

VALUE, ASPIRATION, AND POLICY: HOW (AND WHY) TOMORROW'S  
MIDDLE CLASS CHINA MOVES

by

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## **Executive Summary**

China has a nation in the throes of massive economic growth since the late 1970s, a situation creating both benefits and pitfalls as the nation continues its headlong course of development. One of the major results of economic growth has been massive migration to urban areas and an increasingly globalized populace through the infiltration of Western media and entertainment. More recently, the explosive growth of private automobile ownership is asking new questions of cities throughout the country as they struggle to cope with congestion, pollution, and issues of spatial allocation and equity in society. There is the suggestion that an increasingly materialistic and Western values system is a factor in the generation gap felt between groups in the nation. This paper addresses the views of middle-class youth in Shenzhen, a major southern city of China, and their perspective of some of the changes occurring in Chinese society. The method of assessment was a survey asking about their views on transportation, personal values, and reactions to hypothetical transportation policies. The results demonstrate the hold that the automobile has on the collective imagination of youth. There is also evidence that as incomes rise and cars become normalized, the expectation of future ownership increases, pushing the car from a luxury item into the mainstream for middle-class aspirants. Despite the presence of materialism, Western values do not seem to play a major role in the attitude of students towards cars, and potential policies either promoting transit or restricting private vehicles were met by strong pushback, though the policies would result in moving more trips to transit. Overall, the pace of motorization signals impending disaster, both from a municipal management and a broader environmental stance and efforts should be encouraged within China to manage the growth and usage of private automobiles in the urban arena.

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## **1. Introduction**

Since the economic reforms and opening of China in 1978, the country's economy has expanded massively, averaging more than 9% growth per year (Thun, 2006). In this same span, the number of urban Chinese has grown massively, along with their relative incomes (Dargay, 2007). Reflected in this newfound prosperity has been a headlong rush into car ownership by the emerging middle class, resulting in a slew of accompanying problems such as congestion, pollution, and urban sprawl.

In Shenzhen and other cities, the number of cars has skyrocketed, growing from 105,097 in 1997 (Shenzhen Statistical Yearbook, 1997) to an estimated 2 million today (Shenzhen Daily, 8 February 2012). This trend of growing ownership is mirrored across the country in the massive increase of the number of cars (China Statistical Yearbook, 2010). In response, local municipalities have unleashed an array of measures designed to ease traffic woes. These can take on many different shapes and forms: targeting and limiting car ownership, subsidies for electric vehicles, encouraging bicycling, and expanding public transit systems.

Beyond policy, there are social dimensions to be considered when car ownership is put in the spotlight. A study of satisfaction with transportation in Beijing found differing levels between older and younger generations in the city. The elderly were more satisfied with the current state of the system, while younger people felt a greater level of dissatisfaction (Ji & Gao, 2010). Similarly, the same study showed that income variations affect one's view of transportation, and that in general higher incomes showed a greater preference for car ownership (Ji & Gao, 2010).

Chinese media have shown a growing love affair with the car, seen in more obvious advertising placements and the subtler but still reinforcing image of successful characters on television dramas going from place to place in their own vehicle. It is to the point that middle-class culture reflects “a growing love affair with the car” that has “sexualised the car as a ‘magical object’ that appeals to the desire for power, speed and excitement” (Waite & Harada, 2012).

The perceived value of the car is increasingly entrenched. This is in spite of the discovery that the value attached to the private car, and its perceived utility, are seemingly misplaced. In Beijing, the average speed of a car was similar to that of a brisk cyclist, about 12 kilometers per hour. When compared with the speed of the Shanghai subway, clocking in, with stops, at 36 kilometers/hour, driving is vastly slower (Zhu, 2012). Actual usage of cars differs from perception as well, as one study of Hong Kong drivers showed that most anticipated using the car for trips they would not otherwise make, yet the majority of trips by car in Hong Kong were for commuting (Cullinane, 2003).

Cars are an addiction that once purchased becomes a necessity. Even in Hong Kong, Cullinane found that the more a person used their vehicle the more it was viewed as indispensable (2003). Indeed, in the relatively small area that comprises Hong Kong (426 square miles), it was found that the average car still traveled 22 miles per day, further evidence that once a car is purchased, its use becomes habitual and addictive. This is in spite of statements to the contrary made prior to purchasing a vehicle (Cullinane, 2003).

The infiltration of materialistic ideas into China may be one of the forces driving the desire for a private vehicle and some studies have been done to this effect. Typically values are transmitted from one generation to the next. In China, this has been disrupted by social changes, and younger generations create value in a vacuum (Gu & Hung, 2009). In this newly materialistic society, the driving goal centers around possession and acquisition of specific products, and it is from here that satisfaction is derived (Gu & Hung, 2009).

Presuming the examples of the US and Europe is emulated, more income means more materialism and drive to own possessions. These have begun to take

hold in Asia now, with Podoshen noting “Chinese consumers found themselves appropriating a modern and more progressive world, one in which goods from the West symbolized a new found freedom” (2011). A seismic change in Chinese social values may be underway, with more youth aspiring to university degrees and trying their luck in newly industrialized centers. Status and social pressure add a different element from the simple Western yearning to consume based on desire alone (Podoshen, 2011).

As this occurs, a new generation of Chinese youth is growing up, part of a society where cars are no longer an exception but are perceived as the rule. They exist in a culture that is undefined, no longer tied to the heavy-handed ideological roots or traditions of older generations. They are left to define values and aspirations for themselves in a country in the midst of a sustained economic boom that has transformed life throughout China.

A survey of students at universities in the Yangtze River delta showed that a vast majority, indeed almost two-thirds, aspire to own a car when they can afford one (Zhu, 2012). These same students hold a vastly positive view of the automobile, and, mirroring the drop in average age of the car driver to 32, most students in the survey would hope to own a car within 4-10 years (Zhu, 2012). This particularly underscores the need for more study of younger generations within Chinese society.

The notion that young people in China hold such overwhelmingly positive views of the car, even if that view is divorced from the reality of its likely use, bears notice. Coupled with the habituation of use that car ownership carries, particular importance should be paid to youth perceptions and the types of policies that can lessen the harmful effects of urban traffic congestion. The scale and density of Chinese urban areas, increasing environmental woes, and massive economic change further underscore the need for more research along this avenue.

## **2. Research Questions**

A pair of questions guided this work. First, what values and life aspirations are today’s middle-class youth choosing for themselves? Second, how do these



values and aspirations combine with policy to affect their choices on personal transportation and how do youths react to theoretical transportation policies?

Embedded within the primary research questions are lesser ones valuable to the data analysis process. Foremost is the thorough assessment of the demographic traits of survey respondents, broken down by age, household size, estimated family income, gender, type of home, and family car ownership. With these baselines established, significance of the sample can be determined and used in comparative analysis of other survey responses.

Next comes what values are the most common and whether or not there has been an infiltration of Westernized values competing with traditional values in modern Chinese culture? Students' future ambitions regarding lifestyle and car ownership/usage are investigated as well. The research also allows us to determine a picture of success within our sample group.

In addition to looking at students' perceived future relationship with cars, the responses provide information about perceptions of cars and bus and rail transit. Assessment of environmental views is conducted at a basic level, along with the influence that education levels have on all the aforementioned views.

Finally, proposed policy interventions are examined. General trends can be drawn determining the relative reception and effectiveness of incentives and discouragement – carrots and sticks – relating to transportation behavior. The individual policies are also assessed in finer detail for specific results.

### **3. Literature Review**

Mobility issues are increasingly coming to the fore in the cities of rapidly developing countries. These accompanying problems to motorization are not unique to China and include a diverse array of specific challenges, outlined broadly as local demand and motorization exceeding facility capacity, tension between land use and transportation, inadequate road maintenance and accountability, and more fundamentally the incompatibility of the present urban structure with increased motorization (Gakenheimer, 1999).

Harder still is for developing countries to resist the example offered by the developed Western nations. Lessons are to be learned from Western development, but blindly following the established model is a recipe for disaster, both locally and globally (Gakenheimer, 1999). Cities, provinces, and national governments in dense, rapidly developing nations such as China would be wise to heed the lessons, both the positive and negative, of other nations in forging a road forward.

### 3.1 MOTORIZATION IN THE DEVELOPING WORLD

By 2030, China is estimated to have twenty times the number of cars it did in 2002, surpassing the United States' vehicle numbers by nearly a quarter; in spite of this projection, car ownership levels will only be on par with those from the 1970s in Europe and Japan (Dargay, 2007). Growth rates have run high, with vehicle ownership growing annually by 10.6%, faster than nearby fast-developing nations like India and Indonesia (Dargay, 2007).

Spread out over time, the rate appears even higher, at 37.4% annually, though this may be a factor of statistical manipulation considering the low level of car ownership in China as recently as 1985 (Zhu, 2012). Regardless of the manner in which growth is quantified, the number of cars stood at 'only' 28 million in 2008, roughly 38 per 1000 people, and is projected to continue expanding (Zhu, 2012).

This underscores the pressing need related to issues of building infrastructure supporting increasing car usage, environmental consequences (Dargay, 2007), the inability of local municipalities to match the exceedingly rapid growth rate of personal car ownership, and the external pressures on land expansion for development that are exacerbated by the growth of private cars (Yang & Zergas, 2010).

An attendant issue to increasing income is that transit usage tends to drop. A study by de Grange found that with every 10% rise in income, there was a 2% reduction in transit usage (de Grange & Troncoso, 2012). The same study offered signs of hope, noting that policies restricting car usage and higher density settlement patterns both boosted transit patronage (de Grange & Troncoso, 2012).

There is also the factor of personal attachment and desire for private vehicles in the developing world. Drivers feel a greater sense of independence and freedom, both more in control of their schedule and autonomous (Beirao, 2007). Even though many Chinese cannot yet afford a car, more and more view their future earning potential with optimism, and hold expectations of a future car purchase not merely for utility but as a symbol of arrival into the middle class (Yang & Zergas, 2010).

More troublesome for those with a negative view of car growth in China is that the trend may yet accelerate. Car ownership growth has consistently been double that of income, and as more Chinese families enter the middle-income class (between \$3,000-\$10,000 per year) the trend in purchases is expected to further grow (Dargay, 2007).

Growth of automobile ownership in this income range has been seen in Brazil, Japan, Spain, and more recently South Korea, as large numbers of people in these nations have reached middle incomes (Dargay, 2007). While car purchasing decelerates as average incomes rise (Dargay, 2007), China today has found itself squarely in the midst of an ever-expanding boom of private vehicle ownership.

Already statistics are bearing out this statistical reality. As far back as the first half of 2006, car sales were found to have grown by nearly 50%, with 1.8 million cars sold in that period (Pendyala & Kitamura, 2007). From the 38 cars per 1000 people today, the proportion is anticipated to grow to 269 per 1000 by 2030, translating to an estimated twentyfold increase of vehicles totaling 390 million (Zhu, 2012; Dargay, 2007).

### 3.2 URBANIZATION IN CHINA

In China, modernization has occurred in tandem with urbanization, raising questions about the effect of these phenomena (Segall, 1986). Traditionally China has stood apart from other developing countries in measures of transportation, a result of the one-time high numbers of trips conducted by bicycle. In the developing world, an average of 75% of trips are made by transit (Gakenheimer, 1999).

A further complication for motorization, and a benefit presently for Chinese cities eager to encourage other types of trips, is the high density of China's urban

areas, often over 250 persons per hectare. This is significantly above the Western European average of 50 persons per hectare, with a consequence being that only 10% of China's urban surface area are roads (Gakenheimer, 1999). Today, that advantage is being eroded with the development of far-flung suburban developments to meet the demands of the new middle class and their vehicles. Employment often follows, a pattern described below in Shanghai, and in the process lower-income people are usually left behind.

In addition to the spatial demands of the car on the physical structure of the city, there is its grasp on the Chinese heart. Despite the lower amount of roadways available, shorter trip lengths, and transit options, families in China are willing to spend two years of income on a car purchase, compared to an average of 27 weeks of income for Americans (Gakenheimer, 1999).

## URBAN GROWTH

Tied to the growth in motorization has been the rapid expansion of cities within China. The percentage of urbanized population has shifted rapidly, going from 29% in 1995 to 45% in 2007 (Wang, 2010), a shift that occurred in just over a decade and is expected to continue into the future. In terms of numbers, there were only 80 million urban Chinese in 1978; by 2008 there were 560 million (Cervero). This is an average annual shift of over ten million rural Chinese to cities, and these new residents are becoming part of the urban problem though traveling increased distances and more frequently than in the past, propelling congestion and demand for fossil fuels (Wang, 2010).

One of the issues of Chinese urbanization, as observed in Beijing and Shanghai (Wang, 2011; Cervero, 2008), is that the increased population and the increased dispersal of population also lead to the spatial spread of employment (Wang, 2010). In recognizing this outcome, some of the potential policies that could be used to control traffic may need a re-examination. An example from Wang suggests that cordon pricing, similar to congestion charging in London, will lose effectiveness as jobs migrate farther outside the central cordon zone, and the effect of such a policy may have limits (2010). This may be true of other urban

transportation policies, and underscores the dynamic connection between transportation and land use.

## BEIJING

One of the most telling examples of these trends is Beijing, the Chinese capital, which has been subject to massive changes in the past few decades. For the capital there is a growing body of research addressing the impacts of urbanization and motorization (Yang & Zergas, 2010; Wang, 2011; Ji & Gao, 2010) that offer glimpses into the present state of China's political center.

A 2010 paper covers these changes from the perspective of the capital city, noting that though home ownership was still the first priority of Beijing families, as incomes rose, households became more and more likely to own a car, consistent with broad international findings (Yang & Zergas, 2010).

This desire for a car, borne out anecdotally on the traffic-choked streets, is also statistically true. In a country with car ownership levels far below Western counterparts, Beijing boasted a car ownership rate of 171 per thousand residents in 2009 among the 3.7 million cars within the capital's boundaries (Yang & Zergas, 2010; Beijing Statistical Yearbook, 2010). Since 2009 the number of cars has kept climbing, though even in Beijing more serious restrictions have been brought to the fore with the 2011 advent of a car ownership lottery policy.

Yang further speculates that the appetite for autos will only increase in Beijing. Families classified as "big, young, and affluent" – those most likely to desire cars – are expected to continue flocking to Beijing seeking the higher salaries offered in the capital (Yang & Zergas, 2010). It is anticipated that this growing class will occupy a greater share of the local demographic.

In 2011, a survey of Beijing households organized across ten different neighborhoods was conducted covering car ownership and other transportation elements. Results showed that behavior was shaped by two primary factors: personal attitudes and the built environment, with the latter being potentially stronger (Wang, 2011).

The *danwei* unit, a traditional type of Beijing housing in which residences are organized around a work area and many daily needs are within an easy walk, had lower car ownership levels than the newer suburban communities built by developers since the 1980s (Wang, 2011). These newer developments, located near the urban fringe, all had characteristics of increased travel time and higher private car ownership (Wang, 2011), though it was unclear what type of person lived in these various types of housing and if personal economic factors are at play.

Yang & Zergas agree with the premise of varying forms of urban development guiding preferences for vehicle ownership, along with issues of speed, privacy, and prestige (2010). Likewise, there is a cyclical pattern wherein increasing car ownership spurs on further urban development that serves the car, thus necessitating further car ownership, and the role that government, through road-building schemes, exacerbates these effects (Yang & Zergas, 2010).

Past speculation, the urban expansion phenomenon is visible in Beijing, where the built-up area in 2007 was 2.6 times the size it was in 2000 (Yang & Zergas, 2010). Government efforts such as the construction of over 1800 kilometers of new roads and completion of Beijing's Sixth Ring Road, over 15 kilometers from the city center, have done little to alleviate the city's new image as a perpetually gridlocked metropolis existing under a haze of smog; little surprise when transportation is responsible for an estimated 77% of carbon monoxide emissions (Yang & Zergas, 2010).

For Beijing, there is little evidence of a slowdown in the explosive increase of car ownership. Where only 4% of households owned a car in 2001, the number grew to 13% by 2006 and to 17% by 2009 (Yang & Zergas, 2010). This rapid change meant that even though the city embarked on an ambitious road-building campaign that increased road area per capita in Beijing, the amount of road area for private car dropped nearly in half, from 95 m<sup>2</sup> to 54 m<sup>2</sup> (Yang & Zergas, 2010).

While the municipality is incapable of meeting the demands of the new vehicles, there is little sign of consumer lust for private cars abating. Homeownership, a high priority in the emerging middle class of China, has been found to increase the likelihood of car ownership, whereas renters are more likely

to live near frequently visited locations like work. For homeowners, there is an added symbolic value to car ownership that, though difficult to quantify, carries an influence (Yang & Zergas, 2010).

A complicating factor in the equation is the generally low status that public transportation is regarded with. The results of a 2010 survey of attitudes towards Beijing public transit was published using proximity to transit stations as a criteria for identifying participants (Ji & Gao). Similar surveys in other Asian cities like Hong Kong, Singapore, and Taipei found that locations near to amenities and transport were highly prized by residents, results that were decidedly more mixed in Beijing (Ji & Gao, 2010).

Within the Beijing sample, the wealthy, the young, and the elderly were found to be especially dissatisfied, though for different reasons. For older urban residents, comfort and convenience took precedence, areas where the transport system fared poorly (Ji & Gao, 2010). For younger workers, the critical dimension was time spent commuting, particularly as over half the workers faced one-way commutes of at least 30 minutes (Ji & Gao, 2010).

Speculation on the source of dissatisfaction in high-income households (those earning Y15,000 or higher monthly) centered on the daily experience of severe and chronic traffic congestion (Ji & Gao, 2010). Families with low monthly incomes (less than Y3,000) actually tended to be more satisfied with Beijing's transport network. Primarily relying on the bus and subway system, both of which have seen significant investment and expansion in recent years, low-income households have benefited from this municipal policy direction (Ji & Gao, 2010). For Beijing's governing group, public transit investment has proven successful, while road expansion for private cars has formed the same function as plugging holes in a dam.

## SHANGHAI

Shanghai, 1200 kilometers southeast of Beijing, tells a similar story, though with some different details. While Beijing enjoys status at the political center of the nation, Shanghai plays a role as the dynamic economic hub of Mainland China.

Given this prominent role, it is little wonder that a series of articles about the city have been published in recent years (Cervero, 2008; Pan, 2009; Li & Ye, 2010). One similarity between the two metropolises is the rapid growth of private vehicles: from 1991 to 2002, private vehicles grew from 200,000 to 1.4 million in Shanghai (Cervero, 2008).

A 2008 study found that spatial spread of the city has become a major issue, with one result being the proliferation of isolated and self-contained superblocks of towers removing life from the streets (Cervero, 2008). This development pattern has led to a decline in access to jobs, along with a rise in both motorized travel and commute lengths (Cervero, 2008). Li & Ye believed that the major factor pushing suburbanization, job and destination diffusion, and rising motorization has been the massive economic expansion of the region and nation (2010).

One of the few bright spots amongst the sea of results was that residents of communities built within proximity of a metro station bore a stronger tendency to opt for transit (Cervero, 2008). Another ray of light was the finding that though central city population in Shanghai has slightly declined, density remains high and the core districts do not seem to be at risk of massive population flight like that experienced in mid-20<sup>th</sup> century America (Li & Ye, 2010)

Metro station proximity was not the only factor that influenced transportation behavior among Shanghai dwellers. Pan noted that neighborhoods that were friendly to bike and pedestrians tended to have shorter average trip distances and boast higher shares of non-motorized transport, presumably a factor of the ability to easily move around by means other than car (2009).

For the city as a whole, increases to both trip demand and average trip length have far outpaced population growth (Li & Ye, 2010), almost certainly a result of Shanghai's suburbanization. These developments nurture private car dependency in their built format and more and more of the newly developing areas are built around wide streets and supersized blocks (Pan, 2009).

In spite of the advantages that a denser, ground-oriented built environment can offer in respect to travel behavior and the strong hand that local governments in China can play in the realm of land-use regulations, Pan also concedes the point that



rising incomes point to an ongoing increase in vehicle ownership (2009). In spite of the tie between affluence and ownership, the study ultimately recommends that land use must be paired with other urban planning interventions to reduce the strain on Shanghai's roads, and that government should play a major role in this (Pan, 2009).

Another article takes the role of government a step further, from that of a potential agent of change to one that has already played a major role. From this viewpoint, the disappearance of *danwei* housing and the state-sponsored support of the auto industry are both contributing factors in the changes to land use and local travel in Shanghai (Li & Ye, 2010).

While the spatial and urban design dimensions of new development can influence travel behavior and decisions by individuals, it is hard to imagine that interventions on this scale will succeed in holding private cars at bay. As seen above in Beijing, the built area of Shanghai expanded from 1985-2003 by 175%, growing from 200 square kilometers to 550 square kilometers (Li & Ye, 2010). Other major Chinese urban regions demonstrated large jumps in built area over a similar period, with Guangzhou's urban area growing by 59% and Chengdu's by 166% (Li & Ye, 2010).

### 3.3 ALLURE OF THE PRIVATE VEHICLE

Much literature and research is devoted to describing the appeal of private vehicles and why, as incomes grow, people tend to gravitate toward them (Pan, 2009). Commonly, four values are examined: car use, symbolic, instrumental, and affective (Lois, 2009). One of the most cited values, affective, is examined in more depth below (Lois, 2009; Waitt, 2012; Gardner, 2007; Pan, 2009; Steg, 2005).

Waitt documents the long-standing "love affair" with the car, how this 'magic object' is sexualized in a way that far exceeds its potential utility to the purchaser by speaking to issues of power, excitement, and even love (2012). In this view and in others, the car is thus a supreme expression of comfort, of mobility, of independence; a machine that carves a singular vision for its use (Waitt, 2012; Steg, 2005). Even in a more pragmatic and less poetic evaluation of car ownership and

use, it was found that an underlying factor for drivers were issues of control (Gardner, 2007).

One of the proposed means to escape this overly commercialized and unrealistic manifestation of ultimate freedom through vehicle ownership, Waitt suggests, is by finding the root causes in the behavior of people that makes them responsive to this image (2012). Making drivers conscious of their travel behaviors and attitudes is a good starting point but it does not drive hard enough at leveling the playing field for all modes of transport within a city.

Another proposed research path would explore the psychological determinants most effective at altering driver beliefs and attitudes. This could include factors like the tendency for drivers to estimate driving time on open roads or viewing traffic congestion as an exception (Gardner, 2007).

Membership within a group, whether actual or perceptual, is another motivating factor for a vehicle purchase (Gardner, 2007). This is an example of affective values holding sway over utility. It has been shown that motorization increases as a person's ability to pay for a car rises, namely through growing personal income (Dargay, 2007; Pan, 2009). Becoming part of the middle class or being perceived as affluent by others, may conspire to push people toward a car purchase. Issues like traffic or environmental concerns typically become externalized in these cases, with a feeling that as an individual, they are not part of the problem (Gardner, 2007).

Circling back to affective motivations for car ownership, Lois speculated in 2009 that these affective values were propped up by internalized embedding of symbolic and instrumental values under the umbrella of affective values. Within this classification is the further notion that the youth, especially men, are most the most influenced (Lois, 2009).

Steg's work supports the notion that affective motivation is a primary driver behind car commuting for all users and for young men in particular (2005). This affective bias in favor of cars was visible even in drivers who used their car only rarely, and the theory was posed that drivers (and people generally) compare themselves with what they feel their self-image to be (Steg, 2005). If we accept this

as true, and accept too that car ownership is a value and symbol of middle class membership in China, then it is sensible to expect Chinese to desire a personal vehicle in spite of the numerous infrastructure limitations and financial burden of ownership.

A proposed two-prong intervention addressing Chinese motorization suggests both increasing the instrumental value of public transportation while finding a way to reduce the psychosocial value of cars (Zhu, 2012). This recommendation was based on a recent study of university student attitudes towards car ownership in the Yangtze Delta, though specifics on how to do this were not included.

The students surveyed agreed with the notion that cars were comfortable, saved time, and useful in transporting goods. In truth, Beijing traffic crawls at one-third the speed of a Shanghai subway line, illustrating the disconnect between perception and reality (Zhu, 2012). The facts have yet to change the perceptions among these students, and in the absence of a solution new policy directions or interventions should be considered to reduce the perceived instrumental value and to affect the car's symbolic and affective worth.

## HONG KONG – CHINA'S FUTURE?

The experience of Western countries can be instructive but may not carry the cultural and situational relevance as examples of motorization and urbanization within Asia. Hong Kong, the former British colony at the far south of China, offers a more relatable perspective on these issues. Here, the attitudes and behavior of drivers have been well-documented in recent years through a pair of papers by Cullinane, the first from 2003 and the more recent from 2010.

Even Hong Kong, with its highly dense, concentrated population centers and well-connected and patronized public transit system, has seen car ownership, congestion, and environmental problems grow. In response, the government is seeking to raise public transit ridership from 33% to 45% by 2016, but both Cullinane surveys of Hong Kong residents found that this goal is unlikely to be

achieved unless more controls on car purchasing and use are implemented (2003; 2010).

As seen in surveys of mainland Chinese, there was a predisposition in favor of car ownership seen strongly in young men, who were far more likely to express an intent on car ownership when it became affordable, than women or older adults (Cullinane, 2003; 2010). In Hong Kong it has been suggested that car owners may only use their vehicles for non-work trips, yet was found that once a car was purchased there was increased incentive to use it, seen in the fact that the average Hong Kong driver covers 22 miles a day (Cullinane, 2003), a surprising number when considered in the relatively small geographical context of Hong Kong's boundaries. Thus, the car becomes a necessity to those who purchase them, even in a city where over a third of the population live within 500 meters of an MTR station (Cullinane, 2010).

In a study of important aspects of Hong Kong public transport, frequency was found to be the most important, followed by fares and reliability. In these areas the MTR system performed well, outperforming other public transit in measures of both reliability and frequency (Cullinane, 2010). Whether or not this good showing has an effect on Hong Kong residents, or perhaps to what extent it does, remains unclear.

By 2010, 34% of Hong Kong residents expressed no intention to buy a car and another 34% did not view it as a priority. Perhaps more instructive is to look at the remaining survey respondents. 21% stated they would buy a car when it became affordable, and the final 11% said they would do the same were it not for the cost and difficulty of parking (Cullinane, 2010). For policy makers and cities, Hong Kong offers insight into the power of parking as a tool to leverage and deter car ownership. Without a car, dependence on the car cannot be established by individuals, and even if only a tenth of the population are dissuaded, those people are critical when addressing traffic congestion in an urban setting.

### 3.4 CULTURAL VALUES AND MATERIALISM

The importance of considering culture in survey design and research has recently risen in prominence. Segall noted in the 1980s that too often "cross-culture

psychology” is ignored and research is prepared as if culture were irrelevant (1986). In his definition, culture is composed of a litany of items, many of which (language, political institutions, population density or social rules, to name a few) are vastly different between China and Western nations (Segall, 1986). Awareness then of these differences is critical for research into China by Western academics if good information is to be collected.

In the face of these cultural distinctions, Gakenheimer proposed that certain aspects of travel behavior seem to follow consistent patterns. Indeed, it has been demonstrated that affluence influences the decision to purchase a car (Dargay, 2007; Pan, 2009), but time spent traveling remains constant at an hour a day, and personal travel typically accounts for 10% of household expenses (Gakenheimer, 1999). It is unclear if this trend holds true today in China, as Gakenheimer’s work is over a decade old and a higher share of income in China is needed for vehicle purchases. More so, the willingness to impart this large share of one’s savings on a car underscores the desire for a private car among Chinese.

In the West, a number of examples exist of academic work in relation to transportation behavior and attitudes. These come from an array of places: the UK, Australia, and Portugal (Goodwin & Lyons, 2010; Kattiyapornpong, 2009; Beirao, 2007) and are examined in some detail here to offer context.

Survey results coming out of the UK show the disconnect between identifying problems and finding individual accountability. Majorities of UK residents felt that traffic congestion was a national concern, that speed reductions, traffic restrictions in residential areas, and improved public transit were important, yet felt less strongly that they as individuals or families faced traffic problems (Goodwin & Lyons, 2010).

More controversial were ideas of continued road building or of road pricing (Goodwin & Lyons, 2010), showing that though identifying a problem can be readily done, taking action will be harder. Similarly, environmental concerns played a role in individual decisions, but less than those of proximate personal benefits that a resident could experience personally, be it air quality, increased fitness, or saved time or money (Goodwin & Lyons, 2010).

In Porto, a city in northern Portugal, an in-depth study was undertaken on local transportation attitudes and behaviors through a series of interviews with a group of local residents. Emerging from these results were several noteworthy claims: that perception of speed and public transit are valuable, that targets aimed at reducing car usage should target those already amenable to it, and that public transit needs to respond to the diverse and wide-ranging needs of potential users better (Beirao, 2007).

Within the article were suggestions for policy guidelines that would make slow travel (transit, biking, or walking) more attractive while simultaneously making car travel less attractive (Beirao, 2007). Specific policy ideas were however lacking, and more research is needed to better understand what types of treatment would be most effective. One avenue of research called for is a better understanding of the psychological factors that affect mode choice, with a recommendation on continued use of qualitative methods (Beirao, 2007).

Among public transport options there was also a difference in perception between bus services and light rail. Buses, particularly at rush hour, were seen as slow and thus a waste of time (Beirao, 2007). Light rail, on the other hand, was viewed as more reliable, spacious, comfortable, frequent, and faster, as well as more fun (Beirao, 2007). These perceptions were also found to be true among car users, who attached further affective value to light rail as carrying a certain status and ambience (Beirao, 2007).

As in the Hong Kong example, drivers in Porto are also dependent on their cars after purchasing one. The car, it was said, gives freedom and a sense of control, the ability to keep a personal timetable, all combining into enhanced autonomy for drivers (Beirao, 2007). It is interesting to note that in cities and cultures as disparate as Porto and Hong Kong, there is still a cross-cultural bias and dependence in favor of the car, and that even within the details of usage there are similar perceived values to vehicle ownership.

The negative aspects of car ownership are also similar. Porto drivers, like their Hong Kong counterparts, complained about traffic congestion and the difficulty of finding and paying for parking (Beirao, 2007). Reflecting results from the

Goodwin and Lyons UK survey, individual drivers in Porto tended not to see the full costs of car ownership, or intend to switch to transit in spite of the cost savings (Beirao, 2007; Goodwin & Lyons, 2010).

## MATERIALISM AND SHIFTING VALUES

Chinese culture and history stretch back thousands of years, an example of one of the earliest remaining unified cultures. In spite of this enormous historical wealth, the changes being wrought in the country today, coupled with globalization, may be affecting some of the traditional tenets held by the average Chinese person. In China, modernization goes hand in hand with the urban migration process, the behavioral and psychological effects of which have yet to be fully seen (Segall, 1986).

A major difference between Americans and Chinese, according to Segall, was the divide between individualism and collectivism as defining social characteristics (1986). The article showed that at the time, Chinese students were more equality-oriented and willing to serve others than their more money-driven American counterparts (Segall, 1986). Today it is unclear how the past twenty-five years of economic growth may have changed this balance in China.

Research has emerged in recent years exploring the social and cultural changes occurring in China (Kopnina, 2011; Weber & Hsee, 2000; Zhang, 2005; Rosen, 2004; Gu & Hung, 2009; Podoshen, 2011). One of the major causes attributed to shifting values has been increased exposure to Western ideas through globalized media, like the Internet, and closer economic ties (Zhang, 2005).

Kopnina recognizes this cultural shift in terms of value placed on owned or purchased goods, specifically referencing the private vehicle. She notes that to own a car in the context of a Western European nation carries a different level of significance than it does in a developing country, where it is far more than simply a means of transportation (2011).

Chinese society is still more oriented towards social communities and situations and has yet to fully adapt the more self-serving and individualistic tendencies of Western countries (Weber & Hsee, 2000). There is a stronger tendency in Chinese culture to view life events in a fatalistic way, with less

individual agency proscribed to actions than in the more cause-and-effect Western viewpoint (Weber & Hsee, 2000).

Rosen went so far as to define the 1980s generation of youth whom Segall wrote about as a group 'searching for life's meaning', contrasting them to the success-oriented and financially driven Chinese youth of today (2004). Part of this shift is evidenced in the provision of state-sanctioned role models, once represented by model workers building the state, now being the well-to-do yuppies of China (Rosen, 2004). The value and stature of money has grown and is now an indicator of financial success over generations, due in part to the commercialization of education (Rosen, 2004).

With increased education and increased income has come greater consumption as the newly wealthy look for outlets, often finding them in items that carry high symbolic value and evidence a growing appetite for material culture (Gu & Hung, 2009). This pattern echoes similar shifts observed in Europe and America in the course of economic development generations ago, and has probably been exacerbated in China by mass media exposure (Gu & Hung, 2009).

More recently, Podoshen's article points out the importance of paying attention to emergent values of materialism and 'conspicuous consumption' in East Asia, going so far as to point out the role Western films and television play in promoting more Western-style products (2011). In China it may be a reactionary casting off of the constraints that the Cultural Revolution and state-driven economic policies placed on people, who now celebrate freedom through more purchasing power (Podoshen, 2011).

Ultimately traditional Chinese values of conscientious social interactions and communalism remain intact. While materialism has chipped away at these values, there is the notion that Western values are being grafted onto the old ones, so that consumption and materialism in East Asia occur in response to social cues and status markers, and are limited by communal and social definitions of appropriateness (Podoshen, 2011). The rapidly changing social and economic landscape however makes it hard to assert such judgments as constants, but more so as snapshots of a given time and subject to further change.



### 3.5 THE YOUTH FACTOR

In Hong Kong, it's been shown that younger people have a surprisingly high preference for car ownership, even if the time they may afford one lies far in the future (Cullinane, 2010). This is a good example of why youth ought to be surveyed about transportation values and behavior, a field often neglected. In China, some assessments of youth have been conducted, regarding both travel and values (Zhang, 2005; Zhu, 2012; Gu & Hung, 2009; Smith & Wylie, 2004).

One of the more detailed research pieces regarding youth attitudes around transportation is Kopnina's survey of elementary-age student in Amsterdam. The author acknowledges the dearth of existing research in this segment of the field, particularly in regard to the viewpoints of children (Kopnina, 2011). The work is based on the idea that children's notions of cars and transport may affect their future behavior as adults, and that developing a curriculum for children could further the cause of sustainable transport (Kopnina, 2011).

A notable result was that, like in China and other developing nations, affective factors like independence and personal identity were important choices in car ownership within families (Kopnina, 2011). Another parallel finding was that as the influence of globalization increases, children are more and more likely to have attitudes that differ from their parents, though attitudes are still often developed in youth and have a tendency to be transferred generationally (Kopnina, 2011).

An aspect that stood out was that adolescents whose parents owned cars were less likely to blindly accept cars and were actively more critical of them, encouraging car-free lifestyles more readily than their non-car owning counterparts (Kopnina, 2011). It is unknown if Chinese circumstances would mirror these attitudes or if family car ownership would simply act as a predictor of future personal vehicle expectation.

In 2004 a poll was conducted exploring the concept of what was considered to be 'cool' by Chinese university students. Concepts such as individualism and innovation were characteristics that made companies cool, in the eyes of these

students, and a preference for brands that fit the aforementioned descriptors were preferred by these students (Smith & Wylie).

A series of interviews conducted in Beijing, Shanghai, and Guangzhou of children and mothers found desires for future jobs conferring authority and freedom (Zhang, 2005). Differences reinforcing Western individualism and Chinese ideas of hard work, a happy family, and strong achievement among Chinese youth were also found (Zhang, 2005). What was 'cool' was seen to be a good predictor of aspiration and special attention ought to be paid to what these indicators in a cultural setting (Zhang, 2005).

As noted by Rosen, this definition of 'cool' in China is amorphous. Wealth has become a common aspiration and urban professionals are the current government-approved role model (Rosen, 2004). A survey of university students found that 71% felt the ability to make money was a standard for judgment among peers, and 86% felt it had great importance (Rosen, 2004). To the statement that "a modern man must be able to make money" there was only 7% disagreement (Rosen, 2004). Whether Chinese youth should be seen as shallow is debatable, as it is natural to secure a future for oneself in any culture, and no comparison was made with Western youth, who could share similar ideas.

More in line with the purpose of this paper is a 2012 study of university students in the Yangtze Delta exploring desire for car ownership. The initiative for the study was grounded in the fact that the 25-29 year age group compose the largest portion of car purchases in China now, and today's university student may buy their own cars in as soon as five years (Zhu, 2012).

A surprising finding was that though at least two-thirds of students felt cars had positive instrumental value, a full 25% of students felt cars did not give them more travel options (Zhu, 2012). Similarly, though cars were held in a positive light by at least a plurality of respondents, significant numbers (22%-39%, depending on the question) were less enthusiastic about cars (Zhu, 2012).

In contrast to Kopnina's findings, students from car-owning families in China seem to have higher psychosocial opinions of cars than students from non-car-owning families, with Zhu speculating that a car was a relevant symbol of success

(Zhu, 2012). A gender dynamic emerged too, in that men held a higher psychosocial attitude towards cars, unsurprising given the same was found in Hong Kong (Cullinane, 2010), whereas women held a more positive instrumental view of vehicle ownership (Zhu, 2012).

The most dangerous harbinger of future behavior, if we accept that university students will follow through on their ambitions, is that 65% of surveyed students agreed with the statement that they will definitely buy a car when financially able (Zhu, 2012). Given the already dangerous levels of congestion and pollution in Chinese cities, it gives one pause to imagine a future where nearly two-thirds of homes own their own cars.

Gu and Hung point to the transfer of values as a generational activity, passed down from parents to youth, a process that has been interrupted in modern day China by the chasm between a generation that lived through the Cultural Revolution and the youth today who are embedded in a globalized world (Gu & Hung, 2009). These differences are said to stem from and become exaggerated by the difference in media exposure and financial pressures felt by each respective generation, thus contributing to the disruption of transferred values. (Gu & Hung, 2009).

Acquisition centrality and novelty seeking are central to the adoption of materialism, placed in the center of a person's life by the satisfaction found in obtaining certain goods (Gu & Hung, 2009). It has already been seen that materialistic traits are being integrated into the behavior of Chinese youth, though the measures of materialism are still less than seen in the United States or even Japan (Podoshen, 2011).

Materialism too is a means of adapting to a new society in which the children's views of the world may radically differ from their immediate predecessors, substituting the loss of community and traditional Chinese social values with their newfound purchasing power (Gu & Hung, 2009). It is in the most economically developed corners of China, that youth have turned away from the prospect of steady government employment and directed themselves to higher education and aspirations of upward social mobility (Podoshen, 2011). How materialism may change Chinese culture remains an open-ended question.

### 3.6 POTENTIAL INTERVENTIONS

Residents of any nation do not simply act in a vacuum when it comes to the choices they make in regard to transportation and various policy measures can create influence. Measures and interventions should be enacted that not only promote the use of slower and more sustainable modes like cycling or walking, but also advocate for better public transit and reducing the attractiveness of car ownership and use (Beirao, 2007).

The need for intervention is underscored by the notion that moral imperatives, like environmental protection, may not be enough to drive decision-making, and that decisions often break down into individual cost and benefit scenario (Daboval, 1995). Government is the most obvious point at which to place interventions, and particularly relevant in China where metropolitan areas are unified under single-entity county-level governments, creating a realm in which enacted policies can be universally applied (Gakenheimer, 1999).

One of the simplest measures is to stop building new roadways, halting the expansion of roadway capacity and allowing congestion to serve as a disincentive to driving. In Hong Kong, congestion was enough of a deterrent that 47% of car owners left their vehicle at home, instead using transit (Cullinane, 2003). Similar to road capacity is the provision of parking, both availability and cost, working as a brake on car usage. This is done in the central areas of Hong Kong with results that drivers are discouraged from using their cars (Cullinane, 2003).

Past car limitations is the expansion of transit options, especially rail transit. In China, cities are already at population (five million or more) and density (15,000 persons per square kilometer) thresholds that are traditionally used to justify rail transit (Cervero, 2008). Metro transit, with full grade separation, offers a reliable and frequent connection along its length free from any roadway surface congestion.

Rail transit also brings up issues of the surrounding built-form and the built environment in Chinese cities as they expand their area at rates exceeding their population growth. For those living within 1 kilometer of a metro station, it was seen that there was a much greater chance that the metro rail would be used

(Cervero, 2008). Cities with developed rail-transit systems also tend to have better preserved downtown areas, an area of some concern in China where city centers are being eroded by diffusion of population and jobs (Gakenheimer, 1999).

One study found that a 10% expansion in the size of a rail network had the effect of reducing automobile use by 2%, a modest but definite decline (de Grange, 2012). It was uncertain if the initial size of the network created variations in this effect; for example do a small and large metro system share the same benefits from a proportionally equal expansion. The same article pointed out results saying that fare subsidies did little to stimulate increased transit usage however, consistent with past findings (de Grange, 2012).

Rail transit enjoys a more positive perception than bus service. Traits often associated with rail were its reliability, comfort, frequency, speed, and spaciousness compared with buses (Beirao, 2007). These attitudes were found even among car users (Beirao, 2007), indicating a potential avenue for policy interventions to shift mode share towards transit.

Improving bus service is possible and has been undertaken in many places. Asian cities that had undertaken comprehensive reform of their bus transit provision found that speed improved significantly (30-75%) when a median bus lane was created, and that a 17% increase in ridership followed, on average, along with more metro riders fed by the increased bus patronage (Yamamoto, 2011). Doing so fights the risk of buses bogging down in slow surface traffic and can also create a better perception of buses among residents.

Equity issues can arise when punitive measures place financial costs on car use, as the wealthy are in a better position to pay for the costs are considered. Driving bans, such as Beijing's license plate number scheme or London's congestion charge for access to the central city, have been called into question as second cars can be purchased to circumvent the Beijing policy or those able may simply pay for access in London (Wang, 2010). However given that car ownership is biased towards those with means anyway, the equity issue seems to lie not in penalizing driving but in better facilitating other modes.

Limiting roadway access and improving transit have been advocated as solutions for Chinese cities (Gakenheimer, 1999). It seems clear from demographic data, recent built form, and car sales that no single intervention alone will solve congestion and environmental challenges posed by private vehicles. Instead a menu of options should be fostered and tested to find solutions that are both acceptable to the public and effective.

In Singapore a number of policies exist to limit car ownership and discourage car usage in the most congested parts of the city-state. The list of policies used by Singapore includes congestion charging in central areas, restraints on auto ownership through high license costs, ongoing transit investments, and land-use choices that support these transportation strategies (Pendyala & Kitamura, 2007).

The combined effect in Singapore has been that auto traffic has a commute mode share under 25% and that rates of car ownership hover around 10 per every 100 people, all without impacting rapid local economic expansion of the Singaporean economy (Pendyala & Kitamura, 2007). Given similar demographics, levels of state control, and cultural background, Singapore may offer an instructive example for Chinese cities to consider when creating their own policies.

While congestion charging schemes have been considered somewhat difficult to implement given their technical demands, parking restrictions have been pointed to as an alternative with similar effects (Wang, 2010). By transferring the economic cost of parking spaces onto the user, an effective driving discouragement is put in place (Wang, 2010). This could be easier to implement and enforce in Chinese cities without the same technical requirements and capital costs facing congestion charging.

Even in Western countries there is support for restrictions on driving and greater investments in public transit. A UK study found over 95% support for more transit, speed reductions for cars, and prioritization for transit, buses, and pedestrians in roadways (Goodwin & Lyons, 2010). The same survey saw respondents less enthused with ideas of raising fees or usage costs for cars, or cutting services like road maintenance or reduced spending on new roads (Goodwin

& Lyons, 2010). How these viewpoints may differ in the Chinese context is still a matter deserving more attention.

Policies restricting car usage and car ownership have had positive effects on transit usage, and cities with good car restriction policies have seen car use decline 20-30% accompanied by similar rises in transit usage (de Grange, 2012). These are not numbers to scoff at and offer considerable hope for Chinese metropolises.

Beyond transportation-only policies, the realm of land use planning holds potential by supporting transport strategies with appropriate built form. China has an advantage in this regard as urban land is under public ownership and the local county or city government exercises direct authority over the entire region, creating a much stronger chance for successful interventions if laws are applied with rigor (Pan, 2009). It's a particularly relevant notion too at this stage of urban development, a critical moment in the formation of middle-class lifestyles, and the Chinese government ought not to shy away from its ability to intervene or remain complicit in the motorization of the country.

The power and influence of predominant lifestyles on youth is another reason to act now, as children's views are so often influenced by the culture they grow up in. Increasingly children, teens, and university students are given their own discretionary spending income and take on roles as consumers at a younger age (Veeck & Flurry, 2009). This role has been embraced and nearly two-thirds of Chinese teens feeling pressured to keep up with trends in fashion and technology, showing strong brand cognizance as a means of competing and keeping up with their peers (Veeck & Flurry, 2009).

On a much smaller scale is the idea of personalized interventions. These consist of efforts typically sponsored by government agencies that contact individuals directly, offering materials and support for moving away from car travel to more sustainable modes (Brog, 2009). The advantage of these efforts is that they don't bear the same cost of burdens that large-scale infrastructure or technology-based solutions do.

In Germany, those contacted through a program seeking individual-level change showed a high willingness not only to participate but that the voluntary

actions introduced to them were often successful and lasting means of weaning people onto more sustainable transportation (Brog, 2009). A similar program rolled out in Western Australia found that a 7% reduction in car trips and a 17% increase in sustainable modes, defined as public transit, walking, or biking (Borg, 2009).

Whether such a strategy would be successful in China is unknown, and both aforementioned examples took place in Western cultures. More to the point, even if small-scale interventions proved effective, their scope is not large enough to affect change on the level or pace that is needed in China today. The speed of urbanization and motorization is too great to allow small solutions to eat away at the desire for a private car; a sophisticated array of large-scale strategies is needed if China's urban centers are to make a meaningful impact on the rampant rush for cars by the middle class.

### 3.7 NEED FOR FURTHER RESEARCH

While extensive research has been conducted on China, the country is so expansive and rapidly changing that most studies today can best be seen as snapshots of passing eras. There are also research gaps, as though research exists on youths or motorization and urbanization in China, there is no research connecting the above topics save for the recent Zhu study on university students in the Yangtze Delta. Students at the secondary level are even more neglected by the academic world.

As seen above, China is at a critical time, with income set to reach thresholds at which car numbers will likely boom. The effects, both for China and the world, could be disastrous. Too often decision-making processes, such as transportation, become portioned out into smaller spheres of responsibility, broken into components based on economics or social programs (Fang & Hong, 2006). A more holistic view of policy and the relationships intertwined within would benefit cities.

China is also in a unique position to influence these choices, as high-level governments with administrative power over large areas and fiscal means, such as Chinese localities, are shown to have a greater influence over a longer span of time (Fang & Hong, 2006). Given high-density, the rapidly growing household incomes,



and the disproportionate physical spread of Chinese cities, there is an acute need for effective transportation policies (Wang, 2010).

A frightening implication from Zhu's study on university students was that the normative view that in the future everyone should have a car, a social standard that could create a dangerous situation, especially in a culture as socially conscious as that of China (Zhu, 2012). In this sense, the car has already surpassed mere instrumental value, and if means can be found to counter this, a younger generation must be reached.

If no solution can be found to lower the affective value of car ownership, then policies need a design that discourages car use and encourages and provides competitive alternative transportation (Zhu, 2012). An analysis of attitudes held by secondary students and their reactions to proposed transportation policies may hold clues to addressing the rush for a private vehicle.

Findings from a UK study showed that respondents often perceived congestion as a problem and very few associated themselves as part of that problem. It was left unclear whether this is true of younger people, and no such research exists on the teenage age group in China (Goodwin & Lyons, 2010). Indeed the largest bodies of research on teens and youth comes from Western cultures, leaving a significant gap in Asian cultures and China specifically.

There is also a need to learn more about the affective values that may be held by Chinese youth. For policies to be effective in combating car addiction, they must first understand the psychological factors that drive mode choice and how these can be influenced (Beirao, 2007). Indeed without this knowledge, policies will at best simply be guessing, a risky practice in a country changing as speedily as China.

#### **4. Methodology**

This project adhered to the following methodology, beginning with the literature review that laid the appropriate and necessary background prior to conducting research. This review covered important areas such as Chinese development in the past decades, values and aspirations, behavior economics, and

transportation policies. Listed in the bibliography are a number of sources related to the aforementioned topics, though the list neither claims to be exhaustive nor limited.

The next phase was creating a list of questions pertaining to values, aspirations, and policies. These questions formed the basis of the implemented survey, but were first refined through a process of translation of the survey from English into Mandarin occurring concurrently with consultation from native Chinese speakers and academics as to the appropriateness and function of each question.

With these results in hand, a comprehensive survey was created based upon the original series of questions. The survey covers areas such as environmental awareness, social status, conception of success and happiness, income expectations and education goals. It also addressed transportation policies (both actual and hypothetical) and situations to see how they affected transportation choices. Basic demographic data were included in the questionnaire to allow for comparisons, including information such as age, gender, household income, and type and location of home.

Upon completion of the questionnaire, a pilot test was performed with one class of approximately 45 students. For this, a foreign secondary school teacher in Shenzhen selected from their classes the one least likely to produce useful results, as gauged by the student behavior in other aspects of their education. The idea was to use the circumstances that would provide the most difficulty in conducting, distributing, and collecting results from the questionnaire.

Feedback from the pilot survey was derived in two ways. First, experiential feedback from the teacher about whether the length of the questionnaire was appropriate, how clearly the students understood the expectations of the survey and its questions, and any other recommendations that they had to offer. The second component was an assessment of the results of the questionnaires to determine which questions were effective, which were not, and what needs to change before the following iteration of the survey.

The survey aspired to create two sets of data. The first is based in Shenzhen, using secondary school students exclusively. The second aimed to use university

students across a broad diversity of geographies in China. These were also sourced through the network of expatriate English language teachers with a goal of collecting a broader demographic more representative of the country as a whole. Despite the jump in age and experiences between secondary and university students, it was hoped that a meaningful array of responses could be collected over a range.

## SURVEY SCOPE

For data collection, an appropriate means and sample size target was addressed, as well as a method of initial outreach able to connect researcher and subject. Past studies similar to this one used methods such as street intercepts, contacting through parents, interviews, forced-answer survey questionnaires, and trip diaries (Podoshen, 2011; Kopnina, 2011; Zhang, 2005; Wang, 2011). For the purpose of this study, a questionnaire was created and distributed to students fitting the target characteristics.

Survey size was another key consideration. Past research either in China or on transportation behavior have collected vastly differing amounts of responses, from as few as 52 in-depth personal interviews (Zhang, 2005) or 139 questionnaire results (Podoshen, 2011) to as many as 1119 responses for a Beijing survey (Wang, 2011). A recent, related article concerning university students' car ownership aspirations used a questionnaire targeted at two central China universities, achieving a return rate of 973 total responses, of which 95% were usable. The response rate was high as well, 85% at one school, 90% at the other (Zhu, 2012). These were seen as achievable and reasonable targets in creating robust research results.

A three-tiered system of conducting the survey was conducted beginning with a targeted convenience sample using foreign English teachers employed in secondary schools in Shenzhen. This assured the survey respondent that someone was there to explain any questions they have while making certain that the survey was clearly understood. Schools were generally wealthier, as they are able to afford hiring a foreign teacher. Classes receiving the survey were limited to those taught by

the English teacher as well and had to fit into the schedule so as not to interfere with normal classroom operations, and as such another convenience method was used.

After including these two filters, the sample of students within the school classrooms was census-style, with the survey given to all students present. For those opting to complete it, no personal identifying information was required to allow for a lack of pressure for 'right' answers from the student's perspective. Here, no special consideration is given to the differences between students and the survey was distributed without bias.

The group resulting from this sampling method was very much intentional. Though it may be unfair, from a policy view the lower class of China is not realistically able to afford a car. However this sample produces a group from a higher-income and education bracket more likely to have a choice about a car purchase in the future, as well as being represented (and influenced) by the emergent middle-class that now serves as the idealized life in China.

## SURVEY QUESTIONS

In order to analyze a number of different areas touching on an expanse of topics, a survey design utilizing factor analysis was employed. This entailed clustering of certain elements, such as questions about materialism or car ownership aspirations, together under the assumption that they would show a relation (DeVon & Block, 2007).

Another important concept was face validity, the notion that the question being used accurately assesses the concept under inspection (DeVon & Block, 2007). Given the subjective assessment asked for, this was accomplished by iterating the proposed research questions through several different phases and reviewers to best ensure a comprehensive and usable final product.

The last tool used in the design of the survey questions was concurrent validity. Here a concept is tested through the use of related criteria within a survey (DeVon & Block, 2007). For this piece of research, this has been done by creating triangulating questions that target the same concept through different wording styles and choices, ensuring a view may be validated through several different paths.

This is also a means to control for reliable results, as conflicting viewpoints can be weeded out in the initial review of collected responses.

The final piece of the design that has been considered is the difference in cultural context. Despite familiarity with the culture, the researcher recognizes inherent biases that come from a Western culture upbringing. Part of the review of questions has been having native Chinese parse the proposed survey for cultural congruence and literacy. This recognizes that the Chinese worldview is typically more fatalistic and socially-oriented than self-centered, individualized Western cultural norms (Weber & Hsee, 2000).

## AREAS OF INQUIRY

Environmental attitudes and awareness were a topic examined as air pollution grows in severity and media stature in Mainland China. Even in Hong Kong, the issue has been of enough importance to include in past surveys of transportation behavior (Cullinane, 2010). As environmental degradation continues apace, research ought to determine youth opinions on the matter and its influence have policy implications.

Aspiration to car ownership ties directly into the above, and serves as a cornerstone for the entire research endeavor here. Again using Hong Kong as a bellwether, Cullinane's most recent survey found that despite excellent transit, 65% of residents still felt a desire to own a car (2010). Determining the status of such desires in Mainland youth thus becomes a critical concern to future policy-makers.

Past perception of the automobile, perception of public transit and amenability to it were important survey factors. In the survey, a distinction has been made between rail and bus transit under the assumption that they are viewed differently. This is based on research showing that, in both Asia and Europe, rail has a more prestigious standing in the eye of the general public as well as being utilized when convenient for users (Beirao, 2007; Cullinane, 2010; Cervero, 2008).

The next step – consideration of policy interventions – was critical. Decision making of individuals is typically led by, regardless of the recognition of large-scale issues, the manner in which issues interact with people personally (Goodwin &

Lyons, 2010). Thus for any intervention to be successful, finding what most affects individuals at the personal level has critical importance. An array of hypothetical policy interventions was the tool selected to measure reactions to responses, both by type (incentives versus penalties) as well as scale or severity.

Neighborhood attributes play a vital role in determining the way residents and visitors access and interact with a place. Blank street walls and an impermeable network of pathways limit non-car choices, while lowering parking and driving capacities limits car use (Cervero, 2008). There is also a connection between land-use, built form, and travel behavior that could in theory be measured through a thorough survey design (Wang, 2011).

Reflecting the nuances of land-use and urban form, like street connectivity or presence of local retail, was a problem as it requires a level of instruction that a survey cannot achieve quickly. Thus to include it would have increased the cost of the questionnaire such that responses may lose validity. Given this, built environment was consciously but regrettably absent from the questionnaire and will hopefully be addressed through other research in the future.

## **5. Results**

Upon the close of the survey, a total of 890 responses were collected from 938 distributed surveys, a response rate of just under 95%. From the 890 collected responses, 834 were considered valid and useful. This is a validity rate of 93.7% among returned surveys. Within the 834 valid responses are small variations in responses to questions, as students at times selectively omitted answers while completing the questionnaire. The omissions do not compromise the validity of the responses, but it is worth noting that not all questions have been answered. For more detail, the data set will be made accessible.

Students were drawn from four secondary schools in Shenzhen: Shenzhen Foreign Languages School – Buji, Minzhi Middle School, Shenzhen Experimental School, and Bolun Vocational Technical School. The latter two are located within the

Special Economic Zone of Shenzhen, while the former pair are outside in the more suburban, less central portion of the city.

The two parts of data collection originally planned for the project did not come to fruition. Scheduling conflicts, internal classroom demands, and lost mail did not allow for a full spectrum of university students responses to be collected. The only data from this group were a set of 76 valid responses from Wuhan Textile University. Given the limited sample size and vastly differing demographic character of this group when compared to the Shenzhen secondary school students, the university sample has been filtered out from the responses. Thus the focus of the paper is exclusively secondary students in Shenzhen.

## 5.1 SHENZHEN IN BRIEF

For our comparison, a baseline of demographics from available information on Shenzhen was created, based upon statistics gathered by various levels of government. Shenzhen, with a population of 10.3 million, has a significantly younger population, with an average age of only 30 and a cohort in the 15-64 years range higher than peer cities of Beijing and Shanghai (88.4% versus 82.7% and 81%, respectively) (Shenzhen Municipal Statistics Bureau, 2011).

*Table 1: Shenzhen Municipal Characteristics*

<b>Shenzhen Municipal Characteristics</b>	
Population	10.3 million
Average Age	30 years
% Male	54.2%
Average Monthly Income	¥7,858
% with University Degree	9.1%
Average Household Size	2.11 persons
% Household with a Car	35%

Shenzhen was found to have more average education levels, with 9.1% of residents holding a university degree, lagging far behind Beijing (31.%) and

Shanghai (21.9%) in this regard (Shenzhen Municipal Statistic Bureau, 2011). The gap could be attributable to the lack of established universities in Shenzhen, the prevalence of less educated migrant workers in the manufacturing industry, or a combination of these with other factors; for now, it is unclear.

The presence of a high number of young, migratory residents in Shenzhen is further evident in the low average household size, only 2.11 persons, compared with Beijing (2.45) and Shanghai (2.49) (Shenzhen Municipal Statistic Bureau, 2011). It is also likely that the number is lower as migrants often return home to start families and elderly parents are less likely to join offspring in Shenzhen. Shenzhen also bears the gender imbalance that characterizes China, being 54.2% male and only 45.8% female (Shenzhen Municipal Statistic Bureau, 2011).

What the city lacks in education, age, and household size, it makes up for in high levels of personal income. The average Shenzheners brings home ¥7,858 (\$1,261) per month, well above the national average and reflective of the city's status as a premier Special Economic Zone (Guangdong Statistical Yearbook, 2011). Undoubtedly the higher earning potential is a driver of migration to the city.

#### SAMPLE SIZE CHARACTERISTICS

The average age within the survey sample is significantly lower. Shenzhen students were 14.1 years old on average, the vast majority of them belong to the Junior 1 and Junior 2 grad levels (85%). This has the potential to skew the data, and certainly the results now reflect a younger demographic than previously targeted. The responses retain validity; the lens has simply shifted down a few years.

Average education levels are higher than the city as a whole, obvious given that students are already in secondary school. Their educational aspirations reflect their status as middle- and upper-class children: 72% state an intention to attend a university after graduation. The students also come from considerably wealthy backgrounds, even for Shenzhen. More than 69% estimated their family income to be at least ¥10,000 per month, and nearly half estimated household income at over ¥15,000. In this sense, the design of the survey was a success: the students represent the wealthy middle-class of the future.



On the more mundane elements of demography, the gender split showed better balance, as males were only 51.9% of the sample respondents, whereas females were 48.1%. Average household size exceeded that of Shenzhen, with most students living in homes of 3 or 4 people (67%), obviously above the citywide rate as families with children are larger.

Another telling number of the upper-class status of the students surveyed is the car ownership rate by household. 85% of students lived in household that had their own car, compared to a citywide average of 35% in 2010 (Shenzhen Daily, 8 March 2011). There is no indication either of the number of cars per household, as some students' families may have more than one.

The numbers show an even stronger connection between car ownership and wealth when dissected further. For families with monthly incomes over Y10,000, 93% were car owners. Among those with lower incomes, the rate drops to 67%. Likewise while only 67% of renters in the survey had a car, 87% of homeowners were car owners.

*Table 2: Study Group Characteristics*

<b>Study Group Characteristics</b>	
Average Age	14.1 years
% Male	51.9%
% Estimated Monthly Income >Y10,000	69%
% Plan to Seek University Degree	72%
% Households with 3-4 people	69%
% Households with a car	85%

Students lived in three main types of housing: villas, or stand alone homes, urban apartments, or suburban apartments. Most lived in apartments (79%), villas (7%), or suburban apartments (9%). The remaining 5% lived in other forms of housing and were excluded from further analysis due to small sample size.

Within each group were slightly different ranges of socio-economic status. It is possible to determine a spectrum defined by characteristics, wherein the students living in villas had the highest average family income, estimated at over Y10,000 by

82% of villa dwellers, compared to lower rates for urban apartment (70%) or suburban apartments (62%) students.

In other measures of material wealth, students living in villas showed greater economic clout. 96% lived in homes their family owned and 93% of families had cars. This contrasts with the urban and suburban apartment numbers, where only 91% and 80% of homes were owned, respectively. Likewise, cars were owned by only 86% of families in urban apartments and 72% of families in suburban apartments. In spite of the lower performance relative to villa-dwellers, these numbers still significantly outstrip the average Shenzhen household.

While location can account for some variation in socio-economic demographics, there is no means to assess the built area of each respondent's home to see if it fits into the definition of these categories. Further they are defined by the students themselves, as the line between suburban and urban is hard to divine in a place as dense as Shenzhen.

Some differences in opinion exist, however given that the definitions of the housing types are hard to differentiate, they are not elaborated upon. A full evaluation of the way built form and living environment interact with one's views on transportation should be tabled for the time being and strongly advocated to any seeking to build upon this type of research.

In total, higher average income, household car ownership rates, and education set the sample size in the survey apart from the rest of Shenzhen. The group falls into the category of being middle or upper-class, the exact type of people who in the future may be the trendsetters and barometers of Chinese social norms.

## 5.2 TRAVEL ATTITUDES AND PERCEPTIONS

Of similar import to the demographic traits defining the students in the survey sample are their behaviors and current attitudes relating to transportation. Among students, regular travel to the city center was uncommon, with less than 17% of students heading to the city center more than once per week. Other factors could explain this, such as a lack of free time, and to be sure students are not the

same group as working adults so conclusions about central city primacy are not relevant with this sample group.

Travel behavior also tells us something about the form of the city, at least from a student's perspective. When asked of the walking distance to a bus station, over half (56%) were within a walk of five minutes or less, unsurprising to any person familiar with the sheer number of stops in the city. Another telling statistic is that nearly 55% of students stated they lived within fifteen minutes of a metro station. Again, these measures are based on the student sample and may not be indicative of the city at large. The primary takeaway is that while most families have a car, access to useful transit options are still relatively near, numbers likely boosted with recent metro expansions.

When asked to select most important aspects of transportation from a group of five characteristics (safety, convenience, speed, cost, and comfort), the overwhelming majority selected safety as the primary feature, checking in at 82%. Conversely, the two aspects that featured consistently low rankings were speed and cost, at 62% and 69% respectively in the last two positions.

Several explanations may be given for this safety preference. It is a major part of the education and public information campaigns in the country and it is reasonable that cost bears little relevance to youth whose money comes from parents and who do not directly bear the cost of transportation. Speed is more open to interpretation; one is that as the student is never the driver, the notion of speed may be less perceptible. Of note too is that that question may have caused confusion, with misunderstandings and incomplete responses whittling away the number of valid surveys to only 374 for this particular question.

One area where perceptual trends were quite clear was in regards to how students viewed three different types of transportation: metro, bus and car. Bus and metro were examined separately as enough previous research existed to show perceptual gaps in the biases towards each, and the results from the students confirm that such biases strongly exist still in China.

The Shenzhen Metro, which has expanded dramatically in the last two years from a short 2-line system to a 5-line one covering over 170 kilometers in length, is

generally well regarded. The most frequent descriptions for it were convenient (69%) and fast (66%), and a majority selected affordable (55%). Crowded, a negative trait, and safe appeared in more than 40% of selections.

The bus system in Shenzhen did not fare as well in the minds of students, with the chief adjectives applied being crowded (70%) and slow (60%). While positive attributes such as affordability and convenience scored well (50%, 39%), the bus was also stigmatized as being for poor people by 37% of respondents. Part of this may be due to the fact that buses are typically stuck in the same mixed traffic congestion that private vehicles face, and receive little to no priority for space on Shenzhen's roads.

While cars confront the aforementioned congestion, they are seen quite differently than buses. Majorities of respondents called cars convenient (57%) and comfortable (53%). Interestingly, a cluster of factors just below the 40% range included fast and slow, as well as crowded and gives freedom.

It is possible that students whose parents have cars have experienced both the perceptual notion of cars being speedy as well as the grinding traffic that often negates potential time saved. Curious too is the notion that the car can be both comfortable and crowded. Views between car-owning and non car-owning households showed no gaps large enough to explain the difference as being strictly perceptual or experiential.

*Table 3: Common Transportation Perceptions*

<b>Common Transportation Perceptions</b>			
Mode	Car	Metro	Bus
Responses (% selected)	Convenient (57%) Comfortable (53%) Fast (39%) Crowded (30%) Gives Freedom (28%)	Convenient (69%) Fast (66%) Affordable (55%) Crowded (48%) Safe (41%)	Crowded (70%) Slow (60%) Affordable (50%) Convenient (39%) For poor people (37%)

One difference that appears, and seems to reflect the work done in Hong Kong by Cullinane, is that male students placed greater value on the car. 27% felt

that a car was for the rich, compared to 16.5% of women. Males were also more likely to consider the metro (16% versus 9%) and bus (44% versus 30%) to be for poor people. This is the only area that differed markedly by gender, and seems to support the idea that men place more psychosocial value on the car as a marker of one's social class.

Another way to derive meaningful perception differences in the results was to look at the factors inserted into the survey denoting social class: whether the mode was for rich, poor, or middle class, if it showed a person's status, the expense, and if it gave freedom to the user. The results demonstrate that in terms of affective values and social status, cars are the best, followed by metro and then the bus.

The car was seen to be for the rich by almost 22% of respondents, a decent but not overwhelming amount. It seems much stronger when one is aware that neither the metro nor bus received over 2%. Likewise, responses selecting 'expensive' as an attribute for the metro and bus were also under 2%, but nearly 20% for the car. An opposing question, asking which mode was for the poor, found 37% felt it applied to the bus, with only 12% agreeing for the metro and less than 2% for cars. A clear cost and expense hierarchy is present in these numbers.

With an 18% selection rate, cars scored higher than the other modes as a display of one's social status. The figures for the metro (5%) and bus (4%) are much lower, and indicate that neither is a strong indication of the reputation a person carries in Chinese society. The relatively low rate however for cars in the above figures may mean that the effect of cars on social standing is not overwhelming, though it is impossible to determine from the data if this perception is shifting one direction or the other.

It is somewhat shocking that stronger differences aren't observed when results are sorted by factors like gender. The data collected displays a striking uniformity, though differences appear if the respondents are divided by car ownership in households. It is reasonable too to view car ownership, given the demographic correlation, as a proxy measure for wealth, in a broad sense.

Generalizing from several trends, children in families that owned cars were more likely to see them as standard and not a luxury good purchased by an elite.

Only 21% felt that cars were for the rich, compared to 31% of those in families without them. Whether a car was affordable or expensive showed comparable findings, as 20% of car-owning students thought cars were affordable, while 11% from non car-owning homes felt that way. Non-car owning students also said cars were more expensive (31%) than students whose parents had cars (18%). Interestingly, more students from families with cars felt they were slow, though the gap is not as pronounced.

Combined, the above results paint a picture of transport modes in the minds of the secondary school students of Shenzhen. Cars are viewed most positively, bus travel the most negatively, and metro travel somewhere in between. Assumptions based on class are built into these placements but are not overriding in determining one social placement. They do seem to play a role, particularly for more class-conscious male students. Previous experience with cars within respondents' own homes also show a preferential bias in favor of automobiles.

This same bias is seen in the results to the survey statement "It is more important to invest in roads than transit". Respondents were asked to agree or disagree with the statement, and only 19% came out for roads having priority. Nearly half (48%) supported transit instead, and the remaining third were neutral.

Males were also more likely than females to support more roads, by 22% to 16%. Females were less concerned and far more neutral than males on the issue, 37% opting for 'no opinion' compared to only 28% of males.

In homes with a car there was only a slight bias for more transit over roads, 20% to 18%. Transit performed well with these households, registering 49% support, which was actually higher than the 45% for non-car households. It is unclear why students from these homes may desire more transit instead of road infrastructure, save that in their daily lives they could be more likely to ride transit than be a car passenger.

### 5.3 PICTURE OF SUCCESS

In examining student aspirations, several results point to an influence of Western norms, though these are not entirely at odds with Chinese traditional

values, such as the desire for homeownership. Results from a question asking students to select the characteristics of a successful person show a marked trend towards a mixture of values, potentially the byproduct of a globalized world.

Interestingly, of the options available, the one selected with the most frequency was independence, with over 66% of respondents choosing it. None of the other results obtained a mark over 50%, making independence the runaway winner. This is a result that wouldn't be out of place in a Western classroom, and it begs the question of whether the definition of independence to Chinese students is the same as it is for those in the West.

Markers of wealth also showed a strong connection to a successful individual. With a rate of 48%, both owning a home and being rich were the next two most chosen indicators. Owning a car came in fourth at 38%. All three show a predilection for material possessions as well as a value placed on wealth and a link between success and material gain. Once more, these results would be no surprise coming from either hemisphere.

The last common result was that a successful person would have studied or lived abroad, checking in at just under 37%. As recently as the late 1970s, the only real options to study abroad for most Chinese were in Soviet sphere institutions; today that has changed with record enrollments of Chinese students in universities across North America, Europe, and Australia. A bias in favor of living overseas as a trait of the successful may also point to a level of idolization of Western culture or at least of exposure and worldliness.

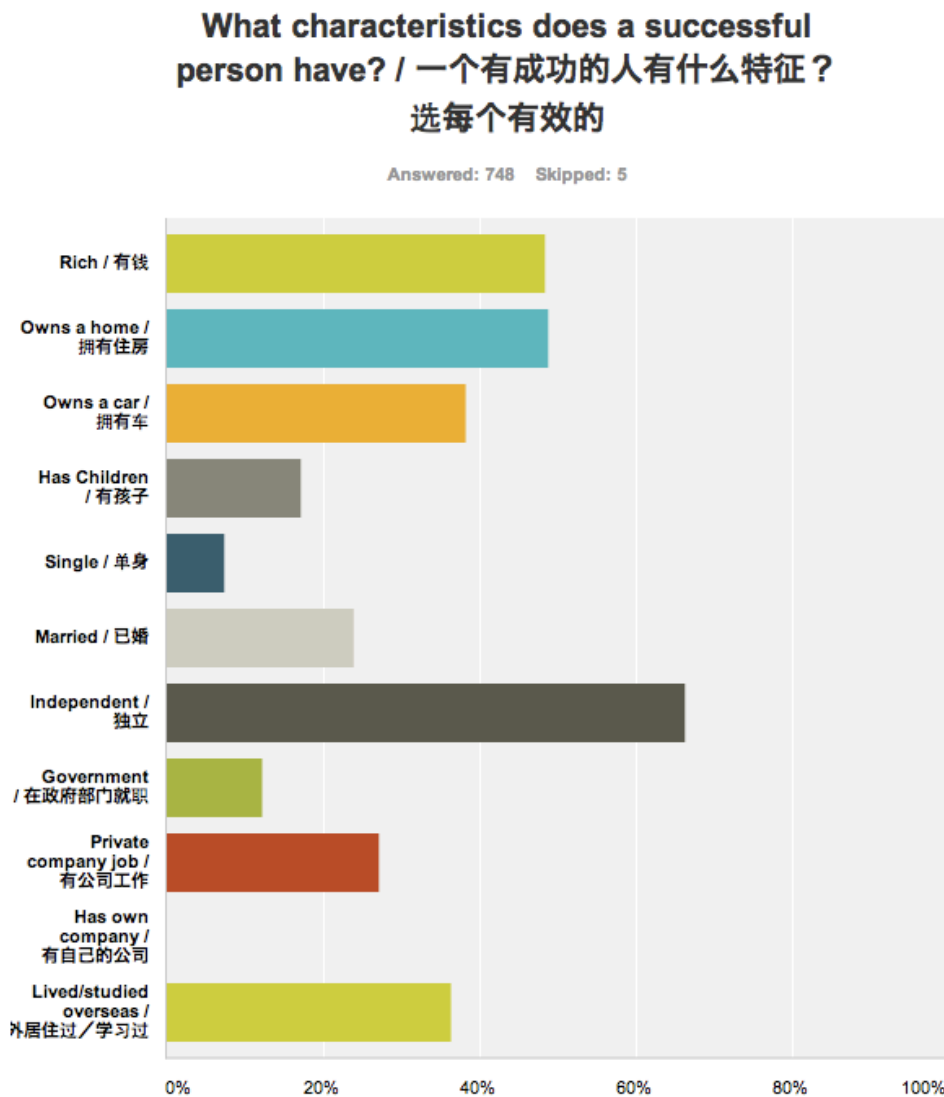
*Table 4: Picture of Success: Most Selected Traits*

<b>Picture of Success: Most Selected Traits</b>	
Trait	% Selected
Independent	66%
Owns a Home	49%
Rich	48%
Owns a Car	38%
Lived/Studied Overseas	36%
Private Company Job	27%

Married	24%
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It is fair to note as well that while these trends are evident, they are, like transportation perceptions, not overwhelming. Independence, the only measure to score over 50%, may be an exception but overall the influence of Western values on the picture of success in Chinese culture is present but not omnipresent, at least for now. There is also no means within this survey to determine if these trends mark a departure from past results given the dearth of available comparative data.

*Image 1: Picture of Success*





When broken into different filters, it was found that being rich and owning a car were significantly more important to students from families with cars. 50% of these students chose rich, while only 37% of students without cars did. Similarly, the respective difference for car owners as successful people was 41%, compared to 27%. The difference for home ownership was quite small and didn't show any great distinction.

Another major difference appeared when results were separated by gender. Women showed much higher desire for independence than men, 77% to 56%. In line with this finding was that marriage as a successful trait was chosen by only 16% of women, compared to 31% of men, a sharp contrast. Growing gender awareness may be responsible for this, although further research is needed.

Among students from car-owning families, 37% felt a car was a symbol of success, while their opposite only selected car ownership 25% of the time. Again, this shows that car ownership breeds familiarity and raises the standard of what becomes acceptable through normalization of car ownership and usage.

#### 5.4 FUTURE BEHAVIOR

Accounting for student responses about future travel behavior, results show that the perception of car usage differs from the reality. Majority selections by those surveyed was that a car, if owned, would be used either to travel on holiday (62%), to visit friends or family (54%) or for general recreation (56%). Far fewer students felt that work commuting would be a common use for their hypothetical vehicle.

Yet despite these intentions, most students said they would use a car regularly, either daily or 4-5 days per week (58%). Only 20% of the respondents would use the car less than once per week. Like Cullinane's findings in Hong Kong, the numbers from the survey seem to indicate that the perceived use of the car and the actual use, even though here it is hypothetical, lead to higher car use.

Once more, having a car present within a student's family turned out to have an influence in normalizing vehicle usage. 60% of students from families with cars indicated they would drive regularly. For their counterparts, this number drops to

46%. This is little surprise, given the other results and past research that corroborates and supports this finding.

## 5.5 VALUE ORIENTATION

The question of values has been at the head of transformation within Chinese culture and as such, an examination of student respondents' values is a useful exercise. In order to test values, a series of eleven statements were derived. Agreement with the statement on six of the questions implied a Westernized cultural value, while agreement on three represented a more traditional Chinese value.

Two of the questions offered a relatively neutral standpoint in terms of their cultural orientation. As they related to perception of others and the value of the environment, there was no strong sway towards either culture considering that the statements probe fairly common stances. The nuances of these attitudes can differ culturally, though here that was not tested.

A Likert scale consisting of five points was used, and answers were grouped into disagree, neutral, and agree for the simplicity of presentation. The general trend emerging from the content of survey responses was that Chinese traditional values are, for the most part, largely intact. There were only two instances where traditional values were questioned.

The first was a statement that the respondent would feel happier if they owned certain things they don't own now, where a full 49% agreed with the statement and only 21% disagreed. This question is also a soft test of values in some regards, and may be more applicable to a feeling of materialism or comparative socializing as the Chinese economy continues to grow.

The second case showing a deviation, albeit only in part, posed that older parents should always live with their children. The results here were not clear-cut but ambiguous. This uncertainty was reflected in the abnormally high rate of neutral answers (46%) compared to the other ten statements. Only 32% agreed with the statement, whereas 22% did not, a finding somewhat surprising given the traditional predilection for multi-generational households. Possible explanations

could be increasing pressure placed on youth and the demographic pinch point in which many youth will one day find themselves as only children, caring for two sets of parents.

Excluding the two aforementioned diversions, the remaining statements received very pronounced responses. This was partly by intent through wording statements in a way to encourage responses, but the consistency of responses was a surprise. It may also serve to validate the tone of the statements in their composition.

*Table 5: Responses to Values*

<b>Responses to Values</b>			
Statement	Agree	Disagree	Neutral
The things a person owns say a lot about them	54%	16%	30%
A simple life with few material possessions is a good life	27%	30%	43%
It's important to own famous or name-brand goods even if they cost more	69%	21%	10%
My life would be happier if I owned certain things I don't have now	21%	29%	49%
I would be happier if I could afford to buy more luxury items	50%	31%	19%
It's okay for people to buy anything they want, even if its something they don't need	58%	23%	19%
Wearing stylish and up-to-date clothes is important	48%	33%	20%
It is more important to fit into society than be known as an individual	14%	16%	70%
Before buying something, it is important to know what others think of it	26%	24%	50%
Protecting the environment is more important than the economy	9%	13%	79%
Parents should always live with their children when they get older	22%	46%	32%

Seven of the statements garnered clear majority responses, including both neutral statements. The responses all reinforced the traditional Chinese value orientation and a further remaining three had clear pluralities, greater than the next option by at least 17%. One of the statements that received only a plurality was the

aforementioned statement that the respondent would feel happier if they owned an item they didn't have. The final statement asked about living circumstances for older parents.

Few of the statement responses went past 60% agreeing or disagreeing, with three exceptions. The first said that the environment was more important than the economy, which met with 78% agreement. To see the environmental situation in China causes one to wonder about the seriousness of this assertion, but on paper the sentiment is at least reflected.

The other two were that fitting into society was more important than standing out (70% agreement) and that it was important to own higher cost brand-name goods (68% disagreement). The former statement is no surprise given the communally derived socialization of China and despite inroads of Western materialism it seems little has eroded, even for the young. Speaking to the latter statement, it may be that cost is still a concern to the students or that luxury goods aren't as much as a draw. They may simply be pragmatic, but the reasons are more supposition at this point than explanations.

Several less pronounced trends emerged from the collected responses. While gender was not a major dividing point, there was a slight tendency for males to select more traditional values than females. This was often only by a few percentage points and in few instances exceeded five percent; thus it may simply fall into the range of error. It may have a connection to the notion that women have more independence in mind when they think of success as well. While this is a logical leap, this paper does not statistically confirm the relation.

Similarly when a filter splitting results between families with cars and without is applied, a slight difference is again seen. Here, students from car-owning households leaned more towards Western values. For statements like "what you own says a lot about you" or whether "owning more luxury brands would make you happier", the agreement rate was 9% higher than for those in families without cars. Likewise, there was over a 9% higher level of disagreement on the idea that parents should live with their adult children or that a life with few possessions was good.

Again, the difference between both the genders and households with or without a car aren't especially divergent. For the most part, the values recorded in the survey show that youth in Shenzhen, though they may have some Western inclinations and materialist views, still maintain predominantly Chinese value systems.

## 5.6 STICKS AND CARROTS: POLICY REACTION

A total of nine different hypothetical policies were crafted for the survey and presented to respondents. Within the proposed policies was a division between disincentives to drive and incentives for non-car modes; in other words, the classic sticks and carrots. Another layer was added through the usage of different wording and theoretical price points to create a gradation of policies. This was done to elicit and test for strength of reaction and to see the extent to which a policy needed to go to drive behavior. It was also a means to determine validity of results.

Survey respondents were asked to respond to a proposed policy in two ways: first, a 5-point Likert scale of the acceptability of the policy, followed by a transportation behavior reaction. Testing acceptance has typically been grouped into acceptable, unacceptable, and neutral in the reporting. For reactions, they have been separated by car and non-car mode, with distinctions made within these where the results are significant.

*Table 6: Proposed Transportation Policies*

<b>Proposed Transportation Policies</b>	
Sticks	Carrots
Y50,000 car license registration	Dedicated BRT-style bus lanes
Car license lottery with an average wait of 2-3 years	Installing a tax to double the size of the metro system
Y70 congestion fee for cars entering the Special Economic Zone	Y2 subsidized tickets for public transit
Y50 per hour parking fee	Free 2 hour transfers on public transit
Y12 per liter gasoline prices	

### STICKS

Unsurprisingly, the stick policies were unpopular. To varying degrees students felt that the proposed policies were unacceptable in one way or the other, with a range between 68% to 91% unacceptable, and all but one over the three-quarters mark. Acceptance rates for the policies never exceeded 20%, and the remainder of responses were of the neutral or no opinion category.

Tied to the unacceptable marks of policies was the move towards more non-car modes of travel. When ranked, the rates of non-acceptance and non-car modes follow the same order. This outcome may indicate that the sharper the policy is and the more restrictive of car purchasing and ownership it may seem, the more likely a Chinese youth is to settle for alternative modes. Chief among these was the metro, which consistently outdrew increased bus, bike, and walking trips.

A lottery policy, inspired by the example used in Beijing, asked students to assume a wait time of 2-3 years for a car. While still deemed overwhelmingly unacceptable (68%), the policy actually had the lowest rate of non-acceptance. It may be because the policy doesn't infer any cost penalty, which the others do. Given this proposed intervention, 59% said they'd use non-car modes more, with the bulk of that being the 39% who would opt for the metro.

The next policy was modeled after the Shanghai car auction program and supposed a one-time fee of Y50,000 (\$8,035) to register a vehicle. Opposition to this was 75%. In accounting for reactions to such a policy, non-car modes were the beneficiaries, with 63% opting for them, including 42% for metro.

*Table 7: Stick Policies: Acceptance and Reactions*

<b>Stick Policies: Acceptance and Reactions</b>						
	Acceptance			Reaction		
Policy	Unacceptable	Neutral	Acceptable	Drive more	Transit more	Walk more
Y50,000 car license registration	76%	10%	14%	35%	54%	11%
Car license lottery with an average wait of 2-3 years	69%	15%	16%	40%	48%	12%
Y70 congestion fee for cars entering the Special Economic	81%	9%	11%	33%	57%	10%

Zone						
Y50 per hour parking fee	92%	4%	4%	26%	62%	13%
Y12 per liter gasoline	86%	5%	9%	24%	61%	15%

The three ensuing measures are based on ideas for car usage management as opposed to ownership restraints like the above pair. They impose financial costs of varying significance. If a congestion charge for central Shenzhen was enacted costing Y70 (\$11.25), over 80% opposition appears, and 50% recording strong opposition. The acceptance rate plummets to less than 10%, but the shift to non car modes is strong (66%) and once more the metro, at 47%, is viewed as the best alternative.

Increasing the cost of gas to Y12 (\$1.90) per liter was, like the others, unpopular. 66% were strongly against it, and 86% against generally. The reaction again tended towards non-car modes at 65%, with the metro clocking in at just under 50% of the total. It is also a continuation of the idea that harsh financial costs are both unpopular but potentially effecting at causing active behavior changes.

Finally, a hypothetical intervention charging Y50 (\$8) per hour for car parking was the least popular. Over three quarters were strongly against it, and 91% of the total deemed the policy unacceptable. The trend of transitioning to non-car modes with rising discontent tied to policy continues however. Nearly 75% indicated they'd use non-car modes more, with nearly half opting for more metro usage.

## CARROTS

Interventions incentivizing non-car travel, instead of punishing automobile options, were met with generally positive reactions. Three of the four policies found broad acceptance among those surveyed. The wording of the fourth one may be a factor in its deemed unacceptability, and is discussed below in detail. Due to difficulty wording a clear and concise question, no specific policy enhancing bicycling or pedestrian choice was included.

Like the driving disincentive proposals, the broad tendency of actions was to move towards more non-car modes of travel. Here the values ranged from 56% to 75%, roughly similar in scope to the effect of the anti-car policies. It is interesting to see this relation; however no distinction is made in the quantity of the trips changed and a fine grain of detail is not available due to the nature of this survey.

*Table 8: Carrot Policies: Acceptance and Reactions*

<b>Carrot Policies: Acceptance and Reactions</b>						
	Acceptance			Reaction		
Policy	Unacceptable	Neutral	Acceptable	Drive more	Transit more	Walk more
Dedicated BRT-style bus lanes	28%	16%	56%	45%	48%	8%
Installing a tax to double the size of the metro system	60%	12%	28%	29%	59%	12%
Y2 subsidized tickets for public transit	13%	13%	74%	34%	59%	7%
Free 2 hour transfers on public transit	14%	8%	78%	24%	70%	6%

A policy proposing dedicated bus lanes on major roads met with 55% approval, with 29% against and the remainder neutral. In such a scenario, 56% of respondents said they would opt for more non-car travel, including 21% more for bus. This was still less than the rate for more metro (27%), an interesting find considering that the policy is specifically designed to encourage bus usage. It may be evidence of the perceptual difference the two modes carry.

A policy of subsidizing public transit fares at a rate of Y2 (\$.32), as in Beijing, would mean significantly lower cost than now, when fares can range up to Y11 (\$1.76) for the furthest trips on the Shenzhen Metro. When facing the option of a ticket subsidy, almost three quarters found it to be acceptable and a mere 13% were



against it. 67% of the respondents would opt for more non-car trips, with metro actually taking a smaller share than bus, which had 39%. This may be the case because the issue of fare payment is one that is not abstract for a student, but a very common occurrence and thus quite tangible.

Currently the transit agency in Shenzhen does not allow free transfers, though it does offer a slightly discounted rate when a fare card is used in close succession between trips. An intervention that would create a free two-hour transfer window met with 79% acceptance and only 15% non-acceptance. Bus usage was selected by 48%, and total non-car mode increases were chosen by 75% of responders. Again, this is a situation student may regularly encounter in their trips to and from school.

The fourth carrot produced the most interesting results. It suggests increasing taxes in order to double the size of the metro system; in Shenzhen, this would result in a system of 360 kilometers in length, large by any global measure. The extent of the tax increase was not prescribed, but it is the only policy proposed that implicates the financial tradeoff of increased service levels.

It may be as a result of the tradeoff that only 26% of students supported such a measure, while nearly 60% found it to be unacceptable. Such numbers are near the levels of discontent registered with the anti-driving policies, albeit at the lower end. Nevertheless, it offers a stark contrast to the other hypothetical carrots.

While unpopular, the idea of doubling the metro system was able to win over a fair share of respondents. Just under 45% stated their reaction would be to ride the metro more, and fully 70% would use non-car modes. For a policy that was seemingly unpopular, there is an irony in that so many of those purportedly against it would also continue to use it.

## DIFFERENCES

Some differences in results appeared for all policies when certain filters were added, such as gender. Men showed a stronger stated intent to walk or bike as a result of policies than women. Women, meanwhile, were more apt to shift to travel

by transit modes, with a particularly strong representation for increased metro usage.

For the driving disincentive policies, the gap was particularly pronounced. Women answered that they would take the metro more by anywhere from 13% to 23%, with public transit rates in general being higher by 11% to 20%. For the non-car incentives, the gaps between males and females narrow, with overall public transit ranging from 7-14% and the metro dropping to under 10% difference.

The gap between men and women for walking or bicycling was smaller. However, the same pattern appeared as with transit, wherein for driving disincentives a larger gap exists than for non-car mode incentives. Here the range was between 4-10% for 'sticks', and only .5% to 5% for the 'carrots'. Based on those results, it seems that women may be more willing to change their ways when faced with more restrictive policies and (possibly or) that men are more obstinately set in their own.

This latter assertion gains some credence when considering that men were more likely to continue to pursue driving. They showed stronger reactions in favor of driving for all policies, ranging from 5% to 10%, with one instance of a 19% gap for the Y70 congestion charge. It is unclear why this gap is so large compared with the others. Overall though this fits with the analysis Cullinane has done of Hong Kong attitudes that show a stronger tendency for men to gravitate towards driving.

In spite of the differences that appeared in the reactions of male and female students, acceptance rates for policies varied little from the composite ones above. The widest gap was merely 7% for the acceptability of a transit ticket subsidized at Y2, in which women found it more agreeable. The general range was more typically seen at 4-6% for proposed interventions.

Similar to gender, the effect of being from a car or non-car owning household seemed to have only marginal impacts on the student's response to the hypothetical policies. Slightly stronger opposition to both anti-car and pro-transit policies was evidenced, but even here the gaps are smaller than the acceptance rates of males and females. There was a slight tendency in favor of taking transit by students who

were from homes that did not own cars, as well as a slight preference for maintaining automobile trips by students from car-owning households.

## 5.7 COMPARING VALUES AND POLICY

Having established that Chinese traditional views are more or less intact and certainly still dominant even among younger citizens, it is possible to determine if the values cause any variance in attitudes towards cars and transportation. To do so, three of the questions relating to personal values were used for comparative purposes against a selection of questions.

The value questions examined were based on responses to survey questions 2, 4, and 8. The primary result to come out of the cross-examination between values and transportation is that there is little connection between the two sets. While some variance exists within the ranges, it seems that a student's personal values play little role in their transportation choices and attitudes.

An area where some greater influence was seen was between materialism and question 4 (My life would be happier if I owned certain things I don't have now). Here, those who agreed with the statement had a greater desire for a car before marriage (28%) than those who didn't agree (18%). For a similar question on home ownership before marriage, 44% wanted a home, while only 28% of those who disagreed wanted a home.

In terms of acceptance of all the policy interventions proposed, both the carrots and sticks, there was likewise little difference. Only two of the policies showed consistently different results: using taxes to double the metro system and subsidizing transit fares at Y2 per ride. For the question about metro expansion, the range was between 3-8% for all three of the value questions.

Relating to subsidized fares, the range was larger, with a low end of only 1% difference but a maximum gap of 11% between values. It should be noted however that regardless of the difference present, the overall trends relating to policy acceptance are in line with one another, and despite some differences, policy acceptance seems unaffected by a person's stated values, at least in relation to the sample group in this survey.

## **6. Interpretations**

Based on the analysis of the data, a number of key threads and thoughts emerge that offer a more complete view of middle-class youth, both in terms of who they are and their attitudes towards transportation. An important if easy to overlook implication is that the design of the survey was successful in bringing out results from the group sought. The student respondents were a group balanced in gender and representing a proportionately higher educated, wealthier, and more car-owning group than in China as a whole or in Shenzhen. These are exactly the people who may have the option of buying their own vehicle a decade from now.

There has not been a wholesale penetration of Western values imposed on these youth. This is in spite of the spread of globalization and idealization of many elements of Western culture in media. The students too are at an age where people are typically quite impressionable and may have the potential to be strongly influenced. In the end, traditional Chinese values seem to be holding.

While values were generally in line with traditional ones, a few points emerged may indicate Western encroachment and a potential gender division. Males were overall more likely to trend towards traditional values, while females placed a greater emphasis on personal independence. Both showed a strong desire to have lived overseas too, though no distinction is made as to if this is a temporary or permanent arrangement.

Even though ideas of being independent or living abroad fared well in student descriptions of a successful person, some conflict of values was present. For all pretensions to value independence, there was still a pull towards traditional values like marriage, bearing children, and owning a home. This may be a result of the survey group's average age, where it is easy to hold two views that may conflict with each other without noticing the logical incongruity.

Materialism is represented among this age group; however, it does not necessarily conflict with Chinese values. A materialist view can be nurtured in the context of wanting to both fit in and stand out in society, ideas that are not

exclusively the social domain of either the East or the West. For all the perceptual value attached to cars and their precedence over other modes in the mind of student respondents, car ownership was still a good deal less essential to a successful person than home ownership.

Evidenced within the results, particularly when examining the descriptors assigned to travel by car, metro, and bus, was a clear preference of the different modes. Speaking from social values, the car was perceived as the best mode, especially for more subtle cues such as the status of person using a particular mode. Cars performed the best here, labeled more positively than either public transit mode.

This was especially true with men, who throughout various sections of the survey demonstrated favoritism towards the car that women did not. Cars, when present in the household, also had a normalizing effect and students from such households were found to hold biases in favor of private vehicles compared to their peers in homes without cars. This is in line with prior research on car ownership, both in Asia and also globally.

The bus had the worst results, maligned as a slow tool for the poor that is too crowded. Metro received better marks, occupying a solid middle ground between car and bus. These results are in line with perceptions of the three modes in the West as well, though for China the speed value of the metro is hard to overstate given the congestion that surface streets often endure.

When presented with a slate of hypothetical policy interventions designed either to curb private cars or encourage transit, outcomes followed a consistent path. The stick policies, either targeting car ownership or car usage, were roundly unpopular and deemed unacceptable by strong majorities. The carrots that incentivized transit were almost entirely acceptable to students.

The sole aberration among these trends was the question of using increased taxes to fund a metro expansion, which was roundly rejected. It may be because this was the only question that involved a tradeoff, and with the financial implication looked punitive. It would be curious to learn what sort of balance would need to be

struck in order to make such a policy acceptable to the general public or to the survey population.

Reactions towards the policies, be they stick or carrot, were near universal. Students chose to increase their non-car modes of travel, siding with more public transit, especially metro. The survey was unable to test for the magnitude of the shift, so the effect of a policy that causes more transit usage could vary from one extra trip a year to all trips by transit. Such detail could not be produced because of the nature of the survey.

Even if values are not affected by the penetration of Western ideas, the market has clearly shifted in response to the private vehicle, coupled with growing affluence. The attitudes of Shenzhen youth, the middle class of the future, shows a distinctive preference for cars and attitudes towards transportation that are as at home in the West as they are in China. For both boys and girls, a car is a symbol of success in life, albeit not a primary one.

For city builders, planners, and government officials, awareness of such findings is crucial. Chinese cities have undergone drastic alterations and continue to change rapidly. The cities that best understand the desires of their populace, as well as the levers to balance those desires with the other citywide goals will have the advantage.

Already China is an urban laboratory offering rare opportunities for innovation and experimentation. In the face of such open models there must be caution; experiments in China affect the course of their urbanized areas. As seen in cities the world over, the legacy of planning decisions, both good and bad, plays out decades and even centuries after those in power have left office. Responsible, civic-oriented policies will balance the short-term political cycle with the gains with long-term perspective required by a city.

## **7. Limitations**

There are certain limitations acknowledged in this project. The majority of students in secondary school and university are of middle or upper class backgrounds, and a lack of economic diversity is expected. This is not purely

classified as a limitation for the survey, as it is believed that students from such backgrounds are the ones more likely to have a realistic choice in purchasing a private vehicle compared to those with lesser means. Further, as an emergent middle class and educated demographic, this generation will be setting the standards by which success is measured within Chinese society.

The sampling methods building upon existing networks (primarily including students who excel in English) may skew the sample population in an unknown way. It is not a true random sample in that sense, but rather one that is opportunistic in selection. To counter this, a large sample was collected so that a level of significance was easily achieved when analyzing results and drawing conclusions.

Finally, students between the ages of 13-18 in China have famously stressful and high-pressure lives. Each progressing year of secondary school builds on that, culminating with the Chinese college entrance examination at the end of grade 12. This, combined with a teenage tendency for fickleness or inconsistency, means there is no certainty of gaining meaningful results from the participants of the survey.

It was hoped that adroitly wording the survey would expose students who were not seriously answering questions. Triangulation was critical here, as well as the researcher's own ability to assess returned questionnaires and weed out those that were not useful. There is a cost to surveying students with little life experience due to youth, as the responses gathered may lack an element of sophistication seen in adults. The upshot however was that the student answers are very genuine and are accurate barometers of this age group in the moment.

In spite of the care taken in survey design, I am aware that the work contained herein is only the tip of a potential research iceberg. As such, a depth of thought and focus on specific issues highlighted within the emergent data set has not been possible. This sacrifice was made so that the results could portray a rich and expansive collection of data from which future work will hopefully build upon.

Another hindrance to the broad-based approach utilized here has been the need for brevity and awareness of survey fatigue, especially present in a group that can be as mercurial as teenagers, necessitated a modicum of brevity. Given this, nuances to questions were lost, given up as clarity took priority.

As stated, the inability to tease out threads or play upon nuances left a clear if at times blunt tool. That all proposed interventions steered students towards taking transit is clear. There is no knowledge though of the significance of that shift, and of the magnitude it would represent. The travel behavior of students is similarly blunt as the simple richness of data that would come from a more detailed form, such as a trip diary, was not the mode used for this research. In spite of its exclusion, such knowledge would be useful in building upon this work.

The proposed policies are by nature imprecise. Understanding that students responding to the survey came from any variety of locations and ages within the greater Shenzhen region, place-specific policies were not used. Often the issue of execution in public projects and policy plays a critical role to its acceptance. Again, here nuance was sacrificed to the need to assemble usable results.

The result is a large, rich, and useful data set that is representative of the targeted group, middle-class secondary students in Shenzhen. Results may differ if the same questions were posed to students in Hong Kong or rural Anhui Province. As such the value of the data and its results are tied to the specific group surveyed only, and confined to Shenzhen. Now that this data set has been compiled, other researchers may hopefully take advantage of it to create comparative studies. This was a regret of the work, as there were no studies similar enough for comparisons.

Lastly, the survey is static in nature. As it was administered with hard copies and by teachers, there was no ability to alter questions to fit any localized circumstances. Similarly, student reactions were confined to the answers laid out, a situation that doesn't allow the strength of emotional responses to be gauged past the Likert scale, nor for any engagement with the student thought process on a personal level. Owing to the desire to protect student anonymity, there is also no function for following up with students at a future date.

It is useful and honest for research to note its own limitations, be they self-imposed through the scope of the work or as a result of unanticipated circumstances arising in this project's execution. By categorizing these gaps, it may be possible for future efforts to find new means to seal them and deliver a stronger, more robust body of research.



## **8. Going Forward**

With this study complete and a baseline for values, transportation attitudes, and policy implications in place, the door is open to a wide array of potential research options. Some of these involve new designs examining previously unexplored areas while others may use this data set to delve deeper into the rich variety it holds and prepare new comparative measures.

It would be useful, with the assembled data, to test in the future for any causal variables between transportation or attitudes and the various subtleties couched within each profile. A multivariate analysis of features, such as gender, location, household income, or household size in relation to transportation policy reactions is merely one example of the many potential outgrowths of such an analysis. It is uncertain what results this may tender, but the potential is vast.

For new research designs building upon the results here, it would be interesting to delve into more of the local and personal dimensions of transportation. Creating policy interventions for a specific area, or eliciting youth ideas for such interventions, could be a great research avenue to determine what works on a scale much smaller than the city writ large.

Such local investigation could shed light on the role that walking and bicycling play in student transportation, a role that this survey was unable to account for. Identifying gaps and potential improvements to such areas would take policies from the idea stage to the critical point where they meet implementation, an essential step to actualizing any plan.

Another path that could be pursued with a concentrated local approach would be to examine the link between urban design, especially of large estate-style housing developments, and transportation behavior. This could be done with communities either near a metro station or served by buses only. Another means of measuring this could be through the use of trip diaries by students over a period of time to see how and what sort of journeys are made.

Along similar lines to the trip diaries would be conducting a series of qualitative, personal interviews with students, using questions similar to the ones

posed in the survey but allowing for a range of reactions. This could go a long way towards capturing some of the nuances that the paper-based survey omitted.

Transportation behavior in the future was looked at merely as a hypothetical scenario, and lacks the means to follow-up with individuals to see how much of those ideas are realized. An interesting research work could target potential car owners, asking them their perceptions of cars and how much they anticipate using them. A follow-up could ensue in six months to a year, determining how the new drivers really use their vehicles and what some of their personal outcomes to car ownership have been.

Another option is to expand the data set. This could be done by rolling out a version of the survey to students in other provinces that have different sets of socio-economic variables or to similar student bodies in other prosperous cities in China. The age could be adjusted too, and university students could become the targeted demographic. The potential exists with this group that reactions will be more thought out and grounded in the complications that the real world can present to a person with time and experience. Such data could provide better determinants of behavior.

Finally, the policy dimension can be examined through a more demanding lens. This could be by investigating tradeoffs, that improvements to either the road or transit network happen at a cost, be it financial or in resources to other areas. It would be telling to pose a series of policies and ask students which one they would find most acceptable or feel most effective at mitigating traffic and enabling urban transportation.

All of the above suggestions, and the content of this paper, can help inform Chinese policymakers and researchers about some of the issues at play in providing urban transportation in China. Hopefully these issues continue to attract serious attention, as any potential solutions found for a place as complex and varied as China also hold great potential for other fast growing, rapidly urbanizing parts of the world.

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## 10. APPENDIX

Table 1: Values

	Disagree ↓ Neutral ↓ Agree			Disagree ↓ Neutral ↓ Agree			Disagree ↓ Neutral ↓ Agree			Disagree ↓ Neutral ↓ Agree			Disagree ↓ Neutral ↓ Agree		
Statement	All			Men			Women			With car			Without car		
What a person owns says a lot about them	54%	16%	30%	58%	15%	26%	50%	16%	34%	54%	16%	31%	61%	16%	23%
A simple life is a good life	25%	30%	45%	28%	27%	45%	23%	33%	41%	28%	31%	41%	18%	26%	58%
It's important to own name brand goods	69%	21%	10%	66%	21%	12%	70%	22%	8%	66%	23%	11%	69%	13%	8%
I'd be happier if I owned certain things	21%	29%	49%	22%	25%	52%	20%	34%	54%	20%	30%	50%	27%	26%	46%
I'd be happier if I could afford more luxury items	50%	31%	19%	49%	30%	21%	50%	33%	17%	49%	30%	21%	50%	39%	11%
People can buy whatever they want	58%	23%	19%	64%	19%	17%	52%	27%	21%	59%	22%	19%	59%	27%	14%
Wearing stylish clothes is important	47%	33%	20%	50%	30%	21%	44%	37%	19%	47%	32%	20%	50%	35%	15%
Fitting into society comes before individualism	13%	16%	71%	13%	14%	72%	13%	19%	68%	13%	16%	72%	14%	19%	67%
Important to know what others think	25%	24%	51%	26%	21%	53%	25%	27%	48%	27%	23%	50%	22%	24%	54%
Environment trumps economic concerns	8%	13%	78%	9%	13%	78%	8%	13%	79%	8%	12%	80%	9%	18%	73%
Older adults should live with adult children	22%	46%	32%	23%	44%	33%	21%	49%	30%	23%	47%	30%	17%	43%	40%

Table 2: Policy Sticks - Acceptability

	Unacceptable ↓ Neutral ↓ Acceptable			Unacceptable ↓ Neutral ↓ Acceptable			Unacceptable ↓ Neutral ↓ Acceptable			Unacceptable ↓ Neutral ↓ Acceptable			Unacceptable ↓ Neutral ↓ Acceptable		
Policy	All			Men			Women			Home with Car			Home without car		
Y50,000 registration fee	76%	10%	14%	74%	10%	16%	78%	10%	12%	77%	10%	13%	75%	9%	16%
Car lottery with 2-3 year wait	69%	15%	16%	70%	15%	16%	67%	15%	18%	70%	14%	16%	59%	19%	22%
Y70 congestion charge	81%	9%	11%	78%	8%	15%	84%	9%	7%	82%	8%	10%	79%	9%	12%
Y50 per hour parking charge	92%	4%	4%	89%	6%	5%	94%	3%	3%	92%	4%	4%	92%	5%	4%
Increase gas to Y12 per liter	86%	5%	9%	84%	5%	11%	89%	4%	8%	87%	4%	9%	84%	5%	11%

Table 3: Policy Sticks - Reactions

	Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓		
Policy	All			Men			Women			Home with Car			Home without car		
Y50,000 registration fee	35%	54%	11%	38%	48%	15%	33%	61%	6%	36%	53%	11%	29%	63%	7%
Car lottery with 2-3 year wait	40%	48%	12%	43%	42%	15%	38%	55%	7%	41%	47%	12%	37%	54%	9%
Y70 congestion charge	33%	57%	10%	39%	49%	12%	28%	64%	7%	35%	56%	10%	28%	62%	10%
Y50 per hour parking charge	26%	62%	13%	30%	52%	18%	20%	71%	8%	26%	60%	13%	18%	67%	15%
Increase gas to Y12 per liter	24%	61%	15%	28%	54%	18%	20%	69%	12%	25%	59%	16%	16%	71%	12%

Table 4: Policy Carrots - Acceptability

	Unacceptable ↓ Neutral ↓ Acceptable ↓			Unacceptable ↓ Neutral ↓ Acceptable ↓			Unacceptable ↓ Neutral ↓ Acceptable ↓			Unacceptable ↓ Neutral ↓ Acceptable ↓			Unacceptable ↓ Neutral ↓ Acceptable ↓		
Policy	All			Men			Women			Home with Car			Home without car		
Dedicated bus lanes on road	28%	16%	56%	32%	14%	54%	24%	19%	58%	29%	16%	55%	24%	17%	59%
Tax to double metro in size	60%	12%	28%	60%	10%	30%	61%	14%	25%	60%	12%	27%	59%	10%	31%
Subsidized Y2 transit ticket	13%	13%	74%	17%	11%	72%	9%	15%	75%	13%	13%	74%	13%	11%	77%
Free 2 hour transit transfers	14%	8%	78%	16%	6%	77%	12%	11%	78%	16%	8%	76%	6%	6%	88%

Table 5: Policy Carrots - Reactions

	Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓			Drive ↓ Transit ↓ Walk ↓		
Policy	All			Men			Women			Home with Car			Home without car		
Dedicated bus lanes on road	45%	48%	8%	47%	43%	10%	42%	53%	6%	45%	47%	8%	38%	55%	7%
Tax to double metro in size	29%	59%	12%	32%	55%	13%	27%	62%	11%	30%	58%	13%	25%	66%	9%
Subsidized Y2 transit ticket	34%	59%	7%	38%	55%	7%	29%	64%	6%	35%	59%	6%	29%	62%	9%
Free 2 hour transit transfers	24%	70%	6%	29%	63%	8%	19%	76%	5%	24%	69%	6%	20%	73%	7%



# Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

## Values

**1. The things a person owns say a lot about them / 根据一个人所拥有的物品就能很大程度上了解此人**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**2. A simple life with few material possessions is a good life / 只拥有少量物质的简单生活是不错的生活**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**3. It's important to own famous or brand-name goods even if they cost more / 拥有名牌产品很重要，尽管这些产品更贵**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**4. My life would be happier if I owned certain things I don't have now / 如果我还能拥有一些现在我没有的东西，我会更开心**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**5. I would be happier if I could afford to buy more luxury items / 如果能买得起更加奢侈的物品，我会感觉更快乐**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**6. It's ok for people buy anything they want, even if it is something they don't need / 人们可以买任何想要的东西，尽管他们可能不太需要这些东西**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**7. Wearing stylish and up-to-date clothes is important / 穿着时尚的衣服是很重要**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

# Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

**8. It is more important to fit in to society than be known as an individual / 能融入社会的群体比作为单独的个体对待更为重要？**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**9. Before buying something, it is important to know what others think of it / 买任何东西前，了解其他人如何评价这些东西很重要**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**10. Protecting the environment is more important than the economy / 保护生态环境比发展经济更重要**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**11. What type of brand name products do you prefer? / 你更喜欢买什么品牌的生产？**

- ☐ Chinese brands / 中国品牌      ☐ Depends on the price / 取决于价格
- ☐ Foreign brands / 国外品牌      ☐ Depends on the brand's reputation / 取决于品牌的声誉

**12. What characteristics does a successful person have? / 一个有成功的人有什么特征？**  
选每个有效的

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Rich / 有钱          | <input type="checkbox"/> Single / 单身              | <input type="checkbox"/> Private company job / 有公司工作           |
| <input type="checkbox"/> Owns a home / 拥有住房 | <input type="checkbox"/> Married / 已婚             | <input type="checkbox"/> Has own company / 有自己的公司              |
| <input type="checkbox"/> Owns a car / 拥有车   | <input type="checkbox"/> Independent / 独立         | <input type="checkbox"/> Lived/studied overseas / 在国外居住过 / 学习过 |
| <input type="checkbox"/> Has Children / 有孩子 | <input type="checkbox"/> Government job / 在政府部门就职 |  |

**13. How do you like to spend your money? / 你喜欢如何消费？** 选每个有效的

- |  |   |  |
|--|---|--|
| <input type="checkbox"/> Food / 食物     | <input type="checkbox"/> Save / 存储              | <input type="checkbox"/> Shopping / 购物 |
| <input type="checkbox"/> Sports / 体育   | <input type="checkbox"/> Travel / 旅游            | <input type="checkbox"/> Invest / 投资   |
| <input type="checkbox"/> Gambling / 赌博 | <input type="checkbox"/> Give to Family / 把钱给家庭 | <input type="checkbox"/> Donate / 捐赠   |

Other / 其他

## Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

**14. It is more important that the government invest in building roads than in public transit / 就政府责任而言，建设公路比发展公共交通更重要**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

**15. Parents should always live with their children when they get older / 父母年纪大了以后也应一直与子女同住**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同
- ☐ Disagree / 不赞同      ☐ Agree / 赞同

# Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

## Aspirations

**16. Before I marry, it is important I/my partner own a home / 结婚前，我和我的配偶应该要有一套房子**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同  
☐ Disagree / 不赞同      ☐ Agree / 赞同

**17. Before I marry, it is important I/my partner own a car / 在我结婚前，我和我的配偶应该要有一辆汽车**

- ☐ Strongly disagree / 很不赞同      ☐ Neutral / 没有意见      ☐ Strongly agree / 非常赞同  
☐ Disagree / 不赞同      ☐ Agree / 赞同

**18. I want to work for... / 我想就职于...**

- ☐ My own company / 自己的公司      ☐ A foreign company / 国外公司  
☐ A small company / 小公司      ☐ The government / 政府  
☐ A large company / 大公司

Other / 其他

**19. If I have a car, I want to use it for these trips / 如果我有车，我会用来...**

- ☐ Go to work or school / 上 / 下班      ☐ Recreation / 闲暇      ☐ Visit friends/family / 看望朋友 / 家人  
☐ Daily errands / 跑腿      ☐ Travel / 旅游  
☐ Shopping / 购物      ☐ Entertainment / 娱乐

Other / 其他

**20. If I have a car, I would use it... / 如果我有一辆车,使用的频率会是...**

- ☐ Every day / 每天      ☐ Once a week / 每周一次      ☐ Only for special trips / 只有特别情况下才开  
☐ 4-5 times a week / 每周4—5次      ☐ Once every two weeks / 每两周一次  
☐ 2-3 times a week / 每周2—3次      ☐ Once a month or less / 每月一次

**21. I want to have the newest and best kinds of phones, camera, or computer / 我想要最新款最好的手机，相机，或者电脑**

- ☐ Always / 总是      ☐ Only if the product is worth the extra cost / 只有当商品物有所值时  
☐ If I have extra money / 如果我额外有钱      ☐ Not important / 不重要

## Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

**22. When I am 30, I expect my monthly income will be... / 当我30岁的时候，我期待我每月的薪水是...**

- ☐ 1000-3000元      ☐ 6000—10000元      ☐ 15000 or more / 15000元或者更多)
- ☐ 3000—6000元      ☐ 10000—15000元

**23. When I think about my future, I feel... / 当想到我的未来，我感觉...**

- ☐ Very negative / 很不好      ☐ Neutral/no opinion / 还好      ☐ Very positive / 很好
- ☐ Worried / 不好      ☐ Hopeful / 好

**24. After I graduate high school, I plan to... / 高中毕业以后，我会...**

- ☐ Go to a university / 上大学      ☐ Work / 就业
- ☐ Go to a technical/vocational school / 上职业培训学校      ☐ Go abroad / 出国

Other / 其他

## Travel Behavior

**25. How often do you travel to the city center? / 你多久去一次城市中心（包括福田中心和东门)?**

- ☐ Daily / 每天                      ☐ Once a week / 每周一次                      ☐ Less / 更少  
☐ 2-3x per week / 每周2-3次                      ☐ Once every two weeks / 每两周一次

**26. How do you usually travel to the city center? / 你通常怎么去城市中心?**

- ☐ Drive / 开/坐车                      ☐ Walk / 走路                      ☐ Metro / 地铁  
☐ Taxi / 打车                      ☐ Bus / 公共汽车                      ☐ Bike / 骑自行车

**27. How long is your trip from your home to school in minutes? / 从你的家到学校需要多少分钟?**

- ☐ Less than 5 minutes / 5分钟以内                      ☐ 10—20 minutes/分钟                      ☐ 30—40 minutes/分钟  
☐ 5—10 minutes/分钟                      ☐ 20—30 minutes/分钟                      ☐ 40 or more minutes/ 40分钟或者更多

**28. How close do you live to a bus stop? / 从你家到最近的公车站需要走路多久?**

- ☐ Less than 5 minutes / 5分钟以内                      ☐ 10—15 minutes/分钟                      ☐ 20 or more minutes/ 20分钟或者更多  
☐ 5—10 minutes/分钟                      ☐ 15—20 minutes/分钟

**29. How close do you live to a metro stop? 从你家到最近的地铁站需要走路多久?**

- ☐ Less than 5 minutes / 5分钟以内                      ☐ 10—15 minutes/分钟                      ☐ 20 or more minutes/ 20分钟或者更多  
☐ 5—10 minutes/分钟                      ☐ 15—20 minutes/分钟

**30. Do you have a driver's license? / 你有驾驶执照吗?**

- ☐ Yes / 有                      ☐ No / 没有

## Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

**31. What is most important to you when you travel? (1 is most, 5 is least) / 请对以下方面对你出行时的重要程度做评价，1为最重要，5为最不重要**

<input type="text"/>	Speed / 速度
<input type="text"/>	Safety / 安全
<input type="text"/>	Convenience / 方便
<input type="text"/>	Comfort / 舒服
<input type="text"/>	Cost / 费用

**32. Which of these are characteristics of metro travel? / 乘坐地铁出行有什么特征？选每个有效的**

- ☐ Fast / 高速
- ☐ Slow / 慢
- ☐ Convenient / 方便
- ☐ Comfortable / 舒服
- ☐ Crowded / 拥挤
- ☐ For rich people / 为了有钱的人
- ☐ For poor people / 为了贫穷的人
- ☐ For middle class people / 为了中产的人
- ☐ Safe / 安全
- ☐ Affordable / 支付得起
- ☐ Expensive / 昂贵
- ☐ Shows status / 体现社会地位
- ☐ Gives freedom / 赋予自由

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### 33. Which of these are characteristics of car travel? / 开车有什么特征? 选每个有效的

- ☐ Fast / 高速
- ☐ Slow / 慢
- ☐ Convenient / 方便
- ☐ Comfortable / 舒服
- ☐ Crowded / 拥挤
- ☐ For rich people / 为了有钱的人
- ☐ For poor people / 为了贫穷的人
- ☐ For middle class people / 为了中产的人
- ☐ Safe / 安全
- ☐ Affordable / 支付得起
- ☐ Expensive / 昂贵
- ☐ Shows status / 体现社会地位
- ☐ Gives freedom / 赋予自由

### 34. Which of these are characteristic of bus travel? / 乘坐公交车出行有什么特征? 选每个有效的

- ☐ Fast / 高速
- ☐ Slow / 慢
- ☐ Convenient / 方便
- ☐ Comfortable / 舒服
- ☐ Crowded / 拥挤
- ☐ For rich people / 为了有钱的人
- ☐ For poor people / 为了贫穷的人
- ☐ For middle class people / 为了中产的人
- ☐ Safe / 安全
- ☐ Affordable / 支付得起
- ☐ Expensive / 昂贵
- ☐ Shows status / 体现社会地位
- ☐ Gives freedom / 赋予自由



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## Policies / 政策

Imagine you are 30, earn Y8,000 a month, and thinking about buying a car. How would each policy affect you?

假如你30岁，已婚，有一个孩子。月薪8千元。你买了一套房子，付每个月3500元。现在，你在考虑买一辆私家车。会后的政策怎么影响你买车的决定？

**35. If it cost approx. Y50,000 to register the car license, could you accept this policy? / 如果你需要花费5万元来注册汽车牌照，你能接受这个政策吗？**

- ☐ Absolutely not / 完全不接受      ☐ No opinion/don't care / 没有意见      ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受      ☐ I could / 可接受

**36. If it cost approx. Y50,000 to register the car license, you would... / 如果你需要花费5万元注册汽车牌照，你会...**

- ☐ Buy the car and drive the same / 照常买车和开车      ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多      ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少      ☐ Ride a bike or walk more / 不买车而更多骑自行车或者走路

**37. If the city had a lottery to get a car license, and you may have to wait 2-3 years to get a car, could you accept this policy? / 如果你所在的城市通过摇号抽签的方式分派车牌，需要大约2—3年才能买一辆车，你能接受这个政策吗？**

- ☐ Absolutely not / 完全不接受      ☐ No opinion/don't care / 没有意见      ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受      ☐ I could / 可接受

**38. If the city had a lottery to get a car license and you may have to wait 2-3 years to get a car, you would... / 如果你所在的城市实行购车摇号政策，需要大约2—3年才能买一辆车，你会...**

- ☐ Buy the car and drive the same / 照常买车和开车      ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多      ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少      ☐ Ride a bike or walk more / 不买车而更多骑自行车或者走路

**39. If every trip to the city center/guannei included an additional Y70 congestion charge could you accept this policy? / 如果你每次开车到深圳关内必须付70元费，你能接受这个政策吗？**

- ☐ Absolutely not / 完全不接受      ☐ No opinion/don't care / 没有意见      ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受      ☐ I could / 可接受

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**40. If every trip to the city center/guannei included an additional Y70 congestion charge, you would...** / 如果你每次开车到深圳关内必须付70元费，你会...

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

**41. If the city increased its hourly parking rate to Y50 per hour, could you accept this policy?** / 如果政府将外面停车场的停车费提高到50元每个小时，你能接受这个政策吗？

- ☐ Absolutely not / 完全不接受
- ☐ No opinion/don't care / 没有意见
- ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受
- ☐ I could / 可接受

**42. If the city increased its hourly parking rate to Y50 per hour, you would...** / 如果政府将外面停车场的停车费提高到50元每个小时，你会...

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

**43. If the city built lanes dedicated to bus travel, could you accept this policy?** / 如果你所在道路中间建设公车专用道，你能接受这个政策吗？

- ☐ Absolutely not / 完全不接受
- ☐ No opinion/don't care / 没有意见
- ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受
- ☐ I could / 可接受

**44. If the city built lanes dedicated to bus travel, could you accept this policy?** / 如果你所在道路中间建设公车专用道，你会...

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

**45. If the city spent money to double the size of its metro system could you accept this policy?** / 如果你所在的城市用税收双倍扩展地铁系统，你能接受这个政策吗？

- ☐ Absolutely not / 完全不接受
- ☐ No opinion/don't care / 没有意见
- ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受
- ☐ I could / 可接受

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**46. If the city spent money to double the size of its metro system, you would... / 如果你所在的城市用税收双倍扩展地铁系统，你会...**

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

**47. If the city subsidized transit tickets so the fare was only Y2 per ride, could you accept this policy? / 如果你所在的城市补贴公交出行，公交票价降到2元一张，你能接受这个政策吗？**

- ☐ Absolutely not / 完全不接受
- ☐ No opinion/don't care / 没有意见
- ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受
- ☐ I could / 可接受

**48. If the city subsidized transit costs so the fare was only Y2 per ride, you would... / 如果你所在的城市补贴公交出行，公交票价降到2元一张，你会...**

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

**49. If the government raised gas prices to Y12 per liter, could you accept this policy? / 如果你所在的城市将汽油价格提高到12元每升，加一次油需要大约650元，你能接受这个政策吗？**

- ☐ Absolutely not / 完全不接受
- ☐ No opinion/don't care / 没有意见
- ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受
- ☐ I could / 可接受

**50. If the government raised gas prices to Y12 per liter, you would... / 你城市提高汽油价格到12元每升，现在加油需要大约650元，你会...**

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

**51. If the city made each transit ticket valid for 2 hours, even after a transfer or another trip, could you accept this policy? / 如果用一张公交车票可以在两小时内可以无限使用包括换乘其他公交，你能接受这个政策吗？**

- ☐ Absolutely not / 完全不接受
- ☐ No opinion/don't care / 没有意见
- ☐ Definitely accept / 完全接受
- ☐ Not really / 不太接受
- ☐ I could / 可接受

## Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

**52. If the city made each transit ticket valid for 2 hours, even after a transfer or another trip, you would...** / 如果用一张公交车票可以在两小时内可以无限使用包括换乘其他公交，你会...

- ☐ Buy the car and drive the same / 照常买车和开车
- ☐ Buy the car and drive more / 买车并开车更多
- ☐ Buy the car but drive less / 买车而开车更少
- ☐ Take the bus more / 不买车而更多用公共汽车
- ☐ Take the metro more / 不买车而更多用地铁
- ☐ Ride a bike or walk more / 不买车而更多其自行车或者走路

# Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

## Basic Information

### 53. How old are you? / 你多大年纪?

- ☐ 13岁   ☐ 14岁   ☐ 15岁   ☐ 16岁   ☐ 17岁   ☐ 18岁   ☐ 19岁   ☐ 20岁   ☐ 21岁   ☐ 22岁   ☐ 23岁  
或者更小   或者更大

### 54. What year of school are you in? / 你现在上几年级?

- ☐ Junior   ☐ Junior   ☐ Junior   ☐ Senior   ☐ Senior   ☐ Senior   ☐ Freshman /   ☐ Sophomore /   ☐ Junior /  
1 / 初一   2 / 初二   3 / 初三   1 / 高一   2 / 高二   3 / 高三   大一   大二   大三

### 55. What is your gender? / 你的性别是\_\_\_?

- ☐ Male / 男性   ☐ Female / 女性

### 56. What is the monthly income of your family home? If you aren't sure, make your best estimate. / 你的家庭月收入大概是多少?

- ☐ 2000元或者更少   ☐ 6000元到10000元   ☐ 15000元或者更多  
☐ 2000元到6000元   ☐ 10000元到15000元

### 57. How many people live in your family home? / 包括你自己，你的家庭有几个人?

- ☐ 2个   ☐ 4个   ☐ 6个或者更多  
☐ 3个   ☐ 5个

### 58. Does your family own a car? / 你的家庭拥有一辆车吗?

- ☐ Yes / 有   ☐ No / 没有

### 59. What type of home does your family live in? / 你的住房是什么类型的?

- ☐ Danwei / 单位   ☐ Apartment in city / 公寓在城市   ☐ apartment in a small city  
☐ Villa / 别墅   ☐ Apartment in suburbs / 公寓在郊区   ☐ house in the countryside or village

Other / 其他

### 60. Does your family rent or own your house? / 你家庭的住房是租的还是买的?

- ☐ Rent / 租房   ☐ Bought / 买的

## Value, Aspiration, and Policy: How (and Why) Tomorrow's Middle Class

**61. What district is your home in? / 你家庭处于哪个城市区?**

- |                                    |                                      |                                    |
|------------------------------------|--------------------------------------|------------------------------------|
| <input type="radio"/> Futian / 福田  | <input type="radio"/> Bao'an / 宝安    | <input type="radio"/> Dapeng / 大鹏  |
| <input type="radio"/> Luohu / 罗湖   | <input type="radio"/> Longgang / 龙岗  | <input type="radio"/> Longhua / 龙华 |
| <input type="radio"/> Nanshan / 南山 | <input type="radio"/> Guangming / 光明 |                                    |
| <input type="radio"/> Yantian / 盐田 | <input type="radio"/> Pingshan / 坪山  |                                    |

**62. How many hours each week do you watch TV shows or movies? / 每星期你看电视或者电影的频率是?**

- |   |                                      |   |
|---|--------------------------------------|---|
| <input type="radio"/> 2 or less / 2或者更少 | <input type="radio"/> 10—15 hours/小时 | <input type="radio"/> 25—30 hours/小时        |
| <input type="radio"/> 2—6 hours/小时      | <input type="radio"/> 15—20 hours/小时 | <input type="radio"/> 30 or more / 30小时或者更多 |
| <input type="radio"/> 6—10 hours/小时     | <input type="radio"/> 20—25 hours/小时 |   |

**63. Have you ever had a job outside your home? / 你有曾经有外工作的经历吗?**

- ☐ Yes / 有 ☐ No / 没有

**64. Do you live on campus? / 你住在你的大学校园里吗?**

- ☐ Yes / 有  
☐ No / 没有

**65. What province is your home in? 你家庭处于哪个地方?**