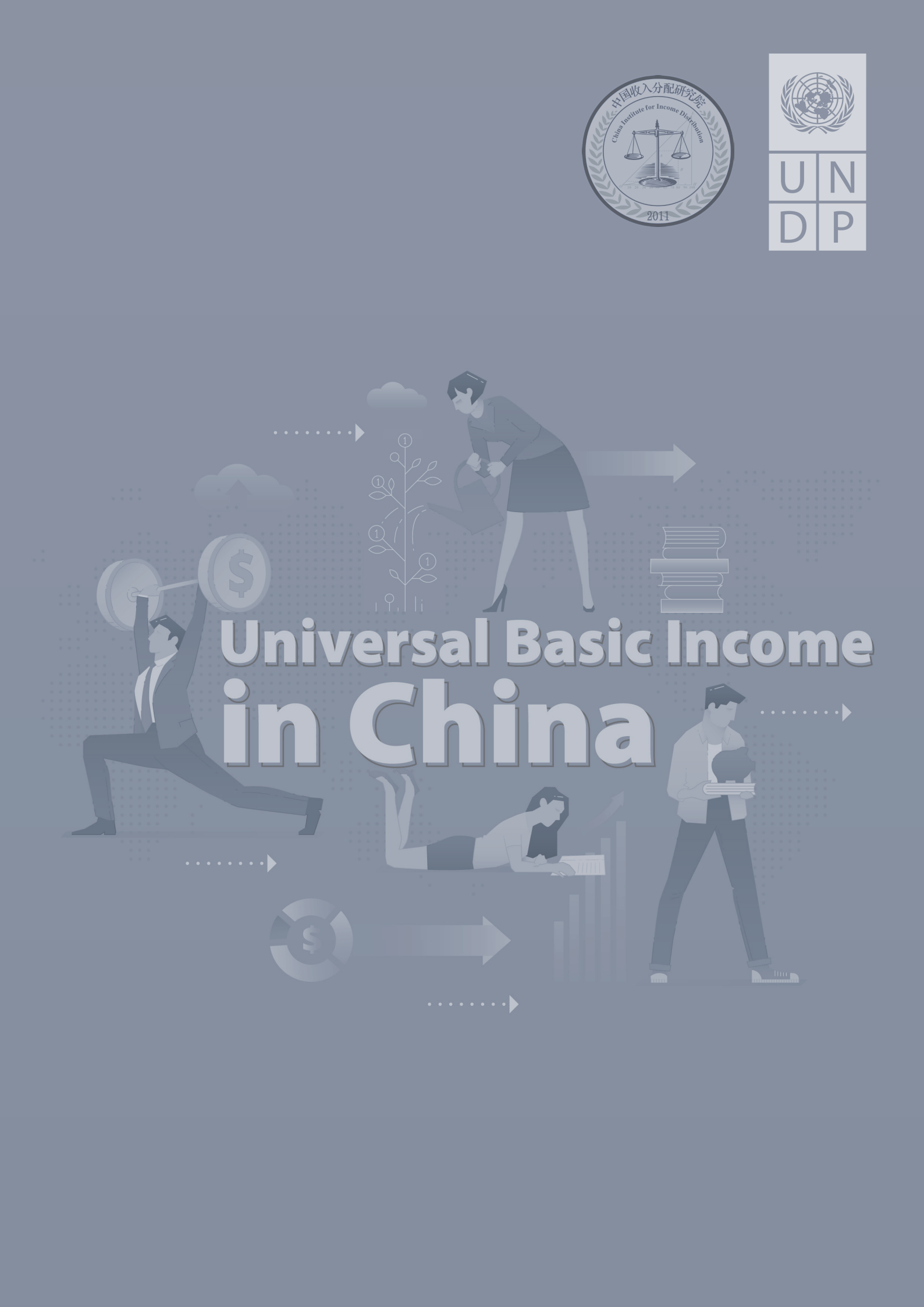
Universal Basic Income in China


Universal Basic Income
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Foreword

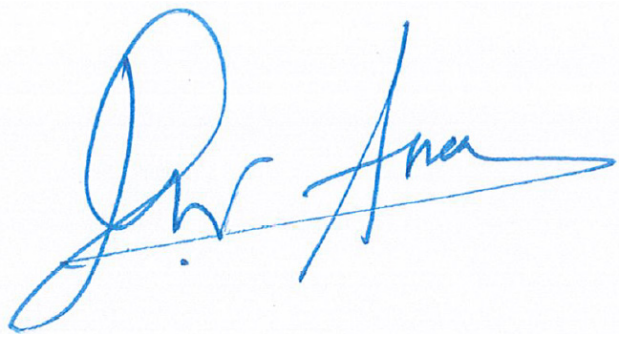
The 4th Industrial Revolution is primed to bring transformational changes to the global economy, increasing connectedness and efficiency in virtually all sectors, serving to increase global productivity. There is broad consensus on the impact these rapid technological advancements will have on the structure of the economy and the labour market.

This structural alteration of the workforce may have social consequences regarding the future of work. Policymakers and businesses are searching for innovative policy options, including revamping of existing social welfare policies to reflect the new challenges and opportunities posed to the labour force.

We embarked on this research project to encourage policy dialogue on whether Universal Basic Income could be a feasible policy option to tackle some of these challenges or not.

Effective behavioral insights on UBI is context and culture specific. Without this context, predictions on changes in the labor market, job losses to automation and artificial intelligence, and the extent to which UBI aligned policies can address these issues have the potential to be misleading at best. Hence the project was designed to garner behavioral insights about regular people and their opinions on UBI, job security and the future of work, and their perspective of the future.

Will people from different countries react the same to changing labor markets? Will they adapt and react to UBI similarly? This is a critical issue when providing policy advise and policy alternatives. This study for the first time has used behavioral insights explicitly to gain understanding on the feasibility of UBI in China, and perhaps in the world.



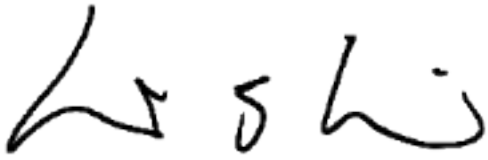
Mr. Devanand Ramiah,
UNDP Resident Representative a.i. in China

In recent years, Universal Basic Income (UBI), an integrated and unconditional cash grant system, has attracted increasing attention. As its name implies, UBI means each citizen in the society, regardless of their employment status and income level, can receive a basic income from the government as a guarantee. There are ongoing trial projects in several countries, while some countries are conducting research and have discussions and may soon adopt it as one of their public policies. This policy, on the one hand, is showing people's increasing concerns about unemployment driven by technological innovation. On the other hand, persistent poverty and expanding income gaps between the rich and the poor are calling for policymakers to find innovative policy solutions. In regard to these concerns, past literature has suggested that, once being implemented in practice, UBI policies may help alleviate these problems. Notably, UBI will become a 'new' policy component of social 'safety net' and income distribution, not only complementing existing social relief systems, but also holding the promise of bringing about a more effective and fairness public policy.

Currently, UBI is still a relatively new concept for China. In order to promote people's understanding of this concept, UNDP and the China Institute for Income Distribution of Beijing Normal University launched an innovative project, seeking to analyse the policy outlook and challenges of UBI implementation in China from the economic and behavioural perspectives. This project yields great promises, especially since it adopts a new data collection approach that combines traditional survey with online game to explore the public preferences to UBI proposals; meanwhile, emphasize the cultural dimension of policy-making process through interpreting different behavioural preferences using Chinese cultural elements.

The report concludes that, based on the field survey, we found that most of the Chinese people surveyed had high preferences for UBI. Over the past four decades of reform and opening up, China's economy has achieved globally recognized advances. But the high poverty rate in some areas and unbalanced development remain key issues to be addressed. As China is facing more complex global environment and also turning to a new chapter of its own history, innovative solutions are in need. Under this background, UBI proposals and some countries' pilot experiences can provide reference for China so that it can map out new ideas and strategies for economic and social development after 2020. We sincerely hope that this report will help stimulate more theoretical and policy discussions on UBI, and attract more Chinese people to participate in this discussion. Equally, we hope that foreign readers will have a better understanding of Chinese scholars' efforts in exploring UBI proposals.

This report is the result of teamwork. I would like to thank members of our team who contributed to this report. Their work and main contributions are as follows: Shen Yangyang (Chapter 1 & 3), Meng Fanqiang (Chapter 4 & 5), Lu Yunhe (Chapter 1 & 2), Wu Shanshan (Chapter 3), Teng Yangchuan (Chapter 4), Chen Jiping (Chapter 4) and Jia Hanrui (Chapter 5).



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Executive Summary

UBI is a fixed cash grant programme that adheres to principles of universality, individuality and unconditionality. It would provide a guaranteed safety net that is aimed at promoting social equity and integration by narrowing income and other differences between groups of people.

Those appealing merits of implementing UBI comes with several challenges, dominant amongst them is the potential disincentive effect on overall economic efficiency. On the one hand, psychologically, providing money to people with few restrictions may discourage people's willingness to work. On the other hand, the cost of UBI, if being funded through traditional government revenue channels, would create additional taxation that burdens middle- and high-income earners. This primary concern, however, is not fully supported by past UBI trials. There is little evidence to suggest that UBI would significantly reduce the labour participation rate. Nevertheless, the financing burden is often identified as a challenge. In other words, the policy debate on UBI has mainly focused on measuring the trade-off between the potential lower economic efficiency and improved social equity.

However, the debate and previous studies thus far have failed to garner the behavioral patterns of the population that fundamentally determine the evolution of social and economic systems. A widely shared consensus is that people respond in varying ways to social policies given the diverse social, economic, cultural and institutional context of a country (or territory). Take, for instance, China. As the largest developing country in the world, China has established a fundamental social security system in the past four decades, which has been successful in reducing poverty and narrowing the income gap. Since the 18th National Congress of the Communist Party of China, more than 80 million people have been lifted out of poverty in six years. In this context, it may be worth discussing the possible outlook of having an inclusive social policy like UBI in China.

As such, this report on UBI explores possible policy responses in China from two dimensions: behavioral insights and economic insights. The behavioral component looks at the behavioral perspective and interprets some of the findings through a cultural dimension. Notably, the behavioral data arrives from traditional survey methodologies and an online gaming application, which were developed as an innovative approach to collect information on public attitudes. The economic component outlines China's current social 'safety net' policy landscape to examine the compatibility of UBI and the existing Chinese social security system. Such analyses using economic rationale provides the needed complement to culturally-interpreted behavioral insights when assessing the overall possible public policy response. Intentionally, the report does not advocate for or against UBI but provide analysis that can feed into a policy dialogue.

Since UBI remains an experimental policy idea, this report conveys certain experimental ideas and should underline its limitations. First, the scope of the survey was confined to urban residents in six districts of downtown Tianjin due to budget and time constraints. Given the limited sample size and since UBI is an unfamiliar concept for most Chinese people, the report's description of preferences and

subsequent behavioral changes are subject to limitations, which are based on respondents' subjective answers in questionnaires and the online game. In other words, deviations from real practices will exist. Still, the project team hopes this report can raise public awareness of UBI among Chinese people and policymakers, improve understanding of some of China's unique cultural features among international readers, and highlight the use of gamification in and the behavioral aspect of policymaking.

Specific findings of this report include:

· At the current stage, China's subsistence allowance policies remain more economically efficient than UBI. If subsistence allowance funding was used to provide UBI to all Chinese registered populations, the per capita income would be only 244 RMB per year, which cannot meet people's basic living needs. If UBI is issued to the whole population with the standard of the subsistence allowance, then the financial expenditure would be 25 times that of the subsistence allowance.

· The culture of hard work may support mitigating the work-related disincentives effects, particularly among better-educated and high-income groups. Almost half of the respondents that chose to maintain their work after receiving UBI, citing reasons such as higher career achievements.

· Traditional family-centered cultural values may aggravate the disincentives effect on employment to some extent, as respondents with heavier family burdens who received UBI tend to allocate more time from work to family. However, the vast majority of respondents also allocated more money for family support after receiving UBI, focusing on education for children and care for older parents.

· The cultural factors that emphasize guanxi (personal connections) and mianzi (reputation) may make UBI a preferred alternative. Mianzi determines people's identification within a given social system, involving prestige, status and social recognition. Therefore, one received subsistence allowance may be labelled as "poor", which is seen intolerable for Chinese people who value mianzi in their social relations. Subsequently, the subsistence allowance is seen less appealing than UBI with its high inclusiveness, echoing why the vast majority of respondents preferred a UBI policy and tended to desire a higher amount of UBI.

· Interestingly, the data gathered through the gaming application indicates that players tended to save most of their UBI money, reflective of Chinese people's preference to saving. Meanwhile, the game data mirrored the survey data in terms of work habits and the tendency to stay in current jobs after receiving UBI; this suggests that the experimental gamification modality has the potential for future study as a supplement to traditional survey techniques.

Overall, China is not ready to implement a UBI policy as a pivotal element of its overall social safety net in the short term, mainly due to its developing economic power and priority to seek the optimal financial resource allocation strategy to tackle poverty. Nevertheless, given some of the cultural traits in China, UBI—as an element that fits in with other social programs—may offer useful contributions to overall social safety net policies, with a negative impact on economic efficiency that is smaller than generally expected. In particular, UBI can contribute to better education for the next generation. More discussion and analysis are needed. Nonetheless, as shown in other UBI trials, China may consider conducting pilot projects in selected areas; meanwhile, continuing the dialogues on exploring how a UBI could fit within the overall system of existing social protection systems in China in a fiscally affordable manner.

Chapter 1

UBI: Concept and Analytical Framework

UBI is not a new concept. According to Van Parijs and Vanderborght (2017), it dates back at least to the social dividend theory proposed by Thomas Paine in the late 18th century.[1] In recent years, the policy has regained attention from policymakers, the public and academia. UBI-related news coverage in The New York Times, for example, has increased since 2015, after years of only marginal references (Hoynes and Rothstein, 2019). Public interest in UBI has also been growing and some policymakers have attempted to transform UBI from a concept into social practice.[2,3]

As a starting point, chapter 1 of this report looks into the conceptualization of UBI. Grounded in a recognition of the context in China, it presents an analytical framework that approaches the topic from economic and cultural perspectives. For the economic dimension, the discussion will focus on social equity, economic efficiency and financial constraints, with more elaboration in Chapters 2 and 3. For the cultural dimension, three notable elements of Chinese culture—namely an emphasis on family, respect for hard work and the importance of guanxi (personal connections) —are used to interpret people's behavioral tendencies. These elements will be explored in detail in Chapter 4.

1.1 A basic definition

UBI is defined here as a fixed cash grant programme that is regularly issued to all citizens or residents by the government or other public institutions. In other words, all citizens, whether poor or rich, receive a fixed income from the state. This income will be modest, calibrated to cover the basic costs of living. Its main features are:

- Universality: it should cover all populations

- Individuality: it should be paid on an individual basis

- Unconditionality: distribution has no conditions

There are many definitions more or less ground in similar meanings. For example, Van Parijs and Vanderborght (2017) define UBI as "a regular income paid in cash to every individual member of the society, irrespective of income from other sources and with no strings attached." The definition in the 1988 original statutes of the Basic Income Earth Network (BIEN) describes "an income unconditionally granted to all on an individual basis, without means test or work requirement".[4] In reality, many European countries used "universal" unconditional transfer payments to children or the elderly[5] as a social welfare policy, but few countries have incorporated working-age groups into the universal kind welfare support. In general, the common keywords shared by various definitions of UBI include: individual entitlement, unconditional, basic, regular and income (cash). These keywords are closely correlated, as shown below:

· Universal: UBI highlights individual entitlement, including newborn babies and the elderly. That is to say, without restrictions such as income or means test, UBI's entitlement does not consider the individual's willingness to work or employment status.

· Basic: How should the UBI standard be set? The overarching principle is to meet the requirements of "basic life". In numerical terms, if the issuer is a State or government, then a feasible suggestion is that the amount should be calculated based on gross domestic product (GDP) or similar macro-economic indicators. For example, Van Parijs and Vanderborght (2017) propose using 25 percent of GDP as the grant for basic income. The Organisation for Economic Co-operation and Development (OECD) recommends setting a level close to the existing minimum social security (2017),[6] but it also mentions that current benefit spending is not enough to finance a basic income close to the poverty line.

· Income (i.e., cash transfer): UBI should be distributed in the form of income (cash) rather than in-kind (food, shelter, clothes, food vouchers or other consumer goods). This distinguishes UBI from most existing relief and minimum subsistence guarantee systems. It emphasizes the freedom and flexibility of income to make purchases. By being universal, it avoids stigmas related to being impoverished (or low-income), and is believed to be able to significantly cut down government procurement and related administrative costs.

· There are some further remaining questions, most notably regarding the relationship of the UBI with the pre-existing social programs, and more generally, the tax benefit system; and the taxation of UBI payments. The latter is discussed in Section 1.3.

1.2 Ideas: The practical significance of UBI

UBI is designed in a way to promote social equity and integration, and narrow inequalities in incomes and socio-economic opportunities among people. It can achieve these goals to some extent (Van Parijs and Vanderborght, 2017). Ideally, UBI can also promote justice, freedom, economic efficiency, and risk resilience. Some of these objectives may be mutually exclusive, however. The many different goals of UBI are essentially reflecting the demands of groups with different development views, political opinions and interests. Atkinson (1995) notes that "support for such a reform (UBI) comes from a wide variety of sources... [therefore] can a single reform meet the very different objectives of different supporters?" A related question then would be: can UBI achieve the goals pursued by different interest groups simultaneously? Given such reasonable doubts raised by Atkinson, this section will not focus on discussing the linkage between motivations and UBI realizations, but highlight the original goals of UBI. These insights will lead to discussions on disincentives, inefficiency and cost, which will be the focus of Section1.3.

First, UBI can help counter the impact of technological changes on the job market. The new technological revolution represented by artificial intelligence and robotics is changing the world profoundly (Acemoglu and Restrepo, 2018). On the one hand, these new technologies have greatly improved labour productivity, but on the other hand, their widespread application in manufacturing has sparked worries about whether new technologies and their main carriers of capital will gradually replace a considerable part of the labour force, leading to job loss, especially among lower-educated and low-skill workers. Accordingly, the income distribution pattern may become increasingly beneficial to capital owners, especially the inventors and owners of new technologies. There is evidence that the technological revolution is dramatically changing the relative income share of workers with different skills. For example, Goldin and Katz's (1998) study shows that the industrial revolution in the late 19th and early 20th centuries shifted the relationship between capital and labour skills from substitutability to complementarity, leading to the persistent rise of wage differentials between high- and low-skilled workers until today (Katz and Autor, 1999). In this context, UBI may become a relatively flexible social security measure to provide a 'safety net' countering the dramatic changes in the future job market, given its universality and unconditionality.

Improved productivity through industrialization also leads to the flow of labour from producing life necessities to industries such as construction, infrastructure, entertainment and finance, enhancing the volatility of the business cycle. Since the current welfare system is calibrated to historically normal economic conditions, it is unlikely to meet the welfare needs of the unemployed and those affected by poverty in the "new normal" situation. Against this backdrop, regular UBI distribution is recognized by many as a better system to counter economic shocks (McGahey, 2017), and is thus supported by many entrepreneurs, workers and some governments.

Second, UBI could be an effective means of redistribution to tackle the widening polarization of societies. Full implementation of UBI would inevitably result in the redistribution of income among different groups, and thus a narrowing of the income inequality between social groups. For example, for married women who stay at home, UBI increases their income, and, subsequently, help reduce income inequality between women and men (see also Parker, 1993).

For most of the current UBI pilot projects (see Chapter 2), funding sources are usually isolated government funds, company or individual donations, or other income (oil revenue, gambling revenue, etc.). This relative isolation of UBI funding sources will not be possible at a universal scale, however, and general tax revenue will need to serve as the source of funding. If all or at least part of the existing social security system (such as medical insurance, etc.) is retained, UBI could be financed by a progressive tax (or the proportional tax advocated in some literature, see Atkinson, 1995), which means a large number of funds will flow from middle- and

high-income earners to low-income earners, and the income distribution pattern will undergo major changes. The direction of change in the welfare level of the whole society, however, is not fully predictable because it depends on the weight of each group in the social welfare function or value judgment.[8] This issue is the focus of many welfare economists, development economists, sociologists, scholars, governments and international organizations that study the inequalities of development.

Third, UBI has the potential to help eradicate poverty and associated social problems, and compensate for the inadequacy of subsistence allowances and other social relief systems. UBI is expected to effectively and continuously improve the welfare of the poor by providing an income sufficient to meet the basic needs of the general population, including low-income groups and those with no income due to unemployment or illness. It protects against poverty, unemployment, lack of medical services, etc. UBI may also reduce the incidence of social problems caused by poverty, such as crime, child malnutrition, etc., mitigating the negative externalities on other groups. Compared with the existing poverty alleviation policy, UBI's universality is expected to solve the inevitable exclusion errors under current targeted policies. When compared with conditional transfer payments implemented in many developed countries, UBI provides a more reliable social safety net for the poor because it has no strict limits on the beneficiary qualification (such as labour participation). To be more specific:

· UBI is considered better in tackling poverty under the principle of fairness (e.g., Atkinson, 2015; OECD, 2017). It is noted that the patchy existing system of poverty alleviation leads to inefficient targeting. From the current review of the existing social relief system, there is a common problem of "gains for the rich" and "pay with one hand, receive with the other" caused by elite capture. The regular distribution of UBI is seen as a better solution to this problem by alleviating mistargeting and leakage. Because UBI is universal, an added benefit is that it avoids stigmatization from being labelled poor.

· UBI has the potential to reduce administrative costs in the implementation of social welfare. The existing social relief and social assistance systems have high administrative costs with no internal stabilizer mechanism. They therefore often generate huge expenditures and even waste resources and capital in terms of administrative examination and approval, poverty identification, and supervision. In diverging from the current means-tested system, UBI reduces the cost of sorting and verification. Additionally, if applied with advanced cash e-transfer measures, UBI will further reduce government costs.

· UBI can reduce policy-driven work disincentives. Most existing welfare assistance policies are conditional, meaning only certain groups can access them, which may cause work disincentives.[9] For example, groups living just above the poverty line may have similarities in income and other aspects with those living under the poverty line. But since only people living under the poverty line receive assistance, groups just above the poverty line may then voluntarily work less and reduce their income to below the poverty line so as to receive relief. Another classic case is the unemployment trap generated under the welfare system (cf. Atkinson, 1984: 29). As Piketty (1999) pointed out, insufficient income and insecurity are among the key contributing factors in the formation of an unemployment trap. As UBI provides a basic income for the entire population, it can help to reverse the work disincentives for specific groups (based on no analysis on taxation, which will be introduced in the following section), and extinguishing the "unemployment trap" (Atkinson, 1995). These issues have been extensively studied in labour economics, public economics, finance and taxation economics, and are also

issues of concern to governments and enterprises.

· UBI may improve the willingness to work, since means-tested schemes may encourage people not to take jobs that do not pay more than the benefits they would lose. The research team referred to this tendency as the "slacker trap". This group of people has the labour capacity or even willingness to work, but they have a higher preference for leisure. In fact, their willingness to do "voluntary" and "involuntary" work in such cases cannot be distinguished under the "freedom" framework (Sen, 1984). In contrast, UBI proponents advocate unconditional coverage, regardless of the individual's work status and income. This provides more choices for slackers who have the willingness and ability to work, and offers additional incentives for these people to give up part of their leisure time and increase working hours in exchange for more income. It ultimately increases labour participation and the employment rate (see the Finland project). Governments and politicians concerned about employment rates both hope to realize these goals.

Fourth, UBI comes from socialism and the utopian world. A social concept of Marxists is that everyone should receive income according to their needs (Van Parijs and Vanderborght, 2017). But a more explicit definition of basic income can be traced back to political economist George D. H. Cole's 1953 reference to John Stuart Mill and socialism (Van Parijs and Vanderborght, 2017). Socialists regard UBI as a means of giving individuals the freedom to liberate themselves from a restraining environment under the market economy. It is also supported by environmentalists,[10] who have proposed to set a flat tax rate at a high level, aiming to improve social redistribution.

Fifth, UBI is a tool for people's pursuit of freedom. It allows people to pursue their own values and distribution of time in family life and leisure. Van Parijs and Vanderborght (2017) propose "involving not only the sheer right but also the genuine capacity to do whatever one might wish to do" (p. 104), which is similar to the concept of "people's capacity of doing what they want to do and living the life they want to live" proposed by Amartya Sen (1999), although the means of implementation are different. UBI proponents emphasize income as likely to be sufficient for achieving this goal. People can pursue the careers that they find meaningful, even perhaps lower salaries, as UBI provides financial freedom to do so.

1.3 Debates: UBI under financial constraints and its efficiency

The previous section introduced the definition of UBI and traced the development of the concept. This section attempts to bridge the gap between the concept and practice in the real world (as elaborated in Chapter 2). It proposes an analytical framework applicable to "canonical" or ideal UBI policy, and emphasizes the three elements essential to an economic analysis of UBI, namely, the impacts on social equity, economic efficiency and public financial system. As with other social policies, UBI needs to be considered in terms of both social equity and economic efficiency, and necessary trade-offs between them. An important constraint is to maintain public revenues and expenditures in line with a broadly sustainable level of budget balance. An analysis of the ideal UBI will help in understanding the design and effects of various UBI practices in reality. Note that the canonical UBI satisfies three basic characteristics proposed by Hoynes and Rothstein (2019): universality, meeting basic needs and no phasing out.

Section 1.2 discussed several channels through which canonical UBI affects social equity. UBI and its financing needs will raise the tax rate (or subsidy rate) of the society as a whole. And, as discussed in this section, economic principles clearly show that these changes will generate shifts in people's incentives and behaviour, which affects overall social economic efficiency. In addition, the problem of budgetary balance involving public finances will also be explored in our discussion of UBI efficiency.

The main query of UBI relies on the following economic logic: As UBI increases the income and actual purchasing power of its beneficiaries, they consume more leisure, thereby reducing their labour supply (i.e., an "income effect"[11]). Specifically, changes in the labour supply occur in different dimensions: employees will be motivated to reduce their working hours (the so-called intensive margin[12]). Some employees may even opt out of the labor market, and the unemployed will give up searching for job opportunities or do so less intensively. In other words, in theory, UBI will lead to work disincentives. This analysis is shown in Figure 1-1.[13]

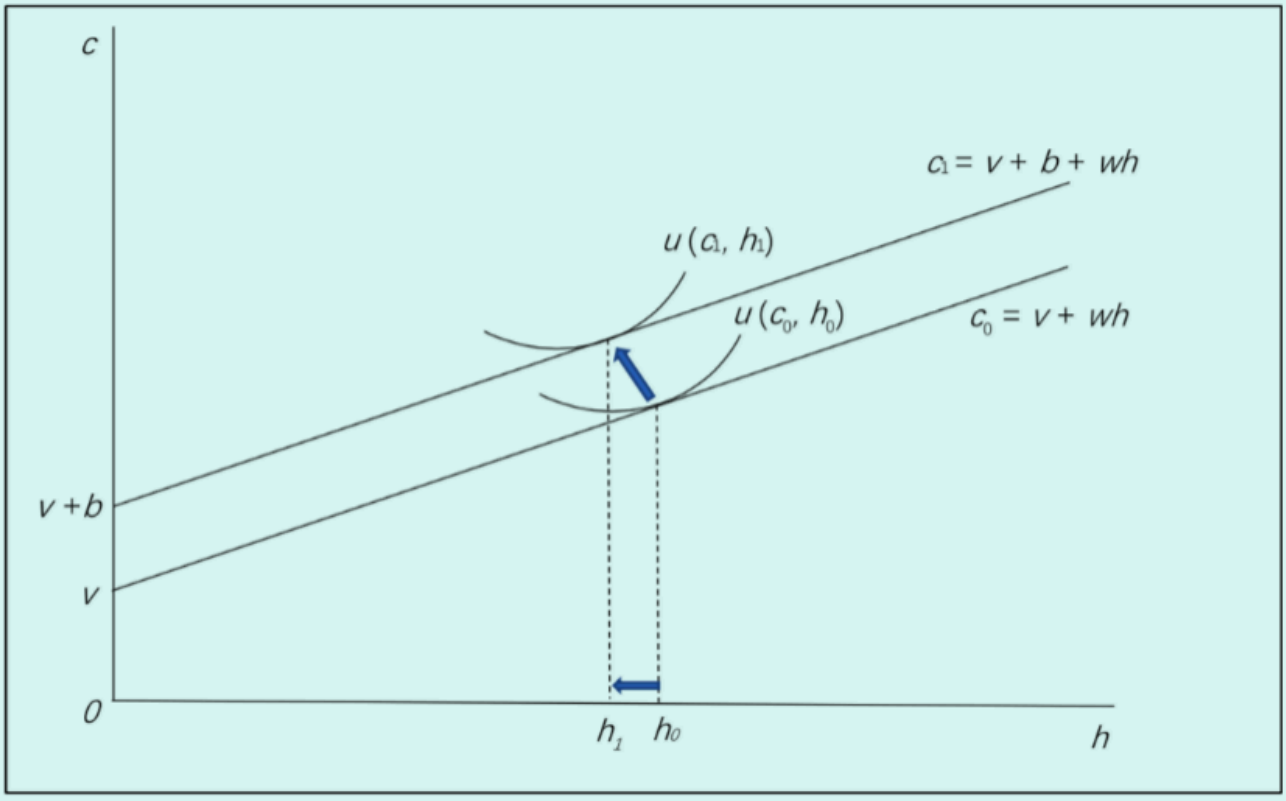

Figure 1-1 UBI and labour supply without the constraint of budget balancedness

Note: In the figure, h represents labour supply (in hours), c represents consumption or income, v represents non-labour income, b represents UBI amount, and w represents wage rate. The slashes c0 and c1 represent the budget lines of labourers without UBI and with UBI respectively, and u (c, h) is an indifference curve, reflecting the total utility of workers from consumption and labour. The figure shows that the issuance of UBI will cause the labour supply to drop from h0 to h1.

In the current debate about the work disincentive of UBI, low-income people have received more attention.[14] As with many existing social welfare systems that target low-income people, UBI may increase dependence on social welfare and reduce the labour supply, thereby increasing the social burden. Yet most studies based on existing UBI pilots with modest levels of income support in countries (or regions) around the world fail to find clear evidence of work disincentives for beneficiaries (mostly low-income groups) (Banerjee et al., 2017; Banerjee et al., 2019; Hoynes and Rothstein, 2019). On the contrary, under certain circumstances, UBI may even promote the labour supply of beneficiaries through certain channels.[15] One speculation is that, with more people spending time on leisure, industries such as services will boom, which in turn generates more employment. However, because UBI pilots have been limited in number and coverage, with low grant amounts and short periods of application, there are few conclusive findings. Of course, even if the work disincentive for low-income groups is small in magnitude, it still cannot be ignored.

Previous discussion on the fairness of UBI has shown that financing issues are critical for a truly universal UBI. To raise the large number of funds needed, it is likely that the tax base will need to be expanded or the tax rate raised, which will undoubtedly increase the burden on middle and high-income earners, who bear the bulk of taxation. If the substitution effect of the labour supply dominates its income effect (as shown in Figure 1-2), then in comparison to cases in which UBI does not exist, the work incentives of middle- and high-income workers may be reduced, causing underuse of labor resources and hence loss of economic efficiency.[16] The problem of work disincentives for middle- and high-income groups caused by financing UBI by taxation may outweigh the work disincentives for low-income groups that have been discussed extensively in the literature. Unfortunately, since almost all existing UBI pilots have not been accompanied by reforms of current tax systems, and the literature on the Chinese labour market offers few reliable elasticities of labour supplies for back-of-envelope calculations, the research team was unable to estimate the size of UBI's work (dis-) incentives for the middle- and high-income groups. This remains a core issue that future researchers should investigate.

The above discussion can be further clarified by employing Atkinson's (1995) proposal, which is demonstrated in Figure 1-1, to add a proportional (or flat) tax to finance UBI. The reason for the proportional tax is partly its analytical simplicity. Switching the proportional tax to a progressive tax with a positive threshold will not change the qualitative conclusion significantly.

To a certain extent, the UBI shown in Figure 1-1 and Figure 1-2 covers the entire population without a phasing out, and provides unconditional transfer payments sufficient to ensure basic living needs, meeting the canonical UBI definition. The UBI model in Figure 1-1 has many similarities with the small-scale UBI pilots described in the next chapter, since these pilots impose no requirements for budget balancedness. The UBI in Figure 1-2, which considers financial constraints, has more in common with a UBI implemented on a large scale or even nationwide. As mentioned earlier,

there are significant differences between the two in terms of economic efficiency and social equity, which should be noted in any economic analysis of UBI.

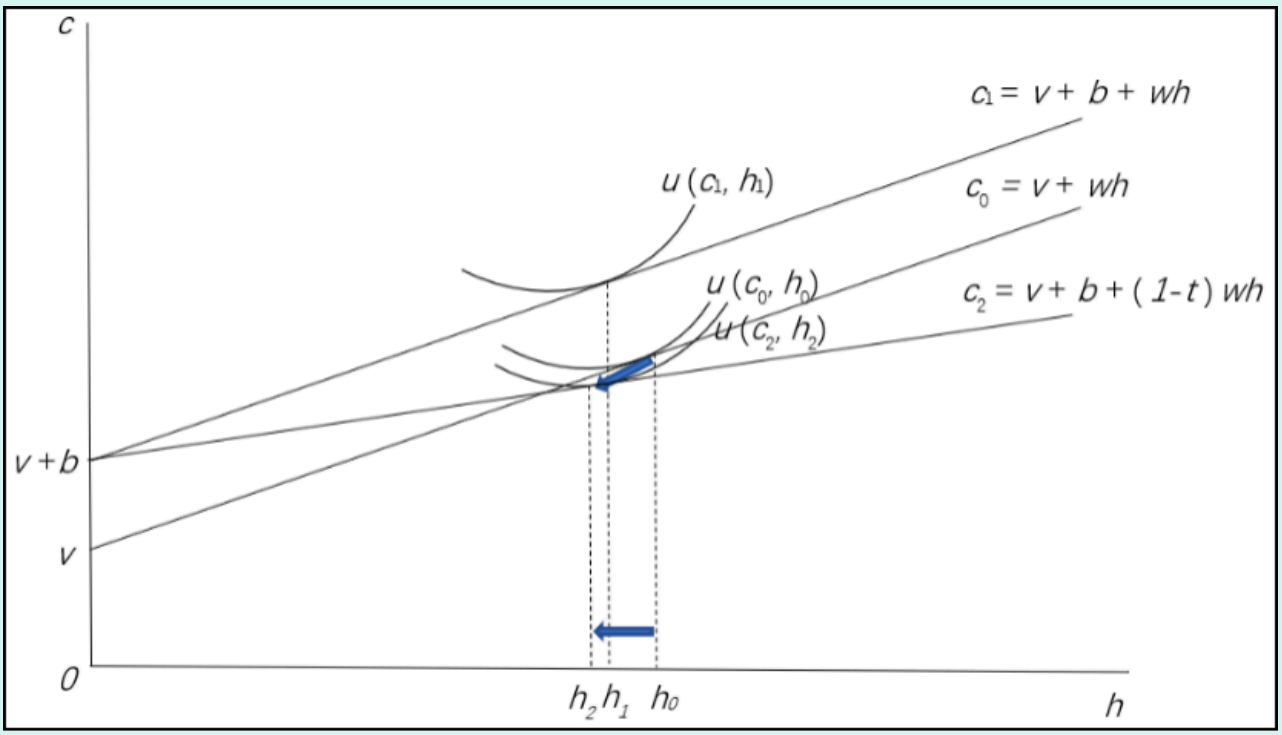

Figure 1-2 UBI and labour supply under the constraint of budget balancedness

Note: In the figure, t represents the proportional tax rate for UBI financing, and other notations are the same as Figure 1-1. As can be seen, compared with the situation without UBI, when UBI is financed by a proportional tax, the labour supply of middle- and high- income earners may decrease.

In addition, some existing social experiments show that the administrative costs of the implementation of a new policy are often not negligible; the amount may even exceed direct costs.[17] Therefore, it is also necessary to measure whether UBI can save administrative costs relative to existing policies in order to comprehensively examine the impact on economic efficiency. The above comparison relies on the selection of control groups (existing policies) and other institutional contexts, a related discussion elaborated in Chapter 3.

Finally, the possibility of raising funds for a possible broad UBI scheme from socially desirable fiscal measures, such as a carbon tax combined with the elimination of fossil fuel subsidies needs to be considered. If the fiscal space thus created is used to address burning social issues by funding a broad UBI, then its financial viability without undermining fiscal balance could be within reach.

1.4 Behavioural studies and UBI policymaking

In general, one often-used approach to measuring future policy outcomes is to build predictive models. Those models can be qualitative and/or quantitative, experimental and/or theoretical, and have been adopted widely in various studies on economics, psychology, sociology and politics. For instance, the University of Bath[18] used microsimulation econometric models to examine the prospect of implementing UBI in the United Kingdom. Such an approach has been applied effectively for decades by governments[19] and academia. However, most predictive models are seen as fragile, mainly because they are rooted in one field and focus on a singular aspect. Many scholars have underlined that traditional econometric models can hardly help understand the "un-rational' side of economic performance.[20]

As a still largely experimental economic policy, UBI is often discussed from a "rational" perspective—with an attempt to forecast policy outcomes following sophisticated mathematical and economic theories. Where the entire population of a country could be affected, the assessment of people's responses to policies becomes particularly important for policymakers seeking to minimize negative economic and social impacts. However, several concerns—people's incentive to work, reactions under potentially increased tax burdens and sentiments around social fairness—are informed as much by socialization as by economic conditions. In other words, rational economic logic can help explain only some aspects of policy outcomes. Any attempt to understand UBI policy responses, therefore, should also consider social and behavioural explanations.[21]

As shown repeatedly in behavioural studies, policy behaviour and decision-making are contextual (World Bank Group). Especially when people are making decisions in which they lack previous experience—such as under a new social welfare system—they tend to rely on prior beliefs. And those prior beliefs, according to Guiso, Sapienza, and Zingales (2006), have a cultural component with statistically significant impacts.

Culture is "the collective programming of mind" (Hofstede, 1997), capturing the essence of a variety of beliefs, customs, manners, rituals, and traditions that people follow in their daily life (Cohen, 1991). As such, culture tends to be viewed as something vague, unmeasurable and, therefore, not a plausible factor to inform policymaking or explain policy responses. This interpretation is widely shared by economists, who have been reluctant to rely on culture as a possible determinant of economic phenomena (Guiso, Sapienza and Zingales, 2006).

In the past decade, however, a number of studies have attempted to link culture with income inequality, tax systems, growth rates, the wealth of nations and consumer behaviour (for instance, Schwidetzky and Eicke, 2015). This should not be a surprise, since using cultural explanations is not a new phenomenon. Both classical economists such as Adam Smith (1759) and John Stuart Mill (1843 [1956]) and non-traditional economists such as

Banfield (1958) and Hirschman (1967) all sought to endorse cultural factors in their work. Recent growing interest in understanding psychological elements in economic decision-making has further contributed to the rising role of culture,[22] because culture is, in essence, an antecedent of psychological processes (Triandis, 2000).

The basic rationale for looking into cultural dimension of policymaking and outcomes is simple: the behaviour of individual agents is a fundamental determinant of the evolution of social and economic systems. Since culture consists of values, which guide the norms of individual behaviour (Kroeber and Parsons, 1958), it is fair to argue that cultural research is necessary to identify important determinants of behaviour, and in turn, policy impacts that might otherwise go undetected (Wyer Jr. and Hong, 2010).

In this context, the research team sought to use cultural elements to interpret behavioural preferences among Chinese people when presumably receiving UBI. When inquiring into underlying reasons embedded in different behaviours, such as the reluctance to receive UBI, culture provides an ideal lens. In applying it, the current research adds to the limited body of evidence on the cultural dimension of economic policy. It also creates the possibility for future UBI policy informed by behavioural considerations.[23]

Because of the lack of comparative UBI macro- and micro-level experimental data in other nations, analyses here are mostly China-centric and in narrative form. Consequently, the explanatory power of the cultural factors listed in this report is subject to limitations. Nevertheless, this report is a first attempt to link UBI policy with Chinese culture. Future research could look beyond single cultural dimensions to account for systematic differences in people's preferences for UBI among different countries.

Chinese culture and social behaviour

Constructs of individualism and collectivism represent the most broadly used dimensions of cultural variability (Gudykunst and Ting-Toomey, 1988). More recently, Triandis and Gelfand (1998) further streamlined the classification into horizontal (valuing equality) and vertical (emphasizing hierarchy) dimensions. Many past studies in the cultural domain concentrated implicitly or explicitly on the contrast between the collectivist-interdependent societies of the East and individualist-independent societies of the West (Maheswaran and Shavitt, 2000: 61). They have also labelled certain countries as such (e.g., France being vertical and individualist; Sweden being horizontal and individualist; India being vertical and collectivist).

Cultural classifications may be useful to understand a country in a general sense, but pose the risk of over-reductionism (Applbaum & Jordt, 1996). For one thing, culture is a changing phenomenon, and the process has been accelerated by globalization. While in many instances, Chinese culture is viewed as naturally Confucian, this is no longer exactly accurate. As noted by

Professor Zhang Xudong of New York University (2016), today's Chinese culture is more similar to that of the West than to its own traditional version. Theorizing Chinese culture becomes even more difficult considering China's intellectual traditions of reconciling diverse ideas and philosophies (Inkster, 2018). That is to say, although Chinese culture, as is the case in many other Eastern countries, may be characterized by collectivist norms, beliefs and values, individualistic tendencies are also relatively common (Wyer Jr. and Hong, 2010).

Clearly, there is a long way to go in developing a conceptualization of Chinese culture. To address the cultural dimension of behavioural insights, as suggested by Wyer Jr. and Hong (2010), it may be useful to consider situational and individual variables that are primarily (although not exclusively) characteristic of the nation and examine their implications for the selected topic. This report, therefore, will explain behavioural findings using three notable characteristics in the macro-level of Chinese culture—the emphasis on family, the respect for working hard, and personal connections or networks (guanxi), as elaborated in Chapter 4. All three characteristics are intertwined with various contextual factors, notably, historical sources of inspiration (for instance, Taoist, Confucian, Maoist, etc.), languages, gender structure, socialization processes, political development and economic features. It should be noted that these characteristics are by no means unique to the Chinese context, only Chinese individuals may be more influenced by them than people elsewhere.

1 Specifically, Paine's theory holds that since the income and wealth of all people today are largely derived from the efforts and achievements of their ancestors, rather than their own striving, everyone should enjoy, to a certain extent, the social dividend left by common ancestors. This theory was regarded by later scholars as the most fundamental legitimacy basis for UBI, that is, the endowed social dividend.

2 Developing and developed countries have begun to conduct experiments on the effect of UBI distribution, including Brazil, Canada, Finland, Iran, Italy and parts of the United States. Evaluation of these experiences is mixed (e.g., Matarazzo Suplicy, 2003; Kangas et al., 2016; Marinescu, 2017; Salehi-Isfahani and Mostafavi-Dehzooei, 2017; etc.).

3 Many scholars have studied the impacts of UBI at the national level, including Atkinson (2015), Widerquist et al. (2014), Reed and Lansley (2016), Spermann (2006), Sommer (2016) and Bistvan et al. (2014). The consensus view of scholars is that more theoretical discussion and research are needed.

4 In the 2016 BIEN annual conference held in Seoul, small adjustments were made to the definition of UBI: "a periodic cash payment unconditionally delivered to all on an individual basis, without means test or work requirement". See: https://basicincome.org.

5 See: http://www.oecd.org/pensions/oecd-pensions-at-a-glance-19991363.htm.

6 For a detailed account of social security, see Van Parijs and Vanderborght, 2017: 11; OECD, 2017.

7 More statistics and references on both productivity and potential job loss can be found in: McKinsey Global Institute. "Notes from the Frontier, Modelling the Impact of AI on the Global Economy," September 2018.

8 Kanbur et al. (1994) argued that for optimal poverty reduction policies, the optimal tax rate can reach 60 percent to 70

percent, even taking into account a work disincentive. However, a poverty alleviation policy is bound to give the poor a higher social welfare weight and other residents lower weights.

9 Regarding the impact on employment encouragement and behavioural change, Atkinson (1984: 29) points out that basic income "is sometimes couched in terms of employers being able to reduce wages, but the assumptions made about the working of the labour market are critical to the conclusions drawn. If, for example, labour supply is reduced, then there may be upward pressure on wages—although total earned income may still fall."

10 The define of environmentalists can refer to Van Parijs and Vanderborght (2017).

11 See Cesarini et al. (2017) for the latest empirical evidence on work disincentive due to income effect.

12 Reader may refer to Cahuc et al. (2014) for more details about the economic analysis on labor supply issues.

13 The analysis below utilizes the toolkit surveyed by Moffitt (2003).

14 In the context of developed countries, generous social welfare systems increase the dependence of low-income groups. In the context of developing countries, a large proportion of low-income groups are employed in informal sectors, where self-employment is common. The self-employed enjoy higher flexibility in terms of labour supply than employees in formal sectors do.

15 See Chapter 2 for a detailed discussion.

16 Considering that the middle- and high-income groups are usually the active part of the economy and the mainstay of entrepreneurship and innovation, the actual losses may be greater.

17 Take the four negative income tax experiments conducted in the United States from 1968 to 1982 as examples. The direct payments to families were US $63 million (in 1984 dollars), accounting for only 28 percent of all project expenditures (Robins, 1985). A substantial fraction of the difference between the two expenditures mentioned above should be administrative costs. The administrative costs of China's recent poverty alleviation policies have also begun to receive more attention.

18 See: www.bath.ac.uk/publications/the-fiscal-and-distributional-implications-of-alternative-universal-basic-income-schemes-in-the-uk/.

19 For instance, The US Department of Health and Human Services has utilized its Transfer Income Model (TRIM) since 1973. Now in its third version, TRIM3 "is a comprehensive microsimulation model that simulates the major governmental tax, transfer, and health programs that affect the U.S. population, and can produce results at the individual, family, state, and national levels".

20 On this note, books such as Animal Spirit can help readers who are interested in understanding "un-rational" human behaviours.

21 According to the OECD, behavioural insights are an inductive approach to policymaking that combines insights from psychology, cognitive science and social science with empirically-tested results to discover how humans actually make choices. For more, see: www.oecd.org/gov/regulatory-policy/behavioural-insights.htm.

22 The root is in John Maynard Keynes's famous "animal spirit" concept and was reasserted by Nobel laureate George A. Akerlof and prescient Yale economics professor Robert J. Shiller in their book with the same name in 2009.

23 Having been adopted by countries such as Australia, Canada and the Netherlands, such policies introduce insights from behavioral studies. They can help policymakers avoid some of the decision traps and biases that affect all individuals, and spark the use of innovative, low-cost solutions. See: http://documents.worldbank.org/curated/en/744191532458732002/pdf/128784-eMBeD-Brochure-DIGITAL.pdf.

Chapter 2

Global UBI
Practices and Implications

Based on the analytical framework described in the previous chapter, this chapter will analyse UBI practices around the world mainly from the economic dimension. For each UBI experiment, the chapter will detail its design and implementation, highlight its differences with the canonical UBI approach, and summarize its (potential) impacts on social equity and economic efficiency, together with its financial constraints. The chapter will also provide background information for analysing the outlook of implementing UBI in China, which will be further explored in the next chapter.

Given that UBI is a newly introduced social welfare policy, the social, economic, cultural and institutional background, especially related to domestic social security, and fiscal and tax systems, should be taken into consideration in policy design and implementation. The effects of the policy also depend on these factors. With that in mind, this chapter will introduce UBI pilot projects in the United States, Finland and India, respectively, illustrating the results under three circumstances: more market-oriented developed countries like the United States, welfare states in northern Europe such as Finland, and developing countries like India where poverty is still prevalent. The chapter will summarize the experiences and lessons learned. For more comprehensive reviews, refer to Hoynes and Rothstein (2019), Banerjee et al. (2019), and Hanna and Olken (2018).

2.1 UBI in the United States

The United States has never implemented UBI nationwide.[24] But there are two relatively small-scale experimental projects roughly in line with the canonical UBI concept. One is the Alaska Permanent Fund project; the other is the UBI project of the Eastern Cherokee Native American Reservation. The similarity of the two lies in their loose restrictions on eligibility. For example, the first project only requires participants to be permanent residents of the state, including children and resident foreigners and refugees with state residency. The second requires participants to be adult Native Americans living on the reservation, which is consistent with the requirement for the universality of the canonical UBI.[25] In both cases, UBI payments are issued annually and are usually not sufficient to meet the basic needs of participants, contradicting a core principle of the canonical UBI. The payment for the Alaska Permanent Fund is about US $1000-2,000, while the Eastern Cherokee Native American Reservation payment is $4,000. The primary reason for low payments lies in limited budgets. The Alaska Permanent Fund is financed by Alaska's oil revenues; the Eastern Cherokee Native American Reservation payments come from casino revenues.[26] Each scheme has a large number of beneficiaries. In other words, even for relatively small-scale UBI experiments, there is already a fairly tense relationship between universality and an adequate payment for basic living. Policymakers, facing binding budget constraints, have been more inclined to meet the requirement of universality and give up on the latter goal to a certain extent.

Researchers in recent years have attempted to make a relatively rigorous assessment of these quasi-UBI experiments, including by examining whether UBI produces negative labour incentives. In general, the results show no obvious evidence that UBI will reduce the labour supply, with the specific reasons needing to be further investigated. For instance, Jones and Marinescu (2018) believe that this may be due to the fact that UBI may increase local residents' consumer demand and therefore the labour demand. In addition, researchers are also interested in UBI's impacts on education, health status and crime among children. The results appear somewhat mixed. For instance, Akee et al. (2010, 2018) find that UBI has a positive impact on the education and health of the children of beneficiaries, and can effectively reduce the likelihood of being arrested on criminal charges. However, Watson et al. (2019) suggest that the UBI increases drug usage by 14 percent.

In the past five years, with the rapid development of artificial intelligence and robotics, and their widespread application in manufacturing sectors, the public is increasingly worried about the impact on the labour market (see Acemoglu and Restrepo, 2018). UBI has been put on the agenda as a possible measure to deal with and resolve uncertainties and risks, which may be particularly acute in the United States as the leading source of these technologies in the past. Several major UBI experiments will be conducted on the west coast of the United States. Among them, the Y-Combinator study[27] and the UBI experiment in Stockton, California, have received much attention.

Unlike the earlier UBI pilot projects, the more recent projects plan to make a different tradeoff between universality and the provision of basic income for living. These projects generally will impose more restrictions on eligibility. For instance, the Y-Combinator experiment will regulate the age of participants and require that income should be below the local median income, meaning it will likely be able to pay beneficiaries continuous and higher amounts. The Y-Combinator project intends to provide beneficiaries with $1,000 per month for a three-year period. The Stockton project is expected to provide the beneficiaries with $500 per month for 18 months. Both pilots have adopted the Randomized Controlled Trial design to more accurately identify the impact of UBI. They also touch on a much wider range of issues and research questions. For example, the Y-Combinator will explore UBI's impact on time use (including the labour supply), subjective and objective welfare, financial status and risk, time preference, political attitudes, social cognition, crime rates, and family and social networks (Y-Combinator Research, 2017).

To sum up the experience in the United States, there is usually a certain deviation between UBI in practice and the canonical UBI design. Given limited funds, the universality and provision of basic income for living emphasized in the canonical UBI design are often not achieved at the same time. A compromise is inevitable. This underscores the importance of addressing limited funding sources. However, to further expand the experiments to be fully universal, the UBIs are very likely to be funded by additional taxes, and the work disincentive problem must be taken seriously. Moreover, these UBI practices can come into conflict with the general trend of social welfare reform towards encouraging labour participation, increasing the labour supply and reducing the social burden (such as the famous earned income tax credit). Although the UBI has been repeatedly advocated in political campaigns (for example, Hilary Clinton's "Alaska for America", or 2020 Democratic presidential candidate Andrew Yang's "Freedom Dividend"), it has not yet gained much popularity among policymakers in the United States.

2.2 UBI in Finland

Compared with English-speaking developed countries, European and especially Scandinavian countries have a higher level of support for UBI.[28] Nevertheless, Finland is the only country that has conducted UBI pilot projects nationwide and obtained preliminary assessment results. [29]

Finland is a country with high taxes and a very generous social welfare policy. This has created a huge burden on society and a need for urgent reform. Finland's unemployment rate has remained high for a long time, reaching 8.6 percent in 2017, higher than in other northern European countries such as Norway. Unemployment is persistent; about 57 percent of those who received unemployment payments at the end of 2016 did not earn any income in 2017. Some economists argue that the generous social welfare system could be a factor behind the high unemployment rate. A KELA (The Finnish Social Security Institution, 2015) report points out that the average annual income of people who lost their jobs at the end of 2016 but were re-employed in 2017 was 9,920 euros, but the average unemployment payment was 7,268 euros, together with other forms of social relief. Another feature of Finland's unemployment relief system is that the unemployed can receive a relatively stable unemployment payment for a long time, which could raise the risk of exacerbating long-term unemployment.

In this context, the Finnish Government launched a two-year UBI experiment (from January 2017 to December 2018) to seek alternatives to reforming the existing social welfare system. Under budget constraints and with other political and economic considerations, the Government adopted a partial UBI scheme, that is, UBI served only as a supplement or partial replacement of the existing social welfare system, and covered a random sample of 2,000 unemployed persons aged 25 to 58. Another 170,000 unemployed people were assigned to a control group. In the two-year experiment, individuals in the experimental group received 560 euros per month, equivalent to the amount of the unemployment benefits paid by KELA. The payment was not cut off in the case of re-employment. The primary objective was to examine the impact of UBI on work motivation.

According to the preliminary results (Kangas et al., 2019), there were no significant impacts on working status. On average, members of the group receiving UBI worked 49.64 days per year. The figure for the control group was 49.25 days. The difference of less than half a day is statistically insignificant. The difference between the self-employment ratio and self-employment income in the two groups is also very limited. In addition, due in part to UBI and current unemployment relief regulations, receiving UBI only reduced the amount of the unemployment benefits by one fifth, or 1,415 euros, far below the expectations of researchers. However, based on telephone interviews with participants, UBI improved their level of social trust, boosted their confidence in the future and improved their health.

The Finnish pilot is the first UBI experiment to be carried out nationwide and promoted by the central Government. It is a milestone for UBI in evolving from concept to practice. However, given Finland's combination of high taxes, high level of welfare and highly complex fiscal and tax system, the experience may be inapplicable to most developing countries and even many developed countries. Nevertheless, some lessons can be drawn. First, in the UBI design and implementation phase, full attention should be paid to the interactions between UBI and the domestic social welfare system. For one thing, given the budgetary requirements, the introduction of UBI, depending on its scale, could lead to the adjustment, deterioration or even abolishment of other social welfare programs. For another, if UBI is only employed as a reform measure for an increment of social welfare, policymakers should take into consideration that existing policies may be generous enough. In this case, UBI will have an insignificant impact on the job and other incentives of potential workers (The New York Times, April 2018).

A second lesson is that the implementation of UBI faces major financial constraints, especially as a truly nationwide system. Major adjustments to the existing fiscal and tax system must be made to meet the needs of UBI, and tax increases may be inevitable. This argument is confirmed by certain financial and political dilemmas[30] in the later phase of the Finnish experiment. Third, some evidence suggests that UBI can improve the income and subjective and objective welfare conditions of low-income people, and promote social equity. However, given the scale of investment and possible efficiency losses, other economically efficient alternatives should be carefully considered.

2.3 UBI in India

The United States and Finland differ significantly from developing countries in their social, economic, cultural and institutional backgrounds. Comparatively, small-scale UBI experiments in India may be more valuable for developing countries.[31]

Unlike developed countries where policymakers want to adopt UBI to reform the existing social security system, and to cope with the challenges of new technologies to the job market, developing countries such as India generally hope that UBI will become an alternative poverty alleviation policy. Poverty alleviation policies usually require prior identification or targeting of the poor population, which places high demands on state capacity and information infrastructures, and poses risks of exclusion and inclusion errors. With UBI, since targeting is not needed, some personnel and material costs for targeting may be saved.

The Self-Employed Women's Association (SEWA) and the United Nations Children's Fund (UNICEF) jointly carried out the UBI experiment in India, with funding from the latter. The experiment selected nine villages near the city of Indore in Madhya Pradesh to receive UBI, and selected 11 villages with similar characteristics as the control group. At the beginning of the experiment, all villagers (including children) in the nine villages were identified as UBI recipients. The amount of UBI was determined by the principle that the payment should "be enough to improve the life, but (by UBI alone) not enough to have a dignified survival." The initial amount was 30 percent of the income of low-income families in the region; it was doubled due to inflation and other factors in the latter phase of the experiment. Sums were continuously issued for about a year and a half. As anticipated by Ravallion (2016) and Bardhan (2017), the experiment failed to conclude that UBI reduces people's work incentive. According to SEWA and UNCEF (2014), nearly 21 percent of the households receiving UBI increased their output during the experiment, compared with only 9 percent of families who did not receive UBI. There was also evidence indicating that families receiving UBI increased the labour supply. Banerjee et al. (2019) provide a preliminary explanation that associates these results with the missing or incomplete credit or insurance market in developing countries, especially in the poorer areas. They believe that UBI helps the poor to escape the poverty trap caused by ill-functioning markets, and thus partially or even

completely offsets any negative labour incentives. Their study shows that UBI could increase the probability of children attending school, reduce the number of child labourers, enhance women's status in family life and production, improve family financial status, and encourage the participation of poor people in government projects.

Whether such conclusions, particularly in terms of work incentives, can be applied to other developing countries, such as China, still needs more empirical evidence and theoretical justification. The labour market in developing countries has many issues that are rare in developed countries, such as large numbers of child labourers, considerable production by agricultural households and the prevalence of part-time jobs. All of these institutional factors represent departures from the standard labor supply framework, upon which most empirical conclusions in developed economies are based. Even within the category of developing countries, there still exist noticeable heterogeneity on these aspects. Therefore, researchers should pay more attention to the institutional background and avoid citing these estimates before knowing such differences.

A common lesson from the Finnish and Indian experiments is the need to search for more efficient ways to reduce poverty and social inequalities, including in light of information technology (such as the widespread use of mobile phones) that has improved the technical and economic feasibility of poverty targeting. Two alternatives could be seriously considered, i.e., to heavily invest in information infrastructures or to promote UBI.

2.4 Lessons and Implications

The experiences, lessons and implications of the UBI experiments in the United States, Finland, and India fall under four broader categories.

- Social equity: UBI has proven potential to promote social equity. It could effectively improve the income and welfare status of low-income groups, reduce the poverty rate and narrow the income gap. UBI may also significantly upgrade the human capital level of workers in terms of education and physical and mental health, especially for women and children by enhancing their status in the family and promoting economic development. However, even if social equity is the single objective, it is still necessary to consider economic efficiency, for it determines how far social equity can be achieved.

- Economic efficiency: Based on the results of UBI experiments from the three countries, there is little evidence that UBI may significantly reduce the labour force participation rate (mainly among low-income people). However, other issues may be encountered in a fully universal UBI project. Unless existing social security programmes are remarkably reduced, it is hard to avoid tax increases as a reliable source of funding. If so, regardless of the adoption of progressive or proportional income tax policies, the tax burden on middle- and high-income groups will be aggravated. It is even possible that increased taxes may diminish

the work incentives of middle- and high-income earners, leading to severe losses in economic efficiency.

· Financial constraints: The lack of a stable source of funding is a major challenge for all current UBI pilot projects, posing tradeoffs between universality and basic income. As the UBI projects expand, the financial constraints become more relevant, since the funding of UBI has to rely on taxes more heavily. The implementation of full-scale UBI requires not only major adjustments to the existing fiscal and tax systems, but also an accounting of subsequent changes in economic efficiency and political issues.

· Embedding issues: Each country has its own unique socioeconomic, cultural and institutional backgrounds. UBI, as a newly introduced "incremental" social welfare policy, would be embedded in existing fiscal and tax systems, requiring full attention to these aspects. Further, when drawing on the experience of other countries, policymakers should be cautious, given significant differences in the motives for implementing UBI. Developed countries have emphasized it as an opportunity to transform a costly and highly complex social welfare system, while developing countries regard it as a policy tool to enhance the social security system and eliminate absolute poverty. The backdrop for UBI policy is also different. Developed countries usually have strong financial capacity and relatively sound information infrastructures. Many developing countries, however, have weak state capacity and do not have well-developed information infrastructures, resulting in the high administrative costs of targeted poverty alleviation policies. In addition, the large informal sectors in developing countries and their impact on the tax base should be taken into consideration. And as more and more research has indicated, given the importance of cultural background in influencing decision-making, UBI implementation has to consider unique cultural factors along with economic perspectives.

24 In the 1970s, several Negative Income Taxes (NIT) pilot projects were launched across the United States. According to Atkinson (1995), linear NIT is equivalent to the combination of UBI and proportional tax, and thus the experimental results of NIT can provide some insights for UBI. For a literature review of NIT, see Moffitt, 2003.

25 According to the State of Alaska (2017), the dividends of the Alaska Permanent Fund were first distributed in 1982. In 2017, the number of eligible applicants was 640,245. The number of eligible applicants for the Eastern Cherokee Native American Reservation fund is much smaller.

26 Macau SAR, China also provides its permanent and non-permanent residents with the so-called "Wealth Partaking Scheme" bonuses, which are commonly viewed as a variant of UBI. In 2017, the government delivered 9,000 patacas to its 638,600 permanent residents, and 5,400 patacas to 62,000 non-permanent residents. Like the Eastern Cherokee UBI project, the scheme is financed mainly through the city's casino tax. For more details, see Cheng (2017).

27 The Y-Combinator study plans to recruit 3,000 individuals across two states and randomly assign 1,000 to the recipient group. The Stockton UBI experiment will recruit 130 participants and have 900 members in the control group.

28 According to Fortune Magazine (April 2018), "70% of Finns supported the idea of basic income". Interestingly, however, "surveys show that number drops to 35% when respondents are told that already high income taxes would have to increase in order to cover the cost of the program".

29 The KELA originally proposed to take two samples for the UBI pilots (KELA, 2015). The primary sample should cover the whole country with low intensity, and it should be supplemented by a regional sample with high intensity. Due to budget constraints, only the first sample with only 2,000 UBI recipients has taken place.

30 The Finnish UBI experiment always faced serious financial problems. Due to technical and other difficulties, the Finnish Tax Administration did not actively participate in the experiment (KELA, 2015). The financial problem eventually ended the pilot. As reported in the press, "Finland has actually reversed course on that front this year, adapting rule that threaten to cut benefits for jobless people unless they actively look for work or engage in job training" (The New York Times, April 2018). Fortune Magazine (April 2018) provided more detail: "the Finnish parliament passed a bill that requires jobseekers to work 18 hours minimum for three months, making unemployment benefits contingent on finding some work".

31 Other developing countries that have conducted or are conducting UBI pilot projects include Iran, Kenya and Namibia.

Chapter 3

Feasibility analysis of the implementation of UBI in China

The series of pilot UBI projects conducted to date offer inspiration, but in looking at the future of UBI within China, it is crucially important to consider the institutional background of China. This chapter, based on the analytical framework for the economic dimension of UBI, will discuss differences and compatibility challenges between UBI and the existing social security system in China. It considers the subsistence allowance and poverty reduction policies as detailed social security policies closest to UBI.

3.1 Implementation Cost: A Conceptual Discussion

In the four decades since reform and opening-up began, China has made historic strides forward. With the world's second largest economy, according to the International Monetary Fund, China contributed to almost 39 percent of the world's economic growth in 2016. From 1990 to 2011, about 400 million people were lifted out of poverty (calculated on the $1.25 a day poverty line). In the past five years, over 10 million rural residents emerged from poverty per year.

China has the world's largest population and labour resources, but also a complex socioeconomic development structure. By 2030, it will have an estimated 1 billion urban residents, accounting for 70 percent of the total population. By 2050, the population over age 65 will reach 31 percent of the total, equivalent to the current population of the United States and Japan combined. Developments like these pose opportunities as well as challenges. Negotiating such transitions will require a strong social security system to provide a cushion, with UBI providing one potentially viable option. At the same time, structural differences between regions and urban and rural areas are prominent, complicating the implementation of UBI.

UNDP (2017) has identified three favourable conditions for UBI implementation in China: First, the Government has strong domestic resource mobilization capabilities, which will facilitate financing. Second, China's technological innovation is advancing in leaps and bounds. Digital payment tools are widely used, which could boost the effective management of UBI. Third, China is committed to the global Sustainable Development Goals. Poverty reduction and inclusive growth are top priorities, which provides a window of opportunity for UBI. With China's large population, policy implementation of targeted programmes means huge administrative costs exacerbated by imperfect information infrastructure. The unrestricted universal nature of UBI could undoubtedly reduce such costs.

UBI implementation also faces challenges. The first and most significant is the source of funds. Although financing for most UBI pilot projects has come from independent fiscal funds, foundations or NGOs, once the policy is promoted across society, a large amount of steady funding is needed. A second issue is whether UBI is a replacement or complementary reform. After decades of development, China has built a basic social security system, including the subsistence allowance system and poverty alleviation policies. These have a proven track record in reducing poverty and narrowing the income gap. The question now is, does UBI implementation mean an alternative to these similar policies? Or is it simply a complementary policy? The question may seem complicated, but it can be simplified by cost-benefit measurement and comparative analysis, as discussed in this chapter. Since estimating the costs and benefits of policies is complex, the research team has made accurate projections to the extent possible.

3.2 A comparison between UBI and the subsistence allowance

Mainland China has seen few UBI-like projects, except the Government of Macau SAR, China, which implements the wealth partaking scheme that distributes a certain amount of cash to citizens every year that can be considered as a UBI. But similar to the unconditional transfer payment programs implemented by many European countries for certain groups of people, there is a minimum living standard security system, referred to as the subsistence allowance, for low-income groups. This began in 1999 with the initial goal of reaching urban low-income groups. According to official documents of the Ministry of Civil Affairs, the subsistence allowance covered all eligible low-income urban residents by 2002 and all eligible rural residents by 2010. Subsistence allowance payments are usually based on households, while transfer payments are on an individual basis. Subsistence allowance standards vary between urban and rural areas and provinces due to their vast differences (see Table 3-1).

3.2.1 Cost-Benefit Analysis

People identified as recipients of the subsistence allowance receive government funds with no strings attached. This is similar to UBI's unconditional payment. The government pays cash directly to low-income groups rather than in-kind compensation, another similarity to UBI.

There are also a number of differences between the two. First, unlike UBI's equal payment notion, the subsistence allowance standards vary greatly among provinces. Those with higher standards, such as Beijing, Tianjin, and Shanghai, are mostly in more developed eastern coastal areas. Provinces in less-developed central and western regions, such as Xinjiang and Gansu, normally have lower standards. Table 3-1 also shows a huge urban-rural gap, with the standard of cities generally higher than that of rural areas. The contrast between urban and rural areas is most striking in Tibet, where the urban low-income standard is 2.41 times the rural one. The gap is also noticeable in Guangxi and Yunnan, while there is no standard difference between urban and rural areas in Beijing, Tianjin and Shanghai. Differentiated policies mean people in the same situation may well be treated differently in different regions, contrary to the principle of equalization.

Second, the payment of the subsistence allowance varies from the UBI principle of undifferentiated payment. The former requires reviewing families' property and basic income. A household can only be identified as a "protection target" if its income is lower than the Government-stipulated standard. There is also an "exit mechanism" so a family will be removed from the security system by the Government when its income and property exceed the standard, or its lifestyle does not meet Government requirements.[32] In practice, accurately locating and verifying eligibility is a major challenge for the Government's executive department. In addition, local governments are limited in their administrative capacity and cannot effectively target low-income families. Certain families may be motivated to conceal their property in order to earn extra income. Although some places adopt multidimensional standards (such as family property, education, health, housing and consumption) to improve the accuracy of identification, such identification schemes generate more labour and administrative costs, while reducing efficiency.

The *Statistical Report on Social Service Development* [33] shows that investment in the subsistence allowance

Table 3-1 Source: Subsistence allowance standards are from the statistics of the Ministry of Civil Affairs; see http://www.mca.gov.cn/article/sj/tjjb/bzbz/. In the original data, urban subsistence allowance standards are calculated on a monthly basis. Annual urban subsistence allowance standards in this table = monthly data*12.

Area	Urban subsistence allowance standard (RMB/year)	Rural subsistence allowance standard (RMB/year)	Urban/rural subsistence allowance
Beijing	12,000.00	12,000.00	1.00
Tianjin	11040.00	11,040.00	1.00
Hebei	7215.6	4,321.70	1.67
Shanxi	5949.6	4,072.60	1.46
Inner Mongolia Autonomous Region	7686	5,453.80	1.41
Liaoning	7082.4	4,629.70	1.53
Jinlin	6082.8	3,881.10	1.57
Heilongjiang	6777.6	3,974.10	1.71
Shanghai	12,840.00	12,840.00	1.00
Jiangsu	8188.8	7,777.10	1.05
Zhejiang	9151.2	9,083.30	1.01
Anhui	6836.4	5,891.80	1.16
Fujian	7267.2	7,127.30	1.02
Jiangxi	6928.8	4,111.70	1.69
Shandong	6388.8	4,482.00	1.43
Henan	5914.8	3,617.40	1.64
Hubei	7260	5,275.20	1.38
Hunan	5625.6	4,097.90	1.37
Guangdong	8983.2	7,114.50	1.26
Guangxi Zhuang Autonomous Region	7075.2	3,812.30	1.86
Hainan	5827.2	4,310.40	1.35
Chongqing	6552	4,984.90	1.31
Sichuan	6086.4	4,009.10	1.52
Guizhou	7100.4	4,191.30	1.69
Yunnan	6801.6	3,651.90	1.86
Tibet Autonomous Region	9660	4,005.70	2.41
Shaanxi	6817.2	4,221.00	1.62
Gansu	5869.2	3,978.80	1.48
Qinghai	6038.4	3,713.10	1.63
Ningxia Hui Autonomous Region	6840	3,965.50	1.72
Xinjiang Uygur Autonomous Region	5202	3,842.30	1.35

Table 3-1: Subsistence allowance standards for urban and rural areas in the fourth quarter of 2018

continues to increase. China's finance departments at all levels spent a total of 64.05 billion RMB on urban subsistence allowances in 2017, and 105.18 billion RMB on rural ones, covering 12.61 million urban residents and 40.45 million rural people. Additional labour costs accrue by considering the costs of local public service personnel. According to the National Bureau of Statistics, in 2015, 13.09 million employees worked in social service institutions. If a quarter of these people specialize in low-income family identification and service, the annual administrative cost is 163.63 billion RMB at 50,000 RMB per person per year.[34] In addition, there are still remaining problems to be solved. For example, the punitive cost of non-low-income people posing as low-income people is relatively low, and staff's own legitimate rights and interests are usually not guaranteed. Addressing these problems in a comprehensive way requires continuous improvement of the system, which in turn calls for a large investment.

While the subsistence allowance costs the government at least 340 billion RMB each year, UBI's cost is even higher, given that benefits would go to a huge population of 1.4 billion people. Without changing the existing social welfare system, annual investment in UBI would reach over 8.5 trillion RMB[35] if calculated at the subsistence allowance standard of 579.7 RMB per person per month for cities and 4,833.4 RMB per person per year for rural areas (based on data for the fourth quarter of 2018). Therefore, the cost of UBI would be 25 times that of the subsistence allowance policy, putting very high pressure on fiscal expenditure. To calculate differently, if only to use the estimated subsistence allowance investment is for UBI, the per capita increase in income would be merely 244 RMB per person per year, which is not sufficient to meet people's basic needs.

3.2.2 Summary: national inclusive UBI payments are not feasible in the current fiscal setting

With the subsistence allowance, the challenge of identifying low-income families undoubtedly adds to implementation difficulties and administrative costs. If the review procedure can be simplified by directly using personal ID number as the only identification, and the system distributes each individual the same amount of subsidies, the central and local governments could be released from the implementation problems. Thus may be an alternative. However, regional gaps in income and cost of living are great. The effect of UBI in the wealthy eastern coastal areas could be a far cry from that in the poor areas of the north-west. However, there is an element of self-targeting in this: support in poorer regions would represent a higher share of total income than elsewhere. At the same time, as China has a very large population, a uniform standard for subsidies nationwide would exert great pressure on social support as mentioned in 3.2.1.

China has no capacity to introduce UBI without major adjustments in the overall tax-benefit system. If the subsistence allowance is cancelled to support the UBI, chances are that the poor would subsidize the rich. If welfare policies remain unchanged, fiscal revenue must be increased. Under most scenarios, this would greatly increase the national tax burden and harm social stability, so it is not a viable option. Under current economic conditions, the China government could not afford the equality for all by UBI, which depends on strong economic support. As a developing country, China should first solve the immediate problem of excessive income disparity and poverty, considering the possible role in this of a UBI, including the massive additional fiscal revenue needed to implement UBI nationwide. Although transfer payments for special groups generate substantial administrative costs, they for now appear to be a better choice than a canonical-type UBI.

3.3 A comparison between UBI and poverty reduction policies

On the road to shared prosperity, poverty reduction has always been high on the agenda in China. Since the reform and opening-up period began, targeted poverty alleviation policies have been implemented to promote the income and development capabilities of poor areas and populations, and have helped propel China into a higher level of development. To realize all-round development, the Government in 2014 formulated a more ambitious poverty alleviation strategy, including targeted poverty alleviation policies, so as to eliminate extreme poverty by 2020. This section compares UBI and poverty alleviation programmes, including through cost-benefit analysis.

3.3.1 China's targeted poverty alleviation strategy

China's targeted poverty alleviation strategy is first and foremost based on individuals and households. It depends on accurate identification, aid and management of target recipients through effective procedures for different poverty-stricken areas and rural poor households. It can be traced back to November 2013, when President Xi Jinping proposed "seeking truth from facts, adapting to local conditions, differentiated guidance, and targeted poverty alleviation" for the first time during his visit to Xiangxi, Hunan Province. At the 2015 Poverty Reduction and Development High-Level Forum, Xi made a promise that China will eliminate extreme poverty under the current standard in 2020. To achieve this goal, the Chinese Government has increased investment, introduced preferential policies and measures, leveraged China's institutional advantages, and focused on targeted measures (i.e., targeted households, measures for each household, project arrangements, use of funds, personnel appointment for each village [First Secretary] and poverty alleviation results). Through the "five batches" (that is, supporting a given batch of people through the development of production and employment, relocation, ecological protection, education and/or subsistence allowances) and corresponding derivative means, assistance on an individual and household basis has been implemented. Targeted relief for the extremely poor, who are not many but are scattered in diverse locations, is underway to facilitate poverty elimination.

China's poverty alleviation policies have been transformed from broad to targeted ones. The scope has changed from specific regions to specific populations, mainly to adapt to changing needs. Earlier, regional poverty was more prominent, and regional poverty alleviation was more effective in supporting local development and alleviating universal poverty. With increasing social polarization and more scattered and individualized poverty cases, differentiated policies for different households are more effective. Since the 18th National Congress, the number of impoverished people has decreased from 98.99 million in 2012 to 16.6 million in 2018, a reduction of over 80 million people in six years, more than 13 million per year on average.

3.3.2 A comparative cost-benefit analysis

To better compare the costs and benefits of UBI and targeted poverty alleviation, Table 3-2 considers two scenarios. Scenario 1 involves implementing UBI to benefit all Chinese citizens and abandoning targeted poverty alleviation. Scenario 2 entails implementing targeted poverty alleviation for the poor and not adopting UBI. The comparison of the two scenarios is in the second and third columns of the table; the first column lists items for comparison. Detailed analysis is as follows.

First, as UBI is inclusive, identification and approval are not required, and relevant administrative costs are almost zero, comprising the cost of distributing UBI and a small expenditure for monitoring distribution to

eligible citizens (such as the salary of corresponding civil servants). In contrast, the administrative cost of targeted poverty alleviation is estimated to be about 38 billion to 80 billion RMB per year (see Appendix for estimation methods). If poverty alleviation policies are abolished after UBI implementation, administrative labour costs will also disappear.

Second, as UBI covers all Chinese citizens, there are no identification errors such as mistargeting or exclusion. The targeted poverty alleviation strategy has addressed these issues, but with huge administrative costs in terms of identification and evaluation as well as additional investment due to a few cases of mistargeting.[36]

Third, UBI should be sent to each person's account in cash as an unconditional transfer payment. As its use is not restricted, irrational consumption caused by short-sightedness or information asymmetry cannot be avoided, and thus the efficiency of capital use will be affected. Especially in China, extreme poverty has yet to be resolved, and the gap between the rich and the poor is still wide. It is very important to improve human capital accumulation and the development motivation of the impoverished. In this regard, targeted poverty alleviation better facilitates differentiated policies for households and individuals (such as the responsible person[37] and teams stationed in villages) and avoids decision-making errors.

Fourth, the financial burden of targeted poverty alleviation is about 1 trillion RMB per year,[38] below the cost of UBI. If the universal subsidy is calculated at the national poverty line of 3,200 RMB per person per year in 2018, annual UBI expenditure could be as high as 4.47 trillion RMB. UBI's fiscal expenditure will be 4.5 times that of targeted poverty alleviation. China's fiscal revenue in 2018 was 18.3 trillion RMB. If UBI is implemented, about a quarter of fiscal revenue would need to be invested in the project, imposing a huge financial burden. If only the funds for targeted poverty alleviation are used to distribute UBI to all registered Chinese people, the per capita income will be only 717 RMB per person per year, which cannot meet basic needs (see Figure 3-1).

Fifth, China's poverty alleviation strategy needs diversified approaches for sustainability. UBI only provides cash, which does not support the "multidimensional improvement" of low-income and poor groups. China's underdeveloped areas, in particular, often suffer from ecological fragility, poor accessibility and insufficient natural resources, among other problems. Local development lacks momentum and urgently needs comprehensive improvement in terms of transportation, infrastructure, school buildings, hospitals, agricultural development and business investment. Similarly, extremely poor people (and even low-income populations) not only have low income levels, but also poor human capital. A modest guaranteed cash income alone is unlikely to sustainably lift them out of poverty.

Compared to UBI, targeted poverty alleviation not only provides the poor with funds, but also invests a considerable amount in the development of the local economy, industry, culture and welfare (including health care, education, training and relocation). Excluding poverty alleviation microfinance and medical reimbursement, the funds distributed to poor households comprise a subsistence allowance, the "five guarantees" (food, clothes, shelter, medical care and housing), temporary relief, agricultural subsidies (including food subsidies and subsidies for returning farmland to forests), and in-kind goods and cash provided by civil servants and persons responsible for poverty alleviation. In addition, funds are invested in poor areas to spur local economic development and farmers' development incentives and capabilities, such as through transportation infrastructure, railways, ecological development and human settlements, irrigation and other agricultural infrastructure, industrial development (cooperatives and enterprises that drive development among poor households), microfinance, relocation, dilapidated house renovation, toilet renovation, safe drinking water projects, education subsidies, nutritious meals, medical infrastructure, major illness relief, medical security, employment training, ecological forester training, and industry funding for poverty alleviation projects (such as providing seeds, fertilizer and young livestock). For the 1 trillion RMB invested each year, excluding administrative costs, the ratio of subsidies for poor households to development funds is about 1:9.[39]

	Scenario 1: Implement UBI and benefit all Chinese citizens	Scenario 2: Implement Targeted Poverty Alleviation and only care for the poor
Administrative costs	For identification and approval, administrative costs are close to zero, but there would still be administrative costs for UBI distribution and monitoring.	About 38 billion to 80 billion RMB of administrative costs per year (not included in the administrative costs of the subsistence allowance).
Identification accuracy	No mistargeting or exclusion errors.	No misremoval or exclusion error, but there are a few mistargeting cases requiring an additional policy guarantee investment.
Decision errors	UBI is sent to personal accounts in cash, and it is impossible to predict and control its use, which may lead to errors in decision-making.	Differentiated policies for households and individuals; responsible persons and teams stationed in villages help avoid decision-making errors.
Financial burden	About 4.5 trillion RMB.	About 1 trillion RMB.
Sustainability	The cash income provided by UBI cannot support the "multidimensional improvement" of low-income and poor groups.	Not only provides poor households with funds, but also invests in development.

Table 3-2: Cost-benefit comparison of UBI and targeted poverty alleviation

Source: Summarized from the China Rural Poverty Monitoring Report(2016-2018).

3.3.3 Summary: The trade-off between the principles of inclusiveness and fairness and targeted assistance

As mentioned in Chapter 1, UBI is universal and provides a basic income. With limited financial capacity, pursuing the former often means giving up the latter. That is, UBI can easily be lower than the level of what people require to meet basic needs. This leads to a lack of sufficient development funds for poor people (see Figure 3-1). Under the condition of limited financial capacity, a lower standard of basic income (see Figure 3-1 part B) will fail to meet the poor's basic livelihood needs, or to lift them out of the poverty trap. This kind of scenario may apply less in developed countries, because of their higher income level, but in China, there are still many poor and low-income groups and some underdeveloped regions that cannot meet the basic living standards. Scholars such as Van Parijs and Vanderborght (2017) have pointed out that UBI can replace other

subsidy policies but not poverty alleviation subsidies. In this sense, poverty alleviation (or subsistence allowance) policies should not be abandoned even when UBI is applied. Consequently, this will cause a huge financial burden, likely amid doubts about where the money will come from and continued debate on the policy's efficiency (see Chapter 1).

Therefore, a question worth considering about inclusive policies and targeted assistance is: Do we need to give up the basic for the universal? In other words, with limited financial resources, do we have to take both into account (such as distributing UBI to everyone based on subsistence allowance or poverty alleviation standards, see Table 3-1)? Do we use fiscal expenditure to pursue fairness at the cost of less investment in other areas of development (efficiency incentives and welfare guarantees)? At least in the context of China today, this report suggests that this approach has low feasibility.

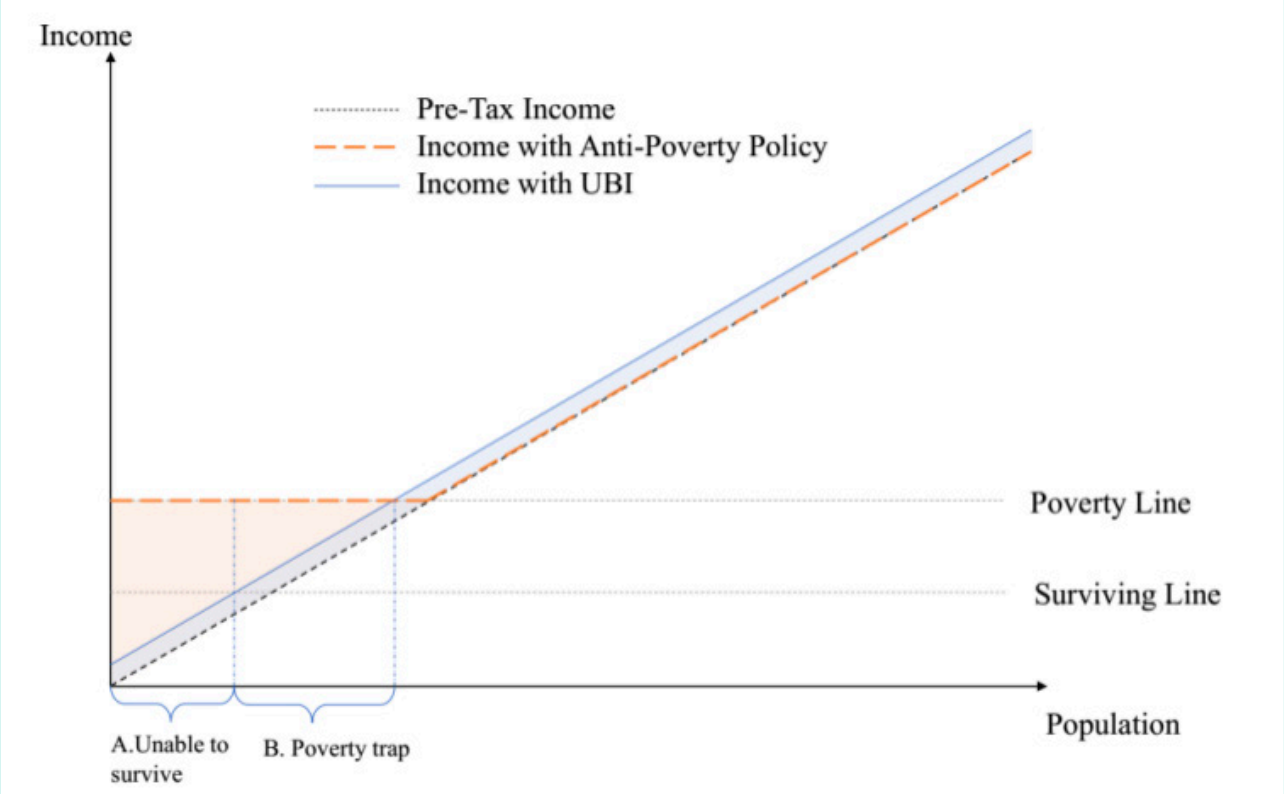

Figure 3-1: The impacts on low-income groups when adapting poverty alleviation budgets to UBI

Note: It is assumed that all poverty alleviation budgets are used for UBI distribution. Thus, the figure shows a low level of UBI. It is also assumed that the area of the orange triangle equals that of the blue parallelogram.

32 Some local governments stipulate that those who receive the subsistence allowance may not use mobile phones or have pets; their monthly telephone charges cannot exceed a limit; "high consumption activities" such as catering and entertainment cannot be carried out; and cigarettes and nutritional products that are not necessaries cannot be purchased frequently.

33 http://www.mca.gov.cn/article/sj/tjgb/2017/201708021607.pdf at http://www.mca.gov.cn/article/sj/ .

34 In 2015, the average wage of employed residents in urban areas was 62,029 RMB, but there were also service personnel in rural areas in social service organizations. Here, we consider the annual salary of 50,000 RMB for a service organization employee.

35 In 2018, China had an urban population of 831.37 million, a rural population of 564.01 million, and a total population of 1395.38 million.

36 According to the identification criteria of the third-party evaluation of targeted poverty alleviation, the focus has been on misexit and leakage, not on mistargeting. The reason for this is that in 2016, a round of review cleared many mistargeted households.

37 According to the notice from the State Council Leading Group Office of Poverty Alleviation and Development (LGOP) on further implementing the aid responsible person for the establishment of the poverty-stricken households, so as to further understand the situation of the households, including the family members, health, causes of poverty, source of income, poverty alleviation condition and their aspirations. The first approach is help. It is necessary to help the poor households to coordinate the implementation of poverty alleviation policies, and help with family issues such as raising children and resolving difficulties of living (health care, education, shopping, cleaning and farm work.) The second approach is support, which means not only supporting their attitude but also improving their education and enhancing internal motivation and poverty alleviation quality of the poor households. The third approach is sending commodities, that is, food, daily necessities, medicines and other items, to poor households.

38 Calculation method: according to the Poverty Monitoring Report of Rural China 2017 in 2016, the county-level poverty alleviation funds in poverty-stricken areas totaled 295.86 billion RMB. There was an additional 600 billion (or more) RMB investment from other channels. The department section of the report presents extrabudgetary expenditure funds. Among them, the National Development and Reform Commission used an extra 232.85 billion RMB (including discount loans and government bonds), 170 billion RMB to support the construction of railways in the central and western regions, and 100 billion RMB to support online poverty alleviation together with the Agricultural Development Bank. In 2016, the Ministry of Transport allocated 130 billion RMB for the construction of transportation infrastructure in 1,177 counties in poor regions. The Ministry of Water Resources invested about 14 billion RMB to improve the rural water conservancy irrigation facilities and further ensure safe drinking water in rural areas. In addition, there are some non-splitable funds from the Ministry of Education, the Ministry of Industry and Information Technology, the Health and Welfare Committee(named the National Health and Family Planning Commission before 2017) and the Ministry of Agriculture, which are not calculated separately here. Further, according to the 2016-2018 national poverty-stricken county poverty alleviation capital investment and its growth trend, the central government as well as the local governments will invest even more funds in poverty alleviation (in 2017, the poverty alleviation funds reached 441.95 billion RMB, 1.5 times the amount in 2016).

39 A very rough calculation assumes that each person would receive 4,833.4 RMB per year of the subsistence allowance (households enjoying the minimum living guarantee; households enjoying the five guarantees, i.e., childless and infirm old persons who are guaranteed food, clothing, medical care, housing and burial expenses by the communes; and impoverished households accounting for 30 to 40 percent of registered cardholders of the year) plus other subsidies listed in the article, making total expenditure about 100 billion RMB.

Chapter 4

Statistical Analysis and Behavioral Insights on Universal Basic Income (UBI): Based on Data from the Game and Questionnaires

Introducing and analysing the concept of UBI can help China gain a deeper understanding of what UBI is and how it works. International experiences shed light on the pros and cons, but an analysis of the actual situation in China is indispensable. Cost-benefit analysis of related policies such as the subsistence allowance and poverty alleviation policy, as presented in Chapter 3, is critical to defining feasibility. Yet another crucial aspect entails is the subjective preferences and behavioural responses of the Chinese people. For this purpose, an offline questionnaire survey and online game have been developed to obtain a series of basic views that are presented in this Chapter. While most behavioural insight research focuses on behavioural change at the individual level (OECD, 2019), in this case, the research aimed at gaining insights and foresight into the potential effectiveness of a policy not yet in place.

The results of the survey serve as the primary approach to capture perceptions of UBI and understand the life choices people would make based on it. Considering that decisions made in the virtual online game were weakly rational choices with less constraint and higher randomness, the data obtained were only used for auxiliary analysis. On the other hand, the research team found that games played a positive role in raising public awareness of the UBI concept.

Based on the analytical framework in Chapter 1, this chapter will focus on the cultural dimension, and discuss public reactions to UBI policies in the Chinese cultural context as well as fundamental reasons behind these.

4.1 Introduction to the content and objectives of the survey and game

4.1.1 The questionnaire—purpose and respondents

The goal of the survey and the game was to understand people's willingness to accept UBI and their subjective attitudes towards it. The main objectives included: first, to investigate Chinese residents' preference for UBI; second, to analyse the responses and opinions of various groups (especially for different income classes) related to UBI; and third, to understand the potential behavioural responses of different groups (the elderly, working people and children) after they receive UBI.

Surveys are the most effective means of gathering insights on behavioural preferences, and have been adopted by UNDP[40] and others for[41] a variety of studies. Nevertheless, there are challenges and limitations associated with conducting a survey alone. Issues include choosing random or non-random sampling, focusing on quantitative or qualitative data, and determining sample sizes, all of which are defined by budget and allocated time (Kate et al., 2003). Given constraints in the research period, random sampling and a quantitative focus were selected as the optimal approaches to achieve effective results. The research team selected urban residents in six downtown districts of Tianjin as survey objects (Table 4-1), with a sample size of 800 households.

Although there is still a large gap in the scope and scale of this research, given the UBI principle of universality, this is seen as the first UBI-related survey conducted in China. Through door-to-door interviewing, the research team managed to gather first-hand data about Chinese people's preferences and possible behavioural reactions, which could not be achieved through other research methods. Utilizing the 2010 Tianjin census data, the project team sampled the quota according to the proportion of the population in each district. In each household, all household members were surveyed on living conditions, income levels and level of knowledge about UBI.

Administrative jurisdiction	Census population of 2010	Census population of 2010	Sample quota (per household)
Six central districts in Tianjin city	4,343,134	4,343,134	800
Heping District	273,477	273,477	50
Hedong District	860,852	860,852	159
Hexi District	870,632	870,632	160
Nankai District	1,018,196	1,018,196	188
Hebei District	788,451	788,451	145
Hongqiao District	531,526	531,526	98

Table 4-1 Sample quota table of six central districts in Tianjin city

4.1.2 Questionnaire sampling method

(1) Site sampling: Taking the Tianjin metro station as the sampling starting point, a total of 42 metro stations were randomly selected in six districts of central Tianjin, amounting to a total sample size of 800 households or at least 20 in the vicinity of each station. Full sample quotas were available at the last site of each district. The number of sites that needed to be randomly determined in each zone is shown in Table 4-2.

Administrative jurisdiction	Sample quota (per household)	Number of sites
Center six districts in Tianjin city	800	42
Heping District	50	3
Hedong District	159	8
Hexi District	160	8
Nankai District	188	10
Hebei District	145	8
Hongqiao District	98	5

Table 4-2 Sample quota and sites of six central districts in Tianjin

(2) Building cluster sampling: According to the right-hand principle of a walking route, the first residential building after exiting the subway station was chosen as the starting point, and the residents in the building were coded. With 10 sampling intervals, the household survey was carried out from the first household, numbered 1, and the second household was the 1+ 10 households of the building, and so on. After completing the first residential building, the survey team followed the right-hand principle at 10, and continued to move forward. After 10 residential buildings, they coded and sampled the 11th residential building, and so on, until the sample quota was completed. In order to ensure that the sample covered the residents of the six districts as much as possible, the number of households successfully surveyed in each building could not exceed five.

Sampling Principles

The participants surveyed were sampled according to the principle of random sampling from the starting point, the right-hand side principle and the continuity principle.

On the first principle, the starting point should be chosen randomly and should be convenient for the interviewer to find. This led to the random selection of a subway station as the sampling starting point in the administrative sampling area. Under the principle of choosing the right-hand side walking route, after determining the starting point, the team should walk on the right-hand side of the route and turn to the right at the fork or corner. Unless there is a dead end or a risk of going beyond the administrative area, walking routes should not cross each other. The principle of the continuity of the walking route required surveyors in the same area to follow a continuous route unless they encountered construction sites, factories or other places that are not residential or inhabited by people.

4.1.3 Statistics on the questionnaire samples

The survey team interviewed 1,130 households in total; 263 households turned down the interview, with a rejection rate of 23.3 percent. The team collected 867 questionnaires, among which 800 were valid at a rate of 92.3 percent. The survey covered 800 urban households and collected 2,040 resident samples. The basic structure of the sample is presented in Table 4-3. It shows that the proportion of men sampled in six districts of the city was higher than that of women. The average sex[43] ratio of men to women was 109.02:100. The highest sex ratio was 117.86:100 in Hedong District and the lowest was 104.63:100 in Heping District. Statistical data on sex structure in six districts of Tianjin differ from the sample, mainly in the proportion of women in the total population, which is higher than that of men (the average sex ratio of men to women was 96:100).

Districts	Male (10,000)	Female (10,000)	Sex ratio (female =100)
Six central districts in Tianjin city	1064	976	109.0
Heping District	226	216	104.6
Hedong District	66	56	117.9
Hexi District	227	199	114.1
Nankai District	192	182	105.5
Hebei District	216	203	106.4
Hongqiao District	137	120	114.2

Table 4-3 Sample structure by sex

In terms of age structure, the proportion of people aged 30 to 39 in the survey sample was the highest at 24.5 percent. The lowest share was people over age 60 at 8.8 percent. Regarding the actual age structure of the Tianjin population, the proportion of people over 60 is 21.4 percent, much higher than the proportion in the sample. At the same time, the proportion of all age groups under 49 years old in the general population was lower than that in the survey sample. In essence, the survey sample was younger than the overall population, probably because it was limited to six districts, while macro-statistical data on age structure cover the entire city.

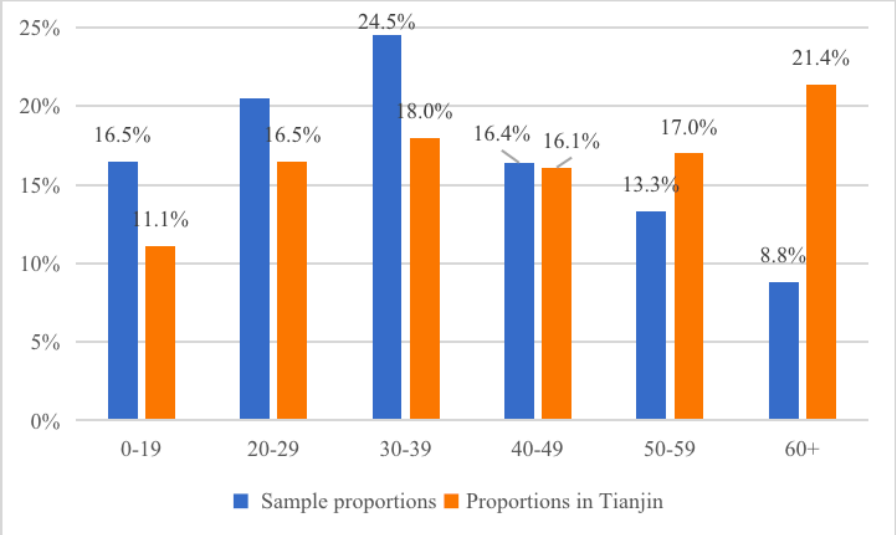

Figure 4-1 Age distribution

Note: The proportion in Tianjin is the weighted data of the 2017 population sampling survey of the whole city, excluding the population under 6 years old.

In terms of education level, the proportion of junior college students and above in the survey sample was the highest, reaching 37 percent. The sample of people with high school, technical school and technical secondary school education accounted for 34 percent, and the sample of those with junior high school and below education accounted for 29 percent. In Tianjin as a whole, the proportion of residents with junior high school and below education is as high as 52 percent, varying from the sample. This may be mainly due to the fact that the survey sample was limited to six central districts where the education level is generally higher.

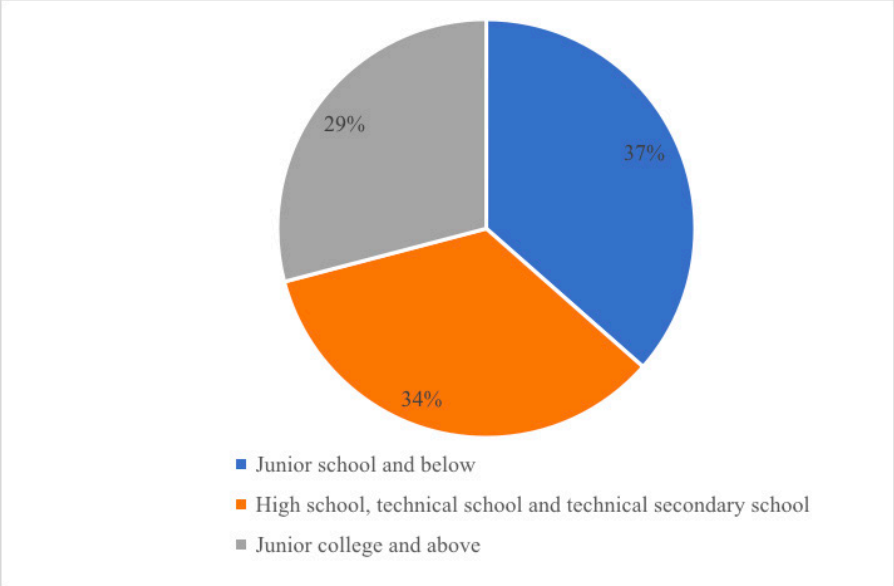

Figure 4-2 Education structure of samples

Note: The data in the figure are weighted data from the 2017 population sampling survey of the whole city, excluding the population under 6 years old.

The proportion of people in the sample with an annual income of 50,000 to 80,000 RMB was the highest, accounting for 40.96 percent, and the share with an annual income of less than 20,000 RMB was the lowest, accounting for only 0.98 percent. Generally speaking, the annual income of the survey sample was closed to normal income distribution with a slight left-biased distribution.

Figure 4-3 Proportion of people by annual income, percentage

Regarding the number of working months per year, 83.3percent of participants worked for more than 10 months per year, while 16.7 percent worked less than 10 months per year.

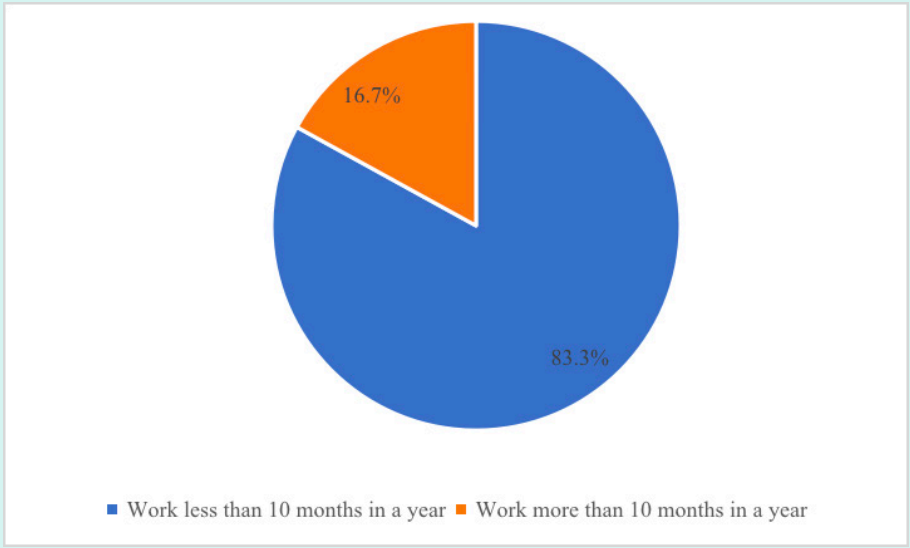

Figure 4-4 Proportions based on working months in a year, percentage

In terms of annual household expenditure to maintain a basic living standard, the proportion of people with annual expenditures of 50,000 to 80,000 RMB was the highest at 32.8 percent. The proportion of people with annual expenditures of less than 20,000 RMB was the lowest at only 3.5 percent. Generally speaking, the basic expenditure of households was in line with normal distribution and showed certain left-biased distribution characteristics.

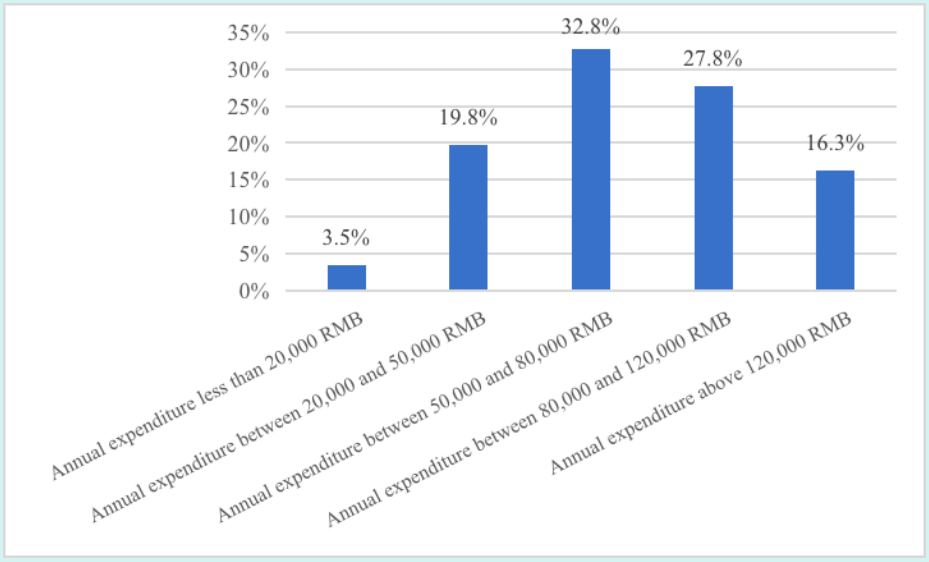

Figure 4-5 Proportion of family basic expenditure by interval, percentage

In sum, the overall survey sample did not show a significant deviation from the overall characteristics of the population of Tianjin. Therefore, research conclusions based on the survey sample are presumed to be credible, even though the sample was not designed to be fully representative of the underlying population.

4.1.4 UBI game design

Conducting a survey alone poses certain limitations, notably, the trend of declining response rates (Rindfuss et al., 2005). This may be due to the rising unwillingness of people to participate (US Department of Health and Human Services, 2015) or to issues such as remote geographical locations. A significant non-response rate may cause selection bias in the data analysed. As shown in, for instance, hospital patient satisfaction surveys, patients who were more satisfied were more likely to respond to the survey, while those less satisfied were likely not to respond, thus skewing the results towards higher satisfaction rates (Kate, 1981).

Real-world data, especially in the domain of economic policies, is often costly to collect with traditional methods such as surveys. For example, if policymakers want to know how new social welfare policies might affect the consumption of "self-invested activities" such as reading and going to the gym, or if people change their preferences for spending leisure time, researchers will need to collect data from notable industries related to such consumption, and carefully calculate the determining power of the selected variable. As for simulation experiments, the same result can be produced by modelling the activities of individuals who would participate in the new welfare system. In turn, policymakers can see how the policy environment influences how people choose to buy certain goods or their preferred travel destinations, and consequently whether there will be increased/decreased consumption of books or more/less overseas travel spending. Unsurprisingly, there is a growing interest in adopting mixed methodologies that combine different data collection approaches, such as online surveys, interviews, desk reviews and controlled simulation experiments.

Given these issues, an experimental simulation game was designed to supplement the survey. It was expected to increase response rates by allowing people to avoid the face-to-face interaction of a door-to-door survey and reducing geographical concerns, while also increasing public interest in UBI. Gamification refers to "a process of enhancing a service with affordances for gameful experiences in order to support user's overall value creation" (Huotari and Hamari, 2012) or "the use of game design elements within non-game elements" (Deterding et al., 2011). This methodology has been effectively applied in real-world usage ranging from economics and marketing (Hamari et al., 2015) to academic research (Andreea and Monica, 2015). In this current research, two aspects may be of interest in terms of the effectiveness of experimental gamification: First, whether the gamified version can increase the response rate and/or geographic reach, and, second, whether data from the game provide similar responses to specific questions posed in the survey.

The research team created an online game called "24 months". It was designed based on the survey questionnaire and modified through pre-testing of the survey and beta testing for the gamified version. The gamification project evolved into a simulation game, where the player controls the "life" of a generated character. The player has control over the choices the character makes related to a career, family and friends, and spending time and money. Choices were reflected in changes in health, happiness, family relationships, career status, etc., with each represented by a percentage.

After a set period, the character would be randomly assigned a monthly allotment, representing UBI. The goal for the player would be to make it to the final round. However, some of the players seemed to aim to get a higher score on each index.[44] Still, in the end, they received a score based on their overall achievements. In this way, the project team hoped to see if players would alter their behaviours after receiving the UBI allotments. For those who

completed the game, an optional survey was presented. Therefore, there were two main types of data gathered: the players' decisions on life, work and free time, as well as the short survey with voluntary information about gender, age, education, salary, etc. Combined, these data sets were designed to overlap with the questions asked on the offline survey, with results detailed later in this chapter.

To fully realize the goal of simulation, game models need a huge amount of data, a key challenge in a project with limited time and funding. These constraints also hindered the design of well-balanced algorithms or the rules of the game. Since the game seeks to simulate people's daily lives, algorithms need to be carefully constructed to account for the majority of people's living and working patterns. In this case, however, the game could only be developed to cover basic research tasks. Still, this game was an experiment that can be built upon, since it helped shed some light on similar approaches that could be applied in the future.

Overall, the design concept followed the EAST framework developed by the Behavioural Insights Team,[45] which entails making any behavioural insights project easy (reducing the hassle of participation), attractive (incentivize behaviour), social (harness networks) and timely (when people are receptive). [46]

The element of easy was incorporated through the game itself, which allowed players to complete the game within five minutes, compared to the 45-minute survey, and without having to interact with others to do so. Attractive was incorporated through incentives in the form of percentages of life status (in-game progress) and a final scoring (achievement). For social, the game was built as a mini-program on the WeChat platform, allowing for individual sharing on the social network itself, as well as Weibo, etc. Timely was incorporated by using a platform for mobile devices, where people often turn when they have free time.

Content and further design followed the three gamification principles of mechanics, dynamics and emotions (MDE), by incorporating the design elements of points, badges, performance graphs, and meaningful stories. This included randomized events and respective choices the players would encounter in the game, in an effort to mimic the randomness of real-life, the choices made would then increase or decrease the characters' status of health, happiness, family, etc. Ideally, all of these elements would not only increase motivation for players to begin the game, but also to continue until at least the UBI allotment and subsequent choices, and hopefully finish to the end and complete the survey. This is a key element of the analysis to be detailed later, whether the gamified version saw an increase in response rate when being presented with a survey in the final stage.

The dissemination strategy for the gamified version was kept to a soft launch. Involving major distribution partners would have increased the budget and sample size beyond what the research team could manage in the limited time available.[47] Distribution was handled through UNDP China's official WeChat and Weibo accounts, as well as more grass-roots distribution through academic circles, associates, etc. through these social media platforms.

Since the game was launched in China, it required more efforts to capture attention than might be the case in other countries. China has a fiercely competitive gaming market that covered 41 percent of the gaming market revenue worldwide in 2017. Despite the large number of gamers in China, the number of players attracted to the game was expected to be limited. For one thing, any topic concerning politics is seen as less attractive to the majority of game players, who are typically aged between 21 and 35. Only games designed up to the standard of some mega-developers attract broad attention.

For future research that plans to adopt a similar approach, big data could provide needed data for game design. In this case, researchers could discuss the possibility of partnering with mega game developers .

4.1.5 Player samples

Within the week allotted for data collection and analysis, social media posts about the game were viewed by roughly 21,000 people; however, "viewed" statistics on social media can often be inflated. Among the 4,429 unique players who began the game, 1,001 completed 12 rounds and 949 completed the final survey. Among them, 444 were male and 499 female,[48] while 237 lived in rural areas and 712 in urban ones.

The engagement rate of those seeing the social media post opening the game was roughly 21 percent,[49] which is fairly high for the average social media post. Among those who began the game, some 22 percent continued to the final round. There was no mechanism to report why some players stopped mid-game, yet anecdotal accounts ranged from the character becoming broke and therefore the game ended, too difficult, confused as to how to play, became bored, etc. Among those who finished the game, 94 percent voluntarily took the survey, a remarkably high response rate.

Respondents to the gamified final survey during the first seven days were in geographically diverse locations, within China and in some cases abroad, although all postings were only made on Chinese social media. Overall, they came from 32 different provinces or cities within China, as well as several from France, Japan, Sweden, Thailand and the United States (Annex Table 5), far surpassing the expectations of the soft launch.

The details of the sample group's education, age and income level are shown in the figures 4-6 to 4-8 below. A comparison of the sample demographics to the demographics of China as a whole would be misleading, as the design and nature of the project could only effectively reach those who had access to the Internet or mobile phones; as of 2017, this would not include 611 million people in China. [50]

Overall, people in the sample group tended to have an undergraduate degree or above. However, undergraduate was the default option, and default bias may have skewed the percentage higher than it should have been.

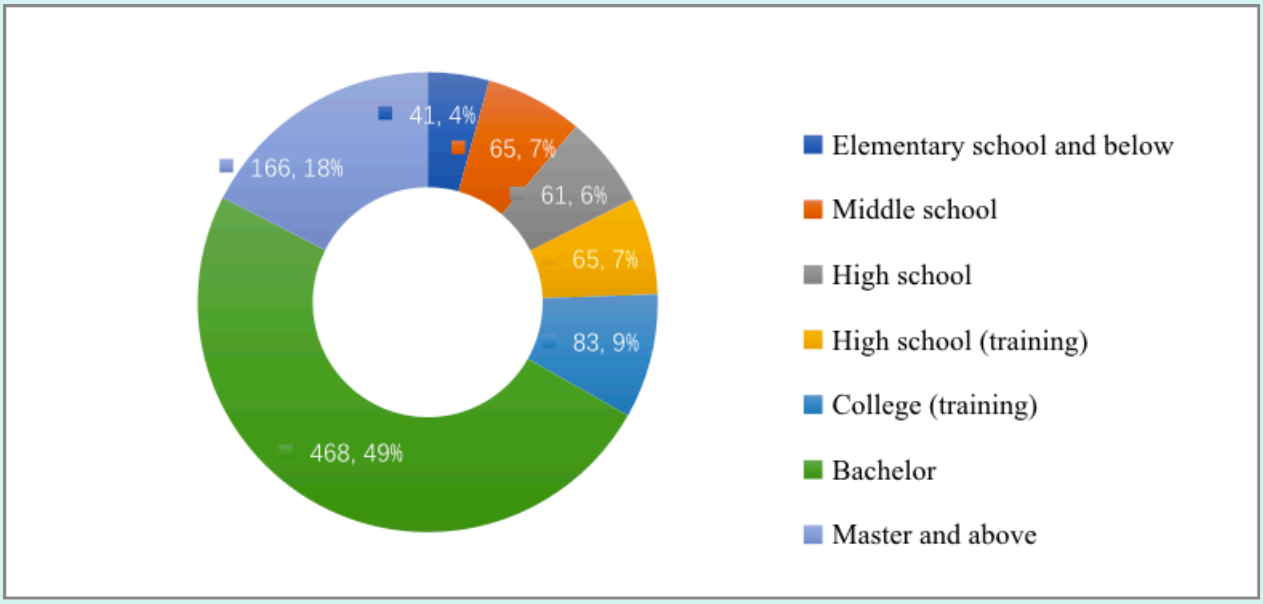

Figure 4-6 Education level of players

Overall, the demographics of the sample leaned largely towards the 16 to 35 age range, with the majority remaining in the 16 to 20 bracket. Default bias was evident as respondents had to type in their age; 20 was the default option.

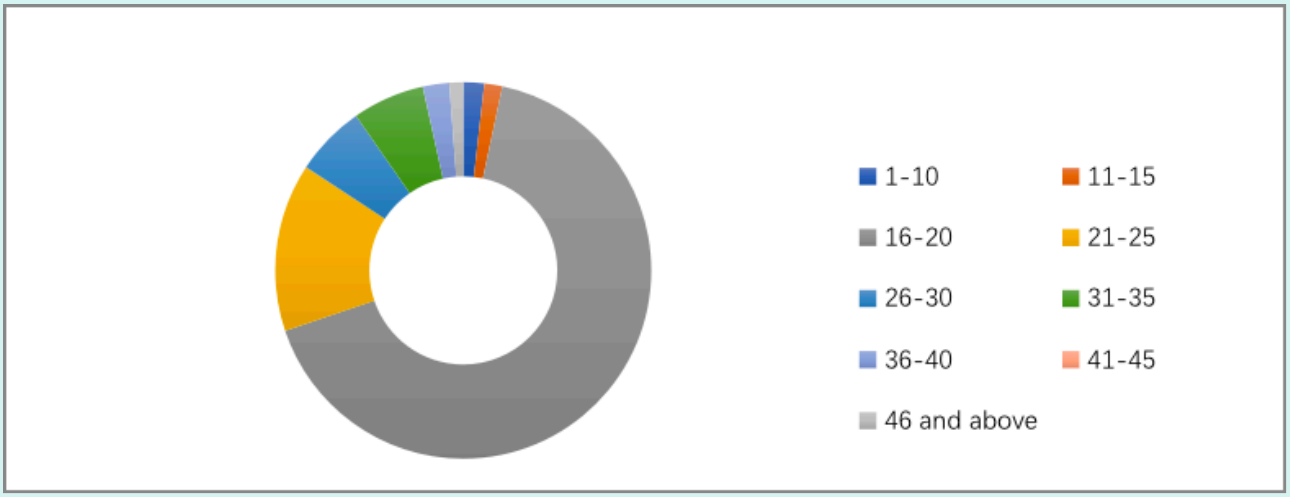

Figure 4-7 Age of players

For reported annual salaries, the majority fell in the 0 to 20,000 RMB bracket, with 12.7 percent earning 20,000 to 50,000 RMB and 18.4 percent earning more than 120,000 RMB. The higher percentage of lower-income responses could reflect the fact that 0 to 20,000 RMB was the default option.

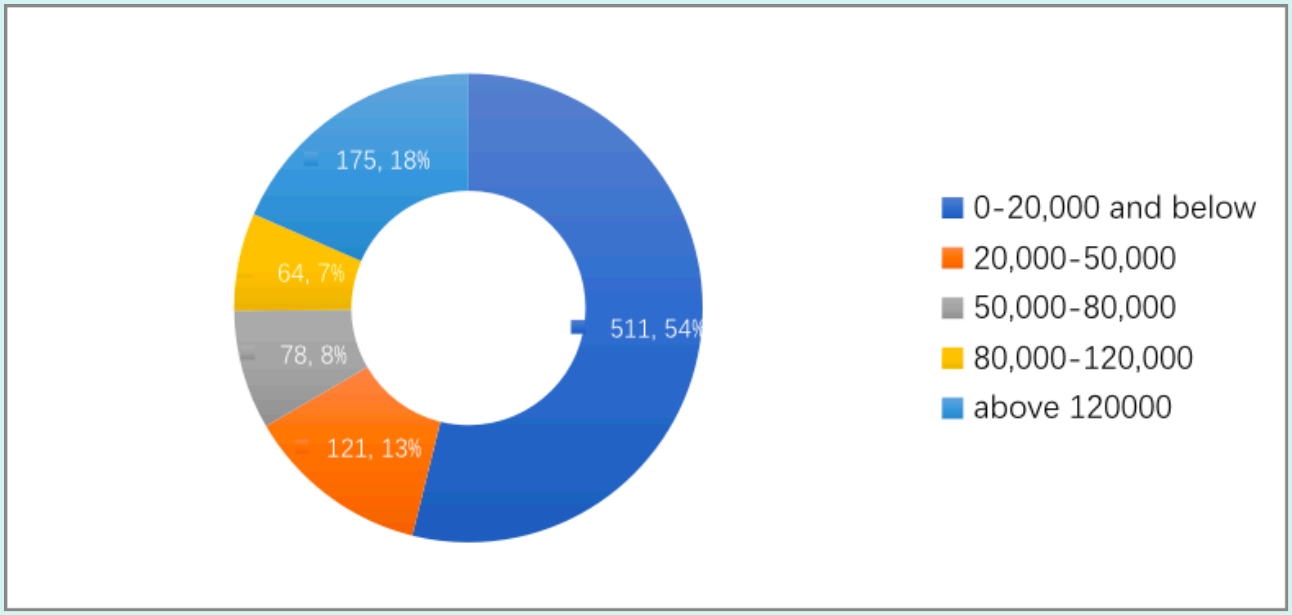

Figure 4-8 Income level of players

4.2 Descriptive statistical analysis of UBI based on the survey

The following is a more detailed descriptive statistical analysis of the survey in Tianjin.

4.2.1 Characteristics based on UBI preference

Among survey respondents, the majority showed a preference for UBI. Of the 1,212 respondents who answered the question "Do you want to receive UBI?" 96 percent said they were "willing to receive UBI" and 4 percent answered that they were "unwilling to receive UBI".

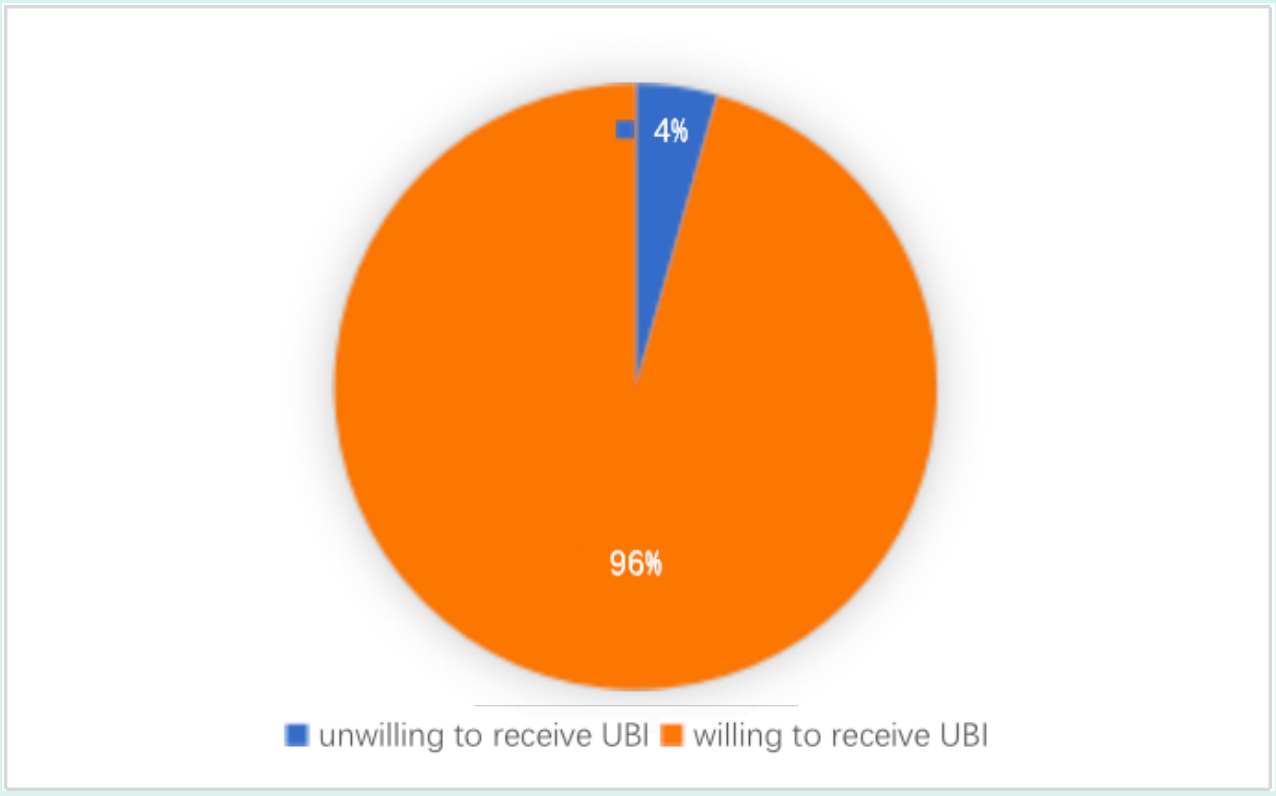

Figure 4-9 Overall willingness to receive UBI

More educated, older and married people were more likely to be in the unwilling group. The proportion of people with a college degree or above in this group was 73.6 percent, but only 49.7 among those willing to receive UBI. People over 40 years old accounted for 54.7 percent of the unwilling group, but only 32.9 percent of the willing group. There was no significant gender difference between the two groups, but a slightly higher proportion of married people were in the unwilling group.

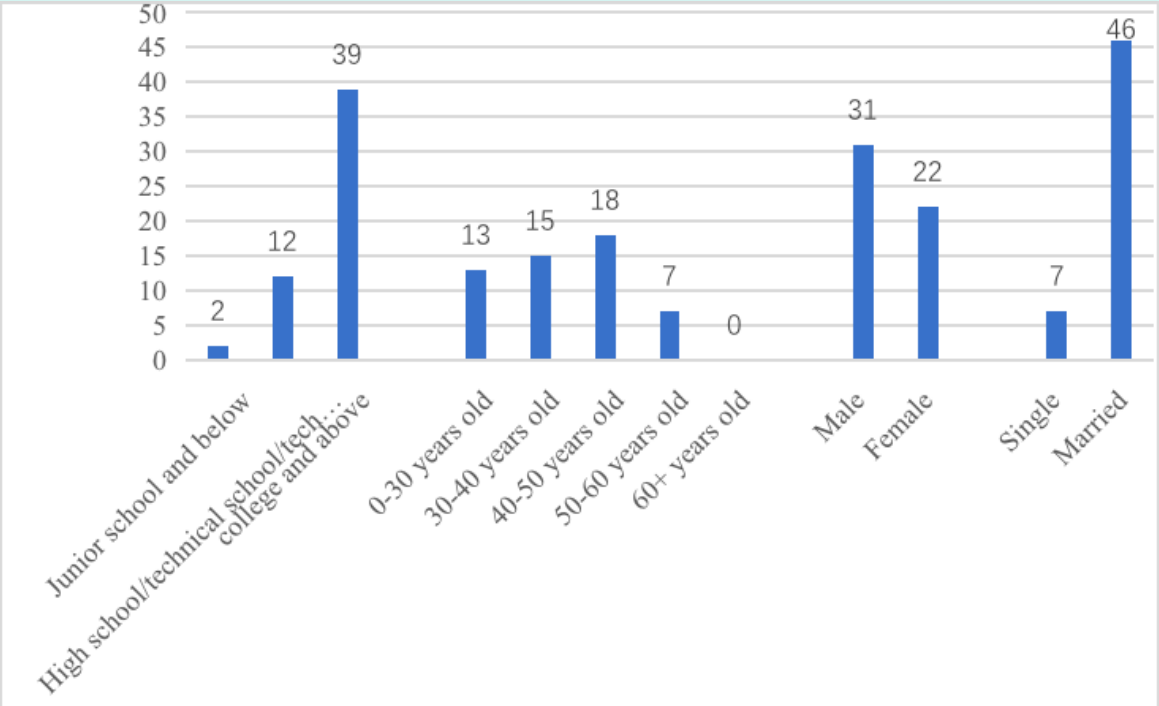

Figure 4-10 Characteristics of individuals in the unwilling group

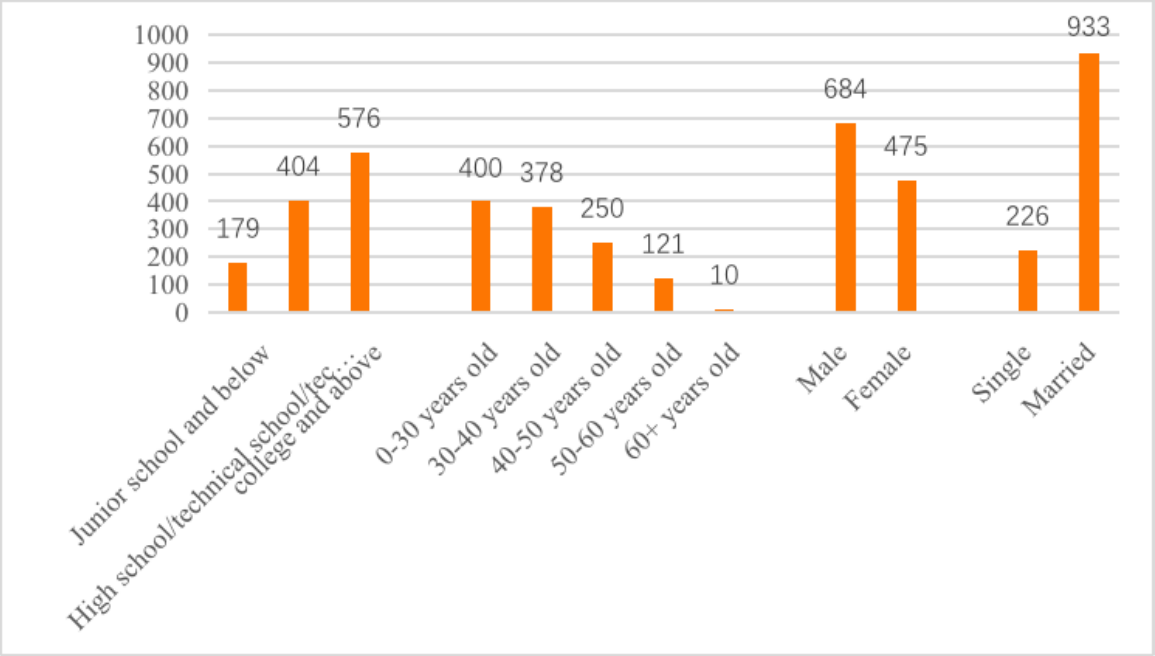

Figure 4-11 Characteristics of individuals in the willing group

Those who have worked for more than 10 months annually were more likely to be in the unwilling group. But the research found no significant connection between UBI preference and work overall. People who were working accounted for 96.2 percent of the unwilling group and 97.2 percent of the willing group. However, the share of those who work more than 10 months annually was 82.3 percent in the willing group, but much higher in the unwilling group at 96.2 percent. Figures 4-12 and 4-13 present the job characteristics of the two groups with different UBI preferences, namely, "working status" and "annual working time exceeds 10 months".

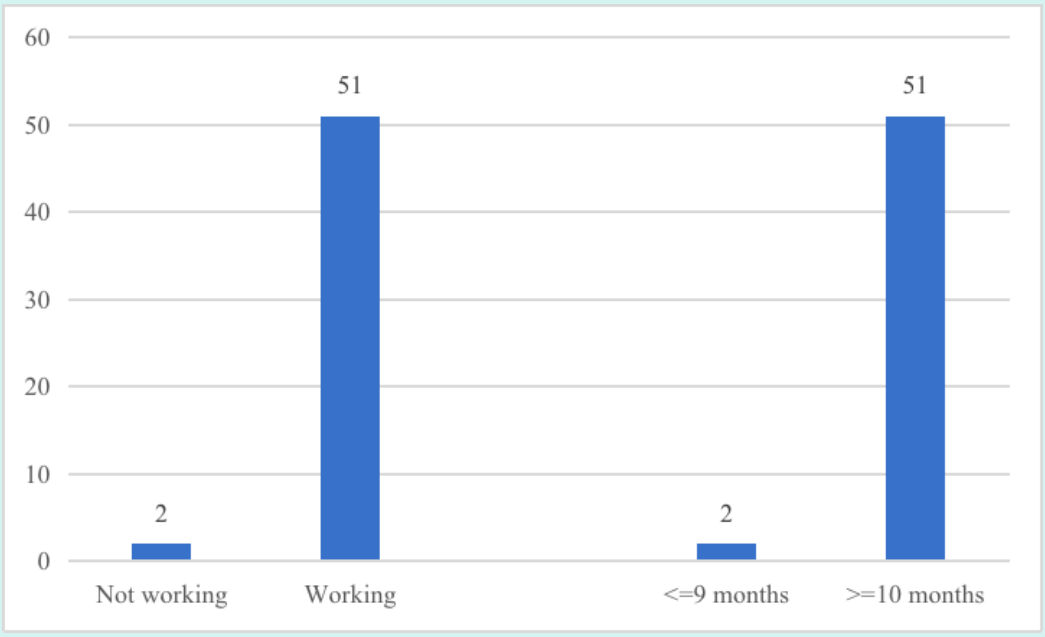

Figure 4-12 Characteristics of the unwilling group's working month

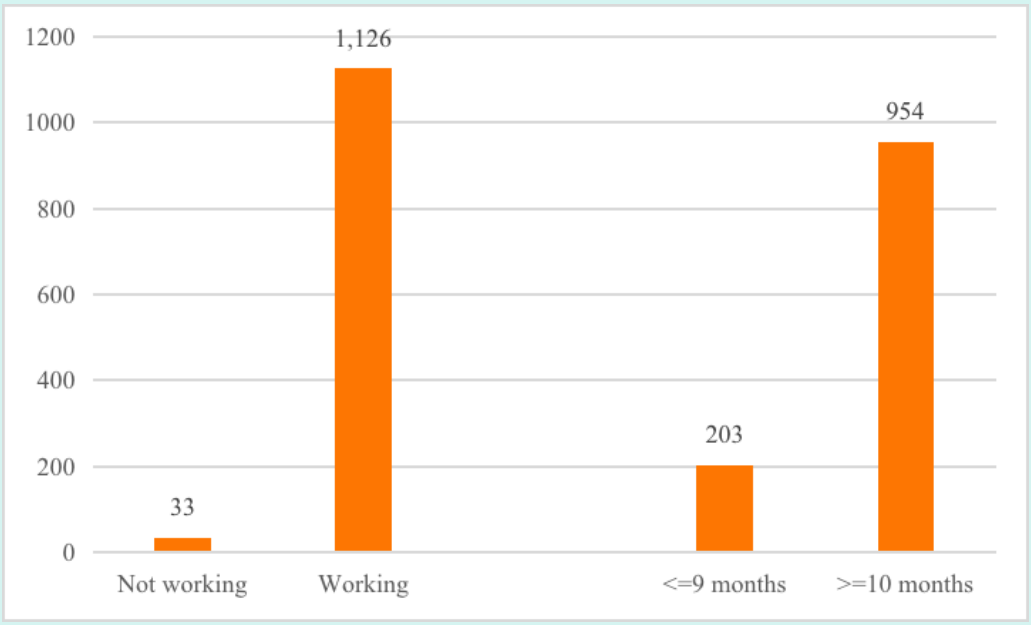

Figure 4-13 Characteristics of the willing group's work

Individuals with no young dependents at home and families with large basic expenditures accounted for a higher proportion of the unwilling group. Figures 4-14 and 4-15 show the distribution of family characteristics among the two groups with different UBI preferences. Family characteristics include "whether there are young dependents in the family", "whether there are elderly in the family" and "the range of the family's basic expenditure". This information helps investigate whether a family's dependency burden and expenditure will affect UBI preference. The share of individuals who do not have young dependents at home was relatively higher in the unwilling group, at 69.5 percent, compared to 58.7 percent in the willing group. Those with over 80,000 RMB per family yearly in family basic expenditure accounted for a relatively higher proportion of the unwilling group, at 60.4 percent, while their share of the willing group was 48.5 percent.

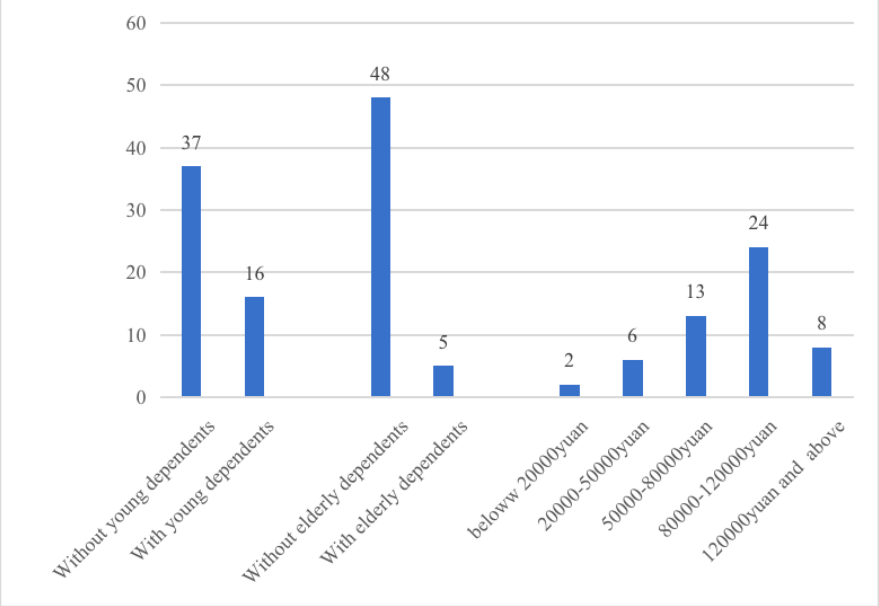

Figure 4-14 Characteristics of families unwilling to receive UBI

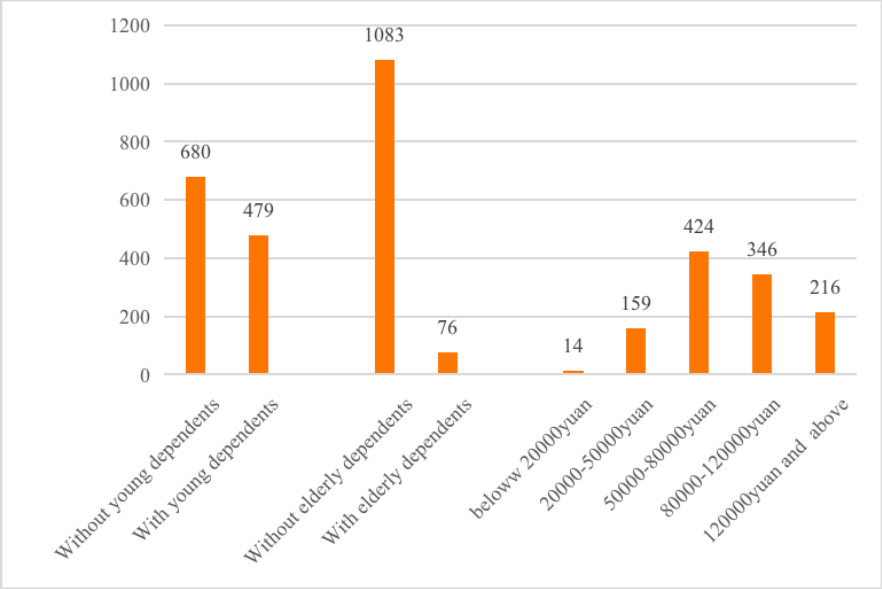

Figure 4-15 Characteristics of families willing to receive UBI

4.2.2 Preferences for amounts of UBI

The vast majority of people surveyed preferred a higher UBI payout. Figure 4-16 reports the distribution characteristics of respondents' preferences. Among those willing to receive UBI, most individuals choose the two highest amounts. Specifically, 87.8 percent wanted to receive more than 2,501 RMB per person monthly, while 8.5 percent wanted to receive 1,800 to 2,500 RMB per person monthly.

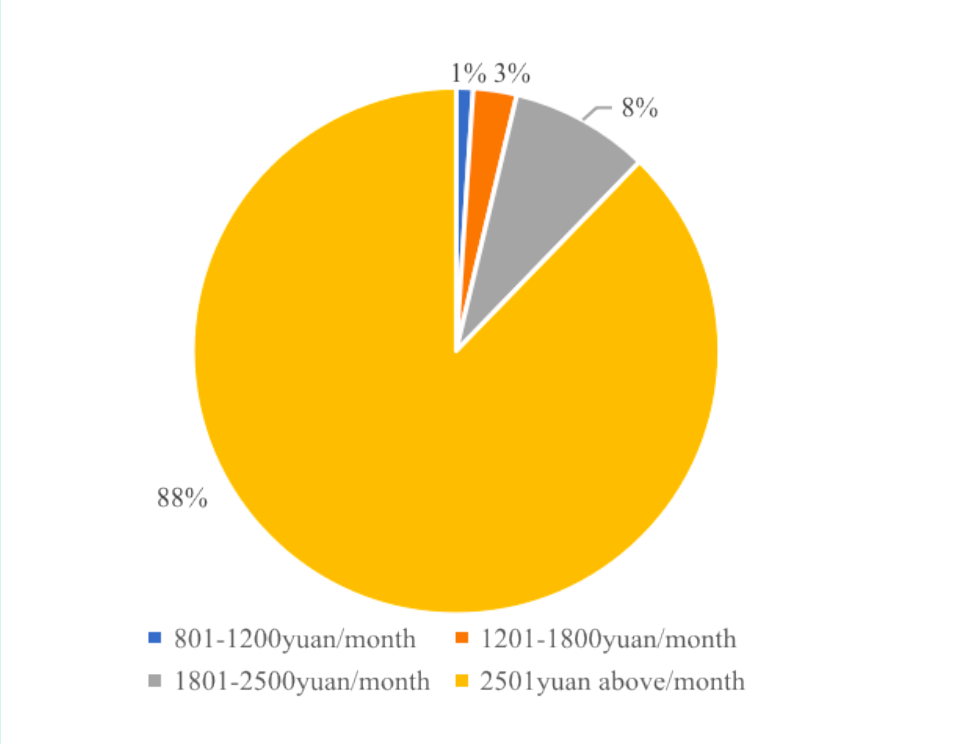

Figure 4-16 UBI amount preferences

Although most people would like to receive more UBI, can the Government's fiscal transfer payments meet these needs? Based on the median of the receiving interval, the average amount of UBI that people were willing to receive was 2,400 RMB per person monthly or 28,800 RMB annually, equivalent to 77.8 percent of the per capita disposable income of urban households in Tianjin in 2017.

If all investment comes from fiscal expenditure, the total amount would be RMB 448 billion according to the 2017 permanent population of Tianjin (15.6 million). That amount would have accounted for 24 percent of Tianjin's GDP that year and 136.6 percent of general public budget expenditure there.

Assuming that fiscal expenditure only supplies the local registered population (10.5 million), the figure is slightly smaller, but still 302 billion RMB, accounting for 16.3 percent of GDP and 92.1 percent of general public budget expenditure.

Table 4-4 shows the financial burden based on a calculation using a quarter of GDP per capita or $210 per person monthly (Van and Vanderborght, 2017). Although the payment differs largely because of different individual payments and targeted groups, the financial burden is large no matter what kind of calculation method is used.

Reference standard	Payment (RMB per person per month)	Target group	Total amount (100 million RMB per year)	Proportion of GDP	Proportion of general public budget expenditure
¼ GDP (per capita)	2478	Registered population	3122.3	16.8%	95.1%
$210, at purchasing power parity (PPP)	746	Registered population	940.0	5.1%	28.6%
$210, market exchange rate	1,347	Registered population	1697.2	9.1%	51.7%
Estimation	2,400	Registered population	3024.0	16.3%	92.1%
Estimation	2,400	Permanent population	4483.8	24.2%	136.6%

Table 4-4 The financial burden of UBI under different standards

Note: The table uses data from 2017. The household population, GDP and general public budget expenditure data are from the Tianjin Statistical Yearbook 2018. Market and PPP exchange rate data are from an OECD database (https://data.oecd.org).

In the general public budget expenditure of Tianjin in 2017, only 46 billion RMB was spent on social security and employment. UBI expenditure would increase this amount by several times, a huge challenge in terms of fiscal revenue and expenditure as well as the tax system.

UBI's impact on equity and efficiency has always been controversial. Calculating the changes in the Gini coefficient[51] before and after introducing a UBI, based on the income of the individual plus the desired UBI receiving amount (median estimate of the interval), shows that the initial Gini coefficient would be 0.207. After UBI, the Gini coefficient would be 0.156, indicating a reduction in the income gap and greater equity. The effect is not significant, however. A high financial burden only reduces the Gini coefficient by 5 percent, making the efficiency of this policy questionable.

4.2.3 Behavioural changes induced by UBI and related population characteristics

(1) Changes in working behaviour

The majority of survey respondents would choose not to adjust their work behaviour after receiving UBI. Figure 4-17 shows that around 83 percent of survey respondents would make no changes, while 10 percent said they would reduce working hours, 5 percent would change jobs, and 2 percent would quit their job and live on UBI income.

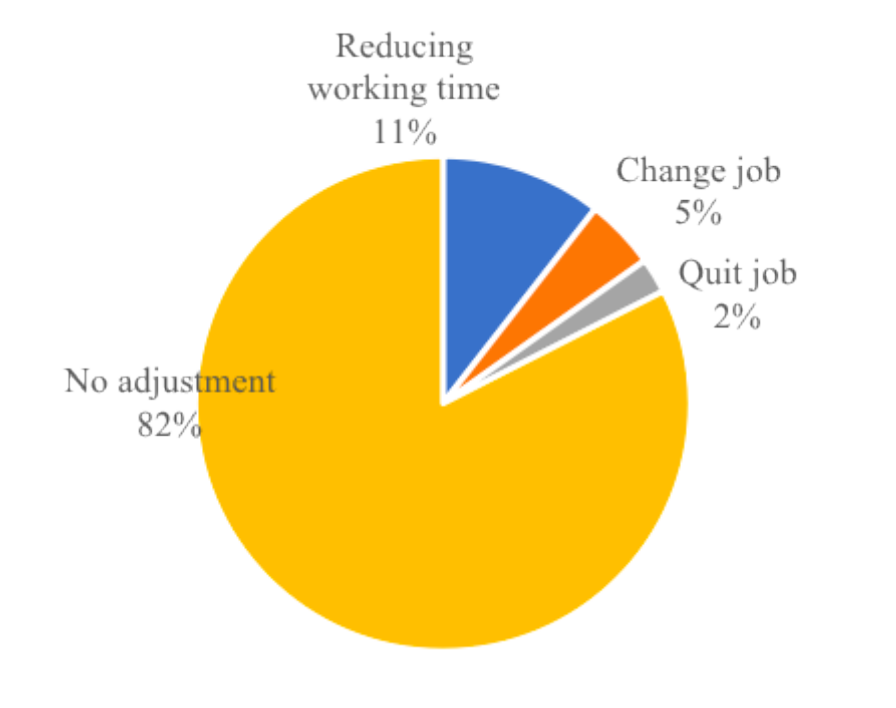

Figure 4-17 Changes in working behaviour induced by UBI

In most cases, the low amount of UBI is not enough to adjust working behaviour, as shown in Figure 4-18. After questioning the 1,000 individuals who choose "no work adjustment" after UBI, the research found that the number who thought "the amount of money is too low to adjust working behaviour" was the largest, accounting for 57.4 percent, followed by people who want to "gain higher pay and maintain their previous workload" at 23.2 percent, and those who "love their job and don't want to change" at 11.8 percent. Other reasons accounted for only 7. 7 percent.

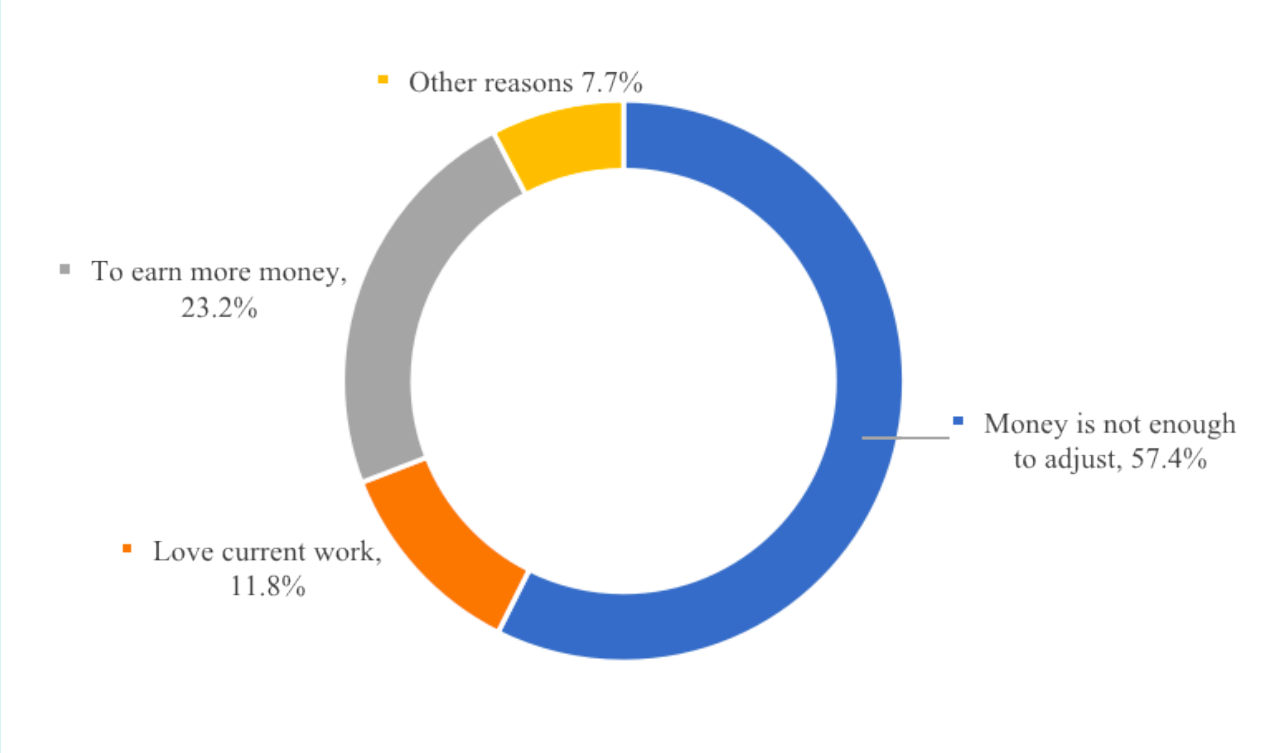

Figure 4-18 Reasons for not changing current work

The survey data illustrate two interesting results. First, there are people who are unwilling to receive UBI. Second, among the majority of people who choose to maintain their current work after receiving UBI, almost half are not driven by budget concerns.

The disinclination to accept UBI has two possible reasons. First, since UBI is a fairly new concept for Chinese, even though interviewers explained it before conducting interviews, some people might still have difficulty in understanding it. Some may have rejected the notion based on misunderstanding. The second reason may be based on a certain level of distrust towards the idea of a welfare state.

The typical welfare state is associated with a high level of redistribution of income as shown in some European countries (Alesina, Glaeser and Sacerdote, 2001). UBI fits into the redistributive category. Despite remarkable social transformation and economic growth, China can hardly be classified as a welfare state. In research on China's welfare system, Gao et al. (2018) shared the same view by pointing out that China still has a long way to go. Such a relatively underdeveloped social welfare system will typically undercut people's belief in redistribution policies and, in turn, the idea of a welfare state. A similar view on the desirability of redistributive policies is prevalent in the United States—for different reasons. Annie Lowrey (2018) in her book Give People Money underscores the fact that, because of the complicated, inefficient and paradoxical setting for social welfare policies in the United States, the level of distrust towards the welfare state is significantly high among poor Americans. Apart from this, on deeper cultural inquiry, she also noted that tendencies discouraging a welfare state could be traced back to Puritanism and how pioneering thinkers such as Alexis de Tocqueville conceptualized the social contract. Essentially, both ideological sources perceive diligence and thrift as the source of happiness, rather than recreation.

Another noteworthy survey result is that around 43 percent of respondents chose to maintain their current work not just because of budget concerns. The reason may be China's culture of respecting hard work. As Landes (1998) noted, hard work is a notable factor in many studies and especially associated with Asian countries. This is also the case for Asian immigrants in other countries. According to a 2012 study by the Pew Research Center,[52] Asian Americans have a pervasive belief in the rewards of hard work. Around 69 percent say people can get ahead if they are willing to work hard, a view shared by a somewhat smaller share of the American public as a whole (58 percent). While 93 percent of Asian Americans describe other people from their country of origin as "very hardworking"; just 57 percent say the same about Americans as a whole.

In China, the preference to work diligently has deep historical roots. For instance, Guo Yu （国语鲁卷）, who documented how people behaved during the Chunqiu dynasty, underlined that "民劳则思，思则善心生；民逸则淫，淫则忘善，忘善则恶心生", meaning work shapes people's kindness, whereas recreation will lead to baleful minds. Such philosophy is also evident in rhetoric. Idioms such as Bulaoerhuo （不劳而获）, meaning one earned something without working, are frequently used in a negative rather than positive tone. Moreover, the current generation of hardworking Chinese is seen as strongly motivated by social development needs. Since 1949, there has been an urgent need to speed up both "economic and cultural development" (Mao, 1957). In response to both economic necessity and political and ideological drivers, there is a prevailing consensus among elders that hard work brings rewards, a sense that has been more or less passed on to younger generations.

Among the 128 individuals who said they would use UBI to reduce their working hours, 45.3% and 42.2% would use extra time for "reading" and "family", respectively, with the latter reflecting traditional Chinese family-centred values. While 36.8% would spend more time learning, only 7% would spend more time on housework, as shown in figure 4-19. Such results indicate that UBI does generate some "work disincentive".

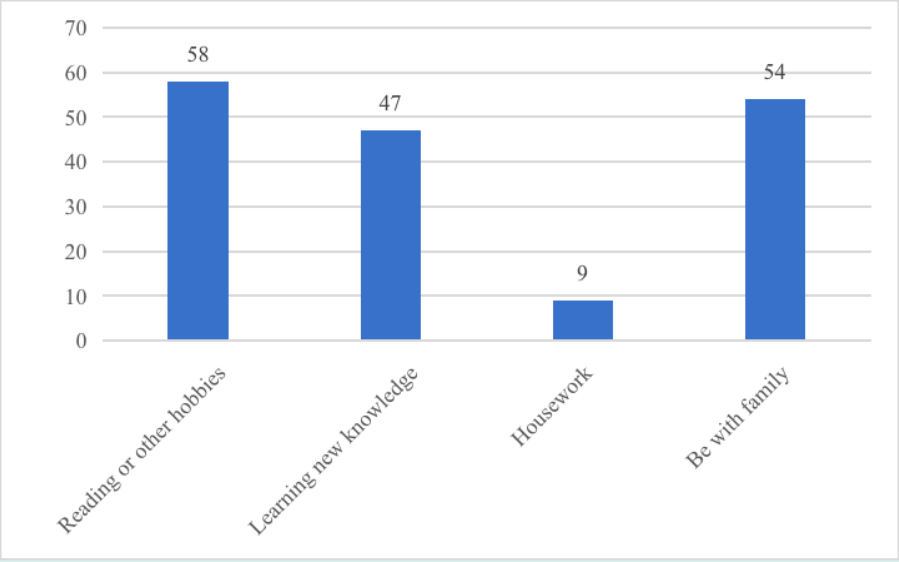

Figure 4-19 Usage of time saved by reducing working hours

Figure 4-20 shows the options considered by 56 individuals planning to "change jobs" after receiving UBI. Among them, 66 percent selected "ideal jobs that they have never tried," followed by 30 percent who would "choose a job matching existing skills".

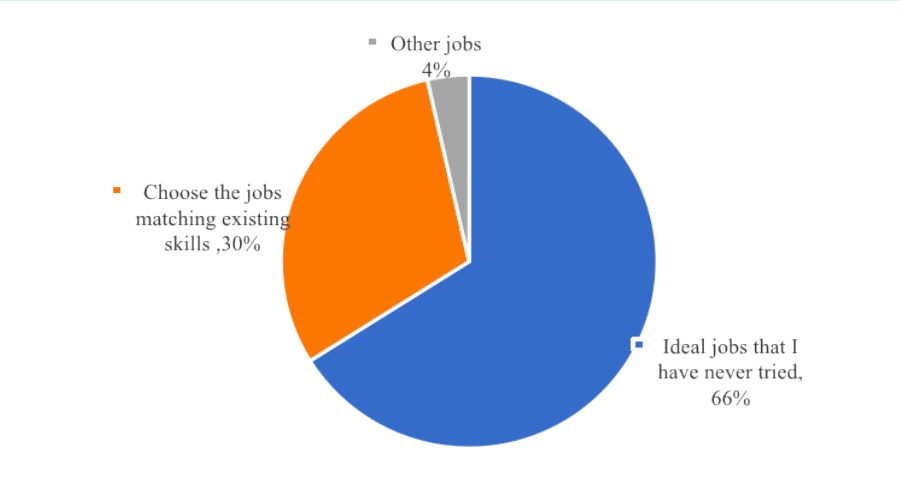

Figure 4-20 Choices for new jobs after changing existing ones

Figure 4-21 shows the reasons why 28 individuals intended to "quit their jobs" after receiving UBI. The share who chose "rest for a period of time" was the largest, reaching 64 percent. Another 22 percent chose "if they don't like work, they can quit if they have income". This suggests again that receiving UBI will affect individual choices in work and leisure to some extent and produce a wealth substitution effect.

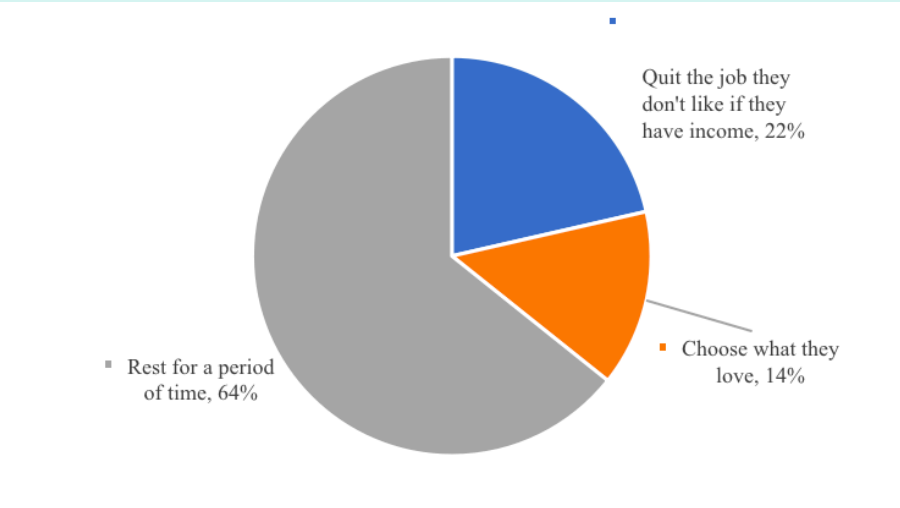

Figure 4-21 Reasons for quitting jobs after getting UBI (sample size: 28 individuals, ___ % of entire sample)

(2) Changes in work behaviour based on population characteristics

A higher percentage of highly educated people, young people under 30, men, and singles who receive UBI said they would not adjust their work behaviour. Table 4-5 reports the distribution of individuals' education, age, gender, marital status and other characteristics in response to a question on adjusting work behaviour after receiving UBI. In terms of education, individuals with a college degree or above havelower preference for continuing to remain working in the same way, which means that those groups are more likely to change their work behaviour after receiving UBI. But this proportion is not significantly different from other education groups. Individuals under 30 years old have the lowest share of non-adjustment, followed by groups over 60 years old. In terms of gender and marital status, men and single individuals are more likely to adjust their behaviour.

Individuals with annual working hours of less than 10 months are more likely to adjust their work behaviours. Among households with dependents, individuals with elderly family members are most likely to make adjustments. From the perspective of family expenditure, individuals with a family basic expenditure of 20,000 to 50,000 RMB are most likely to adjust their working behaviour, while individuals with the highest expenditure (over 120,000 RMB) are least likely to do so.

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Table 4-5 Changes in work behaviour after receiving UBI by population characteristics

	Not adjust, percentage	Not adjust job, number	Working time reduction, number	Change to a new job, number	Quit the job, number
Below junior school	82.9%	150	15	14	2
High school, technical school and technical secondary school	84.6%	352	41	14	9
Above college	81.0%	498	72	28	17
0-30	78.5%	324	60	18	11
30-40	84.7%	333	43	15	2
40-50	85.1%	228	9	22	9
50-60	83.6%	107	16	1	4
Above 60	80.0%	8	0	0	2
Male	81.3%	581	90	26	18
Female	84.3%	419	38	30	10
Single	78.1%	182	28	14	9
Married	83.6%	818	100	42	19
Work>10 months	84.4%	848	84	50	23
Work<10 months	73.2%	150	44	6	5
With young dependents	83.6%	414	48	25	8
Without young dependents	81.7%	586	80	31	20
With the elderly	75.3%	61	14	3	3
Without the elderly	83.0%	939	114	53	25
<20,000	87.5%	14	2	0	0
20,000-50,000	77.0%	127	28	3	7
50,000-80,000	79.6%	348	46	31	12
80,000-120,000	82.4%	305	44	14	7
>120,000	92.0%	206	8	8	2

(3) Changes in investment in children's education and child-rearing behaviour

Receiving UBI enabled 90 percent of respondents to increase their investment in children's education. Figure 4-22 shows the responses of 300 respondents to the question "would you increase educational investment if your child was provided with UBI?" Interviewees were most willing to increase the investment in "cultivating interests and hobbies", followed by paying for cram school and buying school supplies.

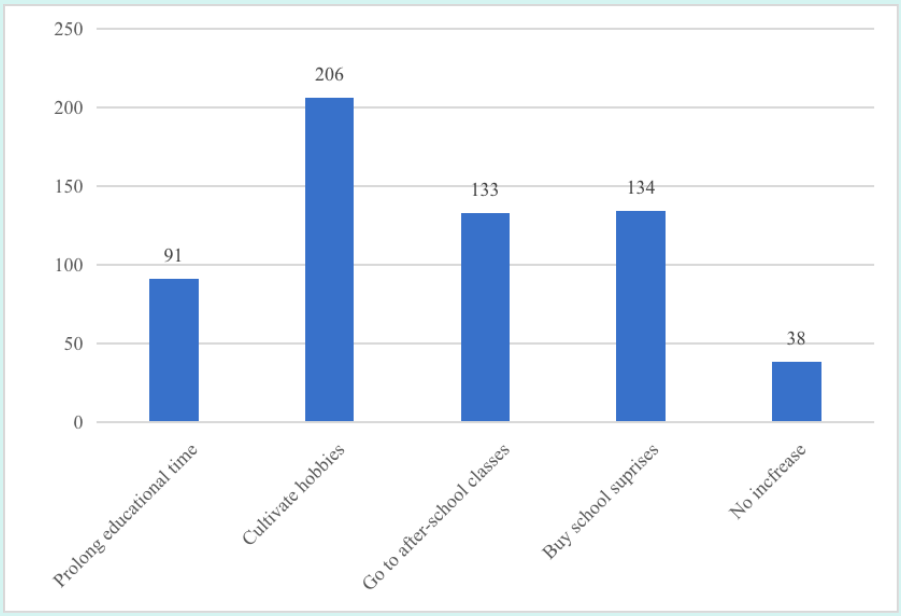

Figure 4-22 Wiliness to increase educational investment after receiving UBI

Figure 4-23 shows nine individuals separated from their children (for reasons such as attending school in other cities and counties, high school and below). Most said they would "maintain the status, and may provide more money for children's education", probably because the amount of UBI is insufficient to make changes.

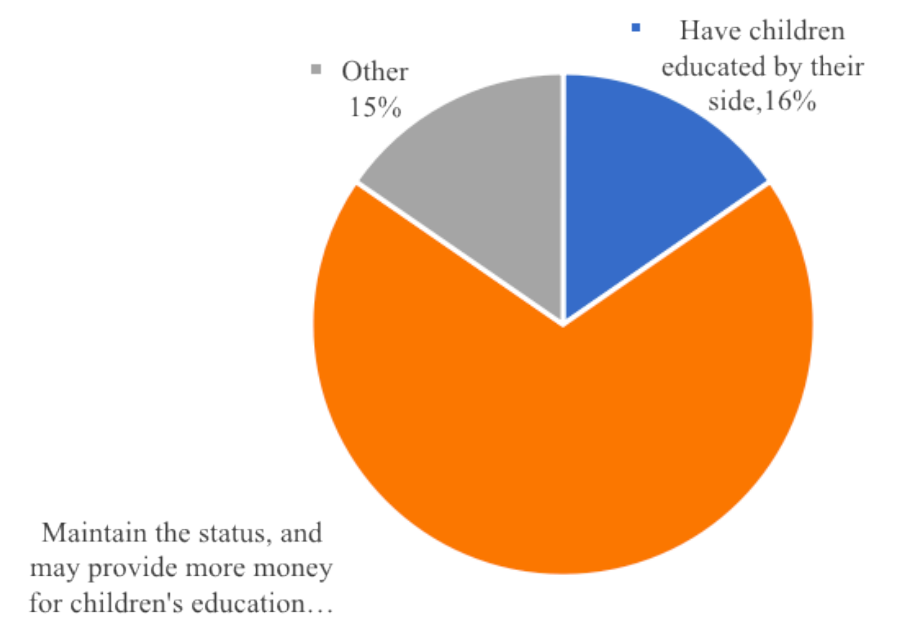

Figure 4-23 UBI's influence on child-raising behaviour among those living separately from their children

Receiving UBI would enable the vast majority of respondents to improve parental support. Figure 4-24 shows the responses of 126 respondents who live apart from their elderly parents in different cities and counties. Only 20.6 percent said they would maintain the status quo. The majority said they would consider letting parents move in with them (36.5 percent) or would raise parents' alimony (34.1 percent). Only 8.7 percent would consider going back to their hometown and working nearby to take care of their parents.

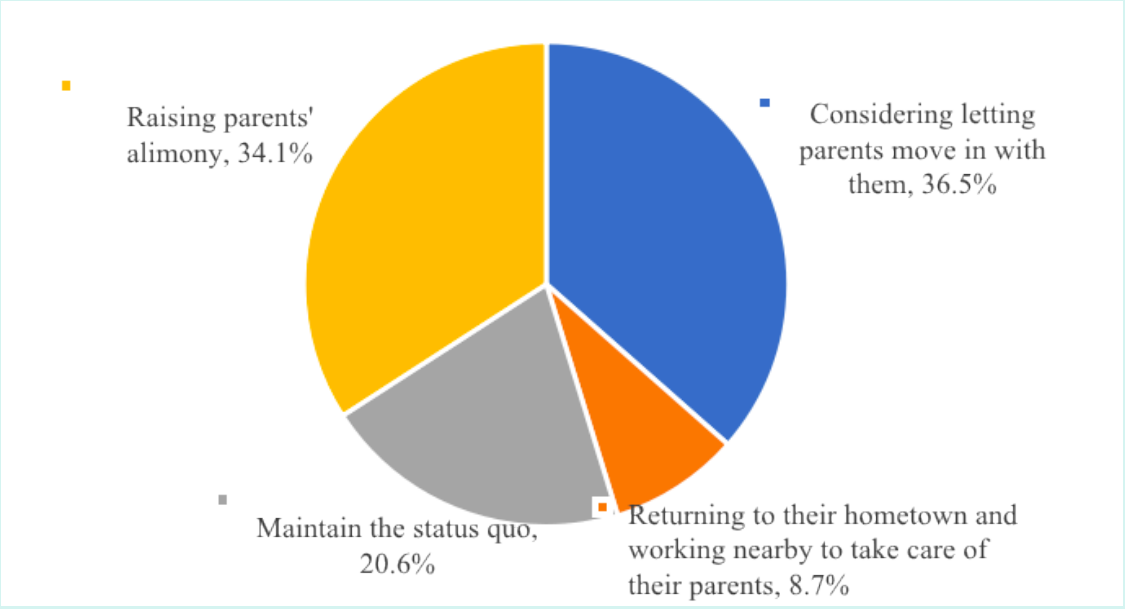

Figure 4-24 UBI's influence on people who live in different locations from their parents

Although there may be a shifting focus from Confucianism to more diversified thinking in Chinese culture today, several founding ideologies remain deeply embedded. One of the core ideas is renai（仁爱）, meaning "consummate persons/conduct" or "benevolence and love". Among behavioural norms developed in line with these, according to Cheng Yi, xiaoti（孝 悌） is seen as the most important event（shi 事） in the practice of renai. Xiaoti consists of two components: filial piety（xiao 孝） and "love of one's elder brothers"（ti 悌）. This idea has traditionally been perceived as the principle of how people should behave in the family. Whereas other ideologies of renai may receive less attention in modern Chinese society, xiaoti has become increasin gly notable, mainly because of the one-child policy. The dominant family ratio in China is now 4:2:1, meaning two adult generations and a child under the same roof. This popular form of multigenerational family household indicates increased pressure to provide familial support for the elderly as well as offspring (Chen, 1996). It is, therefore, not surprising that families with children and elders tend to prefer a higher level of UBI as a support for practising xiaoti.

4.3 Quantitative analysis of UBI based on the survey

4.3.1 Willingness to receive UBI

Based on descriptive statistical analysis, this section uses a bivariate Logit model to measure factors influencing the willingness to receive UBI.[53] The selection of control variables mainly considered several factors with a great impact on UBI, including the individual, work and family characteristics of the sample group.

Variable setting. The research team classified and set variables according to individual, work and family characteristics, as shown in Table 4-6. Among these variables, the team mainly focused on core explanatory variables that affect the willingness to receive UBI, including annual income, education, annual working hours, the presence of elderly people or young dependents in the family, and basic household expenses.

Stepwise regression. Tables 4-7 to 4-11 are the results of the logit regression. Specific regression processes adopted stepwise regression. Column (1) shows the regression results with only core explanatory variables emphasized by the research team. Columns (2) to (4) are estimated results with all control variables including individual, work and family characteristics, and a weight reflecting the household population. Part of the reason for this approach was that the research team hoped to use as much accurate sample information as possible to get more accurate estimates. The research team also attempted to explore whether core explanatory variables would be affected by the interaction of other explanatory variables.

Columns (5) and (6) are estimated results of two rare event bias correction models that are not weighted. Column (5) contains the estimated results of an asymmetric complementary log-log model. Column (6) shows the results of bias-corrected logit estimation. Because of the requirements for a bias-corrected logit model, in column (6), the research team took the

	Variable name	Code
Individual characteristics	Female	Set female to 1, male to 0.
	Age	Actual age in 2019.
	Married	Marital status. Set married to 1, others to 0.
	Education	Junior high school and below are set as control group. High school, vocational high school, technical school, and technical secondary school are merged into a group of high schools. Junior college, university and postgraduate are merged into group of junior colleges and above.
Working characteristics	Annual income	Respondents' annual income for the most important work. Annual income is divided into five intervals: 0-20,000 RMB, 20,000-50,000 RMB, 50,000-80,000 RMB, 80,000-120,000 RMB, and more than 120,000 RMB.
	Working months	Set working for 10 months and above per year to 1, others to 0.
	Employee	Set employees to 1, others to 0.
	Tertiary Industry	According to the three industrial division regulations of the National Bureau of Statistics, the industry types in which the sample work are divided into primary industry, secondary industry and tertiary industry. The tertiary industry is set to 1, and others to 0.
Family characteristics	Basic household expenses	Household expenses to maintain the family's most basic living standards were divided into five intervals: 0-20,000 RMB, 20,000-50,000 RMB, 50,000-80,000 RMB, 80,000-120,000 RMB, and more than 120,000 RMB.
	Family with young dependents	Whether there is a family member who is 0-16 years old or studying at home, set yes to 1, otherwise to 0.
	Family with elderly	Whether there are people between 55 and 70 years old and retired in the family, set yes to 1, otherwise to 0.

Table 4-6 Variable codebook

median value of annual income at different intervals and then used the logarithm for analysis. Subject to space limitations, this paper only reports the regression results of core explanatory variables; the results of the entire regression equation are in Annex 1.

Respondents with higher annual income tended to have lower willingness to receive UBI. Basic estimates of the factors affecting willingness are shown in Table 4-7. Those with an annual income above

50,000 RMB were more reluctant to receive UBI, an effect that remained significant after the inclusion of individual, work and family characteristics. It was still significant after adding a weight for the household population. [54]

Rare event bias correction. Since the number of respondents who were unwilling to receive UBI was small, accounting for only 4.37 percent of respondents answering the question, this variable may be considered a rare event. Estimating it directly may result in a rare event bias and distort the estimated results of the finite sample. The following table uses two methods attempting to get the most robust results. The two methods are: the bias-corrected logit estimation for rare events (King and Zeng, 1999a, 1999b) and the asymmetric complementary log-log model. The revised direction and significance level with the two rare event models were basically consistent with previous results, indicating that an unwillingness to receive UBI, the "rare event", has no significant impact on the regression results. This is consistent with previous estimates of annual income's influence on UBI. People with higher incomes tended to be less sensitive to UBI and less willing to receive it.

	(1)	(2)	(3)	(4)	(5)	(6)
Annual income: 50,000 - 80,000 RMB	-1.881**	-1.907**	-1.858**	-1.863**	-0.530***	
	(0.742)	(0.753)	(0.766)	(0.751)	(0.198)	
Annual income: 80,000 - 120,000 RMB	-2.696***	-2.616***	-2.738***	-3.022***	-0.818***	
	(0.738)	(0.754)	(0.791)	(0.762)	(0.217)	
Annual income: more than 120,000 RMB	-0.651	-0.562	-0.631	-0.269	-0.206	
	(1.005)	(1.016)	(1.049)	(1.046)	(0.275)	
Logarithm of wages						-0.747*
						(0.448)
Individual characteristics		YES	YES	YES	YES	YES
Work and family characteristics			YES	YES	YES	YES
Weight of family				YES		
Observations	1,212	1,212	1,210	1,210	1,210	1,210

Table 4-7 Annual income and willingness to receive UBI

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent.

Respondents with higher academic qualifications have lower willingness to receive UBI. Table 4-8 shows the logit regression results of academic qualifications and the willingness to receive UBI. The research team adopted the same stepwise regression as before. It found that compared with those who completed junior high school and below, respondents graduating from college or above have a lower willingness to receive UBI. Those with a high school diploma were insignificant in numbers and reluctant to receive UBI. This result remained robust after adding individual, work and family characteristics, and a weight for family. When an asymmetric complementary log-log model was adopted, academic qualifications correlated negatively with a willingness to receive UBI, which is statistically significant. This indicates that rare event bias has a certain influence on the significance of coefficients, but not on the direction. The result with rare event bias correction is more significant.

	(1)	(2)	(3)	(4)	(5)	(6)
High school	-0.978	-0.946	-1.220	-0.965	-0.376*	-1.085
	(0.769)	(0.785)	(0.799)	(0.878)	(0.212)	(0.868)
Junior college and above	-1.802**	-2.150***	-2.617***	2.590***	-0.803***	-2.467***
	(0.730)	(0.768)	(0.803)	(0.886)	(0.222)	(0.875)
Individual characteristics		YES	YES	YES	YES	YES
Work and family characteristic			YES	YES	YES	YES
Weight of family				YES		
Observations	1,212	1,212	1,210	1,210	1,210	1,210

Table 4-8 Education and the willingness to receive UBI

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Respondents with longer working hours (per week) are less willing to receive UBI. Based on the same analysis method, the research team found that respondents who worked more than 10 months were more reluctant to receive UBI. The significance of this negative direction was robust after adding individual, work and family characteristics, and became more significant after controlling with a weight for family. The significance of the results remained unchanged after correcting for rare event bias. It is possible that respondents with fewer working months have relatively unstable jobs, so are more inclined to receive UBI.

	(1)	(2)	(3)	(4)	(5)	(6)
Working months	-1.691**	-1.793**	-2.336***	-2.352***	-0.568***	-1.706**
	(0.725)	(0.732)	(0.790)	(0.828)	(0.192)	(0.693)
Individual characteristic		YES	YES	YES	YES	YES
Work and family characteristic			YES	YES	YES	YES
Weight of family				YES		
Observations	1,210	1,210	1,210	1,210	1,210	1,210

Table 4-9 Working hours and the willingness to receive UBI

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Respondents with heavy family burdens are more likely to be willing to receive UBI. The research team divided the family burden into the presence of older or younger dependents in the family. Among respondents who have elderly people at home, willingness became significant after adding control variables, indicating that the influence of the elderly on willingness depends on the status of respondents. Considering that most elderly people that the research team focused on were retired, they have a certain amount of pension income, and the upper age limit was only 70 years old. Thus, the support burden on the family was relatively light. Respondents with young dependents were significantly more inclined to receive UBI to ease the pressure of raising children. This result was still statistically significant after adding control variables and weights, and remained significant after correcting for rare event bias.

As noted earlier, respondents who have children in the family said that UBI would mean they would significantly increase their investment in education for their children, especially in cultivating hobbies, attending tutorial classes and purchasing school supplies. Respondents seemed to hope to acquire enough UBI to add certain capacities to their children based on existing investment in education, and gain an advantage in future competition. The traditional Chinese xiao (filial piety) and ti (love of one's elder brothers) values also explain why families with children or elderly members are more willing to receive UBI.

	(1)	(2)	(3)	(4)	(5)	(6)
Family with elderly dependents	-0.310	0.312	1.122*	1.181*	0.373*	0.670
	(0.488)	(0.525)	(0.625)	(0.676)	(0.211)	(0.643)
Family with young dependents	0.470	0.648**	0.714**	0.734**	0.203*	0.838**
	(0.307)	(0.324)	(0.346)	(0.364)	(0.119)	(0.346)
Individual characteristics		YES	YES	YES	YES	YES
Work and family characteristics			YES	YES	YES	YES
Weight of family				YES		
Observations	1,212	1,212	1,210	1,210	1,210	1,210

Table 4-10 Family burden and willingness to receive UBI

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Basic household annual expenses have no obvious impact on the willingness to receive UBI. The family burden also includes basic household expenses to maintain living standards. The following table provides the regression analysis of different intervals of household basic expenses and the willingness to receive UBI. After adding individual, work and family characteristics, only respondents who spend more than 120,000 RMB annually were more inclined to receive UBI, compared to those whose expenses are less than 50,000 RMB. However, this difference became statistically insignificant after adding a weight for family, indicating that the impact is due to the relatively large number of family members. Respondents whose expenses are between 50,000 to 80,000 RMB and more than 120,000 RMB are more likely to receive UBI after correcting for rare event bias. However, the results of adding the logarithm of expenses are statistically insignificant. It means that comprehensive basic household expenses, especially considering basic household expenses per capita, do not directly affect an individual's willingness to receive UBI, but do indirectly affect it through individual and working characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)
Basic household expenses: 50,000-80,000 RMB	0.411	0.501	0.752	0.495	0.400**	
	(0.458)	(0.470)	(0.511)	(0.582)	(0.173)	
Basic household expenses: 80,000-120,000 RMB	-0.405	-0.198	0.101	0.0207	0.169	
	(0.419)	(0.439)	(0.493)	(0.552)	(0.172)	
Basic household expenses: more than 120,000 RMB	0.222	0.586	1.240**	1.040	0.574***	
	(0.510)	(0.531)	(0.617)	(0.663)	(0.219)	
Logarithm of expenses						0.388
						(0.310)
Individual characteristics		YES	YES	YES	YES	YES
Work and family characteristics			YES	YES	YES	YES
Weight of family				YES		
Observations	1,212	1,212	1,210	1,210	1,210	1,210

Table 4-11 Basic household expenses and willingness to receive UBI

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

4.3.2 Desired UBI Payout Range

In addition to analysing the willingness to receive UBI, the research team carried out a quantitative analysis of factors influencing the desired UBI amount. Since there were fewer samples in the range of 2,500 RMB per month or less, they were combined in a control group set to 0. Amounts from 2,501 RMB and above were set to 1. Taking this binary variable as the explained variable, the influencing factors were analysed using the logit model. The core factors to be considered include the respondents' salary and income level, educational background, working hours, family burden (including child and elderly support), family expenditure, etc. In Table 4-12, column (1) is the regression result of only the core explanatory variables that the research team was concerned about, column (2) is the estimated result of adding individual characteristics, column (3) is the estimated result of controlling all control variables such as work and family characteristics at the same time, and column (4) is the estimated result of taking a reciprocal weight according to the size of the family. Due to space limitations, only the regression results of core explanatory variables are reported. The regression results of the whole equation are shown in the appendix table 1.

The higher-income group tended to desire a lower UBI than the lowest-income group. When investigating the impact of the respondent's income level on the amount of UBI, the core explanatory variable was the total annual income of the respondents' main work according to the questionnaire. Since there were fewer samples with annual income below 20,000 RMB and 20,000 to 50,000 RMB, they were combined in one interval and used as a control group, while the other three intervals were experimental groups. Table 4-12 shows the regression results of how annual income impacted desired UBI amount. Respondents with an annual salary of 50,000 to 80,000 RMB and 80,000 to 120,000 RMB were significantly biased towards choosing a lower UBI amount, although this was not statistically significant. Respondents with annual wages of more than 120,000 RMB also preferred lower UBI. Although only the group with an annual salary between 80,000 and 120,000 RMB was at a significant level of 5 percent, after controlling for individual characteristics, the three groups of respondents with an annual salary above 50,000 RMB still showed a preference for a lower UBI. After the inclusion of work and family characteristics, the results still showed that the higher annual income group was more inclined to choose a lower UBI than the lowest annual income group, and the respondents with an annual salary above 80,000 and between 80,000 and 120,000 RMB were significant at the levels of 1 percent and 5 percent, respectively. In introducing family weights, the results were basically the same. The high-income group was more likely to desire a UBI in a relatively low range compared to the low-income group. The preference of the higher-income group for a lower UBI was basically stable in many cases, for reasons that could include the awareness that UBI must be supported by the tax system. Since the higher-income group endures the greatest tax burden, they choose an amount in the lower range to partially circumvent the possible additional tax burden.

	(1)	(2)	(3)	(4)
Annual income between 50,000 and 80,000 RMB	-0.453*	-0.280	-0.265	-0.520
	(0.259)	(0.270)	(0.280)	(0.322)
Annual income between 80,000 and 120,000 RMB	-0.788***	-0.688**	-0.985***	-1.354***
	(0.275)	(0.296)	(0.322)	(0.370)
Annual income above 120,000 RMB	-0.514	-0.367	-1.008**	-1.199***
	(0.328)	(0.345)	(0.392)	(0.425)
Individual characteristics		YES	YES	YES
Work and family characteristics			YES	YES
Family weights				YES
Observations	1,212	1,212	1,210	1,210

Table 4-12 Annual income and desired UBI payout range

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

There was no significant difference in the preference for UBI amount among people with different educational backgrounds. In Table 4-13, people without a high school degree were the control group, and people with a high school degree, junior college degree and higher were the experimental groups. Controlling for individual, work or family characteristics makes no significant difference.

	(1)	(2)	(3)	(4)
Senior high school	-0.0891	0.255	0.117	0.132
	(0.295)	(0.309)	(0.330)	(0.325)
Junior college and above	-0.366	-0.0492	-0.0571	-0.407
	(0.276)	(0.304)	(0.339)	(0.371)
Individual characteristics		YES	YES	YES
Work and family characteristics			YES	YES
Family weights				YES
Observations	1,212	1,212	1,210	1,210

Table 4-13 Educational background and desired UBI amount

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Respondents who worked longer preferred a lower UBI amount. Table 4-14 shows that this was the case regardless of controlling for individual, work or family characteristics variables, and the results were significant. When there were only core explanatory variables or controlling for individual characteristics (model (1), model (2)), the estimated coefficient was significant at the level of 10 percent. When the variables of work and family characteristics were controlled, the negative impact of working hours on the UBI amount was significant at the level of 5 percent.

	(1)	(2)	(3)	(4)
Working months	-0.501*	-0.498*	-0.585**	-0.622**
	(0.271)	(0.278)	(0.288)	(0.316)
Individual characteristics		YES	YES	YES
Work and family characteristics			YES	YES
Family weights				YES
Observations	1,210	1,210	1,210	1,210

Table 4-14 Working hours and desired UBI payout range

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Families with young dependents preferred a higher UBI payment. Table 4-15 shows that regardless of how many characteristic variables were controlled, respondents with older people and young dependents at home were more willing to choose a higher level of UBI. However, the coefficient was not significant for households with elderly people, while respondents with young dependents had a significant desire to receive a higher UBI at the 1 percent level. This may be because respondents with young dependents were under more financial pressure while having older family members did not necessarily mean an increase in the financial burden. Traditional cultural values that emphasize the role of the family and the high hopes parents hold for children are likely among the reasons that families with young dependents prefer a higher UBI payment.

Table 4-15 Family burdens and desired UBI payout range

	(1)	(2)	(3)	(4)
Family with elderly people	0.384	0.120	0.317	0.726
	(0.388)	(0.400)	(0.420)	(0.494)
Family with young dependents	1.101***	0.803***	0.870***	0.795***
	(0.216)	(0.234)	(0.242)	(0.243)
Individual characteristics		YES	YES	YES
Work and family characteristics			YES	YES
Family weights				YES
Observations	1,212	1,212	1,210	1,210

Table 4-15 Family burdens and desired UBI payout range

Note: Standard errors are reported in brackets. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

4.3.3 UBI's impact on behaviour

Studies have shown that UBI can grant more leisure time to recipients by increasing their income and real purchasing power, which can reduce their labour supply.[55] To further explore the impact of UBI on individual labour supply, this section uses survey data to develop empirical evidence through quantitative analysis. Specifically, those who did not adjust their working behaviours were set as the control group, and the logit model was adopted to examine the impact of receiving UBI in terms of reducing working hours, changing a job and resigning. Due to the limited space, only the regression results of the core explanatory variables are presented here. These whole regression results are in the Appendix Table 3.
People with a higher level of education or income are less likely to change their work-related behaviours, while people with heavier family burdens are more likely to do so. When receiving UBI, individual, working and family characteristics will have different impacts on the labour supply of individuals. In terms of individual characteristics, after obtaining UBI, people with a higher level of education are less likely to adjust their working behaviour. In terms of working characteristics, people with higher income are less likely to change the status quo; the impact of other job characteristics is not significant. As for family characteristics, when there are young or elderly dependents at home, people were more likely to alter their current behaviour.

People with higher education are likely to enjoy more leisure but less likely to change their job. If considering only individual characteristics, those with higher education tend not to change their job, and those with a degree of junior college or higher education tend not to resign. When working and family characteristics are added, the higher-educated group and those with higher income still are not inclined to quit their jobs. This means that respondents believe that obtaining UBI is only a way to reduce working hours and gain more leisure time to spend with their families or on other activities, but the amount of UBI is not enough for them to adjust their labour market participation.

Those with shorter working hours and lower annual income tend to reduce their working hours. When considering working characteristics, respondents with an annual income of more than 120,000 RMB are less inclined to reduce their working hours. Other working characteristics do not have a significant impact on working hours and working behaviours

Family burdens can significantly affect behaviour. In terms of adjusting working hours, people with higher basic household expenditures tended not to reduce their working time. When elderly people at home need to be supported, respondents tended to choose to work for a shorter period of time, while having young dependents led to a longer time to create a more favourable environment for children. As for changing jobs or resigning, people with basic household expenditures of 50,000 to 80,000 RMB tended to want to change a job but not to resign. Respondents with children at home were more likely to resign. This suggests that when people with lower income and low to medium expenditure need to support the elderly or children, they tend to reduce work and spend more time at home after receiving UBI.

Comparing the three types of behavioural changes, it appears that respondents with longer working hours, higher income and heavier family burdens tend to reduce their working hours; respondents with a higher level of education tend not to change jobs; those with a high-school degree and higher salary are less likely to resign; and respondents with young dependents are more likely to quit their job. Higher education and higher annual income indicate a better job, and people in this category may not change their working behaviours for a small amount of UBI, especially to change their job or resign. Respondents who choose to change their jobs or resign were those with relatively heavy family burdens and unpleasant jobs. After obtaining UBI, they would spend more time with their families and take good care of their children, an example of the impact of family-centred traditional values.

	(1) Decrease work time	(2) Change job	(3) Quit job	(4) Decrease work time	(5) Change job	(6) Quit job	(7) Decrease work time	(8) Change job	(9) Quit job
High school degree	14.48	-1.151*	-1.928**	15.10	-1.085	-1.603*	14.14	-1.509**	-1.369
	(809.8)	(0.654)	(0.806)	(1,462)	(0.666)	(0.874)	(886.0)	(0.699)	(0.887)
Junior college or higher education	-0.0411	-0.923**	0.573	0.0710	-0.982**	0.919	0.231	-1.130**	1.032
	(0.325)	(0.402)	(0.801)	(0.338)	(0.420)	(0.808)	(0.352)	(0.445)	(0.828)
Working months				-0.946***	0.394	0.215	-0.985***	0.511	0.272
				(0.216)	(0.455)	(0.540)	(0.229)	(0.469)	(0.559)
Annual income 50,000-80,000 RMB				0.528*	-0.515	-1.253***	0.516*	-0.577	-1.222**
				(0.278)	(0.367)	(0.465)	(0.289)	(0.379)	(0.477)
Annual income 80,000-120,000 RMB				-0.00307	0.00914	-1.927***	0.110	0.0298	-1.809***
				(0.334)	(0.411)	(0.629)	(0.352)	(0.425)	(0.655)
Annual income above 120,000 RMB				-1.245**	-0.0213	-16.47	-1.076*	0.0387	-14.81
				(0.583)	(0.493)	(891.1)	(0.613)	(0.529)	(508.7)
Household basic expenditure 50,000-80,000 RMB							-0.591**	1.781***	-0.233
							(0.283)	(0.658)	(0.534)
Household basic expenditure 80,000-120,000 RMB							-0.530*	1.023	-0.214
							(0.309)	(0.700)	(0.663)
Household basic expenditure above 120,000 RMB							-1.406***	0.861	-1.041
							(0.462)	(0.772)	(0.894)
Elderly dependents at home							0.819**	0.387	-0.233
							(0.361)	(0.650)	(0.722)
Young dependents at home							-0.717*	-0.248	2.847*
							(0.421)	(0.580)	(1.683)
Observed value	1,212	1,212	1,212	1,210	1,210	1,210	1,210	1,210	1,210

Table 4-16 UBI and behavioural changes related to work

Note: The numbers in parentheses are the standard deviation. ***, **, * indicate the levels of statistical significance at 1 percent, 5 percent and 10 percent, respectively. The coefficient of the logit model is presented here. The first three columns are results that only control for personal characteristics, columns 4 to 6 add working characteristics, and columns 7 to 9 add family characteristics. Individual characteristics include gender, age, marital status and education level; working and family characteristics include salary, working months, employment status, whether engaged in tertiary industry, basic household expenditure, and whether there are young or older people at home, etc. Data are not weighed by family size. See the Appendix Table 3 for the weighted results.

4.3.4 Quantitative comparison between the subsistence allowance and UBI

This section compares UBI and China's subsistence allowance system from the perspective of cost-effectiveness. It looks at preferences for the two policies based on data from the questionnaire.

UBI was more popular among survey respondents than the subsistence allowance. Figure 4-22 shows how 1,289 respondents answered the question: "If the central Government possesses a certain amount of money, which of the following do you prefer as a way of spending this money: UBI or the subsistence allowance?" While 88.5 percent of respondents choose UBI, only 11.5 percent choose the subsistence allowance.

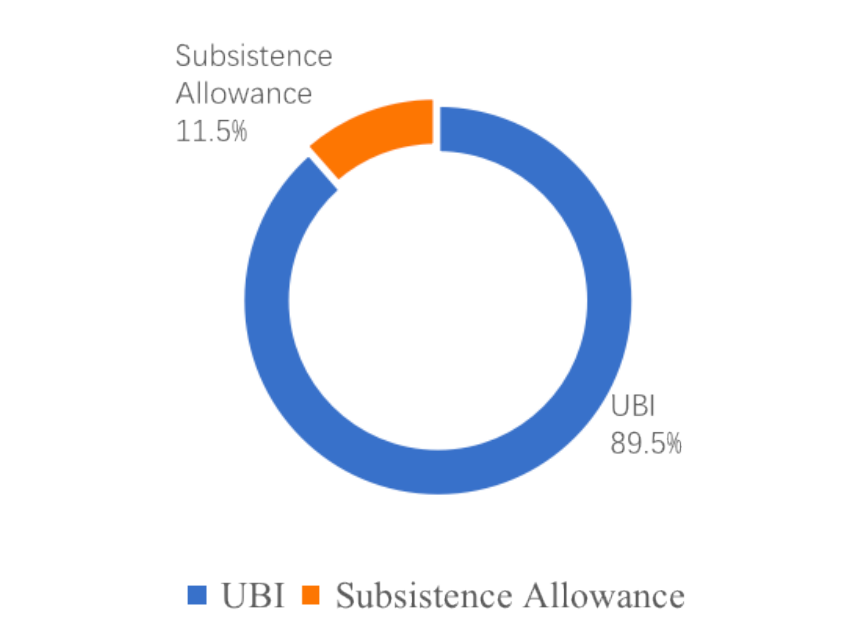

Figure 4-25 Which do people prefer: UBI or the subsistence allowance?

Regression analysis results. Tables 4-17 to 4-21 present the logit regression results of the individuals choosing "subsistence allowance", with individuals choosing UBI as the reference group. Unlike descriptive statistics, which can only analyse proportional differences, regression analysis enabled exploration of the impact of individual variables on the choice between UBI and the subsistence allowance. Among the three columns of results, the first column contains only the regression results of the core explanatory variables; the second column comprises the estimated results controlled by individual characteristics; and the third column includes the estimated results simultaneously controlled by individual, working and family characteristics. The willingness to receive UBI was added to explore the impact of willingness on the choice between UBI and the subsistence allowance. Only regression results of the core explanatory variables are presented here. These whole regression results are in the Appendix Table 4.

Individuals with an annual income above 120,000 RMB have a higher probability of choosing UBI. Table 4-17 shows that this is the case when individual, working and family characteristics are considered, compared with those whose annual income is less than 50,000. This may be because the subsistence allowance is mainly for low-income people. High-income groups have no opportunity to access such kind of government transfer. From an economic rational view, nobody wouldn't accept money putting into his or her pocket without any endeavor. So the upper-income group who have little possibility own subsistence allowance have much possibility to choose UBI rather than the subsistence allowance when asked which is better if the government have the funds to give money to people. After adding the control variable "willingness to receive UBI", the analysis found that individuals are less likely to choose the subsistence allowance comparing to UBI.

	(1)	(2)	(3)
Annual income 50,000-80,000 RMB	-0.387	-0.253	-0.298
	(0.292)	(0.304)	(0.312)
Annual income 80,000-120,000 RMB	-0.243	-0.172	-0.258
	(0.322)	(0.339)	(0.352)
Annual income above 120,000 RMB	-0.513	-0.523	-0.791*
	(0.434)	(0.447)	(0.464)
Willingness to receive UBI	-2.975***	-3.036***	-3.158***
	(0.317)	(0.325)	(0.337)
Individual characteristics		YES	YES
Working and family characteristics			YES
Observed value	1,212	1,212	1,210

Table 4-17 Annual income and UBI preference

Note: The number in the parentheses is the standard deviation. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Individuals with a junior college degree or higher education are significantly more likely to choose UBI. Table 4-18 indicates that this is the case compared with individuals with only a junior high degree or lower education. This conclusion is very robust whether taking individual, working or family characteristics into consideration. This may again be due to the fact that higher-educated people(probably have higher income) are more likely to choose the project which could benefit him or her. These people in general do not receive subsistence allowances, so they are more likely to choose UBI.

	(1)	(2)	(3)
High school	-0.367	-0.473	-0.580*
	(0.311)	(0.323)	(0.342)
Junior college or higher education	-0.911***	-1.179***	-1.269***
	(0.316)	(0.354)	(0.384)
Willingness to receive UBI	-3.167***	-3.372***	-3.462***
	(0.320)	(0.337)	(0.359)
Individual characteristics		YES	YES
Working and family characteristics			YES
Observed value	1,212	1,212	1,210

Table 4-18 Education and UBI preference

Note: The number in the parentheses is the standard deviation. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Individuals who have been working for over 10 months a year are significantly more likely to choose UBI. Table 4-19 indicates that this conclusion still holds after adding individual, working and family characteristics.

	(1)	(2)	(3)
Working months	-2.941***	-3.037***	-3.158***
	(0.306)	(0.313)	(0.337)
Willingness to receive UBI	-0.0614	-0.160	-0.128
	(0.311)	(0.316)	(0.329)
Individual characteristics		YES	YES
Working and family characteristics			YES
Observed value	1,212	1,212	1,210

Table 4-19 Working hours and UBI

Note: The number in the parentheses is the standard deviation. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Family burden does not significantly affect the choice between UBI and the subsistence allowance. Table 4-20 shows that this finding holds for young and elderly dependents. The regression results were not significant whether or not the individual, working and family characteristics were added.

	(1)	(2)	(3)
Whether there is any elderly person at home who needs to be supported	-0.507	-0.502	-0.555
	(0.520)	(0.527)	(0.542)
Whether there is any young person at home who needs to be supported	0.159	0.213	0.256
	(0.230)	(0.249)	(0.260)
UBI preference	-2.976***	-3.064***	-3.158***
	(0.306)	(0.314)	(0.337)
Individual characteristics		YES	YES
Working and family characteristics			YES
Observed value	1,212	1,212	1,210

Table 4-20 Family burden and UBI preference

Note: The number in the parentheses is the standard deviation. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

Individuals with basic house expenditures between 50,000 RMB and 80,000 RMB are less likely to choose UBI. Table 4-21 indicates that they have a significantly higher probability of choosing the subsistence allowance. Those with an annual expenditure of 80,000 RMB to 120,000 RMB do not show any significant difference.

	(1)	(2)	(3)
Household basic expenditure 50,000-80,000 RMB	0.801**	0.889**	0.864**
	(0.377)	(0.382)	(0.401)
Household basic expenditure 80,000-120,000 RMB	0.285	0.228	0.171
	(0.394)	(0.402)	(0.433)
Household basic expenditure above 120,000 RMB	-0.293	-0.207	-0.315
	(0.480)	(0.491)	(0.539)
Willingness to receive UBI	-3.055***	-3.173***	-3.309***
	(0.314)	(0.323)	(0.349)
Individual characteristics		YES	YES
Working and family characteristics			YES
Observed value	1,212	1,212	1,210

Table 4-21 Household basic expenditure and UBI preference

Note: The number in the parentheses is the standard deviation. ***, **, and *, respectively, indicate that the result is statistically significant at the levels of 1 percent, 5 percent and 10 percent. The coefficient of the logit model is reported.

The generally higher preference for UBI suggests the influence of the prevailing culture of valuing guanxi and mianzi in China. Over the past few years, much ink has been spilled over the importance of guanxi (variously translated as social relations, personal connections or particularistic ties) in China and Chinese culture in general (Kipnis, 1996). The value placed on guanxi is among the frequently cited evidence for China being a typical collectivist country. Collectivism refers to the extent to which individuals are integrated into groups and form their judgments based on group norms (Bond, 1993). Indeed, Asians are typically assumed to be high in collectivism as opposed to individualism (Wyer Jr. and Hong, 2010), but only a few analysts have noted that valuing guanxi has been in part a result of China's past social and economic policies that behind the collectivism characters. When talking about cultural traits that contributed to China's economic growth, Li and Park (2014) mentioned the weak rule of law and lack of a legal tradition in the early 1950s as nurturing a relation-based culture.

Also, China's collectivism has evolved beyond simply valuing guanxi to emphasizing mianzi, which lies at the very heart of how people define themselves. It determines who they are within a given social system, involving prestige, status and social recognition (Earley, 1997). Rhetorically, phrases such as "losing face" and "winning face" have been widely discussed among scholars who have tried to understand China's discourse in international negotiations. In this context, being labelled "poor" may be intolerable for people who value mianzi in their personal relations. It may make the subsistence allowance less appealing than UBI with its high inclusiveness.

4.4 Summary analysis based on the survey results

Several findings emerge from the results of descriptive and quantitative analysis, starting with the willingness of most respondents to receive UBI. Though this can be regarded as a positive signal for future UBI implementation, it may not be based on a full consideration of the implications of UBI. A few respondents expressed a more cautious attitude, and respondents with better education, higher annual income and longer working hours were less willing to receive UBI. Possibly, better knowledge of the policy made them aware of the potentially heavier tax behind it, or the relatively small amount of UBI was not tempting enough for them. Respondents with elderly family members or children to support were more inclined to receive UBI, which indicates an association with heavy family burdens in line with traditional Chinese values emphasizing family.

As for the amount of UBI, most respondents preferred a bigger amount, while a few groups expressed different views. Respondents with higher income and longer working hours chose a smaller amount, while those with elderly family members or children at home to support opted for a higher amount. Such results again show a strong sense of family. Between the subsistence allowance and UBI, most respondents preferred UBI, potentially as a result of the emphasis on personal relations in Chinese traditional culture.

In terms of work behaviour changes after receiving UBI, there was no clear evidence of negative incentives generated from UBI. Most respondents chose not to make any changes to their work, which shows that traditional Chinese values of respecting hard work mitigate negative incentives surrounding UBI. In addition, people with better education and higher income were less likely to change work behaviours, and this group usually generates higher productivity. There were still a few groups of respondents who chose to make changes to their work, but most of these people, who were primarily people with elderly people or children at home, said they would spend the hours taken from work with their families or taking care of children. Such results indicate that family-centered traditional values will result in negative incentives for labour, but in a mild way. At the same time, UBI would lead 90 percent of respondents to increase investment in children's education. Nearly 80 percent of respondents said they would improve the care of their parents, again reflecting a strong family sense.

4.5 Analysis and Insights based on game data

While the survey only captured people's perceptions of UBI preferences and could not observe their actual behaviours, the game provided a virtual scenario for UBI implementation that allowed direct study of the latter. The game was a life-planning word game, in which the player took the role of someone in the near future, randomly born in a city on the Earth, the Moon or Mars. Players were randomly assigned some initial attributes, and in the rest of the game had to make choices for random events set by the system. The game consisted of 12 rounds; players received an evaluation at the end of the game.

The game featured three possible UBI scenarios: no UBI, UBI of 3,000 RMB per month and UBI of 6,000 RMB per month. Scenarios were randomly assigned; for any player, the probability of each scenario was one-third. UBI appeared in the seventh round of the game and was provided at the same fixed amount in the following rounds.

4.5.1 The impact of UBI on players' choices

In examining the impact of UBI on players' choices, and given that UBI was issued starting from round seven, the research team aggregated the number of choices for each activity in the first six rounds and the last six rounds. Analysing the change in choice numbers demonstrated the impact of UBI; players receiving 3,000 RMB and those receiving 6,000 RMB were considered separately. Table 4-22 shows that after receiving UBI, those with 3000 RMB increased their proactive selection of the following activities: corporate welfare, team-building activities, watching a movie, going to the gym, going to a pub, shopping, going to the beauty salon, getting together with family, hanging out with family and hanging out with friends. A closer look revealed that these are mostly welfare activities at work, leisure activities, and social activities with friends and families, indicating that obtaining UBI makes players choose them more proactively. Players tended to reduce the selection of the following activities after receiving UBI: salary raise, asking for leave, working overtime, resigning, job hunting, part-time jobs, attending training and making investments. This implies that receiving UBI would increase the players' proactive choice for leisure activities. No significant difference was found between the choices made by players receiving 6,000 RMB and 3,000 RMB.

Activities	Players receiving 3,000 RMB in UBI			Players receiving 6,000 RMB in UBI		
	No. of selection in the first 6 rounds	No. of selection in the last 6 rounds	Difference (1)	No. of selection in the first 6 rounds	No. of selection in the last 6 rounds	Difference (2)
Salary raise	227	147	-80	157	93	-64
Corporate welfare	209	292	83	117	182	65
Team-building	426	435	9	275	268	-7
Taking leave	27	18	-9	21	10	-11
Working overtime	124	53	-71	80	36	-44
Resigning	20	12	-8	8	7	-1
Job hunting	39	11	-28	19	8	-11
Part-time job	81	51	-30	82	27	-55
Watching a movie	299	355	56	181	243	62
Going to the gym	475	551	76	335	402	67
Going to a bar	182	285	103	130	191	61
Shopping	114	205	91	86	122	36
Going to a beauty salon	199	224	25	118	141	23
Attending a training	291	262	-29	195	144	-51
Making investments	228	213	-15	138	123	-15
Getting together with family	504	633	129	299	407	108
Hanging out with family	231	364	133	147	217	70
Getting together with friends	283	234	-49	169	168	-1
Hanging out with friends	115	155	40	94	88	-6

Table 4-22 The impact of UBI on players' choices

Note: Difference (1) represents the number selecting a certain activity in the last six rounds minus the number selecting the activity in the first six rounds (for players receiving UBI of 3,000 RMB); difference (2) represents the number selecting a certain activity in the last six rounds minus the number selecting the activity in the first six rounds (for players receiving UBI of 6,000 RMB).

4.5.2 The impact of UBI on players' characteristics

Examining the impact of UBI on the characteristics of players entailed collecting data on the players' value of the following characteristics at round one, round six and the final round: money, family, friendship, happiness, health, appearance and intellect. Players were divided into three groups based on the UBI amounts. The analysis first compared players with no UBI and those with UBI of 3,000 RMB by subtracting the value of money, family, friendship, happiness, health, appearance and intellect in round one from that in round six, obtaining the change in eigenvalues of these two groups before obtaining UBI. Subtracting the change in values of those with no UBI from that of those with 3,000 RMB eliminated the individual differences of the two groups. Subtracting the value of money, family, friendship, happiness, health, appearance and intellect of the two groups in the final round from that in round six yielded the change in characteristic values of these two groups of players after receiving UBI; this was followed by subtracting the change in values of those with no UBI from that of those with UBI of 3,000 RMB. This difference was thus impacted by UBI as well as individual characteristics. Finally, subtracting the difference in eigenvalues of the two groups before receiving UBI from the difference in eigenvalues of the two groups after receiving UBI eliminated the individual differences of these two groups and provided the relatively clean impact of UBI on various eigenvalues. The eigenvalue of players receiving 3,000 RMB and 6,000 RMB was processed, and a T-test performed on the difference to verify its significance. The results are shown in Table 4-23.

	(1)	(2)	(3)
Money	13,019.23***	9,355.64***	16,632.24***
Family	-1.34	1.50	-0.76
Friendship	1.74	0.77	2.04
Happiness	-5.59*	-0.36	-5.73*
Health	-4.65**	-0.47	-4.84**
Appearance	-0.62	-1.14	-1.05
Intellect	-4.17*	-0.53	-4.38*

Table 4-23 The impact of UBI on the players

Note: Column (1) represents the eigenvalue difference between the players receiving 3,000 RMB and those receiving no UBI; column (2) represents the eigenvalue difference between the players receiving 3,000 RMB and those receiving 6,000 RMB; column (3) represents the eigenvalue difference between the players receiving UBI and those receiving no UBI. *, **, and *** represent the significant differences at the significance levels of 10 percent, 5 percent, and 1 percent, respectively.

Table 4-24 shows that in the final round, those who received UBI possessed significantly more money than those who received no UBI. However, in terms of other characteristics, only the difference in happiness, health and intellect were significantly negative in a few cases. The differences in the value of characteristics in most cases were not significant, which means that UBI did not improve the players' characteristics substantially. The main reason for this is that players saved most of their UBI after receiving it, rather than using it to improve themselves. This may reflect the strong cultural preference in China for saving money.

UBI collection may have different effects on people in different income groups. To examine this, the research team divided players into a low-income group with initial income below 50 percent of the initial income distribution, and a high-income group above 50 percent. A T-test was performed on the significance of the differences, as can be seen in Table 4-25. It revealed no significant difference in the impact of UBI on different groups. Those who received UBI possessed significantly more money than those who received no UBI. However, both the high-income group and the low-income group saved most of the UBI as it didn't bring about a significant increase in the eigenvalues.

	Low-income group		High-income group	
	(3)	(4)	(5)	(6)
Money	13098.79***	4080.96**	12863.67***	14301.21***
Family	2.41	3.02	-5.25*	0.39
Friendship	3.15	3.89	0.23	-1.74
Happiness	-1.04	0.71	-10.25**	-1.22
Health	-4.39	-2.56	-5.00	1.65
Appearance	0.42	-1.60	-1.81	-0.29
Intellect	-2.60	-0.45	-5.84*	-0.40

Table 4-24 The impact of UBI on players in different income groups

Note: Columns (3) and (5) represent the eigenvalue difference between players receiving 3,000 RMB and no UBI (in the low-income group and high-income group, respectively); columns (4) and (6) represent the eigenvalue difference between players receiving 3,000 RMB and 6,000 RMB (in the low-income group and high-income group, respectively). *, **, and *** represent the significant differences at the significance levels of 10 percent, 5 percent and 1 percent, respectively.

4.5.3 Discussion

From analysis of the impact of UBI on players based on the background data of the game, several main conclusions were reached. While receiving UBI mainly increased players' proactive selection of leisure activities, no significant improvement was found in the eigenvalue of family, happiness, health or other characteristics. This is mainly because players saved most of the UBI, reflecting the strong cultural tendency to save money. Since game data are collected from virtual choices made by players in simulated scenarios, they may not fully represent the real situation, and should serve as a reference only. In addition, due to the complexity of the background data of the game, the compilation and selection of data may also affect the results. This was an initial experiment, with room for many improvements. It is not an accurate generalization of behavioural insights across the population; therefore, a substantive analysis should refer to the traditional survey data.

The results of the traditional survey highlighted several key life choices. First, after UBI, people with higher education were less likely to change their jobs. Within the gamified version, the majority of respondents had undergraduate or higher education. The choices they made regarding jobs after UBI reflected a 32 percent decrease in resigning, and a 67 percent decrease in job hunting. In this regard, the choices made in both the survey and the game match significantly: most people would keep their current jobs and would be less likely to quit after receiving UBI.

Second, on the number of hours people spend working, the traditional survey found that those whose salary was less than 120,000 RMB would likely reduce their working hours. In the gamified version, 81% of the respondents claimed salaries of less than 120,000 RMB, and overall after receiving UBI, the desire to work overtime decreased by 56% and taking on part-time jobs decreased 52%. As in the previous example, there are significant similarities to the choices made in both the traditional survey and the gamified mode.

On the use of free time, the traditional survey indicated that people, after reducing working hours, would use their free time with their family. In the gamified version, this was also true, where spending time at home with family increased by 53 percent, and going out with family increased by 29 percent. The increase with friends was negligible. As in the previous two examples, there were substantial similarities between the survey and the game.

While many behavioral conclusions can be drawn from the choices made by players after receiving UBI, one in particular stands out: despite the UBI allotments being fairly small, it was substantial enough to induce a change in how people behaved regarding work. Typically in China, people often switch jobs and work overtime to advance their careers. Yet upon receiving UBI, there was a significant shift to maintaining current jobs and working fewer hours. In real-world applications, this may be considered irrational behavior as it would reduce their market competitiveness and the likelihood of being promoted, potentially stalling their career advancement.

This shift in work behavior raises several questions. Did the relatively small allotment of UBI remove stressors related to work, especially around salary and career advancement? Second, is there a threshold allotment amount, or rather a window of allotments, where below it induces no change in working pattern, and above it might induce people to quit and not continue working? While there was no means to address these questions in the gamified survey, this phenomenon is worthy of future study.

Additionally, due to the game mechanics where players must respond to randomized events that affect their characters' status, questions arise over the motivation for the choices players made. Namely, did they make choices simply to maximize their percentages in the game, or based on how they felt? While both options are equally plausible, the resulting similarities between both modes of the survey suggest the latter. This duality needs to be further explored, however, and any future experimentation with gaming should consider the impact of mechanics on choice.

40 For instance, "Can BI help tackle one of the world's top killers? Improving Tuberculosis Care in Moldova." Available at www.bi.team/blogs/can-bi-help-tackle-one-of-the-worlds-top-killers/.

41 See: OECD (2017), Behavioural Insights and Public Policy—Lessons from Around the World. Available at www.oecd.org/gov/regulatory-policy/behavioural-insights-and-public-policy-9789264270480-en.htm.

42 These include but are not limited to: the use of non-random sampling techniques (particularly convenience sampling) and the associated issue of generalizability, the reliance on human informants and biased perceptions in construct measurement, the dependence on single-source data and the problem of common method bias, and the problem of correlated omitted variables (Speklé and Widener, 2018)

43 The ratio of men to women means the absolute proportion of each gender. For instance, if there is 100 women in the group, and men are more than women, say 105, then the female to male ratio becomes 100:105.

44 This is one of the common feedbacks from players that the team can have the chance to talk to.

45 Established in 2010, the Behavioral Insights Team is co-owned by the United Kingdom's Cabinet Office, the innovation charity Nesta and employees. It has conducted more than 750 projects to date across 31 countries, including 400 randomized controlled trials. See: https://www.bi.team/.

46 See: www.bi.team/publications/east-four-simple-ways-to-apply-behavioural-insights/.

47 In a previous foray into interactive online campaigns, UNDP China launched an interactive quiz with LinkedIn as a means of advocating the Sustainable Development Goals, which received roughly 80,000 responses.

48 Respondents identified as female (52.9 percent) marginally more than male (47 percent), with an error reported on six responses.

49 This number excludes grass-roots sharing as this was not traceable given the context of the pilot.

50 The distribution of Internet users is not static or equal between cities, as there are shifts due to socio-economic factors, such as migration to first-tier cities for work, etc., which can skew the demographics in upper and lower-tier cities. See: gbtimes.com/chinas-netizen-population-hits-new-high-amid-mobile-internet-boom and https://www.kr-asia.com/three-quarters-of-netizens-in-chinas-lower-tier-cities-are-high-schoolers-or-younger.

51 The Gini coefficient is an index measuring income inequality. It ranges from 0 to 1. A larger value means larger income inequality.

52 The report contained survey and census data on all Asian Americans as well as specific information on the six largest Asian origin groups. For the full report, see https://www.pewsocialtrends.org/2012/06/19/the-rise-of-asian-americans/.

53 This section does not report R-square (, because when using maximum likelihood techniques to estimate the parameters of Logit models, there is no measure of goodness of fit analogous to for this regression. Stata produces a measure called .
Let be the log-likelihood value for the fitted model, as presented on the estimation output after convergence. Let be the loglikelihood value for the null model excluding all explanatory variables for both commands and for all commands estimated by maximum likelihood. If we rearrange the log-likelihood values, we may define the as , which like regression is on a [0, 1] scale, with 0 indicating that the explanatory variables failed to increase likelihood and 1 indicating that the model perfectly predicts each observation (MacFadden,1974). Unfortunately, the values between zero and one have no natural interpretation and there is no way to make equal 1, although one can come close(Green, 2012). We cannot interpret this , as we can for linear regression, as the proportion of variation in y explained by x, but in other aspects it does resemble an measure(Baum,2006) . The significant of coefficients in regression is more important than , and that is the main evidence of this report's empirical analysis.

54 The highest annual income group is not statistically significant because the sample size and the intragroup variation were relatively small. However, it can be seen from the direction of the coefficient that people with the highest annual income were relatively less willing to receive UBI.

55 Please refer to chapter 1 for the theoretical analysis of UBI and Labor Supply.

Chapter 5

Conclusions, Challenges and Future Directions

5.1 Conclusions

This report has taken two approaches in considering the future of UBI in China. An economic theoretical approach applied three economic analysis elements—social equity, economic efficiency and financial constraints—to observe the differences and compatibility issues between UBI and the existing Chinese social security system. The second approach uses cultural factors in explaining the underlying reasons behind people's behavioral preferences when presumably receiving UBI. Behavioural insights were generated based on data collected through survey and game. On the three areas where the questions in the traditional survey overlapped with the choices in the gamified version, the results indicated that people's choices are very similar. In addition, the gamified version was able to reach a broad demographic across a large geographic span, which complemented the more limited demographic profile of the survey. In this sense, this new combination of data collection methods has the potential to provide additional data that would not be possible under traditional methodologies. Further exploration of this mode of surveys, and of mixed-mode surveys in general, is highly recommended. This modality could be used in other studies of socioeconomic matters, in particular, on subjects that might not be appealing for individuals to answer in a face-to-face setting, such as gender issues, etc.

Based on the perspectives on economic and social behaviours stemming from its innovative methodology, this study generated the following findings.

Currently, the implementation of a canonical UBI in China would not be economically efficient and would face serious financial constraints. A comparison between UBI and the subsistence allowance as well as with poverty reduction policies shows that in terms of cost, UBI would have an administrative cost advantage over the subsistence allowance system as it does not require identification, service or exit processes. But since the subsistence allowance targets only a share of low-income people, its coverage in 2017 includes just 12.61 million urban residents and 40.45 million rural residents, far less

than the 1.4 billion people who would need to be covered by UBI. If estimated subsistence allowance funding was used to provide UBI to all Chinese registered populations, the per capita income would be only 244 RMB per year, which cannot meet people's basic living needs. If UBI is issued to the whole population with the standard of the subsistence allowance, then the financial expenditure would be 25 times that of the subsistence allowance, which will be a major challenge for the Chinese Government.

Compared to the targeted poverty alleviation policy, UBI, which is universal and unconditional, could also help to reduce administrative costs, and avoid the additional costs from misidentification and omission. With no tracking mechanism or intervention in the use of the funds, however, UBI may cause irrational short-sighted effects that would undercut the efficient use of funds. Avoiding inefficiency is especially important for China, which has not yet lifted itself from poverty. In terms of a financial burden, if the money for targeted poverty alleviation was used for UBI, the per capita income would only be 717 RMB per year, which cannot meet basic needs. If UBI is issued for the whole population according to the national poverty standard, the required funds would be 4.5 times the funds needed under the policy alleviation policy, accounting for about a quarter of China's fiscal revenue. Although experiences in Finland, India and the United States have preliminarily proved that UBI could promote social equity, the lack of a stable source of funding is a problem for almost all current UBI pilot projects. This issue will become even more pressing when UBI is fully carried out. As such, financial constraints pose an inevitable challenge for China, where the economy capacity is still developing, and wealth is still accumulating. The better way to maximize economic efficiency at the current stage is to use limited financial resources to address the most urgent social issues, such as poverty.

Beyond an economic rationale, Chinese traditional culture seems to have a great impact on people's reactions to UBI policies. An economic rationale remains the arguably most important determinant of socio-economic policy outcomes, the concept of agents' bounded rationality has also been widely recognized. In our study, it turns out traditional cultural elements may have a strong influence on people's reaction to UBI and, subsequently, social economic efficiency. Therefore, it may be useful for policymakers to consider the cultural context when designing future UBI policy, which could serve to minimize negative policy impact. This existing study of people's reactions to UBI policies showed that the majority of Chinese respondents prefer to receive a larger amount of UBI, particularly those with heavier family burdens. Even though this is a positive signal, preferences may lack in-depth consideration as people with better education, higher income and longer working hours express different preferences. They are less willing to receive UBI or prefer a smaller amount. This may be because the highly educated have a more comprehensive understanding of possible additional taxation after the implementation of UBI.

Chinese values respecting hard work may mitigate negative work-related incentives; 83 percent of survey respondents said they would not make any change to their work after receiving UBI. Values that emphasize the role of family will to some extent aggravate negative work-related incentives, however. Respondents with elderly or young dependents are more inclined to make changes to their work and reduce working hours to spend more time with families or take care of their children. Yet such negative incentives are relatively weak. And if UBI policies benefit children with better education and the elderly with improved care, they will have a positive impact on social welfare in the long run.

Although economic analysis has proved that subsistence allowance policies are more economically efficient than UBI at the current stage, UBI remains a preferred choice for many people, which is understandable given Chinese cultural values that emphasize mianzi and guanxi. Analysis of the game data found no evidence of a significant increase in scores on family attachment, happiness or health after receiving UBI, whereas players tend to save much of their UBI allotments.

5.2 Challenges, Future Directions and Policy Advice

Based on the research results, this section outlines the challenges that UBI will face in China, as well as future development directions, and proposes several measures accordingly.

5.2.1 Challenges

How can UBI be financed?

The universal character of UBI is intended to bring benefits to everyone, but China, as the developing country with the world's largest population, nearly 1.4 billion people, faces the biggest challenge in universal implementation. Even subsidizing people according to the national poverty line of 3,200 RMB per person per year in 2018, annual expenditure on UBI could be as high as 4.5 trillion RMB. Considering the fact that China's fiscal revenue for 2018 was 18.335 trillion RMB, UBI would cost about a quarter of national fiscal revenue, indicating a major burden for both the Government and the public. Further, 3,200 RMB per person per year means only 267 RMB per person per month, not enough to meet basic needs.

How to achieve universality in China

China covers a large territory, and income and cost of living vary significantly among regions. In the wealthy eastern coastal areas, people's income and consumption have almost reached the level of moderately developed countries, while in the poor areas of the west, a large number of people are still struggling against poverty. In the context of such gaps, the distribution of the same amount of UBI will bring very different economic efficiencies. On the one hand, the positive contribution from UBI's universality would be discounted. On the other hand, this approach would imply a greater poverty-reducing impact in poorer areas. China also is currently facing a dichotomous urban-rural economic structure: urban and rural residents not only have different levels of income and consumption, but also social security (endowment insurance and medical insurance) and public services (education, health care.) In the context of large urban-rural differences that have not yet been eliminated, the UBI's universality seems unfeasible for now.

Balancing the basic and the universal

Obviously, under constrained funding sources, the implementation of UBI entails a trade-off between

universality and basic needs. Though this is a common issue in almost all countries where UBI has been implemented, it is particularly prominent in China. Achieving universality often means the amount of UBI is lower than basic livelihood needs. This may have little impact on middle- and high-income groups, but unlike in developed countries, China still has a large group of people living below the poverty line and having difficulties accessing adequate food and clothing. If UBI is implemented only as an incremental policy along with poverty alleviation policies and the subsistence allowance, there is no doubt that it would cause enormous financial pressure, and inevitably lead to the question of where the money comes from and a controversy over the loss of efficiency. As China has not completely eliminated poverty, meeting basic needs is more prioritized than universality, and thus the implementation of UBI does not seem to be a preferable choice. Though policies such as the subsistence allowance and targeted poverty alleviation lead to administrative costs and efficiency losses, they remain overall cost-efficient choices.

5.2.2 Future Directions

Short-term: Though most Chinese respondents to the survey for this report showed a preference for UBI, the reality is that the conditions for implementing it in China are not yet right in the short term. China's economy is not strong enough to support the huge funding requirements. Regional differences pose additional difficulties. And poverty is still an urgent social problem that needs to be solved. Using limited funds in the most needed areas is inevitably the choice for optimizing capital efficiency. UBI in China still needs to go through intensive discussion and analysis, while a careful examination of how Chinese culture factors embedded in related policy behaviour would also be useful. As Landes (1998) concluded on the basis of Max Weber's work, "if we learn anything from the history of economic development, it is that culture makes all the difference".

Long-term: UBI has proven effective in promoting social equity in many trials. It is considered a useful means of redistribution to close the income gap, and may eliminate poverty and make up for the insufficiency of the subsistence allowance and other social relief systems. It helps people to pursue freedom in line with the development trend of human society. Moreover, with no clear evidence from UBI pilots around the world that it reduces economic efficiency, and given China's traditional cultural values that respect hard work and emphasize the role of the family, UBI's negative impacts on economic efficiency could be smaller than expected. It would likely support Chinese families in providing better education for the next generation, with positive implications for future development. When China's economy develops to a higher level, economic and social problems such as low income and poverty are solved, and regional and rural-urban differences are eliminated, UBI will be a worthwhile choice for the country. Its implementation would need to consider duplications created in overall social protection payments, and would need to impose an effective limit on that total amount.

5.2.3 Policy Advice

Social security system: China should continue to improve its social security system, such as the subsistence allowance policy and targeted poverty alleviation. Sharpening accuracy, reducing mistargeting and leakage, and saving administrative costs could all be geared towards the overarching goal of poverty elimination.

Public service system: Further adjustments in public service systems such as pensions, medical care and education, can gradually change people's concept of saving while solving livelihood problems such as children's education and elderly support, thereby boosting domestic demand and promoting economic growth.

Bridge structural gaps in economics and society. Efforts should also be made to promote the reform of the dual household registration system and gradually eliminate the urban-rural gap. Various initiatives should be applied to encourage the coordinated development of regional economies to ease disparities.

Pilot projects in developed areas. Though the current overall situation in China may not support the implementation of UBI, some of the more developed regions may already have a viable policy environment. It would be feasible to establish UBI pilots in these regions to observe its policy effects in practice and gain some experience for broader implementation. On the other hand, it should also be considered that UBI holds great promise of reducing poverty in poorer areas.

Putting forward similar policies. While conditions for UBI implementation are not yet mature, inclusive policies similar to UBI may be considered. For example, the free physical examination policy introduced by Binhai County in Yangcheng City of Jiangsu Province has enabled the public to obtain free health services and achieved significant social benefits. Current financial constraints have been fully considered, which makes this policy financially feasible even as it combines social equity with economic efficiency.[56]

It is important to further explore how a UBI could fit within the overall system of existing social protection systems in China in a fiscally affordable manner. This would require measures to maximize net impact on poverty while limiting disincentive effects, with funding in a fiscally neutral manner. One possible line of thinking would be to link UBI with possible fundamental adjustments in the tax system aimed at harnessing and addressing two mega-trends: the fourth industrial revolution and climate change.

56 Reference Appendix 2

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Appendix

Appendix 1: An estimation of the administrative cost of the targeted poverty alleviation policy

The first cost: The wages of the resident team members and the chief secretary (35 billion to 80 billion RMB per year). The calculation is as follows: Data from the Poverty Monitoring Report of Rural China in 2017 indicate that in the process of strengthening assistance to rural areas, "the country has sent a total of 128,000 working teams to the rural area, including around 775,000 officials. About 195,000 outstanding party members were assigned to serve as chief secretaries in poor villages that lack strong administration". With reference to the 2018 salary standard for the civil servants from the Ministry of Human Resources and Social Security (3,000 to 8,000 RMB per month), and assuming these officials all work full-time for China's targeted poverty alleviation programme, then the annual staff salary cost should be about 35 billion to 80 billion RMB.

The second cost: the labour cost for improving precise identification (10 billion to 30 billion RMB, one-time cost), equivalent to about 20 billion to 60 billion RMB per year. According to the Poverty Monitoring Report of Rural China in 2017, from 2016 to 2017, "the country has mobilized nearly 2 million people to go to the rural area for rechecking the accuracy of the filed poor households and poor people". Since this identification process covers the entire population in the villages, it is assumed that at least a third to a half of the rural population (poverty plus non-poverty) needs to be accurately identified again. It is estimated that the cost of rechecking each household is 50 to 100 RMB. The corresponding overall cost should be between 10 billion and 30 billion RMB, equivalent to an annual expenditure of 2 billion to 6 billion RMB for a five-year period.

The third cost: labour expenditure of the third-party assessment for targeted poverty alleviation (100 million to 150 million RMB per year). At the current stage, in order to ensure that the poor counties are lifted out of poverty and the increase in rural household income is sustainable, the Government has introduced third-party assessment teams to verify the situation in poor counties withdrawing from the assistance programme as well as the effectiveness of poverty alleviation. For the third-party assessment of poor counties withdrawing from the assistance programme, the county must file an application to withdraw that is then approved by the municipal government and the provincial government before the result is announced. The central Government could then conduct a spot check. For the withdrawal procedure, there are at least two rounds of assessments conducted by the county and the city, at an average one-time cost between 500,000 and 600,000 RMB. As there are 832 countries across the country, by 2020, the accumulated investment in this procedure will be 500 million RMB, with an average of less than 100 million RMB per year. The second expenditure is the assessment of the effectiveness of poverty alleviation in each city and county, at a cost for each county of about 100,000 RMB. This assessment covers 117 counties[Refer to the Government document "Poverty Alleviation Assessment Method of Work Effectiveness for Provincial Party Committee and Government" (see 《省级党委和政府扶贫开发工作成效考核办法》in Chinese).] (the number will continue to grow in the following years) in 22 provinces (provincial municipalities and municipalities directly under the central Government). It is estimated that there will be 200 to 250 counties that need to be assessed every year after 2017. Average annual investment in two rounds of assessments (self-evaluation within the province and national assessment) is about 40 million to 50 million RMB. Overall, expenditure on labour for the third-party assessment for targeted poverty alleviation for the poor counties is about 100 million to 150 million RMB per year.

The fourth cost: the labour costs of the ministries and various functional departments for targeted poverty alleviation (1 billion to 1.5 billion RMB per year). This part of the cost is relatively hard to estimate.

For example, in 2016, the National Health and Family Planning Commission (NHFPC) made a significant investment in improving people's health in poor rural areas. According to the Poverty Monitoring Report of Rural China in 2017, in order to fully identify the poverty caused by diseases, the NHFPC and the LGOP as well as the Ministry of Human Resources and Social Security mobilized more than 800,000 people in the national health and family planning system to conduct a survey of the 19.96 million poor people struggling against poverty due to disease. Using data from every household and patient, a management database of 96 diseases with high incidence, high cost and serious impact on production and living capacity has been established. Based on the salary of civil servants, the labour cost is about 3 billion to 6 billion RMB for this process, equivalent to about 500 million to 1.2 billion RMB per year for a five-year period. Together with investments made by other ministries and departments on accurate identification, as well as the labour cost of ministries and government departments for targeted poverty alleviation, the total number is about 1 billion to 1.5 billion RMB per year.

Appendix 2: Universal Free Physical Examination:

Universal free physical examination refers to an inclusive health policy that provides free health examinations to all residents to understand their health status and facilitate early detection of diseases and health risks. Since 2008, Jiangsu Province has implemented a free physical examination project, and now, two counties there have launched a universal free physical examination. Binhai County of Yancheng City is the first county providing a full-coverage free physical examination service, a move welcomed by residents. In 2017, Binhai County spent 53.08 million RMB to provide free medical examinations (70 RMB per person) for 824,000 permanent residents.

Through the universal free health examination project, over 21,000 people with hypertension, diabetes, cirrhosis, gallstones and other diseases have gained an understanding of their health conditions and effective treatment at an early stage. The project may also help reduce and better rationalize Government spending on health care, against a backdrop of rising costs. In 2015, the medical and family planning expenditures of Jiangsu Province reached 64.931 billion RMB, increasing to 78.952 billion in 2017. Reimbursement and allowances for critical illness account for a large proportion of the cost. Universal free physical examination can help residents find illnesses at an early stage and receive treatment on time, preventing the deterioration of minor diseases that could later become much more expensive to treat. This could significantly reduce the burden of fiscal expenditure in addition to yielding obvious benefits to society.

Appendix Tables

Table A-1 UBI preference

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Annual Income 50,000-80,000 RMB	-1.881**					-1.907**					-1.858**	-1.863**
	(0.742)					(0.753)					(0.766)	(0.751)
Annual Income 80,000-120,000 RMB	-2.696***					-2.616***					-2.738***	-3.022***
	(0.738)					(0.754)					(0.791)	(0.762)
Annual Income above 120,000 RMB	-0.651					-0.562					-0.631	-0.269
	(1.005)					(1.016)					(1.049)	(1.046)
High School		-0.978				-0.946	-1.215	-1.155	-1.338*	-1.170	-1.220	-0.965
		(0.769)				(0.785)	(0.774)	(0.775)	(0.779)	(0.779)	(0.799)	(0.878)
Junior College or higher education		-1.802**				-2.150***	-2.557***	-2.558***	-2.700***	-2.548***	-2.617***	-2.590***
		(0.730)				(0.768)	(0.752)	(0.753)	(0.764)	(0.762)	(0.803)	(0.886)
Working months			-1.691**					-1.793**			-2.336***	-2.352***
			(0.725)					(0.732)			(0.790)	(0.828)
Whether there's any elderly at home that needs to be supported				-0.310					0.312		1.122*	1.181*
				(0.488)					(0.525)		(0.625)	(0.676)
Whether there's any student at home that needs to be supported				0.470					0.648**		0.714**	0.734**
				(0.307)					(0.324)		(0.346)	(0.364)
household basic expenditure 50,000-80,000 RMB					0.411					0.501	0.752	0.495
					(0.458)					(0.470)	(0.511)	(0.582)

household basic expenditure 80,000-120,000 RMB					-0.405					-0.198	0.101	0.0207
					(0.419)					(0.439)	(0.493)	(0.552)
Household basic expenditure above 120,000 RMB					0.222					0.586	1.240**	1.040
					(0.510)					(0.531)	(0.617)	(0.663)
Female						-0.185	-0.0543	-0.137	-0.0672	-0.0819	-0.361	-0.375
						(0.301)	(0.294)	(0.297)	(0.295)	(0.296)	(0.313)	(0.319)
Age						-0.0710***	-0.0640***	-0.0669***	-0.0640***	-0.0668***	-0.0920***	-0.0946***
						(0.0157)	(0.0156)	(0.0164)	(0.0159)	(0.0159)	(0.0191)	(0.0196)
Married						0.0447	-0.0817	-0.0744	-0.337	-0.0375	-0.213	-0.0474
						(0.436)	(0.430)	(0.433)	(0.445)	(0.433)	(0.475)	(0.481)
Han ethnic group						0.781	0.271	0.122	0.122	0.0958	0.237	0.433
						(1.086)	(1.051)	(1.052)	(1.060)	(1.050)	(1.117)	(0.948)
Employment											-0.405	-0.934**
											(0.389)	(0.473)
The third industry											-0.151	-0.206
											(0.443)	(0.415)
Constant	4.949***	4.494***	4.620***	2.942***	3.074***	8.517***	7.302***	9.201***	7.537***	7.361***	12.32***	12.75***
	(0.710)	(0.711)	(0.711)	(0.178)	(0.362)	(1.584)	(1.447)	(1.647)	(1.476)	(1.483)	(2.109)	(2.279)
Observed Value	1,212	1,212	1,210	1,212	1,212	1,212	1,212	1,210	1,212	1,212	1,210	1,210

How to read the figures:

The figures in brackets are the standard errors. ***、**、*, respectively, means that it is significant at the 1 percent, 5 percent and 10 percent levels. The coefficient of the logit model is reported.
Columns 1-5 only include the regression results of core explanatory variables focused on for this report, namely, individual annual income, educational background, family burdens and family expenditure.
Columns 6-10 are the estimated regression results of the core explanatory variables and individual features together.
Column 11 presents the regression results of all explanatory variables.
Column 12 is the estimated results after the reciprocal weighting based on family size.
Column 13 is the estimated regression results of an amended rare event bias model that has not yet been weighted, and only the estimated results of the asymmetrical complement logarithm-logarithm model are reported here.

Table A-2 Preference for the amount of UBI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Annual income 50,000-80,000 RMB	-0.453*					-0.280					-0.265	-0.520	-0.453*		-0.280
	(0.259)					(0.270)					(0.280)	(0.322)	(0.259)		(0.270)
Annual income 80,000-120,000 RMB	-0.788***					-0.688**					-0.985***	-1.354***	-0.788***		-0.688**
	(0.275)					(0.296)					(0.322)	(0.370)	(0.275)		(0.296)
Annual income above 120,000 RMB	-0.514					-0.367					-1.008**	-1.199***	-0.514		-0.367
	(0.328)					(0.345)					(0.392)	(0.425)	(0.328)		(0.345)
High school		-0.0891				0.391	0.255	0.277	0.121	0.164	0.117	0.132		-0.0891	0.391
		(0.295)				(0.318)	(0.309)	(0.310)	(0.313)	(0.316)	(0.330)	(0.325)		(0.295)	(0.318)
Junior college or higher education		-0.366				0.128	-0.0492	-0.0330	-0.0822	-0.178	-0.0571	-0.407		-0.366	0.128
		(0.276)				(0.318)	(0.304)	(0.305)	(0.311)	(0.316)	(0.339)	(0.371)		(0.276)	(0.318)
Working months			-0.501*					-0.498*			-0.585**	-0.622**			
			(0.271)					(0.278)			(0.288)	(0.316)			
Whether there are any elderly people at home who needs to be supported				0.384					0.120		0.317	0.726			
				(0.388)					(0.400)		(0.420)	(0.494)			
Whether there are any young dependents at home				1.101***					0.803***		0.870***	0.795***			
				(0.216)					(0.234)		(0.242)	(0.243)			
Household basic expenditure 50,000-80,000 RMB					-0.362					-0.357	-0.481	-0.625*			

					(0.273)					(0.283)	(0.293)	(0.326)			
Household basic expenditure 80,000-120,000 RMB					0.150					0.117	0.0865	0.120			
					(0.297)					(0.314)	(0.336)	(0.357)			
Household basic expenditure above 120,000 RMB					0.248					0.197	0.379	0.297			
					(0.334)					(0.353)	(0.389)	(0.422)			
Female						0.650***	0.718***	0.695***	0.718***	0.714***	0.582***	0.215			0.650***
						(0.208)	(0.206)	(0.206)	(0.206)	(0.206)	(0.213)	(0.239)			(0.208)
Age						0.0227*	0.0242**	0.0255**	0.0230**	0.0238**	0.0209*	-0.0164			0.0227*
						(0.0117)	(0.0116)	(0.0117)	(0.0114)	(0.0115)	(0.0119)	(0.0141)			(0.0117)
Married						0.978***	0.910***	0.899***	0.604***	0.853***	0.602**	0.984***			0.978***
						(0.218)	(0.217)	(0.218)	(0.231)	(0.220)	(0.242)	(0.273)			(0.218)
Han ethnic group						-0.180	-0.199	-0.282	-0.300	-0.167	-0.653	-0.642			-0.180
						(0.763)	(0.754)	(0.754)	(0.762)	(0.759)	(0.803)	(0.941)			(0.763)
Employment											-0.900***	-0.928***			
											(0.268)	(0.292)			
The third industry											0.134	0.149			
											(0.275)	(0.300)			
Constant	1,159	1,159	1,157	1,159	1,159	1,159	1,159	1,157	1,159	1,159	1,157	1,157	1,159	1,159	1,159
	-0.453*					-0.280					-0.265	-0.520	-0.453*		-0.280
	(0.259)					(0.270)					(0.280)	(0.322)	(0.259)		(0.270)
Observed value	-0.788***					-0.688**					-0.985***	-1.354***	-0.788***		-0.688**

How to read the figures:

The figures in brackets are the standard errors. ***、**、*, respectively, means that it is significant at the 1 percent, 5 percent and 10 percent levels. The coefficient of the logit model is reported.
Columns 1-5 only include the regression results of core explanatory variables focused on for this research, namely, individual annual income, educational background, family burdens and family expenditure.
Columns 6-10 are the estimated regression results of the core explanatory variables and individual features together.
Column 11 is the regression results of all explanatory variables.
Column 12 shows the estimated results after reciprocal weighting based on family size.

Table A-3 UBI and behaviour change linked to work

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Reduce working hours	Change the job	Resign	Reduce working hours	Change the job	Resign	Reduce working hours	Change the job	Resign	Reduce working hours	Change the job	Resign
Female	-0.620***	0.482*	-0.171	-0.768***	0.568*	-0.477	-0.756***	0.582*	-0.389	-0.655***	0.561	-0.443
	(0.208)	(0.282)	(0.407)	(0.218)	(0.291)	(0.428)	(0.224)	(0.297)	(0.434)	(0.217)	(0.343)	(0.464)
Age	-0.0379***	0.00065	0.0583***	-0.0332***	-0.00401	0.0517**	-0.0358***	-0.00133	0.0468**	-0.0327***	-0.0124	0.0506
	(0.0123)	(0.0169)	(0.0205)	(0.0124)	(0.0174)	(0.0213)	(0.0126)	(0.0178)	(0.0231)	(0.0124)	(0.0150)	(0.0309)
Married	0.174	-0.632*	-1.227***	0.221	-0.667*	-1.134**	0.127	-0.859**	-0.997*	0.312	-0.659	-1.090
	(0.255)	(0.359)	(0.454)	(0.271)	(0.360)	(0.484)	(0.288)	(0.405)	(0.546)	(0.310)	(0.479)	(0.664)
High school	14.48	-1.151*	-1.928**	15.10	-1.085	-1.603*	14.14	-1.509**	-1.369	15.15***	-1.494*	-1.338
	(809.8)	(0.654)	(0.806)	(1,462)	(0.666)	(0.874)	(886.0)	(0.699)	(0.887)	(0.388)	(0.774)	(1.196)
Junior College or higher education	-0.0411	-0.923**	0.573	0.0710	-0.982**	0.919	0.231	-1.130**	1.032	0.264	-1.356***	0.968
	(0.325)	(0.402)	(0.801)	(0.338)	(0.420)	(0.808)	(0.352)	(0.445)	(0.828)	(0.394)	(0.517)	(0.837)
Han ethnic group	0.0121	-0.606	1.442*	0.113	-0.675	2.020**	0.308	-0.657	2.179***	0.300	-0.628	2.983***
	(0.325)	(0.388)	(0.788)	(0.344)	(0.424)	(0.808)	(0.363)	(0.443)	(0.843)	(0.399)	(0.458)	(0.826)
Working months				-0.946***	0.394	0.215	-0.985***	0.511	0.272	-1.181***	0.358	0.659
				(0.216)	(0.455)	(0.540)	(0.229)	(0.469)	(0.559)	(0.225)	(0.510)	(0.531)
Annual income 50,000 – 80,000 RMB				0.528*	-0.515	-1.253***	0.516*	-0.577	-1.222**	0.716**	-0.645	-0.743
				(0.278)	(0.367)	(0.465)	(0.289)	(0.379)	(0.477)	(0.282)	(0.452)	(0.477)
Annual Income 80,000 – 120,000 RMB				-0.00307	0.00914	-1.927***	0.110	0.0298	-1.809***	0.268	0.0607	-2.412***
				(0.334)	(0.411)	(0.629)	(0.352)	(0.425)	(0.655)	(0.356)	(0.525)	(0.749)
Annual income above 120,000 RMB				-1.245**	-0.0213	-16.47	-1.076*	0.0387	-14.81	-0.970*	0.0810	-15.95***
				(0.583)	(0.493)	(891.1)	(0.613)	(0.529)	(508.7)	(0.588)	(0.603)	(0.467)
Employment				-0.148	-0.334	-0.495	-0.250	-0.286	-0.511	-0.154	-0.458	-0.270
				(0.244)	(0.336)	(0.465)	(0.252)	(0.341)	(0.505)	(0.270)	(0.317)	(0.469)
The third industry				0.199	-0.976***	1.129	0.173	-1.088***	1.080	0.225	-1.113***	1.521*
				(0.306)	(0.339)	(0.767)	(0.317)	(0.347)	(0.785)	(0.335)	(0.374)	(0.874)
Household basic expenditure 50,000-80,000 RMB							-0.591**	1.781***	-0.233	-0.500*	2.408***	-0.463

							(0.283)	(0.658)	(0.534)	(0.292)	(0.665)	(0.573)
Household basic expenditure 80,000-120,000 RMB							-0.530*	1.023	-0.214	-0.429	1.325*	-1.165*
							(0.309)	(0.700)	(0.663)	(0.303)	(0.752)	(0.648)
Household expenditure above 120,000 RMB							-1.406***	0.861	-1.041	-1.365***	1.107	-2.192**
							(0.462)	(0.772)	(0.894)	(0.490)	(0.836)	(0.932)
Whether there's any elderly at home that needs to be supported							0.819**	0.387	-0.233	0.732*	0.0207	-1.364
							(0.361)	(0.650)	(0.722)	(0.392)	(0.712)	(0.962)
Whether there's any student at home that needs to be supported							-0.717*	-0.248	2.847*	-0.883**	-0.702	1.899
							(0.421)	(0.580)	(1.683)	(0.431)	(0.614)	(1.799)
Dependency ratio							1.984***	1.343	-7.922*	2.193***	2.208**	-6.537
							(0.634)	(0.906)	(4.462)	(0.676)	(1.004)	(4.397)
Constant	-15.08	-0.948	-3.966***	-15.45	0.0511	-4.156**	-14.05	-0.983	-4.082**	-15.50***	-0.780	-5.002**
	(809.8)	(0.950)	(1.334)	(1,462)	(1.185)	(1.791)	(886.0)	(1.316)	(1.967)	(0.809)	(1.428)	(2.311)
Observations	1,212	1,212	1,212	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210	1,210

How to read the figures:

The figures in brackets are the standard errors. ***、**、*, respectively, means that it is significant at the 1 percent, 5 percent and 10 percent levels. The coefficient of the logit model is reported.

Columns 1-5 only include the regression results of individual features.

Columns 4-6 are the estimated regression results of the individual and work features together.

Columns 7-9 are the regression results of all explanatory variables.

Columns 10-12 are the estimated results after reciprocal weighting based on family size.

Table A-4 UBI or the minimum living standard security system

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Annual Income 50,000-80,000 RMB	-0.387					-0.253					-0.298	-0.173	-0.298	-0.298	-0.350
	(0.292)					(0.304)					(0.312)	(0.318)	(0.312)	(0.312)	(0.316)
Annual Income 80,000-120,000 RMB	-0.243					-0.172					-0.258	0.0320	-0.258	-0.258	-0.0943
	(0.322)					(0.339)					(0.352)	(0.368)	(0.352)	(0.352)	(0.367)
Annual income above 120,000 RMB	-0.513					-0.523					-0.791*	-0.496	-0.791*	-0.791*	-0.422
	(0.434)					(0.447)					(0.464)	(0.480)	(0.464)	(0.464)	(0.495)
UBI collection	-2.975***	-3.167***	-2.941***	-2.976***	-3.055***	-3.036***	-3.372***	-3.037***	-3.064***	-3.173***	-3.158***	-3.462***	-3.158***	-3.158***	-3.309***
	(0.317)	(0.320)	(0.306)	(0.306)	(0.314)	(0.325)	(0.337)	(0.313)	(0.314)	(0.323)	(0.337)	(0.359)	(0.337)	(0.337)	(0.349)
High school		-0.367					-0.473					-0.580*			
		(0.311)					(0.323)					(0.342)			
Junior college or higher		-0.911***					-1.179***					-1.269***			
		(0.316)					(0.354)					(0.384)			
Working months			-0.0614					-0.160			-0.128	-0.218	-0.128	-0.128	-0.119
			(0.311)					(0.316)			(0.329)	(0.331)	(0.329)	(0.329)	(0.331)
Whether there's any elderly at home that needs to be supported				-0.507					-0.502		-0.555	-0.319	-0.555	-0.555	-0.610
				(0.520)					(0.527)		(0.542)	(0.537)	(0.542)	(0.542)	(0.544)
Whether there's any student at home that needs to be supported				0.159					0.213		0.256	0.201	0.256	0.256	0.241
				(0.230)					(0.249)		(0.260)	(0.263)	(0.260)	(0.260)	(0.261)
Household basic expenditure 50,000-80,000 RMB					0.801**					0.889**					0.864**
					(0.377)					(0.382)					(0.401)
Household basic expenditure 80,000-120,000 RMB					0.285					0.228					0.171

					(0.394)					(0.402)					(0.433)
Household basic expenditure above 120,000 RMB					-0.293					-0.207					-0.315
					(0.480)					(0.491)					(0.539)
Female						0.123	0.184	0.155	0.167	0.207	0.0289	0.0737	0.0289	0.0289	0.0960
						(0.237)	(0.236)	(0.233)	(0.233)	(0.234)	(0.242)	(0.246)	(0.242)	(0.242)	(0.246)
Age						-0.00284	-0.0213	-0.000581	0.00145	-0.00383	3.35e-05	-0.0198	3.35e-05	3.35e-05	-0.00188
						(0.0126)	(0.0139)	(0.0122)	(0.0126)	(0.0124)	(0.0133)	(0.0147)	(0.0133)	(0.0133)	(0.0133)
Married						-0.141	-0.0323	-0.154	-0.252	-0.0316	-0.197	-0.0869	-0.197	-0.197	-0.0858
						(0.318)	(0.328)	(0.314)	(0.336)	(0.324)	(0.344)	(0.358)	(0.344)	(0.344)	(0.351)
Han ethnic group						-1.972***	-1.911***	-2.027***	-2.025***	-2.079***	-2.020***	-1.972***	-2.020***	-2.020***	-2.060***
						(0.480)	(0.475)	(0.473)	(0.470)	(0.483)	(0.493)	(0.498)	(0.493)	(0.493)	(0.507)
Emplyment											-0.437*	-0.493*	-0.437*	-0.437*	-0.396
											(0.259)	(0.264)	(0.259)	(0.259)	(0.263)
The third industry											0.827*	0.831*	0.827*	0.827*	0.874**
											(0.425)	(0.426)	(0.425)	(0.425)	(0.431)
Constant	0.493	0.948**	0.248	0.189	-0.0858	2.534***	3.855***	2.437***	2.262***	2.053***	2.344**	3.952***	2.344**	2.344**	1.957*
	(0.380)	(0.399)	(0.407)	(0.290)	(0.415)	(0.794)	(0.887)	(0.812)	(0.732)	(0.788)	(1.030)	(1.159)	(1.030)	(1.030)	(1.088)
Observations	1,212	1,212	1,210	1,212	1,212	1,212	1,212	1,210	1,212	1,212	1,210	1,210	1,210	1,210	1,210

How to read the figures:

The figures in brackets are the standard errors. ***、**、*, respectively, means that it is significant at the 1 percent, 5 percent and 10 percent levels. The coefficient of the logit model is reported.
Columns 1-5 only include the regression results of individual features.
Columns 4-6 are the estimated regression results of the individual and work features together.
Columns 7-9 are the regression results of all explanatory variables.
Columns 10-12 are the estimated results after reciprocal weighting based on family size.

Table A-5 Geographical distribution of game participants

China	Province	Number
China		**829**
	Anhui	14
	Beijing	185
	Chongqing	12
	Fujian	16
	Gansu	15
	Guangdong	83
	Guangxi	9
	Guizhou	7
	Hainan	2
	Hebei	39
	Heilongjiang	23
	Henan	33
	Hong Kong	1
	Hubei	18
	Hunan	16
	Inner Mongolia	11
	Jiangsu	52
	Jiangxi	11
	Jilin	10
	Liaoning	26
	Ningxia	5
	Qinghai	2
	Shaanxi	16
	Shandong	28
	Shanghai	36
	Shanxi	15
	Sichuan	31
	Tianjin	23
	Xinjiang	14
	Xizang	2
	Yunnan	21
	Zhejiang	52
	Blank	1
France		**2**
Japan		**2**
Sweden		**1**
Thailand		**3**
United States of America		**4**
In total		**841**


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