%), Japan (17.24%) and Taiwan (23.08%). The case of mainland China (6.55%) is very striking because, despite the large number of foreign postdocs and short-term visitors arriving every year, it seems that this region is having much more difficulties to retain top expatriate scientists than its Asian neighbours. One possible reason may be its long tradition on excluding foreigners from the most generous national [136-137] and local [138] funding programs, although some of these bans have been recently lifted [139], which is expected to motivate top expatriate scientists to stay longer. It is also worth noting that mainland China is the only region that limits and slows down the access to foreign internet used for daily work (such as Google), which seems to have a very negative effect on its ability to retain top expatriate scientists. Finally, the case of Saudi Arabia (80.00%) is also very striking because all the papers come from the same university, which indicates that a single institution may be able to develop, locally and individually, attractive educational and research systems for expatriates.

6.3 – Relationship between achievements, happiness and satisfaction

According to the study from *Psychology Today* [140], attracting recognition from others in the social networks (like LinkedIn, Tweeter, Instagram and WeChat) produces an increase of dopamine in our brains, which is a substance that increases satisfaction. However, it is important to emphasize that recognition from others may also generate adverse effects, such as envy, and therefore I cannot establish a direct correlation. In order to evaluate the relationship, I have made a specific survey among 25 experts working in China, and asked: "*If you would have to balance (give a percentage) to the satisfaction (recognition, salary, promotion) and dissatisfaction (envy, pressure) produced by your progress at work, which numbers would you give?*" The results have been very clear: everyone feels happier with the progress. More specifically, 12.5% of the persons asked think that work progress produce them 90% satisfaction versus 10 % dissatisfaction; the same percentage of people (12.5%) answered that progress would generate them 50% satisfaction versus 50% dissatisfaction. The most repeated answers (by 37.5% of people asked) were that progress generates: i) 80% satisfaction versus 20% dissatisfaction and ii) 70% satisfaction versus 30% dissatisfaction. Consequently, it can be concluded that, in general, progress produces happiness and satisfaction; as progress is evaluated in comparison of others, understanding the performance of foreign scientists working

in China compared to their Chinese colleagues is very important. China has the lowest percentage (6.55%) of foreign scientists contributing to high-level research (for the top journals analyzed). This can be an important factor indicating why the foreign experts feel pressure at work, which may affect their level of happiness and satisfaction.

This is especially significant in the case of non-Chinese scientists working in China, as they rarely participate in administrative tasks because they are carried out only in Chinese, and hence the scientific production has much more weight in their performance evaluation. Humans, as social beings, are affected, in more or less degree depending on the person, by how they fit in a group, as well as how others see them. In a more senior level, for a scientist working in China recognition is understood always brings associated, not only abstract benefits like respect, but also others more tangible, such as higher bonus, higher students quota, receive more funding than in other countries; and conversely, unsuccessful scientists are more ignored, their voice counts much less in research institutions.

Therefore, to conclude this chapter, I can affirm that hypothesis 11 is correct as the foreign talents working in China shows little scientific production compared with Chinese workers, and on one aspect, their scientific production produces lots of pleasure, on the other aspect, it also produces lots of pressure on them.

Chapter 7: Conclusions

In this PhD thesis, I have analyzed the happiness, life satisfaction and work satisfaction of foreign scientists working in China, as well as which factors influence them. The main goal of my PhD thesis is to understand the degree and influencing factors of happiness and satisfaction of this collective of people, so that China can re-adjust policies to maximize it. For China, the interest on providing better degree of happiness, work satisfaction and life satisfaction to foreign experts working in its territory rely on the high technical skills that they provide to the country, which should be important to improve and accelerate its development. This was highlighted by Jinping Xi in the 1st diplomatic meeting with foreign experts [141].

I analyzed the existing literature previous to this work on this topic, made some hypotheses, designed a questionnaire, got it answered by 200 foreign experts working in China, and step-by-step made a deep analysis using SPSS software. I have also carried out multiple in-depth interviews and made a statistical analysis of the scientific production of foreign experts in China.

I have found that around 19 statistically significant variables influence the three dependent variables (happiness, work satisfaction, and life satisfaction) in bivariate correlation. In order to deep into the multivariate statistical analysis, I have selected 11 variables by six groups into the model. The social demographic factors (gender, age, religion belief, education level, among others) don't show statistically significant influence on any of the three dependent variables after controlling variables. However, the multi-statistic research demonstrates significant influence of variables from family background, economic division, life division, work division and social support division.

Generally speaking, from family aspect, the *living status* shows (statistically) significant influence on happiness and work satisfaction. Foreign experts who live alone (without spouse/partners) tend to be less happy or work-satisfied. The *living status* indicates if they could get some actual support at home or after work; those who have this support are more possibly to be happy/life satisfied. Another influencing factor from family aspect is *children status*; the children have a negative effect on work satisfaction, foreign experts who have kids tend to be less satisfied in work. From economic aspect, *salary* plays an important role on happiness and work satisfaction (it can have both positive and negative effects); those who get a salary between 20,000 and 50,000 RMB/month tend to be happier and have a higher work satisfaction than those with a lower salary, and those with a salary above 50,000 tend to be less happy or work-satisfied. From work aspect, the variables *if has Chinese boss* and *if feels discriminated comparing with Chinese coworkers* show significant influence on happiness, work satisfaction and life satisfaction. Chinese boss appears to be a very influencing social support for foreign experts working in China and, together with the *number of good friends*, plays a significant role on work satisfaction. From life aspect, the *quality of medical insurance* show significant influence in happiness and life satisfaction; this point has been also specially emphasized in the individual interviews.

Living status, *monthly salary* and *quality of medical insurance* are three important variables that show significant influence on happiness and satisfaction, which represent three important aspects: at home, at work, and at emergency. People *having partners* could somehow compensate a non-ideal integration into Chinese society, as it becomes a source of social support for foreign experts. Hence, the Chinese employer should think on the family status of

the foreign scientists, and even offer a job to the spouse/partner when possible. *Monthly salary* is important to attract foreign experts, but only giving a good salary and forgetting other needs is in general not enough to retain them. *Quality of medical insurance* influences both the happiness and life satisfaction, the importance lies as one vote negative factor (it only plays a significant role when there are medical difficulties).

Among all the statistically significant variables, two specifically important variables that influence all the three dependent variables including happiness, work satisfaction and life satisfaction are: *nationality of the boss* (Chinese or non-Chinese), *if feel discrimination compared with Chinese workers*. Firstly, Chinese boss plays a very important role because he/she accumulates much more power than in other countries, and he/she can individually make many important decisions (e.g., approve travel requests, promotion, salary, etcetera). This is remarkably different than in other countries, in which processes area in general more democratic. Hence, working methodologies and the way to interact and communicate with Chinese and non-Chinese boss are different, and foreign experts have to adapt to it (sometimes this is painful). Among all foreign experts working in China who answered the questionnaire, 50% have Chinese boss, and they showed lower degrees of happiness and satisfaction. Secondly, how foreign experts *feel comparing with other Chinese co-workers*, especially if they feel discriminated compared with other Chinese workers, is a very important influencing factor. Foreign experts may not be unhappy/unsatisfied if they are in absolute “poverty”, while they will be unhappy/unsatisfied if they feel in “relative poverty”. For example, some foreign experts working in China feel unhappy when they see that other Chinese coworkers get enrolled into the management teams, but they cannot get it due to their condition of foreigner. The Chinese institution always justify this saying that they cannot do the work because they cannot speak Chinese, but this does not calm down the feeling of the foreign expert because they feel it is not a proper justification. There are many purely scientific activities (such as resources splitting and hiring strategies) that foreigners could perfectly do in English, but they are normally excluded. In the view of the foreigner, the only reason is that the Chinese boss wants to put in the committees people of his trust to control the decisions, while they cannot control the decision of the foreigner (or will be more difficult to influence).

It is very interesting to see that, foreign experts with highest *monthly salary* are supposed to feel greatest happiness, while statistical results certify those with monthly salary between 20,000 and 50,000 RMB/month to have the highest occurrence rate of happiness/ work satisfaction, followed by those with monthly salary below 20,000 RMB/month. Those with a monthly salary above 50,000 RMB/month are the least happy/ work satisfied. This indicates that salary is important for foreign experts working in China, but not the only factor. Experts who get a higher salary may also raise to a higher level of pressure and requirements, which could explain why the happiness and work satisfaction don't go rising with the salary rising. This result of the survey is in good agreement with the previous literature.

It is very interesting to discuss the influence of *if have Children*. The multi-model certifies that the same children status has different effects on happiness and work satisfaction: the children status has positive effect on happiness (even though the influence is not significant), while it has negative effect on work satisfaction (the significance is significant at 0.05 level). This means that if a foreign expert working in China has children, he/she is more likely to be happy but he/she will be less likely to feel satisfaction in work. Kids bring joy and meaning, but taking care of kids takes not only money, but also time, which will also influence the work. People has to balance the time for work and kids, which is a comprehensive challenge for most parents, especially foreign experts who are working abroad. It is possible that, if their kids would stay

in China, foreign experts themselves will also stay in China. In other words, if the foreign experts need to leave China, one of the important factors could be, for their kids.

Additionally, subjective factors (for example, *if feel discrimination compared with Chinese workers*) do have significant influence on happiness, life satisfactory and work satisfaction of foreign experts working in China; this could also partly explain why the salary increase doesn't produce higher levels of happiness and work satisfaction accordingly. Moreover, support on the work (*if have Chinese boss*) is an important factor that significantly influences foreign experts working in China. Boss is one of the most important factors influencing foreign experts working in China. This is to say that, either foreign experts should know well the Chinese boss style and working method, cleverly, to make a good relationship with him, which may bring many benefits in the work (and sometimes also for the live in China); and the other way around, Chinese institutions that want to retain their foreign experts should train the Chinese staff having foreign employers on effective communication with them, and understand their needs and how to fulfill them. Chinese boss should improve themselves to have an international working style to contribute to the happiness and satisfaction of foreigners working in China, so that they could stay and work longer, or forever. One of the most important lessons for foreigners working in China is to know how to set up a strategically friendly relationship with the Chinese bosses, as they hold much more power than in other more democratic and less hierarchical western societies.

Finally, as discussed in Chapter 6, the statistical analysis of top publications indicates that the contribution of foreign experts to top journals is much lower than that of their Chinese colleagues (only 6.5%), and that it is the lowest compared to the productions of foreigners living in other countries like Australia, Austria, Belgium, Canada, Denmark, France, Germany, Israel, Italy, Japan, Korea, Netherlands, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, Taiwan, United Kingdom, United States. Foreign experts working in China actually have a great pressure to compete with Chinese workers. On one aspect, as Chinese workers are one of the hardest workers, and they help each other a lot in the science community, some of them are really excellent. On the other aspect, foreigner experts working in China will feel very difficult to be recognized by their hard working, as well as the working production. Actually the working production of foreign experts working in China is not that significant for them to be recognized in Chinese scientific community. That creates a dilemma for foreign experts working in China, as the working progress produce both satisfaction and dissatisfaction.

Chapter 8: Impact and future studies

I feel very satisfied with the overall conclusions of this PhD thesis because I am truly convinced that they could be helpful for the development of my country, China. Based on the conclusions described in the previous sections, I recommend some actions to be taken by each one of the three actors involved in order to improve the happiness, life satisfaction and work satisfaction of foreign experts living in China.

1. Actions to be taken by the hiring institutions. These recommendations are the most objective and specific, and they are mainly related to the employment conditions offered and services offered. The most important actions are:
 - Offer better retirement plan and insurance, trying to improve not only the amounts and coverage received, but also giving the confidence that they will be able to enjoy of it even if they return to their home countries.
 - Offer better options for children education, such as reduced fees in international schools, facilitate transport of the kids to the school and offer attractive extra-curricular activities.
 - Improve facilities like housing, office space, and common areas (such as toilet, kitchen, canteen) making them more clean and enjoyable.
 - Offer a better internet connection with fast access to foreign internet (may be through stable VPN connection).
 - At least in the university, try to reduce the political control and advertisement (at least the one that can be found during daily life, such as visual and audible propaganda), which may not be in line with the policies applied in the countries of origin of many foreign experts.
 - Design a fair working environment in which the foreign expert could have access to management opportunities (if he/she wishes to engage), especially in those that involve making important decisions (hirings, resources like space, machines and funds). Improve the overall transparency of the decisions-making system.
 - Design a clear evaluation system for promotion that considers the field of work (not only the number of high-impact-factor articles) and explain this criterion clearly to the foreign experts.
2. Actions to be taken by the foreign experts. This is a more general recommendation that is related to the attitude to the foreign expert while living in China. There are many foreign experts living in China that do not accept the life style and working culture, and pretend to live within China in the exactly same way that they do in their home country. For example, in China it is very difficult to survive without a smartphone because one has no access to multiple key services (transportation, registration for events, online shopping), and after the COVID-19 pandemic this has been impossible because scanning the health code has become mandatory. Moreover, being available after hours to answer messages (especially in WeChat) and Emails related to work is very common, and some foreigners prefer to completely disconnect. While they have the right and freedom to do it, they should understand that this makes them being different and will affect negatively their integration in the community. That is what the data collected and interviews show. I believe it is wise to follow the proverb “When in Rome, do as the Romans do”. If most Chinese workers in a university, institute or companies work after hours and are always available without complaining, probably foreigners who don’t follow such habit will always be seen as outsiders. This does not mean that foreign experts working in China should commit to

work 15 hours per day, but they should know that (in general) top Chinese institutions have become very competitive, and hence, that they are in a demanding environment.

3. Actions to be taken by the local, provincial and national governments. Here I propose two recommendations, the first one related to the promotion of social changes and the second one related to the communication of data to facilitate future studies.
 - In general, the government has been launching multiple strategic programs and benefits to attract foreign experts, including such as access to VIP sections in the hospital, right to register children in better schools, and better financial conditions in banks that cooperate with the government (depending on the province). But there is still a lot of work to do in changing some habits of the people, who are interacting every day with the foreigners at the streets, administration, restaurants, means of transport, etcetera. Improving the education of the people at the street to improve their manners (less noisy, not spit on the ground, respect no-smoking signals, respect traffic lights, improve cleanness in shared facilities like toilets) is essential to enhance the happiness and life satisfaction of foreign experts living in China. The governments are making a very intense work in this direction, mainly employing the technology (cameras and sensors) to avoid misconducts, but more work at the schools and social communities are needed.
 - Ideally, the distribution of nationalities of the sample should match the distribution of nationalities of foreign experts working in China. However, there is no official data on such thing. The only data available is the distribution of nationality of foreigners living in China (see Figure 2), but this can be very different than that of foreign experts. For example, Figure 2 shows that the percentage of people from Myanmar and Vietnam living in China are amongst the highest (4th and 5th respectively), much higher than those of Germany, Canada, France, Italy, Spain and Israel (these last two don't even appear in Figure 1). However, despite not having official data, during my life and work in China I have met multiple foreign experts from Germany, Canada, France, Italy, Spain and Israel, and I have never met any foreign expert from Myanmar or Vietnam. Moreover, the number of foreigners from Korea is the highest but, again based on my experience, the number of foreign experts from Korea working in Chinese universities is much lower than that of Germans, Canadians, French, Italians, Spanish and Israelis. Hence, the nationality distribution of foreign experts does not match the nationality distribution of foreigners living in China. I have made a deep literature research but local, provincial and national governments have not disclosed statistics of the nationality of the foreign experts working in China. Hence, so far it is not possible to know what would be the ideal nationality distribution to follow. If the local, provincial and national governments could provide more information about this point, future studies could be improved.

As mentioned, this study is the first-of-its-class, and many aspects could be improved in the future. Here I give some specific recommendations to be taken in future studies:

1. Increase the sample size and nationality follow country balance. It is of common sense to think that the conclusions of a statistical sociologic study apply to the sample analyzed. For every statistical study, the larger the sample the better, and the higher the diversity the better. In this study, my questionnaire has been answered by 200 persons with a response ratio of 91%. Increasing the sample to more persons would be beneficial. Moreover, in my

study the diversity of the nationalities did not match the diversity of the nationalities of the foreigners living in China.

2. Diversity of the nationality of the sample. As mentioned three paragraphs above, selecting a sample which nationality distribution matches that of foreign experts living in China would be highly desirable. However, such distribution is unknown because the government of China is not reporting such data. Statistical analyses on nationality distribution of foreign experts working in different provinces could be also made in order to get more insights.
3. Employ different statistical analysis methods. In this study, the dependent variables used are originally scales (1 to 10) that I have transformed into dichotomous 0-1. Future studies may use the same models with a standard regression using as dependent variables the original scaled 1 to 10 variables.
4. More interviews to Chinese bosses. For me it has been very difficult to get access to high-profile Chinese employers (head of institute, president of university, founders of company). They were very reluctant to answer questions. More collaboration from their part in communicating which are the strengths and weaknesses of the foreign experts working for them would help to understand how to attract and retain them, which would be very good for the development of China.
5. Distinguish if foreign experts with a Chinese partner feel happier/satisfied. In the conclusions section it has been concluded that foreign experts who have a partner tend to feel happier/satisfied because they receive more support. However, this study did not investigate if the nationality of the partner (Chinese or non-Chinese) influences the happiness/satisfaction. This is a very interesting point as, intuitively, the people who has a Chinese partner would have in principle more help for translations and understand the culture of the place. However, it is important to indicate that Chinese people living in China receive a lot of social pressure from family and friends, for example, to marry and have children. This can also provide an amount of unhappiness and dissatisfaction that ultimately will be transferred to the partner. Future studies should investigate this point.

Overall, this study is the first of its kind, and it could be improved in the ways that I have described in the above paragraphs. However, this knowledge produces unequivocally state-of-the-art knowledge and a series of recommendations that could be very useful for the development of China. I wish other researchers in the future could consider the conclusions of my thesis and the recommendations as a starting point, and that their studies also contribute to a better understanding of the happiness, life and work satisfaction of foreign experts working in China. I believe more studies like this one will make China a better place.

References

- [1] National Statistics Bureau. (2021). 第七次全国人口普查公告 (第二号) [The 7th national population census report (report number 2)]. Retrieved from http://www.stats.gov.cn/tjsj/tjgb/rkpcgb/qgrkpcgb/202106/t20210628_1818821.html
- [2] Central government of China. (2017). 中国版图 [China]. http://www.gov.cn/guoqing/2017-07/28/content_5043915.htm
- [3] Blaettler, K. G. (2018), A List of China's Natural Resources. Sciencing. Retrieved from <https://sciencing.com/list-chinas-natural-resources-5375735.html>
- [4] Government of the People's Republic of China. (1978). 中国共产党第十一届中央委员会第三次全体会议公报 [Communication of the Third Plenary Session of the 11th Central Committee of the Communist Party of China], 一九七八年十二月二十二日通过 [adopted on December 22, 1978]. 中国共产党历次全国代表大会数据库 [Database of the National Congresses of the Communist Party of China]. Retrieved from people.com.cn
- [5] State Administration of Foreign Experts Affairs. (2003). 纪念邓小平“引进国外智力”重要谈话20周年 [Commemorating the 20th Anniversary of Deng Xiaoping's "Introducing Foreign Intelligence" Important Talk]. Retrieved from <https://news.sina.com.cn/c/2003-07-08/0611337601s.shtml>
- [6] Deng, X. P. (1994). Selected Works of Deng Xiaoping (Vol. 2). Beijing: People's Publishing House.
- [7] US Department of State – Bureau of Consular affairs. (2018). Report of the Visa Office 2018. Retrieved from <https://travel.state.gov/content/travel/en/legal/visa-law0/visa-statistics/annual-reports/report-of-the-visa-office-2018.html>
- [8] Zhang, J. G. (2018). 引进用好外国人才 [Introduce and utilize foreign talents]. Retrieved from <https://news.12371.cn/2018/01/31/ARTI1517351850409273.shtml>
- [9] People's Daily, The State's Council, Government of China. (2022). 超95万外国人在华工作, 中国开始成为移民目的国 [The people's republic of China: China launches more favorable policies to lure overseas talents]. Retrieved from: http://english.www.gov.cn/news/top_news/2017/03/14/content_281475595212322.html
- [10] Co-Aim International. (2020). 上海市外专局, 上海市外籍人才战略及政策概览 [Shanghai Foreign Experts Bureau, Overview of Shanghai Foreign Talent Strategy and Policies]. Retrieved from <https://www.co-aim.com.cn/h-nd-70.htm>
- [11] WorldOmeter. (2022). Taiwan Population. Retrieved from: <https://www.worldometers.info/world-population/taiwan-population/>
- [12] Ministry of the interior of Taiwan, National Immigration Agency. (2021). Foreign Residents by Nationality. Retrieved from: <https://www.immigration.gov.tw/5475/5478/141478/141380/286482/>
- [13] WorldOmeter. (2022). Spain Population. Retrieved from: <https://www.worldometers.info/world-population/spain-population/>
- [14] Instituto Nacional de Estadística. (2022). Población (españoles/extranjeros) por País de Nacimiento, sexo y año. Retrieved from ine.es
- [15] International Monetary Fund. (2022). GDP by country. Retrieved from <https://www.imf.org/en/home>
- [16] United Nations. (2022). Percentage of foreign population in the world 20 biggest economies. Retrieved from:

- https://www.un.org/en/development/desa/population/migration/data/estimates2/data/UN_MigrantStockTotal_2019.xlsx
- [17] Shi, Y. Q. (2018). 考古实证：中华文明五千年! [Archaeological evidence: 5,000 years of Chinese civilization], Beijing, China: People Daily, 2018-05-29. Retrieved from <https://yrc.henu.edu.cn/info/1047/1023.htm>.
- [18] Joseph, N. (2018). Introduction to the 100 great inventions of Ancient China- Science and civilization in China. Shanghai. Beijing, China: Science Press/ Shanghai Ancient Books Publishing House
- [19] Rong, Z. Z. Wu, C. M. (2005). 中国三农问题：历史，现状，未来 [China's Three Rural Issues: History, Current and Future]. Beijing, China: Scientific literature press
- [20] Juchixiuming. Liao, Y. Z. translated. 末代王朝與近代中國：晚清與中華民國 [The Last Dynasty and Modern China: The Late Qing Dynasty and the Republic of China]. Xinbei, Taiwan: Taiwan Commercial Press. 2017
- [21] Lin, Q. Y. (2003). 鸦片战争的再认识 [Re-understanding of the Opium War]. Hong Kong: Chinese University Press. 2003. ISBN 9629960796
- [22] The Writing Group of "Modern Chinese History". (1977). "Modern Chinese History". Beijing: Zhonghua Book Company. 1977
- [23] Adcock, K. A. (2010). "The "Century of Humiliation: Then and Now: Chinese Perceptions of the International Order". Pacific Focus. 25 (1): 1–33. Retrieved from doi:10.1111/j.1976-5118.2010.01039
- [24] World Bank. (2021). Macro-trends China GDP Growth Rate 1961-2021. Retrieved from, <https://datatopics.worldbank.org/world-development-indicators/>
- [25] Government of China (2020). 我国 GDP 近百万亿元，增长 6.1% [Annual GDP is nearly one trillion yuan, an increase of 6.1%,]. Retrieved from http://www.gov.cn/xinwen/2020-01/18/content_5470531.htm
- [26] The British Broadcasting Corporation. (2020). Chinese economy to overtake US 'by 2028' due to Covid. Retrieved from <https://www.bbc.com/news/world-asia-china-55454146>
- [27] Visual Capitalist. (2021). Global Market CAP Rankings. Retrieved from: <https://www.visualcapitalist.com/wp-content/uploads/2021/06/Biggest-Companies-in-the-World.html>
- [28] Textor, D. (2021). Average annual wage of full-time employees in Shanghai, China from 1990 to 2017. Statista. Retrieved from: <https://www.statista.com/statistics/1082492/china-average-wage-of-full-time-employees-in-shanghai/>
- [29] Xi, J. P. (2021). 在全国脱贫攻坚总结表彰大会上的讲话 [Speech at the National Poverty Alleviation Summary commendation Conference]. Xinhua News. Retrieved from http://www.xinhuanet.com/politics/leaders/2021-02/25/c_1127140240.htm
- [30] Tencent News. (2021). [全球海外到底有多少华人？华人最多的十个国家！](https://new.qq.com/omn/20210118/20210118A0ELGC00.html) [How many Chinese are there overseas? Ten countries with the most Chinese!]. Retrieved from <https://new.qq.com/omn/20210118/20210118A0ELGC00.html>
- [31] The Paper. (2019). 澎湃在线，引进国际人才助力中国更好发展 [Surging Online, attracting international talents to help China develop better]. Retrieved from https://m.thepaper.cn/baijiahao_3945315
- [32] Government of the People's Republic of China. (2021). 第七次全国人口普查公报(第二号) [Bulletin of the Seventh National Population Census (No. 2)], 第七次全国人口普查公报（第八号）接受普查登记的港澳台居民和外籍人员情况 [The 7th

- National Population Census Bulletin (No. 8) about Hong Kong, Macao and Taiwan residents and foreigners registered in the census. Retrieved from http://www.gov.cn/guoqing/2021-05/13/content_5606149.htm.
www.stats.gov.cn/zjtj/zdtjgz/zgrkpc/dqcrkpc/ggl/202105/t20210519_1817701.html.
Accessed on December 12th of 2021
- [33] Sina.com. (2020). 在中国的外国人到底有多少? [How many foreigners are there in China?] Retrieved from <https://finance.sina.com.cn/wm/2020-03-08/doc-iimxyqvz8719186.shtml>
- [34] United Nations, Population Division, Department of Economic and Social Affairs. (2021). Migration report. Retrieved from https://www.un.org/en/development/desa/population/migration/data/estimates2/data/UN_MigrantStockTotal_2019.xlsx
- [35] Scout Real State. (2021). Marketing, Expats in China: nationalities and in which cities they settle. Retrieved from <http://www.beijingrelocation.com/blog/expats-in-china-nationalities-and-in-which-cities-they-settle/>
- [36] Government of the People's Republic of China. (2018). 中华人民共和国中央人民政府, 第六次全国人口普查公报[Central People's Government of the People's Republic of China, Communiqué of the Sixth National Population Census]. Retrieved from http://www.stats.gov.cn/tjsj/tjgb/rkpcgb/qgrkpcgb/201104/t20110429_30329.html
- [37] China National Radio. (2018). 2018年中国累计发放外国人才工作许可证 33.6 万份 [In 2018, China issued a total of 336,000 work permits for foreign talents]. Retrieved from <https://baijiahao.baidu.com/s?id=1630836248470369267&wfr=spider&for=pc>
- [38] Beijing Daily. (2018). 北京市 5 项出入境新政吸引外籍人才 [5 new entry and exit policies in Beijing to attract foreign talents]. Retrieved from http://www.gov.cn/xinwen/2018-09/07/content_5320018.html
- [39] Central Government of China. (2014). 国务院关于印发社会信用体系建设规划纲要 (2014—2020 年) 的通知 [Notice of the State Council on Issuing the Outline of the Social Credit System Construction Plan (2014-2020)]. Retrieved from http://www.gov.cn/zhengce/content/2014-06/27/content_8913.htm
- [40] Kayleen, C. (2015). China rates its own citizens – including online behavior, Retrieved from <https://futurism.com/china-rates-its-own-citizens-including-online-behaviour>
- [41] China Briefing. (2017). China Work Permit Calculator: Find Your Tier. Retrieved from <https://www.china-briefing.com/news/china-work-permit-calculator-find-your-tier/>
- [42] Nature Index. (2021). Retrieved from <https://www.natureindex.com/annual-tables/>
- [43] QS World University Ranking. (2021). Retrieved from <https://www.topuniversities.com/university-rankings/world-university-rankings/2021>
- [44] Center for World University Ranking. (2021). Global 2000 list by the center for World University Rankings. Retrieved from <https://cwur.org/2021-22.php>
- [45] THE World University Rankings. (2021). Retrieved from <https://www.timeshighereducation.com/content/world-university-rankings>
- [46] US News. (2021). Retrieved from <https://www.usnews.com/rankings>
- [47] Government of the People's Republic of China. (2015). 中国制造 2025 [Made in China 2025]. Retrieved from http://www.gov.cn/zhengce/content/2015-05/19/content_9784.htm
- [48] China daily. (2015). China Is Betting Big on These 10 Industries. Retrieved from https://www.chinadaily.com.cn/bizchina/2015-06/30/content_21138379.htm
- [49] U.S. Chamber of Commerce. (2017). Made in China 2025: Global Ambitions Built on Local Protections. Retrieved from <https://www.uschamber.com/international/made-china-2025-global-ambitions-built-local-protections-0>

- [50] Ministry of Education of China. (2010). 国家中长期教育改革和发展规划纲要 (2010-2020 年) [Outline of the National Medium- and Long-Term Education Reform and Development Plan (2010-2020)]. Retrieved from www.moe.gov.cn/jyb_xwfb/s6052/moe_838/201008/t20100802_93704.html
- [51] 大学必备网 [Chinese website specialized on university education in China] (2022). 中外合作办学大学名单一览表 [List of Chinese-foreign cooperatively-run universities, the necessary website for college students]. Retrieved from http://www.moe.gov.cn/jyb_xxgk/s5743/s5744/202007/W020200709292792106069.xls
- [52] Baidu Library. (2020). 宁波诺丁汉大学[University of Nottingham]. Retrieved from https://baike.baidu.com/reference/2027913/a1e4XH0_6YAnGeDHxcyFs8Mg9pfDLQwkzWn1xspANy3m9fg8upzioO7xmMbBtyApmqt1pRkE5TeyqXKXt3X09ZFFI7Gz9jbdsWRUEV3Hgg9EnCg
- [53] Sina.com (2019). 2019 中国国际学校发展报告 [China's International School Development report 2019]. Retrieved from <http://edu.sina.com.cn/ischool/2019-11-11/doc-iicezuev8538680.shtml>
- [54] Daxue Consulting. (2020). International schools in China maintain slow growth. Retrieved from <https://daxueconsulting.com/the-market-of-international-school-in-china-a-booming-sector/>
- [55] Ren, R., Tian, J. (2020). 双一流建设高校本科阶段中外合作办学数据调查报告 [a survey report on the data of Sino-foreign cooperation in running schools at the undergraduate stage of double-first-class universities]. 中国教育在线 [Chinese Education online]. Retrieved from https://www.eol.cn/e_coop/gol/html/report2020/content.shtml
- [56] Ortiz-Ospina, E. Roser, M. (2017). Happiness and Life Satisfaction. Retrieved from <https://ourworldindata.org/happiness-and-life-satisfaction>
- [57] Gallup. (2019). Self-reported life satisfaction. Gallup World Poll.
- [58] Brockmann, H., Delhey, J., Welzel, C., Yuan H. (2009). The China puzzle: Falling happiness in a rising economy. *J. Happiness Stud.* 10:387–405.
- [59] Burkholder, R. (2005). “Chinese Far Wealthier Than a Decade Ago—but Are They Happier?” The Gallup Organization. Retrieved from <https://news.gallup.com/poll/14548/chinese-far-wealthier-than-decade-ago-they-happier.aspx>
- [60] Kahneman, D., Krueger, A.B. (2006) Developments in the measurement of subjective well-being. *Journal of Economic Perspectives.* 20:3–24.
- [61] Burkholder, R. (2005) Chinese far wealthier than a decade ago—but are they happier? The Gallup Organization. Retrieved from <http://www.gallup.com/poll/14548/chinese-farwealthier-than-decade-ago-they-happier.aspx>
- [62] Crabtree S., Wu T. (2011). China's puzzling flat line. *Gallup Management Journal.* Retrieved from <http://gmj.gallup.com/content/148853/china-puzzling-flat-line.aspx#1>
- [63] Cai, H. J. Yuan, J. Q. Su, Z. (2022). Does Economic Growth Raise Happiness in China? A Comprehensive Reexamination. *Social Psychological and Personality Science.* 2022-05-05
- [64] PEW Research center. (2008). The Chinese Celebrate Their Roaring Economy, As They Struggle With Its Costs. Retrieved from <https://www.pewresearch.org/global/2008/07/22/chapter-1-chinese-views-of-their-lives/>
- [65] The world bank. (2020). GDP growth (annual %) – China. World Bank national accounts data, and OECD National Accounts data files. Retrieved from

<https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2020&locations=CN&start=1961&view=chart>

- [66] Easterlin, Richard A. (1974). "Does Economic Growth Improve the Human Lot?" <https://www.sciencedirect.com/science/article/pii/B9780122050503500087>
- [67] Betsey, S. Justin, W. (2008). "Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox" (PDF). *Brookings Papers on Economic Activity*. 1: 1–87. doi:10.1353/eca.0.0001. JSTOR 27561613
- [68] Sacks, D. W. Stevenson, B. Wolfers, J. (2012). "Subjective Well-Being, Income, Economic Development, and Growth." In ...and the Pursuit of Happiness: Well-Being and the Role of Government (PDF). London: Institute of Economic Affairs. p. 59–97
- [69] Diener, E. Tay, L. Oishi, S. (2013). "Rising Income and the Subjective Well-Being of Nations". *Journal of Personality and Social Psychology*. 104 (2): 267–76. doi:10.1037/a0030487. PMID 23106249
- [70] Veenhoven, R. Vergunst, F. (2014). "The Easterlin Illusion: Economic Growth Does Go with Greater Happiness" (PDF). *International Journal of Happiness and Development*. 1 (4): 311–343. doi:10.1504/IJHD.2014.066115
- [71] Duan J. H. (1996). 主观幸福感概述 [An Overview of Subjective Well-being]. *Psychological dynamics*. Beijing, China: 心理学动态 [Journal of Economic Psychology]. 1996(01):46-51.
- [72] Hayo, B. Seifert, W. (2003). Subjective well – being in Eastern Europe. *Journal of Economic Psychology*, (3) 329-348
- [73] Cao, S. (2011). 浅析如何提高我国城市居民主观幸福感 [Analysis on how to improve the subjective well-being of urban residents in Chinese country] Jilin, China: 现代交际 [Modern Communication]
- [74] Zhang, Y. Q. (2017). 婚姻与主观幸福感——基于 CGSS2013 数据的实证分析 [Marriage and Subjective Well-being—An Empirical Analysis Based on CGSS2013 Data]. Heilongjiang, China: 化创新比较研究 [Comparative Research on Cultural Innovation] 1 (16): 88-91
- [75] Kan, B. B. Lin, R. R. (2019). 教育对个人幸福感的提升效果和作用机制检验——基于 CGSS2012 数据的实证研究 [The effect of education on personal well-being and its mechanism test: an empirical study based on CGSS2012 data]. Jilin, China: *Modern education Science [现代教育科学]* (03), 28-35
- [76] Zhang, Y. H. Yu, J. Chang, B. (2009). 城区居民主观幸福感的影响因素分析——以沈阳市城区居民为例 [Analysis of Influencing Factors of Urban Residents' Subjective Well-being——Taking Shenyang Urban Residents as an Example] . Hunan, China: 吉首大学学报: 社会科学版 [Journal of Jishou University: social Science version]. 2009 (3)
- [77] Zweig, J. S. (2015). Are Women Happier than Men? Evidence from the Gallup World Poll. *Journal of Happiness Studies* volume 16, pages 515–541. Berlin: Springer Nature
- [78] Chen, W. T. Zhang, X. M. (2013). 我国居民主观幸福感及其影响因素分析——基于 CGSS2010 年数据 [Analysis of the subjective well-being of Chinese residents and its influencing factors—Based on CGSS 2010 data]. Beijing, China: 调研世界 [Investigation in China] (10)
- [79] Rojas, M. A. (2005). Conceptual—referent theory of happiness: Heterogeneity and its consequences. *Social Indicators Research* (2). 261-294
- [80] Mao, X. P. Luo, J. W. (2012). 影响居民幸福感的社会因素研究——基于 CGSS2005 数据的分析 [Research on social factors that affect residents' well-being—Based on

- the analysis of CGSS2005 data]. Hunan, China: 湖南科技大学学报: 社会科学版 [Journal of Hunan University of Science and Technology: Social Science Edition] (3)
- [81] Jebb, A. T. Tay, L. Diener, Ed. Oishi, S. (2018). Happiness, income satiation and turning points around the world. *Nature Human Behavior*. 2, 33–38
- [82] Lipovetsky, G. (2009). *Bonheur Paradoxal: Essai sur la société d'hyperconsommation*. Folio Essais
- [83] Liu, M. N. Du, J. R. (2013). 住房不平等与中国城市居民的主观幸福感——立足于多层次线性模型的分析 [Housing inequality and the subjective well-being of Chinese urban residents: An analysis based on a multi-level linear model]. Henan, China: 经济经纬 [Economic Review] (5)
- [84] Winkelmann, R. (2009). Unemployment, social capital and subjective well – being *Journal of Happiness Studies* (4), 421-430
- [85] Yan, A. K. Willits, F. K. (2007). Family ties, physical health, and psychological well – being. *Journal of Aging and Health*, (6): 907 – 920
- [86] Romero, E. Gómez- Fraguera, A. Villar, P. (2012). Life aspirations, personality traits and subjective well-being in a Spanish sample. *European Journal of Personality*
- [87] Huang, C. X. Xing, Y. Q. (2022). 员工满意度的测量与分析方法 [Measurement and Analysis Method of Employee Satisfaction]. Henan, China: 企业活力 [Enterprise Vitality]. 2022 (02):50-51
- [88] Xu, G. Z. (1977). 工厂工人的工作满足和相关因子探讨 [Discussion on Job Satisfaction and Related Factors of Factory Workers]. Taiwan, China: 台湾中央研究院民族研究所集 [Collection of Ethnic Research Institute of Academia]. 1977 (43)
- [89] Herzberg, F. Mausner, B. Snyderman, B. B. (1959). *The Motivation to Work* (2nd edition). New York: John Wiley. ISBN 0471373893
- [90] Porter, L. W. (1961). A study of perceived need satisfactions in bottom and middle management jobs. *Journal of Applied Psychology*, 45(1), 1-10. <http://dx.doi.org/10.1037/h0043121>
- [91] Adams, J. S. (1963). Toward an understanding of inequity. *American Journal of abnormal and social psychology*. 1963, 68, 422-436 (1963)
- [92] Seashore, S. E. Taber, T. D. (1975). Job Satisfaction Indicators and Their Correlates. *American Behavioral Scientist*. 18(3), 333–368. doi:10.1177/000276427501800303
- [93] Locke, E. A. (1976). “The Nature and Causes of Job Satisfaction” in Dunnette, M. D. *Handbook of Industrial and Organizational Psychology* (1st Ed.). Chicago, IL: Rand McNally. 1976. 1297-1349
- [94] Balzer, W. K. Kihm, J. A. Smith, P. C. Invin, J. L. Bachiochi, P. D. Robie, C. Sinar, E. E. and Parra, L. F. (1997). *Users Manual for the Job Descriptive Index (JDI; 1997Revision) and the Job in General (JIG) Scales*. Bowling Green, OH: Bowling Green State University Press
- [95] Buckingham, M. Coffman, C. (1999). *First, Break all the rules: what the world’s greatest managers do differently*, Simon Schuster
- [96] Zhang, M. Li, S. Z. (2002). 雇员主动离职心理动因模型评述 [A Review of Psychological Motivation Model of Employees' Voluntary Resignation]. Beijing, China: 心理科学进展 [Advances in Psychological Science]. 2002(03):330-341.
- [97] Hu, B. Chen, J. A. (2003). 脑力劳动者工作满意度实证研究 [An empirical Study on Job Satisfaction of Mental Workers]. Beijing, China: 科研管理 [Research Management]. 2003(04):139-144.

- [98] Zhao, W. J. (2004). 知识型员工满意度研究 [Research on the Satisfaction of Knowledge Employee]. Shanxi, China: 生产力研究 [Productivity Research]. 2004(07):140-142+193
- [99] Gao, F. (2008). 企业员工工作满意度及其相关因素研究 [A study on employee job satisfaction and its related factors]. Henan, China: 河南大学 [Henan University]
- [100] Diener, E. Emmons, R. A. Larsen, R. J. Griffin, S. (1985). "The satisfaction with life scale". *Journal of Personality Assessment*. 49 (1): 71–75. doi:10.1207/s15327752jpa4901_13. PMID 16367493
- [101] Diener, E. (1984). "Subjective well-being". *Psychological Bulletin*. 95 (3): 542–575. doi:10.1037/0033-2909.95.3.542. PMID 6399758
- [102] Diener, E. (2000). "Subjective well-being: The science of happiness and a proposal for a national index". *American Psychologist*. 55 (1): 34–43
- [103] Li, Y. (2013). 生活满意度及其影响因素研究 [Research on Life Satisfaction and Its Influencing Factors]. Gansu, China: 社科纵横 [Review of Social Sciences] 28 (07):80-82
- [104] Wang, P. G. Yi, H. L. (2007). 中国城市居民主观生活质量满意度评价分析 [Evaluation and Analysis of Subjective Life Quality Satisfaction of Chinese Urban Residents]. Sichuan, China: 社会科学研究 [Review of Social Sciences]. 2007(06):15-23
- [105] Li, Y. Luo, Z. N. (2018). 宿舍生活事件对医学生生活满意度的影响:宿舍整体满意度的中介作用 [The influence of dormitory life events on medical students' life satisfaction: the mediating effect of overall dormitory satisfaction]. Beijing, China: 中国健康心理学杂志 [Chinese Journal of Health Psychology]. 2018,26(01):85-89
- [106] McCullough, G. Huebner, ES. Lin, j. (2000). Life events, self-concept, and adolescents' positive subjective well – being *Psychology in the Schools*, 2000, 37(3):281-290
- [107] Gilman, R. Handerk, M. L. (2001). Changes in life satisfaction as a function of stay in a residential setting *Residential Treatment for Children and Youth*, 2001, 18 (1): 47-65
- [108] Xu, H. L. (1994). 老年人生活满意度及其影响因素研究 [Research on life satisfaction of the elderly and its influencing factors]. Beijing, China: 中国心理卫生杂志 [Chinese Journal of Mental Health]. 1994(04):160-162+189
- [109] Lohr, M. J. Essex, M. J. Klein, M. H. J, *Gerontol.* (1988). The relationship of coping response to physical health status and life satisfaction among old woman. 1988, 43, pp54-59
- [110] Rich, G. Jeffrey, S. Dina, S. Dan, F. Kristen, V. (2007). The relationship between perfectionism and multidimensional life satisfaction among Croatian and American. *Personality and Individual Difference*. 2007, 43 (7), pp. 1807-1818
- [111] CNKI project, <http://www.cnki.net/> Accessed on May 2nd of 2022
- [112] Cai, Z. J. (2014). 老年人休闲满意度、流畅体验与主观幸福感的关系研究 [Research on the relationship between leisure satisfaction, smooth experience and subjective well-being of the elderly]. Chongqing, China: 重庆师范大学 [Chongqing Normal University]. 2014:42-43
- [113] Zhang, Q. F. Feng, M. Y. Jiang, G. Q. (2018). Satisfaction and Resident Happiness — An Empirical Study based on Logistic Model, *Special zone economy*, 2018, (9), 84-88
- [114] Zhang, W. Li, H. J. Hu, Z. M. (2015). 混淆的幸福:我国城市居民的幸福感和生活满意度 [Confused Happiness: Happiness and Life Satisfaction of Chinese Urban Residents]. Gansu, China: 开发研究 [Development Research]. 2015(02):164-167

- [115] Maslow, A. (1943). "A theory of human motivation". *Psychological Review*. 50 (4): 370–396
- [116] The Importance of Maslow’s Pyramid of Needs. The School of Life. Retrieved from <https://www.theschooloflife.com/article/the-importance-of-maslows-pyramid-of-needs/>
- [117] Ferrer-i-Carbonell, A. (2005). Income and well-being: an empirical analysis of the comparison income effect. *Journal of public economics* 89 (5-6), 997-1019
- [118] Central government of China. (2009). 中央组织部就引进海外高层次人才千人计划问答 [The Central Organization Department asked questions and answers on the plan to introduce overseas talents]. http://www.gov.cn/zwzgk/2012-12/12/content_2288640.htm
- [119] Central government of China. (2005). 外国专家证办理问答 [Answers & questions of certificate of foreign expert]. http://www.gov.cn/banshi/2005-10/10/content_75526.htm
- [120] Official website of “Statista”, search keyword: “WeChat”, Accessed on April 14th 2020. <https://www.statista.com/statistics/255778/number-of-active-wechat-messenger-accounts/>
- [121] Rice. (2022). Spanish Network of Scientists China-Spain. Retrieved from <http://www.ric-e.net/>
- [122] Euraxess. (2019). 1st Meeting of the European National Scientists' Networks in China. <https://euraxess.ec.europa.eu/worldwide/china/1st-meeting-european-national-scientists-networks-china>
- [123] Lu, S. H. (2005). Social statistics 3rd version. Beijing, China: Peking University Press
- [124] Anja, Z. (2019). Employee Recognition: The Key to Employee Satisfaction, Talent Lyft. <https://www.talentlyft.com/en/blog/article/280/employee-recognition-the-key-to-employee-satisfaction>
- [125] Nikki, V. (2017). How China is Pressuring Single Women to Get Married, Culture Trip. <https://theculturetrip.com/asia/china/articles/how-china-is-pressuring-single-women-to-get-married/>
- [126] Cheng, Y. Zhang, X. M.†Ye, S. Y. Jin, H. M. Yang, X. H. (2020). Suicide in Chinese Graduate Students: A Review From 2000 to 2019. <https://www.frontiersin.org/articles/10.3389/fpsy.2020.579745/full>
- [127] Ministry of Education of the People’s Republic of China. (2022). 习近平总书记谈教育公平：让每个孩子都有人生出彩的机 [General Secretary Xi Jinping talks about education fairness: Let every child have the opportunity to excel in life], Retrieved from http://www.moe.gov.cn/jyb_xwfb/xw_zt/moe_357/jyzt_2017nztzl/2017_zt11/17zt11_xjpjysx/201710/t20171009_315944.html
- [128] Smriti Mallapaty. (2020). China bans cash rewards for publishing papers, *Nature* **579**. Retrieved from <https://www.nature.com/articles/d41586-020-00574-8>
- [129] Investigadores reclaman un sistema "atractivo" para hacer de España un destino científico, Europa Press, 31st of January of 2022. <https://www.infosalus.com/salud-investigacion/noticia-investigadores-reclaman-sistema-atractivo-hacer-espana-destino-cientifico-20220131151654.html>
- [130] Any. S. (2020). Thinking of Taking an Academic Job in China? Let’s Talk About ‘De-coupling’ and the ‘China Bubble’. <https://www.socialsciencespace.com/2020/11/thinking-of-taking-an-academic-job-in-china-lets-talk-about-de-coupling-and-the-china-bubble/>

- [131] Linda, W. Plume, Andrew, P. (2021). Great Power or Great Responsibility: What Is the Meaning of ‘Corresponding Authorship’ in Modern Research? International Center for the Study of Research. <https://ssrn.com/abstract=3835300>
- [132] Journal Citation Reports, https://en.wikipedia.org/wiki/Journal_Citation_Reports Accessed on May 2nd of 2022
- [133] Ministry of Education of the People’s Republic of China. (2020). 教育部 科技部印发《关于规范高等学校 SCI 论文相关指标使用 树立正确评价导向的若干意见》的通知[The Ministry of Education and the Ministry of Science and Technology issued a notice on "Several Opinions on Regulating the Use of SCI Papers Related Indicators in Colleges and Universities and Establishing a Correct Evaluation Orientation"] Retrieved from http://www.moe.gov.cn/srcsite/A16/moe_784/202002/t20200223_423334.html
- [134] Elsevier BV. (2021). Data-update for "Updated science-wide author databases of standardized citation indicators". <https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3>
- [135] Björk, B. C. (2018). Acceptance rates of scholarly peer-reviewed journals: A literature survey. *Profesional de la información*, 28, 4, e280407. <https://doi.org/10.3145/epi.2019.jul.07>
- [136] National Science Foundation of China. (2018). Outstanding Young Scientist Program. <http://www.nsf.gov.cn/nsfc/cen/xmzn/2018xmzn/08/index.html>
- [137] National Science Foundation of China. (2018). Excellent Young Scientist Program. <http://www.nsf.gov.cn/nsfc/cen/xmzn/2018xmzn/07/index.html>
- [138] Jiangsu Science and Technology Office. (2019). Double innovation project. <http://kxjst.jiangsu.gov.cn/module/download/download.jsp?classid=0&filename=69514e3afe884d0193629b65489b6a8d.pdf>
- [139] National Science Foundation of China. (2002). National Science Fund for Distinguished Young Scholars. <http://www.nsf.gov.cn/publish/portal0/xmzn/2020/08/>
- [140] Eva, R. (2012). Psychology today, Facebook and Your Brain: The inside dope on Facebook. <https://www.psychologytoday.com/us/blog/vitality/201205/facebook-and-your-brain>
- [141] Nan, X. S. (2012). 习近平与外国专家：记习总书记首场外事活动 [Xi Jinping and foreign experts: remembering General Secretary Xi's first foreign affairs event]. Beijing, China: 《International talent exchange》 2013.01

ANNEX I

Questionnaire

May 24th, 2020

Dear China-based talents,

My name is Linzhi Gu, I got my Bachelor and Master at the Sociology Department of Peking University, and currently I am a PhD candidate at the Sociology Department of University of Barcelona. The topic of my PhD thesis is “**Happiness and satisfaction of foreign scientists working in China**”. I wish my work could be useful to explain Chinese research institutions (i.e. universities, institutes, companies) what are the major needs of foreign researchers based in China. The ultimate goal of my PhD thesis is that Chinese research institutions improve the conditions offered to foreigners, so that they can have a more pleasant life in China and stay longer, which should be helpful for the modernization of my country. I would like to ask you for five minutes of your precious time to help me to fill this simple anonymous questionnaire (totally 3 pages).

I plan to collect data from several foreign researchers at different levels, and based at different cities in China. The results of my study will be published open access, and if you want I can send you a copy of my study. I highly appreciate your kind support, and I wish you (and other foreigners who will come to China later) could benefit from my work.

Kind regards,

Linzhi Gu
PhD candidate
Sociology Department
University of Barcelona

Part I. Professional Information

In which city do you work currently? _____

Your current working place:

- University
- Research institute, no need to teach courses
- Company
- Others _____

Academic discipline: _____

Job title: _____

How many years have you been living in China? _____

Is your direct boss from China?

- Yes
- No, please specify _____

Are you satisfied with your direct boss?

- Yes
- No, please specify _____

Does your boss contribute to your professional development?

- Yes
- No
- Others _____

Do you have Chinese colleagues and /or collaborators who help you in your work?

- Yes, my Chinese collaborators help me a lot
- Yes, I feel collaborating with Chinese researchers is very difficult but I got a bit of support
- No, I feel collaborating with Chinese researchers is very difficult
- Others _____

Do you feel respected in your work?

- Very respected
- Respected a bit
- Neutral
- Not respected

Do you work after hours or in the weekend?

- Never
- Rarely
- Sometimes
- Often

On average, how many real hours do you work per every day? _____

How do you rate the amount of holidays you have per year?

- I have a lot of holidays
- I have very few holidays
- Others

Do you feel the work that you produce is valuable?

- Yes
- No
- Others

In general, how satisfied you are with your work in China? Where 1 means completely dissatisfied and 10 means completely satisfied, please indicate your number: _____

Part II. Economic information

What is roughly your monthly salary (after tax, in CNY)?

- Below 10000
- 10 - 20,000
- 20 – 50,000
- 50 – 100,000
- More than 100,000

How much do you pay for your living place?

- I pay a monthly rent, please fill in the amount in RMB _____
- I get free accommodation from my employer
- I purchased a house
- Others, please specify _____

Which medical assistance do you have?

- The regular provided by my employer
- I got a private one. Paying it represents a big economic effort for me.
- I got a private one. Paying it does not represent a big economic effort for me.
- Others, please specify _____

How do you rate the quality of your medical assistance in China?

- Excellent
- Normal
- Poor

Given your salary and cost of life in China, are you able to save money every month?

- Yes, I am saving a lot
- Yes, I am saving a bit
- I spend all I earn, I am not saving
- I spend all I earn, and I still need to borrow

Do you think a lot on your retirement plan?

- Yes, and that makes me worry
- Yes, and that doesn't make me worry
- No

Part III. Daily life

How often do you practice sports?

- 3 times per week or more
- 1-2 times per week
- 1-2 times per month
- Almost never

How often do you go out with your friends (bar, cinema, shopping, travelling)?

- 3 times per week or more
- 1-2 times per week
- 1-2 times per month
- Almost never

How many good friends do you have in China? (Please write a number)

Which means of transport do you often use? (Can select more than one)

- I drive
- Didi
- Taxi
- Bus
- Subway
- Train
- Plane
- Bicycle
- Others _____

Which of these services do you often use by yourself? (Can select more than one)

- WeChat
- Taobao
- Didi
- Shared bikes
- Alipay
- Order food on line
- Others _____

How often do you attend these activities?

	Often	Occasional	Never	
Art, music, education				
Religious activity				
Political activity				
Environment activity				
Humanitarian activity				

At present, the main challenges you are facing in your work and personal life are (multiple choices):

- Language barriers
- Cultural differences
- Lack of equipment
- Intelligence property protection
- Lack of expert advice
- Discrimination compared to Chinese co-workers
- Lack of entertainment activities
- No appreciation of my work
- Others please specify _____

How would you describe your knowledge of Chinese culture?

- () High
- () Normal
- () Very limited
- () Others _____

What are the best things of living in China? (Please write at least 3)

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

What are the main challenges of living in China? (Please write at least 3)

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

How many _____ years more do you plan to live in China? (Please write a number)

How satisfied are you with your life as a whole in China? Where 1 means completely dissatisfied and 10 means completely satisfied, please indicate your number: _____

Please rate your level of Happiness in China? Where 1 means not at all happy and 10 means very happy, please indicate your number: _____

Part VI. Personal information

Gender:

- () Male
- () Female

Year of birth: 19 _____ (write in last two digits)

Nationality: _____

Highest academic degree:

- () Doctor
- () Master
- () Bachelor
- () High school
- () Others _____

Do you believe in any religion?

- () No
- () Christianity
- () Jewish
- () Muslim

- Hindu
- Buddhist
- Catholicism
- Others please specify _____

Marital status:

- Single
- Married
- I have boyfriend / girlfriend
- Separated/ Divorced
- Widowed
- Others _____

If you have a partner living with you, what is his/ her occupation?

- Has a job
- Is studying intensively (15 hours per week or more)
- Stays at home/ Take care of Children/ Plays with friends
- Other occupation, please specify _____
- I have no partner living with me in China

Number of children: _____

If you have a partner, can he/she speak Chinese?

- Yes
- No

What is your level of Chinese language?

- Very good
- Enough to survive
- Not enough to ask for basic things (buy at the supermarket, take a taxi, order food)
- Others _____

If you have a partner, what is her nationality?

- Chinese
- Not Chinese, but Asian
- others _____

How would you describe your state of health in China?

- Very good
- Good
- Bad

If you want me to write your name in the acknowledgements of my PhD thesis, without disclosing any information about the answers that you have given, please write your name here:

_____. If you prefer not to appear, leave it blank.

ANNEX II

Interviews to representative experts

Interview 1

Canadian Female of 48 years old working as an English teacher for the third year

1 – Why did you come to China?

I came to teach for a six-week summer program in August 2018 – but fell in love with the country, my students, friends and university... now just signed up for my third year.

2 – Did you find what you were looking for? What have you discovered?

Perhaps I found things I wasn't looking for. Even if the teaching material is out of my research interests, it is an area I know I teach well. I have found great respect from everyone I come into contact with. Also, I find it fascinating to learn about Chinese culture through people I encounter and personal exploration/travel. It is almost overwhelming the scope of the country though... history, geography, population, food (!), stories... I could spend a lifetime learning and exploring and only scratch the surface.

3 – At which stage of your career did you come to China?

At a transition... I had left a position as an Associate Professor of Strategy and wasn't sure I wanted to go back into a Business School so soon. For several years all I did was work – and suffer from politics at a university and departmental level. In my current department there are no politics – the reduction in stress is huge. I consider myself still in transition, but of course the longer I am here, the more this is what I am transitioning to...

4 – Do you think coming to China was a good idea to develop your career? Why?

Frankly no. In any case, for me personally this could (from the outside and sometimes from the inside) be considered a HUGE step backwards professionally. But, it has been valuable to me on a personal level and I am still learning and now doing research with a few professors at STU – so my time is not completely “wasted” career wise.

5 – From an economic point of view, do you think coming to China was a good idea?

Yes. My expenses are low and I am saving money. Daily life is cheaper in China than Canada or the UAE (where I taught previously). I have a habit of saving money, but my savings have been able to grow while working in China – more so than when I worked in Canada. (The same as in the UAE, but I worked on several side contract in the UAE and basically worked all the time)

6 – Do you think for young and middle-age scientists coming to China to develop a successful career and get a good economic position is easy? Which advices could you give them?

If they are working in their field (which I am not), then yes. China is the economy of the 21st century and there are many opportunities for funding and research opportunities. The pool of young talented, respectful (!) students is huge. More efforts are needed to assist students with their learning curve in written and oral communications, but that is well worth it (in my mind).

7 – Tell me two or three things that you like a lot about living in China? And also tell me two or three things that you do not like about living in China?

What I like:

- Travel is inexpensive, so weekend get-away are very accessible.
- Our students are amazing - respectful, hard-working, and ready to tackle challenges.
- In my case, living on campus and walking to work. I'm a bit worried about moving off campus – but I will cross that bridge when we come to it.

What I like less:

- Living far from the city is sometimes a challenge... (which contradicts my last statement a bit I know).
- Honestly, I don't like the spitting, the smoking and the general poor hygiene practices in the city I live in. I noticed this isn't the case in other places I have visited in GD province and the rest of China. Hopefully this will improve with the pandemic and the acknowledgement of the importance of cleanliness and general hygiene.
- I don't like asking for help so much – I am SUPER grateful for all the help I get – but it is frustrating that I need help for daily tasks.

8 – How much do you miss your country? What do you exactly miss?

I miss my car, my house (4 bedrooms, big kitchen, big bath tub) and my yard and the ocean close by. I miss my family. I miss some groceries (but then I miss my Chinese ingredients when I am in Canada... so that is normal). I miss my independence to a certain extent – I am blessed in China with people who will freely help me, but I am used to doing almost everything on my own...

9 – During your time in China, which positive and negative lessons have you learned?

Good question. On a personal level I have learned to let go of my ego a bit – I didn't realize my self-worth was so tied up with my title/position until I choose to walk away from it. I have learned to ask for help more readily (I still struggle with that), I have learned some patience (I still struggle with that).

Negative lessons, type your name and passport number very carefully when purchasing train/airplane tickets. I will be stared at like I am from outer-space in the city I live in. AC gets turned off in the evenings even when it is hot and I am working in my office.

10 – In your opinion, what should China improve in order to attract and retain talented foreign scientists?

There are certain things that can't/won't change. However, housing is very important – we are coming from very comfortable living conditions to worse living conditions than we lived in as undergraduate students. For people from North America and Europe that is a huge sacrifice and will always make China a “temporary” place, no matter how long we live there.

Well fitted-out labs with control of the physical environment (e.g. not cutting off power, AC, etc. in a centralized way). I don't work 9-5 and no scientist I know does... that we don't have control of lights and our physical work environment is frustrating and leads to inefficient work. Some Chinese HR practices just don't fit with international academic standards – which also means people come for temporary stays and “suck-it up” while they are here, but they have no intention of staying.

I would say the Gulf countries have done a very good job at making their environments for expats hospitable for long term living and developing a strong sense of belonging. China would be wise to benchmark with these countries.

Interview 2

American male of 71 years old who works as an English teacher for the fourth year

1 – Why did you come to China?

I came to China in order to make my teaching career more varied and interesting.

2 – Did you find what you were looking for? What have you discovered?

Yes, teaching in China is different and very interesting. I have discovered that Chinese students have a good and basic understanding of English grammar, but they need much help in expanding vocabulary. Listening comprehension is also weak.

3 – At which stage of your career did you come to China?

I came to China toward the conclusion of my career.

4 – Do you think coming to China was a good idea to develop your career? Why?

Yes, I teach at the Technion in a multi-cultural environment. I teach Arab and Jewish students, new immigrants, religious and secular students and Ethiopians. Teaching Chinese students has helped me to gain experience and work with the multicultural makeup of the classes I teach.

5 – From an economic point of view, do you think coming to China was a good idea?

Yes, I have been paid well in dollars for my work and consequently it is a good idea.

6 – Do you think for young and middle-age scientists coming to China to develop a successful career and get a good economic position is easy? Which advices could you give them?

I think it is not easy to come to China as a scientist. There are significant cultural barriers to overcome and efficient work with professional colleagues can be challenging for months until one feels more comfortable in the new environment.

I would suggest that they need to be very patient and tolerant in order to succeed in China.

7 – Tell me two or three things that you like a lot about living in China? And also tell me two or three things that you do not like about living in China?

I do not like the danger of walking on the sidewalk together with motor scooters and motorcycles.

The weather can be very hot, humid and uncomfortable.

Everyone I work with tries to be helpful and supportive.

There are opportunities to travel and to see different parts of the country.

China for me is an inexpensive country which is a continuing joy.

8 – How much do you miss your country? What do you exactly miss?

I do not have a problem of being homesick. However, I do miss family when I am in China for an extended period of time. I also miss quality bread.

9 – During your time in China, which positive and negative lessons have you learned?

Chinese students do not participate freely in class, and it is a continuing struggle to get them to speak.

China is a very large and varied country. One cannot generalize about China.

China is less open to sources of information from abroad than many other countries in the world.

One can begin to feel at home in China and to begin to understand and appreciate the country.

One can even begin to communicate in Chinese.

10 – In your opinion, what should China improve in order to attract and retain talented foreign scientists?

Scientists should have the freedom and independence to pursue their research wherever it takes them.

Interview 3

Spanish male 35 years old who works as postdoctoral researcher for the second year

1 – Why did you come to China?

Because in Spain there are not many possibilities for me. My professor didn't have enough funding to hire me as postdoc, and I couldn't find people interested on hiring me, even if I think I had a decent CV to find something in Spain. I went to China looking for opportunities.

2 – Did you find what you were looking for? What have you discovered?

Absolutely, I have found much more than what I was looking for. I landed in the team of a professor who has many resources, both research funding and manpower, and I can progress. In my case, I am a theoretician, and I need experimental data from other group members. Here I have everything I need. Moreover, my professor already sent me to the best conferences in the world, those that I dreamed to go but I couldn't attend because my previous professor had not enough funding.

3 – At which stage of your career did you come to China?

After finishing my PhD I couldn't find a postdoctoral position in China for more than one year. I thought may be I will end up serving food in a restaurant; to do that you do not need a PhD in physics. Luckily, in China somebody wanted to give me an opportunity. One year after graduating, I found the position in China.

4 – Do you think coming to China was a good idea to develop your career? Why?

Yes, it was a very good idea. Because here professors have funding, and the salaries of postdocs are partially subsidized by the government. Then professors can hire more people, and there are always vacants.

5 – From an economic point of view, do you think coming to China was a good idea?

Yes, I am being able to save money every month, as the life here is cheap, specially to rent the apartment. Moreover, I am the whole day working, I do not have time to spend money, and I didn't marry or have children, and I am healthy. I do not have big expenses.

6 – Do you think for young and middle-aged scientists coming to China to develop a successful career and get a good economic position is easy? Which advices could you give them?

I think coming here is not a warranty of success. Competence is very fierce, and I see that my professor always have a lot of pressure. In my case I work under the umbrella of another scientist, which releases me pressure to get funding.

7 – Tell me two or three things that you like a lot about living in China? And also tell me two or three things that you do not like about living in China?

I like that there are opportunities for people in my position. I can use good equipment and earn a good salary. I like very much the international community in China. They are all very open minded and have been in many countries before, and they are intelligent and in general speak 3 languages or more. I also like that students respect the professors when they talk face to face. However, at the same time, I hate the manners of most people (burp when eating, do not let people go out of the lift or subway before eating, people is very reluctant to talk with foreigners). Moreover, the facilities are very dirty and are uncomfortable and nobody seems to care. For example, the light of the toilet in my school was broken for a year and nobody did anything to repair it. In addition, the ban to the internet creates many troubles to work.

8 – How much do you miss your country? What do you exactly miss?

I miss a lot my family, friends and food. Communicating with many people in English is nice, but some times you always want near to you somebody from your own culture who can understand you. Luckily, I made some Spanish friends in China, and I can make Skype calls with my family.

9 – During your time in China, which positive and negative lessons have you learned?

I have learned that if you work hard there are opportunities. However, I do feel that the price I am paying is too high. I want to go back to Spain, I do not want to stay here forever, I do not think I can make life here, this place is too different from what I am used. I have also learned the kind of person I am, which is good. Living far from your family and friends, in a total unknown place, makes you reconsider many things.

10 – In your opinion, what should China improve in order to attract and retain talented foreign scientists?

Chines people is too closed, it is super difficult to interact with them. When they go abroad or to conferences they always form ghettos and stay together. When you experience this for a short time you attribute it to the different cultures, but when you are ignored every day you feel they are very impolite. I have the feeling that young people starts to be different, less brainwashed. I think they are more critical. However, this process changing this old-minded mentality is very slow. The government should put more efforts on teaching less politics and more manners. However, it seems that it is taking the opposite direction, living here is every day more difficult, as they control more and more, and this makes foreigners very uncomfortable. And now with the COVID-19, the government has found the perfect excuse to intensify this more and more. I have the feeling that foreigners who come here is because they have no choice, because they cannot find a good position in another place, not because they like to live in China. Foreign scientists who live in China are not leaders in their field, and I cannot find any reason why a foreign world leader would come here, if he could find a position in Germany, Singapore, USA or Switzerland, he would take it. Of course, you also find old senior foreign scientists who come to China before retirement, but that is just few months per year and just to make money, not because they are interested on the country. In summary, if China wants to attract more and better foreign scientist, less politics and control, and more education on manners.

ANNEX III

Interviews to high-profile experts

Interview 4

Anonymous, Representative of the European Commission in China

Mr. Anonymous got his B.A. in Politics, Philosophy and Economics from Bifrost University (Iceland) in 2010, and a Masters in International Relations from Peking University (China) in 2013. He speaks fluent English, Icelandic, Chinese, French and Danish. He has worked in different positions related to international relations and management at The Icelandic Directorate of Customs, Bifrost University and Statistics Iceland. Since 2015 he is working for the European commission as Senior Country Representative in Euraxess. For this work, he is located in Beijing (China) and promotes the exchange of science and research between Europe and China. Mr. *Anonymous* is a world leader in international relations and has a deep understanding about the challenges that European professionals face when working in China.

1 - Dear *Mr. Anonymous*, thanks for accepting my invitation for this interview.

You are welcome Linzhi, now is in fact a good moment to have it because I am locked in a hotel room in Beijing passing my quarantine. After that, I will be allowed to move freely in China.

2 – Oh really? What do you think about having to pass such a strict quarantine in China?

I think it is a necessary step. If we do not take this seriously it can become a huge problem. While many people in Europe is following instructions strictly, the freedom that we enjoy in Europe, based on our democratic states, makes more difficult to control this virus. In such a special and dangerous situation, I am in favor of controlling more strictly for the collective safety.

3 – Nice, I wish you pass it smoothly. I would like to start this interview by asking you to introduce about the work that you are doing in China.

I work as Senior Country Representative for Euraxess, based in Beijing. I am not European scientist working in china, but I work very closely to European scientists living in China and I have a lot of interaction for them. What we [*Euraxess*] do is to provide services for researchers. For example, we organize forums where we share funding opportunities, experiences and potentiate networking, with the aim that this facilitates the access to resources and promotes the progress of European Scientists working in China.

4 - Why does the European Union has created such a service?

From the point of view of the European Union, there is mainly an imbalance between Europe and China in terms of mobility. There are lots more Chinese researchers going to Europe, than European researchers coming to China. And this is not actually good. For Europe, we want more Europeans coming to China because that can help Europe. So we want to know what is

the main issue. There is no doubt that there are more researchers coming, for example, the network found like Rice, which is impossible ten years ago. We also introduce research opportunities for Chinese researchers going to Europe, so it goes both ways. On the point why this service should be created: It is not only good for Europe to have more collaboration in China and more Europeans working here, but it is also good for us to have more Chinese coming to Europe, and for the Chinese it is good to attract more high-talent people to join the Chinese academic world.

5 – Do you also pay attention to what are the level of happiness and satisfaction of European scientists working in China?

Yes, absolutely. Last year we did a survey on more than 100 European researchers to figure out what are the main issues and challenges facing them and what are their motivations for working in a country like China.

6 – Which are the main challenges that European scientists encounter when working in China?

While there are many issues that have been raised by European scientists during my time in China, and others that I have experienced by myself, I think there are some of them that are common for many people. The most important in my opinion are:

First, the difficulty to read and speak Chinese language. This is an omnipresent factor that European scientists working in China in great disadvantage compared to other Chinese workers, and it is very difficult to solve. Getting access to information, such as guidelines of funding programs and equipment manuals, is essential to develop the work, and in this sense not having enough knowledge of Chinese is a very big handicap.

European workers living in China (not only scientists but in general) have big issues with integration. So they stay in china and can't integrate into Chinese society, this is common thing. Even if you speak fluent Chinese, the Chinese people will always see you as an outsider, and will always think that you are going to abandon them and therefore prefer not to make strong bonds.

The third is access to the funding. It always happens that foreigners don't have enough knowing of Chinese funding, they always know funding afterwards, while lots of Chinese people know before it happens. Many foreigners always have Chinese in the team. With the "Guanxi", you are totally fine, but if it disappears, you are fucked up. Moreover, several foreigners working in China indicate that they feel being cheated as the employer change the conditions without previous notice after arrival.

You can find more about the 6 main challenges European researchers in China face here:

<https://cdn2.euraxess.org/sites/default/files/4-european-researchers-mobility-in-china-challenges-and-opportunities.pdf>

The main challenges are:

1. Non-effective integration within the Chinese scientific research community
2. Still burdensome and time-consuming immigration procedures and residence regulations.
3. Awareness of funding opportunities and talent mobility incentives remains not optimal,

4. Stiff selection criteria for European researchers to obtain funding opportunities and talent mobility incentives.
5. Frustration for not being always allowed to write research proposals in English, thus being in a disadvantaged position when applying to certain research grants.
6. Constraints in accessing data and information, both from outside and from within China

7 – When you comment about integration issues in China, could you please explain which difficulties are bothering you and/or European workers exactly?

It really depends on your current status, in which position you are inside the Chinese scientific system. Graduate students often have problems about the recognition of the degrees between different countries, as well as to develop international collaborations. For postdoctoral scientists and professors, the problem is to be integrated in the department. For example, they are asked to attend events and meetings but the administrative staff does not provide them enough support to understand the topic to discuss. In some occasions, if they are not invited, some foreigners may get offended if no explanation is given. Furthermore, rumors are very common and useful in China, as many news are anticipated and leaked. Foreigners do not have access to rumors and therefore are in clear disadvantage and this makes them frustrated because they lose multiple opportunities. There are also many unspoken rules in China, and sometimes foreigners are not aware and this produces a bad reaction from the Chinese colleague, which also produces frustration in the foreigner.

8 - Did you find any specific challenges that European scientists are facing during the COVID-19 pandemic?

Before the pandemic, European scientists based in China often complained about family visa problems, meaning that many people had difficulties to bring their spouses to China. Now, since the pandemic has started, the biggest problem is that people have strong difficulties to renew their visa. More than 60% of European scientists working in China who travelled to abroad are not able to come back. This has created a big amount of frustration among European scientists, especially because Chinese scientists working in Europe could come back without restrictions. Even if foreigners who have lived in China for many years, they can't come back to China. They should be able to as they are not travelers. There are also several foreigners facing the problem that the visas are expired when the policy is open. We estimated that at least one third foreigners are stuck outside China and they can't come back. Actually, there may be others more than virus in China, which gives foreigners the feeling that "you are no more reliable".

9 – Based on the fact that many foreigners are still working or will come to work to China, could you please suggest some specific, viable and feasible comments?

For Europeans coming to China, first, it is very important to prepare very good before landing here. For example, we may strengthen the networks to tell our employer, boss and/or co-workers what to expect ahead. Second, the contractual standards should be improved, as the former work contracts were not clear, and later many Europeans had the feeling that their Chinese boss exaggerated on the conditions. We should learn this lesson from previous unhappy experiences. We should implement standards of good and bad contacts, and share this information within the different associations of foreigners in China. And third, Europeans working in China should be open-minded and participate in activities popular among Chinese. Here it is very common to invite for dinner, Karaoke, give informal and small gifts, etc....

when there is an important achievement or personal development. This all helps to integrate better.

For Chinese, one important aspect is to break the “Champion” system. With this I mean that many aspects of the work are strongly related to networking, and if you do not have a friend who is very influential (what I call “Champion”), it is very difficult to progress. In many jobs networking is essential to get access to promotion, and this should not be like this; in this sense, Europeans have more difficulties than Chinese. Another aspect is to internationalize, which implies that the ratio of foreigners in an international organization should be above 30%, and services and facilities should be provided accordingly. Chinese employers should facilitate that their European workers integrate in the team, providing support in English, and emphasize among other Chinese workers what is the mutual benefit of having European team members in the near future.

10 – Could you please share with us the negative and positive personal feelings related to your work and life in China?

I have been studying and working in China for 8 years. I live in a Beijing community with my Chinese partner. My first feeling is that Chinese people are very friendly; as the time passes by, my feeling is that it doesn't matter how long you come, you don't feel one more, you are always a foreigner. This is not how Europe treats Chinese. When people look at me and ask me as a visitor despite my long living here and well-spoken Chinese, I feel some frustrated. Chinese treat guest well, but you don't want to be a guest. You have to be polite if you are a guest, and, you want to complain about daily lives.

Moreover, I feel that in China some people have privileges some no, and that foreigners are not welcomed in negotiations. Meanwhile, policies are changing. In 2019 for the first time EU changes the relationship with China, as now it calls it “Competitor “. Now we don't agree to work with China, and we study case by case. The first condition is working on negotiation in science and technology. We don't work together for whatever conditions; the framework conditions need to fit our interests.

About the positive things, I would highlight that I like China and its culture. Moreover, in China there are many good opportunities or Europeans, and here you are able to get a position that is impossible in Europe.

Thank you very much Mr. Anonymous for your time to answer my questions.

Thanks a lot Linzhi, and best luck with your PhD thesis

Interview 5

Pedro Laborda, Full Professor at Nantong University (China) and president of RICE (the Network of Researchers China-Spain). RICE is an initiative with the support of the Spanish Embassy in China. More details in www.ric-e.net



Prof. Pedro Laborda studied Chemistry at the University of Zaragoza, where he got his PhD degree in 2014, for work developed partially in the University of Oviedo and in the Institute of Advanced Chemistry of Catalonia (CSIC). Between January 2015 and December 2018, he worked as postdoctoral researcher, and later as associate professor, in Nanjing Agricultural University and in Jiangsu Academy of Agricultural Sciences (Jiangsu Government). Since January 2019, he is group leader in the School of Life Sciences of Nantong University. His research focuses on the development of new

strategies for the management of plant pathogens and on the identification of new plant diseases

1. Why did you come to China? At which stage of your career did you come to China?

After I finished my PhD degree, I was unemployed for 10 months. My objective was to be a postdoctoral researcher in Europe or USA; however, although I applied for a number of postdoctoral positions, I was rejected in all cases. For this reason, I did not have so many options, and I started to apply for postdoctoral positions in Asia, including China. The answers I received from China were in general very positive, and I decided to come to Nanjing as postdoctoral researcher in January 2015. It can be said that I came to China to continue my scientific career because I did not have any other option, and my unemployment compensation was going to finish soon.

2. Did you find what you were looking for? What have you discovered?

Actually, I found something better than I was expecting. I found not only a salary and the possibility to keep working in research, but also a lot of possibilities in research, universities with a lot of students, and number of funding applications for foreigners. The resources, regarding technology and university platforms, were much better than the ones I had in Spain. I have to admit that I did not know where I was coming, and it was a very positive surprise.

3. Do you think coming to China was a good idea to develop your career? Why?

Absolutely, it was a good idea. After 4 years in China, I achieved a position as full professor in Nantong University. Currently, I am PI, and I have a research group with 4 assistant professors, 3 associate professors and more than 25 students. The promotion was really fast,

and I had the opportunity to have my own research group. I am 34 years old, and I did not see so many young PIs in Spain. China gave the opportunity that I did not have in my country.

4. How is your family status? Do you live in China with a partner or children? If you live with a partner, may I ask in which percentage you contribute to the house tasks (cleaning, bring children to school, cooking, etc...). Do you split this with your partner 50%? Or She does more? Or you have a maid or nanny?

I am married, my wife is Chinese and we have a daughter. We live together with my mother-in-law, and she takes care of most house tasks, such as cooking, stay with the child or washing the clothes. My wife also works in Nantong University as assistant professor. Regarding the contribution of my wife and my contribution to the house tasks, we only participate during the weekend, when we clean the house, and stay with our daughter.

5. Do you think it is easy for young and middle-age European scientists to come to China to develop a successful career and get a good economic position? Which advices could you give them?

I think it is easy to come to China, but, although I promoted, it is not such easy to promote in China. There is a huge competition, with millions of Chinese nationals who want to promote, and who want to have their own research groups. I have 2 advices for European scientists who want to come, or who are currently in China. 1. I recommend to change often the University and city inside China. The Chinese system facilitates the recruitment, but does not facilitate the promotion in the same institution. For this reason, it is convenient change of research institution after some years to promote. 2. I recommend to go to an average university (in the top 1000 of the world, but not in the top 200). The competition in the top universities is much higher than in the average universities. If you go to top universities, you will probably not be able to participate in the decisions of your college; however, if you go to an average university, you will probably be able to participate in the decisions in your college, and you will feel more relevant inside your institution.

6. How do European scientists feel living/working here? Tell me two or three things that they like a lot about living in China? And also tell me two or three things that they do not like about living in China?

I have found very different situations during last years. I have seen Europeans crying and leaving China in less than one year, and I have met Europeans who feel happy and are adapted to the country. In my opinion, the first years are difficult and require some adaptation. After one year, life becomes easier, we commonly are able to communicate and live more or less independently.

Europeans usually like the reputation that is given to researchers in China, the facilities offered by the universities to start a research group, and to try Chinese food.

Europeans usually do not like the pollution, and traffic. Some Europeans have problems to adjust to how Chinese people behave, such as pushing to enter in the train, spitting...

7. How much do you miss your country? What do you exactly miss?

I miss my family and my friends. I miss to go to a bar with my friends, or to have lunch with my family on Sunday. I would like to go to the beach in summer. I would like my parents to

stay more time with their granddaughter. I would like to stay at home during Christmas. I feel that I am gaining some experiences in China, but, at the same time, I am missing some experiences in Spain. This was especially difficult during the first years. I had the feeling of “what am I doing here?” “What is going to happen with my life?”. But, after more than 6 years in China, I somehow adapted to this situation. Now, I have hobbies in China, I like to go to some restaurants with my friends, and I like to have a walk in a park close to my house.

8. During your time in China, which positive and negative lessons have you learned?

I feel I have learnt how I am. Now, I am much more independent and braver than I used to be, such as travelling alone and giving conferences in public. I feel more confident about my capacities, I have understood my abilities and my limitations, and I feel that my limits are much higher than I thought. I have also learnt how to communicate with people, how to connect with their feelings, and how to adjust my mood.

On the other hand, I have become more competitive, and I think this is a mistake. I can see that Chinese people compare too much with the people around them, about money, about cars, about research achievements... They are continuously doing rankings, competing and comparing between themselves. The satisfaction in China is not achieved when you buy a car, it is achieved when the car you have just bought is better than the car of your neighbor. I feel that such much competition decreases the quality of life. I absolutely do not compete in my personal life, but, on the other hand, it is necessary to compete with your workmates to continue doing research and to get resources from the university.

9. In your opinion, what should China improve in order to attract and retain talented European scientists?

China has arisen as an attractive research destination. They are giving possibilities to young scientists, they know that young researchers (between 30 and 50 years old) are very productive, more productive than senior researchers. China is giving the possibility to do research independently, and we do not have this possibility in Europe. During my PhD in Spain, I saw how all associate professor positions were given to some specific people according to their friendship, there was not a fair application call; however, I came to China and I achieved my research group without knowing anybody. I can see that the recruitment system of China is fairer than the one in Spain, and they mainly evaluate the past achievements during the recruitment process.

On the other hand, I think that there are 2 issues that China must improve to retain scientists. In this moment, there are some funding applications that are only available for Chinese nationals. This is an enormous limitation for foreigners in order to advance and develop their careers. Secondly, it is very difficult to find Europeans in administration roles. I think China should give equal opportunities to occupy administration roles inside the universities. In most universities, the international office is managed by Chinese people, who are not able to understand the problems of foreigners in China. The introduction of foreigners in these roles would improve the quality of life of European researchers.

10. What are the opinions of European scientists about the way in which Chinese government, companies and universities have managed the crisis of COVID-19? Did you have some new experience which may influence your future living/working plan? Did you pass a quarantine that you could describe?

We strongly think that Chinese government has perfectly managed the COVID-19 crisis. The decisions were taken very fast, and the spread was controlled in a short period of time. In Nantong, we have passed more than one year without any case. I did not wear any mask for long time. I feel very safe here in China, but I can see in the news that the spread in Europe is still not controlled after more than one year. My university followed the measures indicated by the government, and there was no problem when the students came back. I took the one of the Chinese vaccines few months ago.

When the spread started in January 2020, we were especially careful because my wife was pregnant at that time. We stayed at home all the time. But, the situation was controlled in few weeks, and we could start a normal life.

Interview 6

Mario Lanza, Full Professor, Young 1000 Talent of China and Deputy Dean of Research at Guangdong Technion Israel Institute of Technology, Shantou, China



Prof. Mario Lanza got his PhD in Electronic Engineering in 2010 at Universitat Autònoma de Barcelona. He has published over 120 research articles, including Science, Nature Electronics, and Nature Chemistry, edited a book for Wiley-VCH, and registered four patents (one of them granted with 1 Million USD). Prof. Lanza has received the 2017 Young Investigator Award from Microelectronic Engineering (Elsevier), and the 2015 Young 1000 Talent award (among others), and in 2019 he was appointed as Distinguished Lecturer of the Electron Devices Society (IEEE-EDS). He is the Associate Editor of Scientific Reports (Nature) and Microelectronic Engineering (Elsevier), and serves in the board of many others, like

Advanced Electronic Materials (Wiley-VCH), Nanotechnology and Nano Futures (IOP). Prof. Lanza has 10 years experience working in China, where he worked at Peking University, Soochow University and Guangdong Technion - Israel Institute of Technology (GTIIT), and has been very successful raising funds from the National Science Foundation and Ministry of Science and Technology (in total he has raised more than 2 million USD). Currently he serves as Full Professor and Deputy Dean of Research at GTIIT, where he advises the rest of faculty about how to apply for public funding in China..

1 - Dear Prof. Mario Lanza, thanks for accepting my invitation for this interview.

You are welcome Linzhi. I wish my opinions are useful for your study.

2 - Why did you come to China? At which stage of your career did you come to China?

I came to china mainly for two reasons. The first one is that I wanted to know Chinese because around 2008 it was the Olympic Games, and China was growing very fast, and I thought learning Chinese will be a good asset to find a good job in my hometown later. And the second is to find new experiences. I was already tired of living in Europe, and I wanted to find a society, classmates and friends with a radically way of thinking and living.

3 - Did you find what you were looking for? What have you discovered?

Yes, I have found what I was looking for. I expected to make some new friends and learn a bit of Chinese. Instead, I found many good friends, I found my wife and I had a daughter. I found a very nice job that gives me more salary than I could expect, and I live now in a city (Suzhou) that is much more beautiful than I could expect.

4 - Do you think coming to China was a good idea to develop your career? Why?

I think coming to China was a good decision. Before coming to China (back in 2009) I wanted to find a well-paid job. At the same time, I liked research and the freedom we have working at the university. Therefore, I was considering to apply for a faculty position in one of the already established research groups of the department where I got my PhD, even if the salaries were not that high.

When I first came to China in 2009 I rapidly noticed that students, postdocs and professors spend a lot of time in the university; moreover, here I got access to many equipment I didn't have access in my home university. These two factors allowed me to progress much faster than my colleagues who stayed in Europe or USA.

After I became associate professor in China in 2013, I discovered that the policies from the university and funding agencies were very favorable to further develop my career faster. The main reasons are that: i) the access to all the machines in my institute is for free, ii) the salaries of students and postdocs are partially subsidized by the university/government, and iii) there are many types of research projects that I can apply. This has allowed me to spend a lot of time concentrated on doing experiments and writing papers, and this has allowed me to progress faster than my colleagues working in Europe and USA.

5 - How is your family stratus? Do you live in China with a partner or children? If you live with a partner, may I ask in which percentage you contribute to the house tasks (cleaning, bring children to school, cocking, etc...). Do you split this with your partner 50%? Or She does more? Or you have a maid or nanny?

I live with my wife. I contribute in the tasks of the house very little. I have hired a nanny who helps us to take care of our 2-years-old daughter, and with the cleaning of the house and shopping. I think in China this is affordable, I feel quite happy with it. In any case, my wife does much more work than me.

6 - Do you think it is easy for young and middle-age European scientists to come to China to develop a successful career and get a good economic position? Which advices could you give them?

No, I think it is challenging because China is a very competitive place. You need to be very hard worker, be always available, act fast, and be very comprehensive. One need to be very open minded, understand the weaknesses of his team members and be clever to exploit their strengths. In my case, giving templates and audiovisual examples was very useful to train students. Also, spend some money to get access to a good VPN to overcome the censor, otherwise this can really slow down your working speed. Success is always very complex everywhere, but at least in China you have most of the tools needed to work for it.

7 – Tell me two or three things that you like a lot about living in China? And also tell me two or three things that you do not like about living in China?

Apart from my family, what I like the most of living in China is the positive environment of the work, both inside and outside the university. People is very hard working, and they always have plans of studying, and travelling, starting a business. It is a very positive environment. I

also love that China is quite safe place, with low crime and no drugs. The high respect for family and friends is also very enjoyable.

The things that I do not like about living in China are mainly the manners of the people in many senses. For example, many places are very dirty, people still do not obey some basic rules, such as first let people go out of the bus/car/lift and then enter, do not stop in traffic lights, etcetera. Some people still behaves very rude, scream too much in the restaurant or shopping center, burp during eating, spit on the ground, etcetera. Some Chinese people try to justify that saying that “we are from different cultures”, but that is not correct because my well educated Chinese friends who are full professors at Peking University never do that, and when I travel to Singapore, Korea and Japan I also do not see such things. Chinese society has improved a lot, but I think there is still a very long way to go.

Another thing that I do not like of living in China is the very authoritarian attitude of some boss/professors to their workers/students. Also, I hate that the access to many foreign websites is very slow or blocked.

8 – How much do you miss your country? What do you exactly miss?

Not a lot. I mainly miss my father and my mother. Something that I miss a bit from my country is the clean sky, the beach and pool, and also the food.

9 – During your time in China, which positive and negative lessons have you learned?

China has taught me to be perseverant and hard working. I have learned to adapt to the changing situations, as Chinese system is very dynamic and policies from the university and the government are constantly changing. I have learned to construct long-term strategies to achieve my goals. I have learned to be innovative, which in China there is so many people that if you do the same than the others is nearly impossible to succeed in anything. And I have learned to be very pragmatic and productivity-oriented researcher. For the negative ones, China has taught me that even close collaborators can betray you, and I have learned not to be naïve.

10 – In your opinion, what should China improve in order to attract and retain talented foreign scientists?

China is offering excellent conditions to do research in many aspects, including manpower, access to facilities and funding. However, some foreigners still do not feel comfortable living here (or at least less comfortable than in other places like Singapore, to mention one), and they decide to leave after a short period of time, apart from the obvious problems of pollution and internet limitation, I have noticed honesty of people and personal relationships is normally the biggest problem.

In many cases, foreigners are automatically excluded when deciding how to share goods. As an example, last year one professor in my institute left, and some professors from my department meet by themselves to decide who gets the equipment and team members. Also, I suffered myself the uncomfortable situation that I was attracted by promises that later didn't become true, such as purchasing of equipment that later never came. Also, I found that many important differences between western and Chinese systems were not explained to me. For example, I was offered a position as Associate Professor, but when I arrived to China I noticed that Associate Professors here cannot supervise PhD students, which was very frustrating. Also, some heads of institutes, departments and groups are very authoritarian to the people under

them and I have observed that, while many Chinese staff tend to simply accept this attitude, while foreigners get frustrated and leave. These kind of actions are considered to be very dishonest in western societies, and I never faced them when working in other institutions in top western countries. Of course there is people who behave correctly and wrongly everywhere, but it is a fact that such kinds of problems happen much more often in China. Almost every foreigner I have talked with experienced many similar situations when working in China for long periods of time (>1 year).

ANNEX IV

Interview to a Chinese employer

Interview 7

Chinese full professor and member of the Chinese Academy of Sciences. Working at a Chinese university, and head of an institute. Famous scientist with an h-index of 81

1 – How many foreigners have you hired in your institute?

In the institute that I am leading, we are around 102 workers, including faculty (professors, associate professors and assistant professors) and administrative staff. Among them 22 are foreigners.

2 – Which positions occupy those 22 foreigners in your institute?

Two are full professors, one is associate professor, four are lecturers and the rest are English teachers.

3 – Do you have foreigners in any management committee of your institute? Why?

No, I do not have any foreigner in the management committee of my institute. For these positions one needs to speak and write Chinese. In China we have many meetings and presentations, and if one cannot understand the language it is impossible.

4 – How is the performance of the professor and associate professors compared to the other Chinese faculty in terms of number of publications and citations?

Their numbers are lower than the average. They do good work, but for some reasons still didn't get enough recognition in their communities.

5 – And why did you hire them?

Chinese institutions are trying to open to the world, and we all are making efforts to attract foreign talented scientists. However, China is still very unknown for foreigners. We have prepared very competitive offers in terms of salary and research funding, and I am contacting many foreigners every week. We expect to bring more people soon.

6 – Taiwan, Hong Kong and Singapore are also Asian territories, and the percentage of foreigners there is much higher. Why do you think that is the reason?

I think these territories have a longer tradition in receiving foreigners, and their habitants speak more fluent English. Moreover, the restrictions to access to foreign websites in China is a very important obstacle. We are working to improve this situation.

7 – Do your Chinese professors often collaborate and do joint researches with foreign professors?

Yes, they are publishing papers together. I think overall the understanding is good and in multicultural groups everyone wins, specially the students.

8 – In your opinion, which are the main challenges that foreigners have to face when working in your institute? Did you receive any complain?

I think the main challenge is the language barrier. The institute that I am leading has very high standards in terms of publications. For example, the university where I work in China is in the world top 20 in Materials Science according to US News, in the top 20 in Nanoscience & Nanotechnology according to the Shanghai Jiaotong Ranking, and in the top 30 in Physical Sciences according to Nature Index. Moreover, we have 30 professors and 9 of them belong to the Highly Cited category of Thompson Reuters. These numbers are pretty high, some of the challenges that foreigners face here are not because they are not in their home country, are because they are in a very competitive environment. In such circumstances, people may complain sometimes for whatever unjustified thing.

9 – May I ask you to specify which complains did you receive?

For example, last year two foreigners complained about the status of the facilities, like toilets. We are all using the same facilities and nobody complains, I think they should adapt like everyone.

10 – Is there anything else that you specially value from your foreign professors and staff?

They are very useful for us. They improve the English level of our students, and they have valuable working methodologies. I would like to have more foreigners.

ANNEX V

Summary of top national/foreign scientific production

Table summarizing the percentage of National and Foreign talents contributing to top scientific papers, as defined in the thesis

	Nature	Materials	Nanotech	Electronics	Total
Total number of papers	147	306	294	133	880
Total number of authors	206	491	474	195	1366
Total number of affiliations	217	517	481	202	1417

Region of affiliation	Nature				Nature Materials				Nature Nanotechnology				Nature Electronics				TOTAL						
	Total	Nationals	Foreigners	Not found	Total	Nationals	Foreigners	Not found	Total	Nationals	Foreigners	Not found	Total	Nationals	Foreigners	Not found	Total	Nationals	%	Foreigners	%	Not found	%
Australia	11	4	7	0	7	2	3	2	16	5	6	5	9	4	4	1	43	15	34.88%	20	46.51%	8	18.60%
Austria	2	1	1	0	6	2	2	2	3	0	2	1	3	0	0	3	14	3	21.43%	5	35.71%	6	42.86%
Belgium	3	2	1	0	1	1	0	0	1	1	0	0	2	2	0	0	7	6	85.71%	1	14.29%	0	0.00%
Canada	5	1	4	0	9	4	5	0	9	4	5	0	3	1	1	1	26	10	38.46%	15	57.69%	1	3.85%
China (continental)	14	14	0	0	69	58	7	4	59	51	2	6	26	19	2	5	168	142	84.52%	11	6.55%	15	8.93%
Czech Republic	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0.00%	2	100.00%	0	0.00%
Denmark	1	1	0	0	2	1	1	0	5	1	2	2	0	0	0	0	8	3	37.50%	3	37.50%	2	25.00%
Finland	2	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3	2	66.67%	1	33.33%	0	0.00%
France	3	2	0	1	31	8	8	15	13	4	3	6	3	1	0	2	50	15	30.00%	11	22.00%	24	48.00%
Germany	20	13	7	0	38	15	9	14	22	14	2	6	6	3	1	2	86	45	52.33%	19	22.09%	22	25.58%
Hong Kong	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	2	0	0.00%	2	100.00%	0	0.00%
India	0	0	0	0	1	0	0	1	1	0	1	0	1	0	0	1	3	0	0.00%	1	33.33%	2	66.67%
Ireland	0	0	0	0	2	0	1	1	1	0	0	1	0	0	0	0	3	0	0.00%	1	33.33%	2	66.67%
Israel	0	0	0	0	3	2	1	0	4	2	1	1	1	1	0	0	8	5	62.50%	2	25.00%	1	12.50%
Italy	0	0	0	0	16	9	4	3	9	5	2	2	2	2	0	0	27	16	59.26%	6	22.22%	5	18.52%
Japan	11	6	0	5	21	9	6	6	18	13	3	2	8	5	1	2	58	33	56.90%	10	17.24%	15	25.86%
Korea	4	3	0	1	14	11	0	3	13	6	6	1	9	7	0	2	40	27	67.50%	6	15.00%	7	17.50%
Netherlands	2	0	1	1	7	3	2	2	18	5	7	6	5	4	1	0	32	12	37.50%	11	34.38%	9	28.13%
New Zealand	1	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	2	0	0.00%	1	50.00%	1	50.00%
Norway	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	2	0	0.00%	2	100.00%	0	0.00%
Portugal	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0.00%	1	100.00%	0	0.00%
Russia	0	0	0	0	1	0	1	0	2	0	2	0	1	1	0	0	4	1	25.00%	3	75.00%	0	0.00%
Saudi Arabia	0	0	0	0	2	0	2	0	2	0	1	1	1	0	1	0	5	0	0.00%	4	80.00%	1	20.00%
Singapore	2	0	1	1	18	1	14	3	12	2	8	2	4	0	4	0	36	3	8.33%	27	75.00%	6	16.67%
Slovenia	0	0	0	0	2	0	1	1	0	0	0	0	0	0	0	0	2	0	0.00%	1	50.00%	1	50.00%
South Africa	1	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	1	50.00%	0	0.00%	1	50.00%
Spain	1	0	1	0	11	8	1	2	11	3	5	3	1	1	0	0	24	12	50.00%	7	29.17%	5	20.83%
Sweden	6	2	2	2	10	0	7	3	5	1	2	2	4	0	2	2	25	3	12.00%	13	52.00%	9	36.00%
Switzerland	5	1	4	0	22	3	14	5	29	3	20	6	4	1	2	1	60	8	13.33%	40	66.67%	12	20.00%
Taiwan	0	0	0	0	5	4	0	1	7	2	3	2	1	0	0	1	13	6	46.15%	3	23.08%	4	30.77%
Turkey	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	100.00%	0	0.00%	0	0.00%
United Kingdom	22	12	10	0	37	15	14	8	34	6	19	9	11	1	9	1	104	34	32.69%	52	50.00%	18	17.31%
United States	101	53	45	3	179	60	100	19	180	58	107	15	96	25	67	4	556	196	35.25%	319	57.37%	41	7.37%
TOTAL	217	118	85	14	517	216	205	96	481	187	214	80	202	78	96	28	1417	599	42.27%	600	42.34%	218	15.38%

Detailed analysis of the articles in Nature

Year	Volume	Number	Type of paper	Corresponding Author 1			Corresponding Author 2			Corresponding Author 3		
				Name	Country of affiliation	Bachelor institution + Country	Name	Country of affiliation	Bachelor institution + Country	Name	Country of affiliation	Bachelor Institution + Country
2019		7737	Article 1	Sasikanth Maniapatruni	USA	Indian Institute of Technology (India)						
			Article 2	W. Nicholas Haining	USA	Oxford University (UK)						
			Article 3	Youdong Mao	China/USA	Wuhan University (China)						
			Letter 1	Guillaume Salomon	Germany	Lycée Louis-le-Grand (French)						
			Letter 2	Aaron M. Lindenberg	USA	Columbia University (USA)						
			Letter 3	Frances H. Arnold	USA	Princeton University (USA)						
			Letter 4	Guillaume Lamarche-Gagnon	UK	University of Bristol (UK)						
			Letter 5	Curtis D. Williams	USA	Indiana University (USA)						
			Letter 6	Ben Marwick	Australia/USA	University of Western Australia (Australia)	Bo Li	Australia	NOT FOUND—China			
			Letter 7	Qiufu Ma	USA	Fudan University (China)						
Letter 8	Venkatesan Sundaresan	USA	University of Poona (India)									
Letter 9	Jonathan S. Stamler	USA	Brandeis University (USA)									
Letter 10	Hongbo Chi	USA	Shandong University (China)									
Letter 11	David Baker	USA	Harvard University (USA)									
Letter 12	T. Martin Schmeing	Canada	McGill University (Canada)	Jason W. Chin	UK	University of Oxford (UK)						
Letter 13	Alan F. Cowman	Australia	Griiffith University (Australia)									
Article 1	Jonathan Simon	USA	California Institute of Technology (USA)									
Article 2	Shingo Kajimura	USA	The University of Tokyo (Japan)									
Article 3	Daniel-Adriano Silva	USA	National Autonomous University of Mexico (Mexico)	K. Christopher Garcia	USA	Tulane University (USA)	David Baker	USA	Harvard University (USA)			
Article 4	Yigong Shi	China	Tsinghua University (China)									
Letter 1	E. Kara	USA	Columbia University (USA)									
Letter 2	Pier-Emmanuel Tremblay	UK	Université de Montréal (Canada)									
Letter 3	Nami Sakai	Japan	Waseda University (Japan)									
Letter 4	C. Dornes	Switzerland	Heidelberg University (Germany)	S. L. Johnson	Switzerland	Harvey Mudd College (USA)						
Letter 5	Matthew J. Rosseinsky	UK	University of Oxford (UK)									
Letter 6	Steeve Gréaux	Japan	NOT FOUND									
Letter 7	Nicholas J. Murray	Australia	Flinders University (Australia)									
Letter 8	Robyn Pickering	South Africa	University of the Witwatersrand (South Africa)									
Letter 9	François-Xavier Weil	France	Université Victor Segalen Bordeaux 2 (France)									
Letter 10	David A. Reardon	USA	Tufts University School Of Medicine (USA)									
Letter 11	Wolfgang Wick	Germany	University of Bonn (Germany)									
Letter 12	Minako Ito	Japan	NOT FOUND	Akihiko Yoshimura	Japan	Kyoto University (Japan)						
Letter 13	Rickard Sandberg	Sweden	NOT FOUND (PhD in Karolinska Institutet, Sweden)									
Article 1	Minh-Son Pham	UK	Hanoi University of Technology (Vietnam)									
Article 2	Seishi Ogawa	Japan/Sweden	NOT FOUND (PhD in University of Tokyo, Japan)									
Article 3	Bing Chen	USA	Fudan University (China)									
Letter 1	L. Izzo	Spain	University of Naples Federico II (Italy)									
Letter 2	Jennifer A. Shusterman	USA	Tufts University (USA)									
Letter 3	Faxian Xiu	China	Harbin Institute of Technology (China)									
Letter 4	Nuh Gedik	USA	Bogazici University (Turkey)	Pablo Jarillo-Herrero	USA	University of Valencia (Spain)						
Letter 5	Daniel N. Congreve	USA	Iowa State University (USA)	Tomislav Rovis	USA	University of Toronto (Canada)	Luis M. Campos	USA	California State University (USA)			
Letter 6	Shigeru Kuratan	Japan	NOT FOUND (Master in Kyoto University, Japan)									
Letter 7	John A. Nyakatura	Germany	Friedrich Schiller University (Germany)									
Letter 8	Alexandros Pouloupoulos	USA	University of Athens (Greece)	Jeffrey D. Macklis	USA	MIT (USA)						
Letter 9	Robert W. Gereau IV	USA	Missouri State University (USA)	John A. Rogers	USA	University of Texas (USA)						
Letter 10	Laura K. Mackay	Australia	University of Warwick (UK)	Jason Waitman	Australia	Oregon State University (USA)	Thomas Gebhardt	Australia	Hannover Medical School (Germany)			
Letter 11	Xiaodong Cheng	USA	Peking University (China)	Jan E. Carette	USA	Leiden University	Or Gozani	USA	UC Berkeley (USA)			
Letter 12	David Bheila	UK	Cardiff University (UK)									
Letter 13	Elizabeth A. Campbell	USA	Swarthmore College (USA)									
Article 1	Yi-Wei Chen	USA	National Taiwan University—Taiwan, Chin									
Article 2	Stavros Lomvardas	USA	Columbia University (USA)									
Article 3	Simonas Masulis	UK	University of Bristol (UK)	Keith W. Miller	USA	University of Oxford (UK)	A. Radu Aricescu	UK	University of Bucharest (Romania)			
Letter 1	M. J. Damley	UK	University of Oxford (UK)									
Letter 2	Michael Hoffmann	Germany	Otto-von-Guericke-Universität Magdeburg (Germany)									
Letter 3	Sayef Salahuddin	USA	Bangladesh University of Engineering and Technology (Bangladesh)									
Letter 4	Vivek K Goyal	USA	University of Iowa (USA)									
Letter 5	Julia K. Green	USA	Tufts University (USA)									
Letter 6	Nandan L. Nerurkar	USA	University of Maryland at College Park (USA)	Clifford J. Tabin	USA	University of Chicago (USA)						
Letter 7	Ari Pekka Mähönen	Finland	University of Eastern Finland (Finland)									
Letter 8	Bert De Rybel	Belgium/The Netherlands	Ghent University (Belgium)	Ykä Helariutta	Finland/UK	University of Helsinki (Finland)						
Letter 9	Navdeep S. Chandel	USA	University of Chicago (USA)									
Letter 10	Yamina Bennasser	France	Université Paul Sabatier Toulouse III (France)									
Letter 11	Reiner A. Wimmer	Austria	Weihenstephan University (Germany)	Josef M. Penninger	Canada/Austria	University of Innsbruck (Austria)						
Letter 12	Geert Carmeliet	Belgium	Katholieke Universiteit Leuven (Belgium)									
Letter 13	Duncan Lavery	UK	University of Bath (UK)	Keith W. Miller	USA	University of Oxford (UK)	A. Radu Aricescu	UK	University of Bucharest (Romania)			
Article 1	V. Gopalaswamy	USA	Graduate in University of Rochester									
Article 2	Thomas F. Mentel	Germany	Philipps University of Marburg (Germany)									
Article 3	Zanobia Jacobs	Australia	University of Stellenbosch (South Africa)	Richard G. Roberts	Australia	University of Wales (UK)						
Article 4	Kenya Honda	Japan	Master in Kyoto University (Japan)									
Article 5	David P. Bartel	USA	Goshen College (USA)									
Article 6	Sherif Abou Elele	Canada	University of Qatar (Qatar)									
Letter 1	A. G. M. Tielens	The Netherlands	NOT FOUND (PhD in Leiden University, The Netherlands)									
Letter 2	Zhen Gao	Singapore	NOT FOUND	Baile Zhang	Singapore	Tsinghua University (China)	Hongsheng Chen	China	Zhejiang University (China)			
Letter 3	Yoshichika Otan	Japan	Keio University (Japan)									
Letter 4	Shiqiang Wei	China	Guangxi Normal University (China)	Jinlong Yang	China	Nanjing Normal University (China)	Junling Lu	China	Henan University (China)			
Letter 5	Timothy D. O'Hara	Australia	University of Melbourne (Australia)									
Letter 6	Katerina Douka	Germany/UK	Technological University of Athens (Greece)	Tom Higham	UK	University of Otago (New Zealand)						
Letter 7	Karl Deisseroth	USA	Harvard University (USA)									
Letter 8	Regine Kahmann	Germany	University of Göttingen (Germany)	Gert Bange	Germany	Martin-Luther-Universität Halle-Wittenberg (Germany)						
Letter 9	Michael F. Berger	USA	Princeton University (USA)	Ingo K. Mellinger	USA	Technical University of Munich (Germany)						
Letter 10	Jan Karlseder	USA	University of Innsbruck (Austria)									
Article 1	Ruichao Ma	USA	Nanyang Technological University (Singapore)									
Article 2	Tamsin L. Edwards	UK	University of Manchester (UK)									

Detailed analysis of the articles in Nature Materials

Year	Month	Type of paper	Corresponding Author 1			Corresponding Author 2			Corresponding Author 3			Corresponding Author 4				
			Name	Country of affiliation	Bachelor Institution + Country	Name	Country of affiliation	Bachelor Institution + Country	Name	Country of affiliation	Bachelor Institution + Country	Name	Country of affiliation	Bachelor Institution + Country		
2019	January	Perspective 1	Chris Leighton	USA	University of Durham (UK)											
		Letter 1	Chunlin Chen	Japan/China	Central South University (China)	Yuchi Ikuhara	Japan	NOT FOUND (PhD in Kyushu University, Japan)								
		Letter 2	Benoit Roman	France	NOT FOUND											
		Article 1	Kyung-Jin Lee	Korea	KAIST (Korea)	Hyunsoo Yang	Singapore	Seoul National University (Korea)								
		Article 2	Geoffrey S. D. Beach	USA	California Institute of Technology (USA)											
		Article 3	Stefan Abel	Switzerland	University of Würzburg (Germany)	Ping Ma	Switzerland	NOT FOUND	Pablo Sanchis	Spain	Universidad Politecnica de Valencia (Spain)					
		Article 4	Shaoxun Fan	USA	University of Science and Technology of China (China)	C.-W. Ou	Singapore	University of Science and Technology of China (China)								
		Article 5	Huanuo Zhang	USA	NOT FOUND	Joerg Appenzeller	USA	Technical University Aachen (Germany)								
		Article 6	Keping Tai	China	Central South University (China)	Ning Gao	China	Harbin University of Science and Technology (China)	Chang Liu	China	Wuhan University of Science and Technology (China)					
		Article 7	Jodie L. Lisenbeaus	USA	University of Texas at Austin (USA)											
February	February	Article 8	A. Smolyanskiy	USA	Illinois Institute of Technology (USA)											
		Article 9	Samir Mitragotri	USA	Institute of Chemical Technology (India)	Craig Hawker	USA	University of Queensland (Australia)	H. Tom Soh	USA	Cornell University (USA)					
		Letter 1	Ilija Zeljkovic	USA	Washington University in St. Louis (USA)											
		Letter 2	Fei Gao	China	Sichuan University (China)	Yidong Chong	Singapore	Stanford University (USA)	Baile Zhang	Singapore	Tsinghua University (China)					
		Article 1	Andrea Alii	USA	Roma Tre University (Italy)	Alexander B. Khankhaev	USA	NOT FOUND (PhD in Moscow State University, Russia)								
		Article 2	Susumu Noda	Japan	Kyoto University (Japan)											
		Article 3	Michael S. Strano	USA	Polytechnic University, Brooklyn (USA)											
		Article 4	Yee Kan Koh	Singapore	University of Technology Malaysia (Malaysia)											
		Article 5	Wei D. Lu	USA	Tsinghua University (China)											
		Article 6	David Kiefer	Sweden	NOT FOUND (PhD student in Chalmers University of Technology, Sweden)	Christian Müller	Sweden	Cambridge University (UK)								
March	March	Article 7	Ho Seok Park	Korea	NOT FOUND (PhD in KAIST, Korea)											
		Article 8	Zhi Wang	China	Tianjin University (China)											
		Article 9	Yossi Weizmann	USA	ORT Braude Academic College of Engineering (Israel)	Chongli Zhong	China	Beijing University Of Chemical Technology (China)	Michael D. Guiver	China	London University (UK)					
		Article 10	Jeffrey A. Hubbell	Switzerland/USA	Kansas State University (USA)											
		Review 1	N. A. Spaldin	Switzerland	Cambridge University (UK)											
		Letter 1	Guillermo M. de la Cruz	Australia	NOT FOUND	Thomas Volz	Australia	University of Konstanz (Germany)								
		Letter 2	Ataç Inanoglu	Switzerland	Middle East Technical University (Turkey)											
		Article 1	Nicola A. Spaldin	Switzerland	Cambridge University (UK)											
		Article 2	T. Sato	Japan	NOT FOUND	K. Kanoda	Japan	NOT FOUND								
		Article 3	Xiaoyu (Rayne) Zheng	USA	Beihang University (China)											
April	April	Article 4	Martin Schwarze	Germany	NOT FOUND (PhD student in Technische Universität Dresden, Germany)	Frank Ortman	Germany	Friedrich-Schiller-Universität Jena (Germany)	Karl Leo	Germany	University of Freiburg (Germany)					
		Article 5	Victor I. Klimov	USA	Moscow State University (Russia)											
		Article 6	Geoffroy Ceder	Belgium	University of Leuven (Belgium)	Michael F. Toney	USA	California Institute of Technology (USA)	William C. Chueh	USA	California Institute of Technology (USA)					
		Article 7	Takaroni Fukuhama	Japan	Tohoku University (Japan)											
		Article 8	Huajie Liu	China	Tongji University (China)	Friedrich C. Simmel	Germany	NOT FOUND (PhD in LMU Muenchen, Germany)	Chunhui Fan	China	Nanjing University (China)					
		Article 9	José A. Garrido	Spain	Technical University of Madrid (Spain)	Anton Guimera-Brunet	Spain	NOT FOUND								
		Article 10	William C. C. Gleason	USA	University of Virginia (USA)											
		Review 1	Dianqiang Xia	USA	Shanghai Jiao Tong University (China)	J. Joshua Yang	USA	Southeast University (China)								
		Letter 1	Jie Shan	USA	Moscow State University (Russia)	Kim Fai Mak	USA	Hong Kong University of Science and Technology (Hongkong)								
		Article 1	Marta Fitzpatrick	Italy	University of Pisa (Italy)	Roberta Sessoli	Italy	University of Florence (Italy)								
May	May	Article 2	Hsiu-Hsiu Lin	Taiwan, China	NOT FOUND (PhD in U.S. Santa Barbara, USA)	Chih-Huang Lai	Taiwan, China	National Tsing Hua University (Taiwan, China)								
		Article 3	Thorsten Geisler	Germany	NOT FOUND											
		Article 4	Carlos Silva	USA	NOT FOUND (PhD in University of Minnesota, USA)	Ajay Ram Srinivas Kandada	USA/Italy	Sri Sathya Sai Institute of Higher Learning (India)								
		Article 5	Yoshihiro Asai	Japan	NOT FOUND (PhD in Kyoto University, Japan)	Gang Zhou	China	Nanchang University (China)	Nongjian Tao	USA/China	Anhui University (China)					
		Article 6	Wenbo Chen	China	Wuhan University (China)	Colin Lambert	UK	NOT FOUND	Wenqing Hong	China	Xiamen University (China)					
		Article 7	Thomas D. Bennett	UK	University of Cambridge (UK)											
		Article 8	V. Gopalan	USA	Indian Institute of Technology (India)	J. W. Freeland	USA	Beloit College (USA)								
		Article 9	Dongshai Wang	USA	Tsinghua University (China)											
		Article 10	Yi-Chun Lu	China	National Tsing Hua University (China)											
		Article 11	Nuria Montserrat	Spain	University of Barcelona (Spain)											
June	June	Perspective 1	Sean Ekins	USA	Nottingham Trent University (UK)											
		Letter 1	N. P. Ong	USA	Columbia University (USA)											
		Letter 2	Philip Kim	USA	Seoul National University (South Korea)											
		Letter 3	Curtis P. Berlinguette	Canada	University of Alberta (Canada)											
		Letter 4	Sascha Ulbrich	Germany	NOT FOUND	Johannes Benduhn	Germany	NOT FOUND (PhD student in Technische Universität Dresden, Germany)	Koen Vandewal	Germany	NOT FOUND (Master in Ghent University, Belgium)					
		Letter 5	Arun Dash	India	National Institute of Technology Rourkela (India)											
		Article 1	Kenneth S. Burch	USA	University of California at Santa Cruz (USA)											
		Article 2	Jian-Hao Chen	China	Zhejiang University (USA)	Ji Feng	China	National University of Singapore (Singapore)	Dong Sun	China	University of Science & Technology of China (China)					
		Article 3	Faxian Xu	China	Harbin Institute of Technology (China)											
		Article 4	Ferry A. A. Nugroho	Sweden	Nanyang Technological University (Singapore)	Christoph Langhammer	Sweden	NOT FOUND (Master in ETH Zurich, Switzerland)								
Article 5	Mathieu Saubanière	France	NOT FOUND	Marie-Lessee Doublet	France	NOT FOUND (PhD in University of Paris-Sud Orsay, France)										
July	July	Article 6	Ehud Gazit	Israel	Tel Aviv University (Israel)											
		Article 7	Charles M. Lieber	USA	Franklin & Marshall College (USA)											
		Perspective 1	James Hone	USA	Yale University (USA)											
		Review 1	Jeshwan Kim	USA	Hongik University (South Korea)											
		Letter 1	H. Suzuki	Germany	NOT FOUND	B. Keimer	Germany	Technical University of Munich (Germany)								
		Article 1	Joseph P. Heremans	USA	Catholic University of Louvain (Belgium)											
		Article 2	G. M. Vanacore	Switzerland	NOT FOUND											
		Article 3	Yi-Chun Chen	Taiwan, China	National Taiwan Normal University (Taiwan, China)	Jan-Chi Yang	Taiwan, China	National Chiao Tung University (Taiwan, China)								
		Article 4	Martin Kemmerik	Sweden	Eindhoven University of Technology (The Netherlands)											
		Article 5	Zhenan Bao	USA	Nanjing University (China)											
Article 6	Jiangwei Wang	China	Xi'an University of Technology (China)	Libo Gao	China	Dalian University of Technology (China)										
August	August	Article 7	Lianguo Hu	USA	University of Science and Technology of China (China)											
		Article 8	Rinu Sharma	USA	Ranga University (India)											
		Article 9	Hyunjun Kim	Republic of Korea	KAIST (Korea)	Ki Tae Nam	Republic of Korea	Seoul National University (Korea)	Taegwan Hyeon	Republic of Korea	Seoul National University (Korea)					
		Article 10	Jung Ling	China	Wuhan University (China)	Jeremy Mao	USA	NOT FOUND								
		Article 11	Paloma Karchhauerová	Singapore	Cornell University (USA)	Garrett E. Jones	UK	NOT FOUND	Alexander D. Berahatsky	Singapore/Israel	Moscow State University (Russia)					
		Review 1	Jeremy J. Baumberg	UK	University of Cambridge (UK)											
		Letter 1	Amalio Fernández-Pacheco	UK	University of Zaragoza (Spain)	Elena Vedmedenko	Germany	NOT FOUND								
		Letter 2	Duck-Ho Kim	Japan	NiHA University (Korea)	Tarujo Ono	Japan	Kyoto University (Japan)								
		Letter 3	E. Huser	Sweden	Technische Universität München (Germany)	R. Huser	Germany	Technische Universität München (Germany)								
		Letter 4	Jian-Feng Li	China	Zhejiang University (China)	Jun Cheng	China	Shanghaijiaotong University (China)								
Article 1	Myung-Hwa Jung	Republic of Korea	Sungkyunkwan University (Korea)	Mathias Klau	Germany	RWTH Aachen University (Germany)										
Article 2	Xinyue Lu	China	Hebei University (China)	Pengcheng Dai	USA/China	Zhengzhou University (China)										
September	September	Article 3	Brahm Lounis	France	NOT FOUND											
		Article 4	Russell J. Holmes	USA	University of Manitoba (Canada)											
		Article 5	Wenhao Sun	USA	Northwestern University (USA)	Aaron M. Holder	USA	NOT FOUND (PhD in University of Colorado Boulder)								
		Article 6	Ned B. McKelown	UK	University of East Anglia (UK)											
		Article 7	Phillip Christopher	USA	University of California, Santa Barbara (USA)											
		Article 8	Truls Norby	Norway	University of Oslo (Norway)											
		Article 9	Shaun P. Jackson	USA/Australia	NOT FOUND	Cheng Zhu	USA/Australia	Zhejiang University (China)								
		Review 1	S. K. Ozdemir	USA	Middle East Technical University (Turkey)	S. Rotter	Austria	University of Hamburg (Germany)								
		Review 2	Stefano Sanguanetti	Italy	NOT FOUND (PhD in University of Milano-Bicocca, Italy)											
		Letter 1	T. Machida	Japan	Tokyo University of Science (Japan)	T. Hanaguri	Japan	Tohoku University (Japan)								
Letter 2	Heon M. Hwang	Germany	Babeş-Bolyai University (Romania)													
Letter 3	Theodor B. Norris	USA	NOT FOUND													
Letter 4	Kazunari Domen	Japan	University of Tokyo (Japan)	Nicholas A. Kotov	USA	NOT FOUND (Master in Moscow State University, Russia)										
Article 1	Xuebang Wu	China	Anhui Normal University (China)	Jun Song	Canada	University of Science and Technology of China (China)										

August	Article 2	M. Ghidini	Italy/UK	Università Cattolica del Sacro Cuore (Italy)	S. S. Dhali	UK	NOT FOUND	N. D. Mathur	UK	NOT FOUND (Master in University of Cambridge, UK)									
	Article 3	Sergii Yakunin	Switzerland	NOT FOUND	Maksym V. Kovalenko	Switzerland	Chernivtsi National University (Ukraine)												
	Article 4	Christan Wagner	Germany	NOT FOUND															
	Article 5	Andrew M. Minor	USA	Yale University (USA)															
	Article 6	Axelino Gomez	Spain	University of Valencia (Spain)															
	Article 7	Fut (Kuo) Yang	Canada	University of Toronto (Canada)	Boxin Zhao	Canada	Central South University (China)												
	Article 8	Jason A. Burdick	USA	University of Wyoming (USA)															
	Article 9	Daniel G. Anderson	USA	University of California, Santa Cruz (USA)															
	Review 1	Michael A. Kott	USA	Cornell University (USA)															
	Letter 1	Cheng Song	China	Central South University (China)	Feng Pan	China	Peking University (China)												
	Letter 2	Zuankai Wang	China	Jilin University (China)	Hans-Jürgen Butt	Germany	Max Planck Institute for Biophysics (Germany)		Xu Deng	China	NOT FOUND (PhD in Max Planck Institute, Germany)								
Article 1	Ueli M. Angst	Switzerland	the Norwegian University of Science and Technology (Norway)																
Article 2	N. Bergaël	France	NOT FOUND (PhD in ESPCI, France)																
Article 3	Ritesh Agarwal	USA	Indian Institute of Technology (India)																
Article 4	Joel G. Crim	USA	The Pennsylvania State University (USA)																
Article 5	Jieshan Dou	China	Anhui University of Technology (China)	Lin-Wang Wang	USA	Shanghai Jiao Tong University (China)		Haimei Zheng	USA	University of Maryland, college park (USA)									
Article 6	Richard H. Friend	UK	Trinity College (UK)	Jian-Xiang Brédas	USA	University of Namur (Belgium)		Feng Li	UK/China	Renmin University of China (China)									
Article 7	Yasuhiro Shiraiishi	Japan	Osaka University (Japan)																
Article 8	Jie-Peng Zhang	China	Sun Yat-Sen University (China)																
Article 9	L. Mahadevan	USA	Indian Institute of Technology Madras (India)																
Article 10	Cole A. DeForest	USA	Princeton University (USA)																
Article 11	Xavier Trepap	Spain	University of Barcelona (Spain)																
Perspective 1	P. J. Wilbers	UK	University of Cambridge (UK)																
Letter 1	Weida Wu	USA	Univ. of Sci & Tech of China (China)																
Letter 2	T. Kontos	France	NOT FOUND																
Letter 3	Chang-Kiyoung Yang	UK	University of Oxford (UK)	Feng Wang	USA	Fudan University (China)													
Letter 4	Ozgur Sahin	USA	NOT FOUND (PhD in University of Heidelberg, Germany)																
Article 1	Yaroslav A. Gerasimenko	Slovenia	Moscow Institute of Electronic Technology (Russia)	Dragan Mihalovic	Slovenia	NOT FOUND													
Article 2	Hajime Nakazono	Japan	NOT FOUND	Jean-Luc Brédas	USA	Université de Namur (Belgium)		Chihaya Adachi	Japan	Chuo University (Japan)									
Article 3	Chang Xu	China	Fudan University (China)																
Article 4	Q. Jie Wang	Singapore	Univ. of Sci & Tech of China (China)	Huo Zhang	Singapore/China	Nanjing University (China)		Zheng Liu	Singapore	Nankai University (China)									
Article 5	Peter G. Bruce	UK	Aberdeen Grammar School (UK)																
Article 6	Nicolas Ondig	Hong Kong, China	Université Joseph Fourier LIRIC de Chimie et de Biologie (France)	Damien Voiry	France	University of Bordeaux (France)													
Article 7	Gemena Bachner	Germany	University of Heidelberg (Germany)																
Article 8	Jennifer E. Adair	USA	Washington State University (USA)																
Article 9	Kanyi Yu	Singapore	ECUST (China)																
Review 1	Albert Polman	Netherlands	University of Utrecht (Netherlands)																
Letter 1	P. James Schuck	USA	UC Berkeley (USA)																
Letter 2	Rafael Gómez-Bombarelli	USA	Universidad de Salamanca (Spain)																
Letter 3	Ger-Jan A. H. Wetzelzer	Germany	University of Groningen (Netherlands)																
Article 1	Lucret Via	France	NOT FOUND	Manuel Bibes	France	INSA Toulouse (France)													
Article 2	A. Di Bernardo	Germany/UK	NOT FOUND (PhD in University of Cambridge, UK)	J. W. A. Robinson	UK	NOT FOUND													
Article 3	D. Yıldız	Switzerland	Middle East Technical University (Turkey)	M. Kissel	Switzerland	NOT FOUND													
Article 4	Y. Morris Wang	USA	National University of Defense Technology (China)	Frederic Sansoz	USA	the Ecole Nationale Supérieure de Mécanique et Aérotechnique (France)													
Article 5	Nuria Lopez	Spain	University of Barcelona (Spain)																
Article 6	Marc Fontecave	France	Ecole normale supérieure de l'enseignement technique (France)	Victor Mougel	France	Ecole Normale Supérieure de Lyon (France)													
Article 7	A. Di Carlo	Italy/Russia	Technical University of Munich (Germany)																
Article 8	Chinedum O. Osuji	USA	Cornell University (USA)																
Article 9	Metin Sitti	Germany	Boğaziçi University (Turkey)																
Article 10	Chiara Malinverno	Italy	University of Notre Dame (USA)	Fabio Giavazzi	Italy	Politecnico di Milano (Italy)		Roberto Cerbino	Italy	University of Milan - Laura (Italy)		Giorgio Scota	Italy	University of Parma (Italy)					
Review 1	Theodor Lampiris	Belgium	Royal Institute of Technology (USA)	M. Saiful Islam	France/UK	University College London (UK)		Christian Mascuquer	France	NOT FOUND (Master in Université Paris VI)									
Letter 1	I. Swart	Netherlands	Utrecht University (Netherlands)	C. Morais Smith	Netherlands	University of Campinas (Brazil)													
Letter 2	Xiaodong Xu	USA	Univ. of Sci & Tech of China (China)																
Letter 3	Xin Fai Mak	USA	Hong Kong University of Science and Technology (Hong Kong)	Jie Shan	USA	Moscow State University (Russia)													
Letter 4	Eliot J. G. Santos	UK	Technical University of Denmark (Denmark)	Hu Young Jeong	Republic of Korea	Sungkyunkwan University (Korea)		Manish Chhowalla	USA/China	The State University Of New Jersey (USA)									
Letter 5	Orlin D. Velev	USA	Sofia University (Bulgaria)																
Article 1	Xiao-Jia Chen	China	Henan Normal University (China)																
Article 2	Guillermo C. Bazan	USA	The University of Ottawa (Canada)	Thu-Quyen Nguyen	USA	University of California, Los Angeles (USA)													
Article 3	Yu-Ko Zhang	China	NOT FOUND (PhD in Henan University, China)	Sean Xiao-An Zhang	China	Jilin University (China)													
Article 4	Gleb Yushin	USA	St. Petersburg Institute of Technology (Russia)																
Article 5	Xialan Mao	China	Tsinghua University (China)	Margareta F. Costa Gomes	USA/France	Instituto Superior Técnico (Portugal)		T. Alan Hatton	USA	University of Natal (South Africa)									
Article 6	Shin Yang	UK	Peking University (China)	Martin Schröder	UK	University of Sheffield (UK)													
Article 7	Rishita Chandega	Singapore	NOT FOUND (PhD in National University of Singapore, Singapore)	Michael P. Sheetz	Singapore/USA	NOT FOUND (PhD in California Institute of Technology, USA)													
Article 8	Jeff W. M. Butler	USA	the Free University of Amsterdam (Netherlands)																
2018	Letter 1	Peter G. Bruce	UK	University of Aberdeen (UK)															
	Article 1	M. S. Bahramy	Japan	NOT FOUND	P. D. C. King	UK	NOT FOUND												
	Article 2	J. L. Prieto	Spain	NOT FOUND															
	Article 3	Pieter Gelsgat	Belgium	Ghent University (Belgium)															
	Article 4	Victor I. Klimov	USA	Moscow State University (Russia)															
	Article 5	An Quan Jiang	China	Lanzhou University (China)															
	Article 6	Guangqun Zhou	USA	Xiangtan University (China)															
	Article 7	Y. Morris Wang	USA	National University of Defense Technology (China)															
	Article 8	Ivan I. Smalyukh	USA	Lviv Polytechnic National University (Ukraine)															
	Article 9	Ali Sobhi Afshar	Germany	Master and PhD in The Johns Hopkins University (USA)	Takanari Inoue	USA	University of Tokyo (Japan)												
	Article 10	Ita Platzman	Israel	Israel Institute of Technology (Israel)	Joachim P. Spatz	Germany	Ulm University (Germany)												
Article 11	Maria Palasis	USA	University of Cincinnati (USA)																
Review 1	Jianhui Hou	China	University of Science and Technology (China)	Feng Gao	Sweden	Nanjing University (China)													
Letter 1	Lian-Jong Li	Kingdom of Saudi Arabia	National Taiwan University (Taiwan)	David A. Muller	USA	University of Sydney (Australia)													
Letter 2	Alexander J. Giles	USA	Gilkinson University (USA)																
Letter 3	Jay Fineberg	Israel	Hebrew University (Israel)																
Article 1	Dario Battarini	Italy	Università degli Studi di Pavia (Italy)																
Article 2	G. Cassabois	France	NOT FOUND																
Article 3	Hao Yan	USA	Shandong University (China)	Alan Aspuru-Guzik	USA	National Autonomous University of Mexico (Mexico)		Mark Bathe	USA	Massachusetts Institute of Technology (USA)									
Article 4	T. Brousse	France	National Graduate School of Engineering (French)																
Article 5	David Fátan-Jiménez	UK	Universidad de Alicante (Spain)																
Article 6	Syed A. M. Tofiq	Ireland	Bangladesh University of Engineering and Technology (Bangladesh)	Damien Thompson	Ireland	NOT FOUND (PhD in University of Limerick, Irish)													
Article 7	Zhiqiao Su	China	Dalian University of Technology (China)	Guanghui Ma	China	Xian Jiaotong University (China)													
Article 8	David Lembo	Italy	Università degli Studi di Torino (Italy)	Francesco Stellacci	Switzerland	Politecnico di Milano (Italy)													
Letter 1	Xiaoyan Zhong	China	Tsinghua University (China)																
Letter 2	B. Li	China	Tsinghua University (China)	H. Wang	USA	Tsinghua University (China)		J. Q. He	China	Wuhan University (China)		M. G. Kanatzidis	USA	Aristotle University (Greece)					
Letter 3	C. B. Eom	USA	Hanyang University (Korea)																
Letter 4	Silvia Godóni	UK	University of Barcelona (Spain)	Molly M. Stevens	UK	Bath University (UK)													
Article 1	South Africa	South Africa	NOT FOUND																
Article 2	Bo B. Iversen	Denmark	Aarhus University (Denmark)																
Article 3	He Yan	China	Peking University (China)	Harald Ade	USA	NOT FOUND (PhD at Stony Brook University, USA)													
Article 4	Peidong Yang	USA	University of Science and Technology (China)																

Detailed analysis of the articles in Nature Nanotechnology

Year	Month	Type of paper	Corresponding Author 1		Corresponding Author 2		Corresponding Author 3		Corresponding Author 4		Corresponding Author 5					
			Name	Country of affiliation	Name	Country of affiliation	Name	Country of affiliation	Name	Country of affiliation	Name	Country of affiliation				
2019	January	Review Articles	Ren-Min Ma	China	Peking University (China)											
		Letters 2	Simon J. Bonnafant	USA	Not Found	Peter Mohler	Germany	University of Stuttgart (Germany)								
		Letters 3	Yan M. Khromov	USA	Not Found											
		Letters 4	Natalia M. Luchinskaya	USA	Michigan State University (USA)											
		Letters 5	Yoshinori Suzuki	Japan	Shanghai Jiao Tong University (China)											
		Articles 2	Jun Lu	USA	University of Science and Technology of China (China)											
		Articles 3	Alena G. Semakova	USA	Not Found	Khalil Amine	USA	Master University of Bordeaux 1 (France)	Kang Xu	USA	Southwest China Normal University (USA)	Feng Pan	China	Peking University (China)		
		Articles 4	Gerassimos Konstantatos	Spain	Not Found	Huazhang Zhao	China	China University of Petroleum (China)								
		Articles 5	Abhishek D. Patil	UK	Moscow Institute of Physics and Technology (Russia)	Joshua B. Edo	UK	Not Found								
		Articles 6	Zhen Gu	USA	Not Found											
February	Review Articles	Mathias Kocih	Canada	McGill University (Canada)												
	Letters 1	Joel J. Van Wang	USA	Not Found	Pablo Jarillo-Herrero	USA	University of Valencia (Spain)	William D. Oliver	USA	University of Rochester (USA)						
	Letters 2	Yun Kuohar	Australia/Russia	National Kharkov University (Ukraine)												
	Letters 3	Zhong Lu	China	Lanzhou University (China)												
	Letters 4	Mathias Kocih	Australia	Freie Universität Berlin (Germany)	Manfred Rabig	Switzerland	University of Dortmund (Germany)									
	Letters 5	Jarvis Lehmann	USA	Pennsylvania State University (USA)	Pablo Jarillo-Herrero	USA	University of Valencia (Spain)									
	Letters 6	Nathaniel M. Gabor	USA	Pennsylvania State University (USA)	Qi Lu	China	Wuhan University of Technology (China)	Qing Wang	USA	East China University of Science and Technology (China)						
	Letters 7	Jiayang He	China	Wuhan University (China)												
	Letters 8	Tarao Shimizu	Japan	University of Tokyo (Japan)												
	Articles 1	Shahar Bard	Israel	Hebrew University (Israel)												
March	Articles 2	Jun Lu	USA	University of Science and Technology of China (China)												
	Articles 3	Yamuna Krishnan	USA	Madras University (India)												
	Articles 4	Byron Högberg	Sweden	Lundska University (Sweden)												
	Articles 5	Jun Lu	USA	University of Science and Technology of China (China)	Jun Lu	USA	Hunan University (China)	Khalil Amine	USA	Master University of Bordeaux 1 (France)						
	Articles 6	Thilo Hoffmann	Austria	Not Found	Antonia Probst	Austria	Jacobs University Bremen (Germany)									
	Articles 7	Feng Mao	China	Nanjing University (China)												
	Articles 8	Steven Ganj	Singapore	Not Found												
	Articles 9	Shing Zhu	Japan	Hajim normal university (China)	Din Ping Tsai	China Taiwan	Soochow University (China)									
	Articles 10	Ducksoo Kim	France	Not Found	Byung-Jin Lee	Korea	Korea Advanced Institute of Science and Technology (Korea)	Tetsu Ono	Japan	Kyoto University (Japan)						
	Articles 11	Peter R. Wileczka	France	Not Found	Sang Duk Kim	Korea	Korea Advanced Institute of Science and Technology (Korea)	WooChul Jung	Korea	Seoul National University (Korea)						
April	Articles 1	Yamuna Krishnan	USA	Madras University (India)												
	Articles 2	DMitri Simezov	USA	Hebrew University (Israel)												
	Articles 3	John T. Wilson	USA	Oregon State University (USA)												
	Articles 4	Han Kai Ho	Singapore	National University of Singapore (Singapore)	David Tai Leong	Singapore	National University of Singapore (Singapore)									
	Articles 5	Joseph Rosenfelder	Germany	Not Found												
	Articles 6	Sang-Hyun Oh	USA	Korea Advanced Institute of Science and Technology (Korea)												
	Articles 7	Ruben Sorn	Switzerland	Ecole Polytechnique (France)	Sebastian Wintz	Switzerland	Not Found									
	Articles 8	Vukob Juka	Germany	Not Found												
	Articles 9	Oskar Püntener	USA	University of British Columbia (Canada)												
	Articles 10	Peer Boppert	Germany	Rheinisch-Westfälische Technische Hochschule Aachen (Germany)	Franco Casali	UK	University of Pisa (Italy)	Paolo Samori	France	University of Bologna (Italy)						
May	Articles 1	Stefan Hecht	Germany	Alexander-von-Humboldt-Gymnasium (Germany)	Qing Ma	China	Sichuan university (China)									
	Articles 2	Yiu Zhou	China	Tangshan University (China)												
	Articles 3	Dennis M. Minton	Switzerland	Salve Regina University (USA)												
	Articles 4	Tom F. A. de Geest	Netherlands	Master Endhoven University of Technology (Netherlands)												
	Articles 5	Xinghui Lu	China	University of Science and Technology of China (China)	Xing-Jie Liang	China	Hebei Normal University (China)									
	Articles 6	Xinghui Lu	USA	Zhejiang University (China)	Xiaoming He	USA	Sichuan university (China)									
	Articles 7	K. S. Novoselov	UK	Moscow Institute of Physics and Technology (Russia)												
	Articles 8	Shen Chu	USA	University of Rochester (USA)												
	Articles 9	Xin Lu	USA	Wuhan University (China)	Ajit Sivasubra	USA	U. B. Patil University of Agriculture and Technology (India)									
	Articles 10	Jonas Falkner	Switzerland	Ecole polytechnique Fédérale de Lausanne (Switzerland)												
June	Articles 1	Bas Heissen	Australia	Not Found	Andrew S. Dzarak	Australia	University of Sydney (Australia)									
	Articles 2	Mauro Bolognesi	UK	Not Found	Brian D. Gerardot	UK	Purdue University (USA)									
	Articles 3	Michael S. Strano	USA	Polytechnic University (USA)												
	Articles 4	Markus P. Landry	USA	University of North Carolina at Chapel Hill (USA)												
	Articles 5	Sandy-Sue Gamble	USA	Arizona State University (USA)	Stanislav Emelov	USA	Not Found									
	Articles 6	Michael E. Reimer	Canada	University of Waterloo (Canada)												
	Articles 7	Joseph A. Sulpizio	Israel	Not Found												
	Articles 8	Wesley R. Browne	Netherlands	Dublin City University (Ireland)	Sander J. Wezenberg	Netherlands	University of Nijmegen (Netherlands)	Ben L. Feringa	Netherlands	University of Groningen (Netherlands)						
	Articles 9	Gregory V. Looney	USA	University of California (USA)												
	Articles 10	Enlii Lund	Australia	Not Found												
July	Review Articles	Melanie Kah	New Zealand	University of Nancy (France)	Jason C. White	USA	Junata College (USA)									
	Articles 1	Juan Pablo Girardo	USA	University of Los Andes (Colombia)												
	Articles 2	Takashi Nakamae	Japan	Toyo University (Japan)	Seigo Tanaka	Japan	Tokyo University (Japan)									
	Articles 3	Geoffrey S. D. Beach	USA	California Institute of Technology (USA)												
	Articles 4	Walter Guo	China	Northeastern Polytechnical University (China)												
	Articles 5	Lydéric Bocquet	France	Ecole Normale Supérieure (France)												
	Articles 6	R. Thomas Weitz	Germany	University of Kaiserslautern (Germany)	Jiuniao Li	China	Sun Yat-Sen University (China)	Xuehua Wang	China	Xiangtan University (China)						
	Articles 7	Orlando DiCarlo	Austria	University of Bologna and Carnegie (Italy)												
	Articles 8	Jun Lu	USA	Hunan University (China)	Lillem Lu	China	Not Found									
	Articles 9	Shengye Yan	USA/China	Central South University (China)												
Articles 10	Ehud M. Landau	Switzerland	ETH Zurich (Switzerland)	Raffaella Mozzana	Switzerland	Master University of Perugia (Italy)	Chongmin Wang	USA	Lanzhou University (China)							
August	Review Articles	Jan Grimm	USA	MD University of Hamburg (Germany)	Morosa L. Guzman	USA	University of Guanajuato (Mexico)									
	Articles 1	Booyi Tian	USA	Fudan University (China)												
	Articles 2	Mathias Kocih	Germany	Rheinisch-Westfälische Technische Hochschule Aachen (Germany)	Peng Zhou	China	Fudan University (China)									
	Articles 3	David Wei Zhong	China	Xian Jiaotong University (China)												
	Articles 4	Stephen M. Wu	USA	University of California (USA)												
	Articles 5	Ahmet Ascar	Switzerland	Middle East Technical University (Turkey)	Andras Kis	Switzerland	University of Zagreb (Croatia)									
	Articles 6	Michael Kall	Sweden	Not Found	Timur Shegel	Sweden	Novosibirsk State University (Russia)									
	Articles 7	Michael R. Backhaber	USA	Technical University of Karlsruhe (Germany)	Carmel Miald	USA	Cornell University (USA)	Krzysztof Matyjaszewski	USA	Lodz University of Technology (Russia)						
	Articles 8	Jingyi Zhang	China	Liaoning University (China)	Haojing Yu	China	Peking University (China)									
	Articles 9	Christoph Lenzau	Germany	University of Göttingen (Germany)												
Articles 10	Yi Qi	USA	University of Science and Technology of China (China)													
September	Articles 1	Nicole F. Steinhilber	USA	Rice University (Germany)												
	Articles 2	Chunhua Chen	China	Huazhong University of Science and Technology (China)	Tao Zhu	China	Wuhan University (China)									
	Articles 3	Matteo Endrey	France	Grenoble Institute of Technology (France)	Franck Mauerer	France	Ecole Normale Supérieure de Paris (France)									
	Articles 4	Leven M. K. Vandervynen	Netherlands	University of Leuven (Belgium)												
	Articles 5	Reed W. Andrews	USA	Macalester College (USA)												
	Articles 6	Mathieu Francoeur	USA	University of Laval (Canada)												
	Articles 7	Almaly B. Kuznetsov	Switzerland	Master Moscow Institute of Physics and Technology (Russia)	Jula R. Greer	USA	Massachusetts Institute of Technology (USA)	Xiaojun Li	China	Tangshan University (China)						
	Articles 8	Haojun Guo	USA	Not Found												
	Articles 9	Christina Schneider	Germany	University of Erlangen-Nuremberg (Germany)												
	Articles 10	Yang Chai	China	Not Found												
October	Articles 1	Charles M. Lieber	USA	Franklin and Marshall College (USA)												
	Articles 2	Mortaza Aramian	Switzerland	Not Found	Janae Vonds	Switzerland	Edipe Lorand University (Hungary)									
	Articles 3	Virginia O. Lorenz	USA	Not Found	Xin Fan	USA	University of Science and Technology of China (China)									
	Articles 4	Peter Schilligen	Germany	Julius-Maximilians-Universität Würzburg (Germany)												
	Articles 5	Andra Saja	USA	Indian Institute of Technology Bombay (India)	Alexey Chernikov	Germany	Not Found									
	Articles 6	Alamy Balayan	USA	Nizhn Novgorod State University (Russia)	Markus B. Raschke	USA	Not Found									
	Articles 7	Erhard Gleditsch	USA	Not Found												
	Articles 8	Tianping Wu	USA	University of Science and Technology of China (China)	Teng Li	USA	Tangshan University (China)	Chao Wang	USA	University of Science and Technology of China (China)	Reza Shahbabaee Yassar	USA	Sharif University of Technology (Iran)	Langshu Hu	USA	University of Science and Technology of China (China)
	Articles 9	Abdakar Asmatov	USA	Master Ivan Franko Lviv State University (Ukraine)												
	Articles 10	Ruiyao Ding	USA	Harvard University (USA)												
Articles 11	Jun Zhang	USA	Inoor Moughan University (China)													
Articles 12	Shengyu Li	USA	Not Found	Mady M. Stevens	UK	Bath University (UK)										
Articles 13	Singanya R. Bhatia	USA	Not Found	Helena F. Florindo	Portugal	University of Lisbon (Portugal)										
Articles 14	Rohit Sacha-Farano	Israel	The Hebrew University (Israel)													
Articles 15	Jethwan Kim	USA	Hongk University (China)													
Articles 16	Jingzhong Chen	Singapore	Lanzhou University (China)													

Detailed analysis of the articles in Nature Electronics

Year	Month	Type of paper	Corresponding Author 1			Corresponding Author 2			Corresponding Author 3			Corresponding Author 4		
			Name	Country of affiliation	Bachelor Institution + Country	Name	Country of affiliation	Bachelor Institution + Country	Name	Country of affiliation	Bachelor Institution + Country	Name	Country of affiliation	Bachelor Institution + Country
2019	January	Research 1	Edoardo Aliberti	Italy/USA	Politecnico di Milano (Italy)	Elisa Riedo	USA	The University of Milano (Italy)						
		Research 2	Yifu Zhang	China	Nanjing University of Aeronautics & Astronautics (China)	Yongqiang Huang	USA	Peking University (China)	John A. Rogers	USA	University of Texas (USA)			
		Research 3	Phillip del Hougne	France	Not found	Geoffroy Lerosey	France	ESPCI Paris - PSL (France)						
	February	Reverse Engineering 1	Mahadev Sathyanarayanan	USA	Indian Institute of Technology (India)									
		Research 1	Feng Wang	USA	Fudan University (China)									
		Research 2	H-Wei Chen	USA	National Tsinghua University (Taiwan)									
	March	Research 3	Chao Wang	China	Chongqing University (China)	Benjamin C.-K. Tee	Singapore	University of Michigan (USA)						
		Reverse Engineering 1	Robert P. Colwell	USA	University of Pittsburgh (USA)									
		Research 1	Deepak Venkateshvaran	UK	Sri Sathya Sai Institute of Higher Learning (India)	Henning Sirringhaus	UK	ETH Zurich (Switzerland)						
		Research 2	Rui Yang	China/USA	Tianjin University (China)									
	April	Research 1	Qiangfei Xia	USA	Shanghai Jiao Tong University (China)	J. Joshua Yang	USA	Southeast University (China)						
		Research 4	Xiaonan Hui	USA	Northeastern University (China)									
		Reverse Engineering 1	Irene Greif	USA	Massachusetts Institute of Technology (USA)									
		Research 1	C. H. Yang	Australia	The University of New South Wales (Australia)	S. D. Bertlett	Australia	University of Waterloo (Canada)	A. S. Ozgur	Australia	University of Sydney (Australia)			
	May	Research 2	Jie Shan	USA	Moscow State University (Russia)	Kin Fai Mak	China	Hong Kong University of Science and Technology (Hong Kong)						
		Research 3	Tian-Ling Ren	China	Not Found (PHD Tsinghua University (China))	Liyang Jiao	USA	Shandong University (China)						
		Reviews Article 1	Zhenan Bao	USA	Nanjing University (China)									
	June	Research 1	Qingming Shao	USA	Tsinghua University (China)	Kang L. Wang	USA	National Cheng Kung University (Taiwan)						
		Research 2	James T. Teherani	USA	the University of Texas (USA)									
		Research 3	Mohammed Reza M. Hashemi	USA	University of Nevada (USA)									
	July	Research 1	Tury Yu. Blantonov	Russia	Sankt-Peterburgskiy Politehnicheskyy Universitet Petra Velikogo (Russia)	Tibor Grasser	Austria	Not found						
		Research 2	Simon Schall	UK	Rheinisch-Westfälische Technische Hochschule Aachen (Germany)	M. Fernando Gonzalez-Zaba	UK	Universidad de Zaragoza (Spain)						
		Research 4	John S. Ho	Singapore	Hong Kong University of Science and Technology (Hong Kong)									
	August	Perspectives 1	Marco Mercuri	The Netherlands	Universitat de Calalabria (Italy)									
		Research 1	Mario Lanza	Spain	Universidad Autónoma de Barcelona (Spain)									
		Research 2	Ruonan Han	USA	Fudan University (China)	Dirk R. Englund	USA	California Institute of Technology (USA)						
	September	Research 1	Wei D. Lu	USA	Tsinghua University (China)									
		Research 3	Mark Lee	USA	Harvard University (USA)									
		Research 4	Kyung Rok Kim	Korea	Seoul National University (Korea)									
	October	Reviews Article 1	Westheng Zhao	China	Not Found									
		Research 1	John S. Ho	Singapore	Hong Kong University of Science and Technology (Hong Kong)									
		Research 2	Krishna Jayant	USA	National Institute of Technology Trichirapalli (India)	Kenneth L. Shepard	USA	Princeton University (USA)						
	November	Research 3	Tsuyoshi Sekitani	Japan	Osaka University (Japan)									
		Research 4	Xiaodong Chen	Singapore	Fuzhou University (China)	Zhenan Bao	USA	Nanjing University (China)						
		Perspectives 1	Sara Gerke	USA	University of Augsburg (Germany)									
	December	Research 1	Duck-Ho Kim	Japan	Toho University (Korea)	Se Kwon Kim	USA	Korea Advanced Institute of Science and Technology (Korea)	Kyung-Jin Lee	Korea	Korea Advanced Institute of Science and Technology (Korea)	Tenuo Ono	Japan	Kyoto University (Japan)
		Research 2	Xuge Fan	Sweden	Not Found	Max C. Lemme	Sweden/Germany	RWTH Aachen University (Germany)	Frank Niklaus	Sweden	Not found			
		Research 3	Jin-Woo Han	USA	Not Found									
	2018	Research 4	Carlos Navarro	Spain	University of Granada (Spain)									
		Research 5	Meng-Fan Chang	Taiwan	Not Found									
		Perspectives 1	Xiangfeng Duan	USA	University of Science and Technology of China (China)									
	January	Research 1	A. N. McCaughan	USA	Not Found	J. M. Shamline	USA	University of Colorado, Boulder (USA)						
		Research 2	M. Kim	UK	Pohang University of Science and Technology (Korea)	P. Kumaravadivel	UK	University of Peradeniya (Sri Lanka)	A. K. Geim	UK	Moscow Engineering Physics Institute (Russia)			
		Research 3	Mirko Holler	Switzerland	ETH Zurich (Switzerland)									
	February	Research 4	Cunjiang Yu	USA	Nanjing University (China)									
		Research 5	Wei D. Lu	USA	Tsinghua University (China)									
		Reviews Article 1	Kyusik Lee	USA	Korea University (Korea)	Jeehan Kim	USA	Hongik University (Korea)						
	March	Research 1	Roozbeh Tabrizian	USA	Sharif University of Technology (Iran)									
		Research 2	Yongsheng Chen	China	Northern China Institute of Technology (China)									
		Research 3	Kai Ni	USA	University of Science and Technology of China (China)									
	April	Research 4	Christopher Rotherglen	USA	California Institute of Technology (USA)									
		Research 5	Rebecca L. Peterson	USA	University of Rochester (USA)									
		Perspectives 1	Lian-Mao Peng	China	Peking University (China)	Xirran Wang	China	Nanjing University (China)						
	May	Research 1	Peng Wang	China	Harbin Institute of Technology (China)									
		Research 2	Chang-Ki Baek	Korea	Not found									
		Research 3	Paide D. Ye	USA	Fudan University (China)									
June	Research 4	Yen-Huang Lin	UK	National Taiwan University (Taiwan)	Thomas D. Anthopoulos	UK/Saudi Arabia	Staffordshire University (UK)							
	Research 5	Shahar Kvattinsky	Israel	The Hebrew University of Jerusalem (Israel)										
	Research 6	Kris Myny	Belgium	Katholieke Hogeschool Limburg (Belgium)										
January	Research 1	Zhyong Zhang	China	Renmin University of China (China)	Lian-Mao Peng	China	Peking University (China)							
	Research 2	Kaustav Banerjee	USA	Not found (University of California, Berkeley (PHD, USA))										
	Research 3	John Paul Strachan	USA	Massachusetts Institute of Technology (USA)	J. Joshua Yang	USA	Southeast University (China)	Qiangfei Xia	USA	Shanghai Jiao Tong University (China)				
February	Research 4	Jae Woong Moon	Korea	Hanyang University (Korea)	Seung-Min Ma	Korea	Not Found	Seok Ho Song	Korea	Yonsei University, Seoul (Korea)				
	Research 5	Andreas Kainz	Austria	Not Found										
	Research 6	Xiaonan Hui	USA	Northeastern University (China)										
March	Reverse Engineering 1	Kourosh Kalantari-Zadeh	Australia	Sharif University of Technology (Iran)	Peter R. Gibson	Australia	Not Found							
	Perspectives 1	Erica R. H. Fuchs	USA	Massachusetts Institute of Technology (USA)										
	Perspectives 2	John Paul Strachan	USA	Massachusetts Institute of Technology (USA)	Wei D. Lu	USA	Tsinghua University (China)							
April	Perspectives 3	Kris Myny	Belgium	Katholieke Hogeschool Limburg (Belgium)										
	Research 1	Andreas Alù	USA	Roma Tre University (Italy)										
	Research 2	Hiroshi Kubota	Japan	Not Found										
May	Research 3	Daiichi Chiba	Japan	Not Found										
	Research 4	J. Joshua Yang	USA	Southeast University (China)	Peng Wang	China	Harbin Institute of Technology (China)	Feng Mao	China	Nanjing University (China)				
	Research 5	R. Stanley Williams	USA	Rice University (USA)	Qiangfei Xia	USA	Shanghai Jiao Tong University (China)	J. Joshua Yang	USA	Southeast University (China)				
June	Reverse Engineering 1	John O'Sullivan	Australia	University of Sydney (Australia)										
	Reviews Article 1	Carmel Majidi	USA	Cornell University (USA)										
	Research 1	Z. Q. Lu	China	Lanzhou University (China)										
July	Research 2	Andrea Alù	USA	Roma Tre University (Italy)										
	Research 3	Zhenan Bao	USA	Nanjing University (China)	Boris Murrmann	USA	Fachhochschule of the German Telekom (German)							
	Research 4	Jianhui Tang	USA	Nanjing University (China)	Shu-Jen Han	USA	National Tsing Hua University (Taiwan)							
August	Research 5	Hussain Nil	USA	University of Tehran (Iran)	Omid Kaveshi	Australia	Shahid Beheshti University (Iran)	Dmitri B. Strukov	USA	Moscow Institute of Physics and Technology (Russia)				
	Reverse Engineering 1	John B. Gudenough	USA	Yale University (USA)										
	Reviews Article 1	Ali Javey	USA	Old Dominion University (USA)										
September	Research 1	M. Holthein	France/Canada	Not Found										
	Research 2	Paide D. Ye	USA	Fudan University (China)	Weizhuo Wu	USA	University of Science and Technology of China (China)							
	Research 3	Youfang Hu	China	Beijing Normal University (China)										
October	Research 4	Manuel Le Gallo	Switzerland	PolYTECHNIQUE MONTREAL (Canada)	Abu Sebastian	Switzerland	Birla Institute of Technology and Science (India)							
	Research 5	Tomoyoshi Ito	Japan	The University of Tokyo (Japan)										
	Reverse Engineering 1	Kees A. Schouhamer Immink	The Netherlands	Eindhoven University of Technology (Netherlands)										
November	Perspectives 1	Yuyu Shi	USA	Tsinghua University (China)										
	Research 1	Seonghoon Woo	Korea	Pohang University of Science and Technology (Korea)										
	Research 2	Pai-Yen Chen	USA	National Chiao-Tung University (Taiwan)	Andrea Alù	USA	Roma Tre University (Italy)							
December	Research 3	Xueling Li	USA	Peking University (China)										
	Research 4	Paige Fox	USA	Virginia Commonwealth University (USA)	Zhenan Bao	USA	Nanjing University (China)							
	Reverse Engineering 1	Leon O. Chua	USA	Mapua Institute of Technology (The Philippines)										
2017	Reviews Article 1	Yuchao Yang	China	University of Science and Technology Beijing (China)										
	Research 1	K. S. Novoselov	UK	Moscow Institute of Physics and Technology (Russia)	A. Misra	UK/India	Not Found (Phd in IIT Bombay, India)							
	Research 2	C. H. Back	Germany	Technical University Munchen (Germany)										
2016	Research 3	Jun He	China	Not Found (Chinese Academy of Sciences (PHD, China))										
	Research 4	Dieter Suess	Austria	Not Found (Master in Vienna University of Technology)										
	Reverse Engineering 1	Robert H. Dennard	USA	Southern Methodist University (USA)										
2015	Reviews Article 1	Daniela Ielmini	Italy	Politecnico di Milano (Italy)	H.-S. Philip Wong	USA	University of Hong Kong (Hong Kong)							
	Research 1	Byoung-Guk Park	Korea	Hanyang University (Korea)										
	Research 2	Yuchen Wu	China	Not Found	Hongbing Fu	China	Lanzhou University (China)	Xiang Zhang	USA	Nanjing University (China)				

