GOING GREEN? URBAN VS. RURAL RESIDENCY AND PRO-ENVIRONMENTAL ATTITUDES IN CHINA

A Senior Scholars Thesis

by

SAMANTHA LEE-MING CHIU

Submitted to the Office of Undergraduate Research
Texas A&M University
in partial fulfillment of the requirements for the designation as

UNDERGRADUATE RESEARCH SCHOLAR

April 2009

Major: Political Science

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Associate Dean for Undergraduate Research: Robert C. Webb

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ABSTRACT

Going Green? Urban vs. Rural Residency and Pro-Environmental Attitudes in China. (April 2009)

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With the fastest growing economy in the world, China questions the viability of their economically oriented country under increasing international pressures to strengthen environmental regulations. Understanding public policy support for environmental and economic policies requires factoring place attachment with public opinion. This research theorizes that rural residents, because of their weaker local economy, dependence on extracting natural resources, and distance from heavy pollution, will favor economic development at the expense of environmental protection. Conversely, urban residents who benefit from a stronger economy, desire more trees and parks, and have direct contact with heavy pollution and smog, will prefer an increase in environmental regulation. This study investigates the World Values Surveys (WVS), The China Survey, and other social value surveys conducted in China from 1995 to 2008, and tests urban and rural residents' opinions toward the environment versus the economy. For the 2000 WVS a better measurement for urban and rural residency was created using *hukou* (household registration), size of town, and 2000 national census data. In support of the

hypothesis, 2008 results show city dwellers promoting environmentalism with an equal-but-opposite rural population promoting economic development. Examining trends from 1995 to 2008 reveal two observations: first, that environmentalism is promoted consistently in all samples for urbanites; second, that trends suggest a future overtake of preference for economic development among urban and rural respondents. Such movements in attitudes could affect the direction and future of the Chinese Communist Party's economic and environmental policy reform.

DEDICATION

To Jennifer Feng and Howard Chiu

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Accomplishing the Texas A&M University Undergraduate Research Scholar thesis is attributed to the Department of Political Science and the College of Liberal Arts; and specifically, Dr. Robert Harmel, my research advisor and a critical component of Texas A&M University's China Archive. The China Archive is a data archive dedicated to the support of scholarly and empirical research by anthropologists, economists, historians, political scientists, sociologists, and others. The goal of the Archive is to enable case research on China domestic matters and China-U.S. relations, as well as facilitate the inclusion of China in comparative studies; for more information see (2003) The China Archive at Texas A&M University.

I am also grateful for the Research Center for Contemporary China (RCCC) in Beijing, specifically Dr. Ming-Ming Shen, who invited me to study at the center. Here, I observed the execution of The China Survey's final stages and began my thesis. Additionally, I am thankful for the warm hearted training from Dr. Yan Jie, 赵老师, 葛斐, 房然, 孟天广, and RCCC graduate students.

This experience was funded by the Benjamin A. Gilman Foundation, the Freeman Asia Foundation, and Texas A&M's Study Abroad Office. In addition, I must thank members of the political science faculty: Dr. Min Hua Huang for coding advice and Dr. Parker-

Stephen for regression analysis knowledge. Thank you to the graduate students who gave me advice and training. I also acknowledge the Department of Undergraduate Research for selecting my thesis proposal and selecting me to be a distinguished Undergraduate Research Scholar.

NOMENCLATURE

B/CS	Bryan/College Station
CCP	Chinese Communist Party
DSP	Dominant Social Paradigm
NEP	New Environmental Paradigm
RCCC	Peking Research Center for Contemporary China
TAMU	Texas A&M University
US	United States
VBN	Value-Belief-Norm Theory
WVS	World Values Survey

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CHAPTER I

INTRODUCTION

The demands for economic sustainability among developing nations is often seen as traded off with environmental protection. Despite trends that indicate a deteriorating environment and an absolute depletion of nonrenewable natural resources, nations continue to overlook environmental policy for industrial expansion. The correlation is clear: environmental regulations tax industrial expansion, subsequently limiting economic growth. Regardless of these negative trends, governments still promote economic development; but, do the citizens maintain a similar supportive demeanor for policy reform?

Analyzing public opinion could indicate the direction of future domestic support for the Chinese Communist Party's (CCP) environmental or economic policies and posit policy effectiveness. Sociostructural and socialization factors affect environmental attitudes which influence environmental policy, and empirical studies affirm that environmental policies are unsuccessful unless there is broad public support (Inglehart 1995, Ramsey and Rickson 1976). Regardless of whether or not a country is categorized as developed or developing, public policy success and national integration hinges on public approval.

This thesis follows the style of *The American Political Science Review.*

Present problems in the field of study

Although a great deal of research has been directed toward environmental issues on a global scope, three main problems exist in this field of study. First, little exploration has been expended on investigating public opinion or the relationship between environmental attitudes and socioeconomic-demographic factors (Dietz et al. 1998, Berenguer et al. 2005). Second, most of the relevant public opinion research done so far has only been carried out in advanced industrialized societies, namely western democracies (Arcury 1990, Fruedenburg 1991, McBeth and Foster 1994, Inglehart 1995, Guagnano and Markee 1995, Bogner and Wiseman 1997, Schultz and Zelezny 1999, Dunlap et al. 2000, Rauwald and Moore 2002). Third, despite some successful analysis focused on defining the relationship between sociodemographic attitudes and environmentalism, studies on how the relationship is affected by geographic place of residence are scarce (Arcury and Christianson 1993, Guagnano and Markee 1995, Berenguer et al. 2005). Additionally, this field of policy research lacks consensus on an instrument to measure attitudes towards environmental concern. This research addresses these field concerns and fills a scholarly void by examining urban and rural attitudes—a geographic variable—towards environmentalism in China.

First, little exploration has been expended on understanding the relationship between public environmental opinions, correlated to categorical socio-economic factors. This relationship is critical for the pursuit of a sustainable economic public policy. In

previous studies of paradigms—New Ecological Paradigm (NEP)[1], Dominant Social Paradigm (DSP)[2], and Value-Belief Norm Theory (VBN)[3]— the predominant scales measure values, attitudes, and behaviors; and, the affect public opinion has on policy reform. Ultimately, these prior investigations established a field of study to determine which socio-economic values promote pro-environmental behavior.

These aforementioned studies yield two basic lines of theory identifying the factors associated with environmental concern: sociodemographic research and psychological research (Berenguer et al. 2005). The first line of study concentrates efforts on identifying the sociodemographic factors associated with environmental concern, which are grouped around the following basic issues: education, political ideology, place of residence, race and ethnicity; social class, income and occupation; gender, and religion.

The second line of study concentrates on psychological determinants. Authors agree that psychological determinants revolve around three types of orientation which determine the subject's motivation to be concerned about the environment: (1) orientation toward the environmental values within one's own society, (2) orientation toward care of the environment as the reflection of altruistic behavior given the impact that its deterioration

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[1] New Ecological Paradigm (NEP)—Dunlap and Van Liere's NEP Scale was published in 1978 and is widely used to measure pro-environmental orientations. The scale consists of 15 items from a 1990 Washington State University Survey (Dunlap et al. 2000).

[2] Dominant Social Paradigm (DSP)—Collectively defined in 1974 as a way to evaluate the United State's approach and values towards environmentalism (ibid).

[3] Value-Belief-Norm Theory (VBN)—Theory of an individual's value shifts on objects that are perceived to be threatened, and believe that their actions can help restore those values. Data yields from a US national survey of 420 respondents (Stern et al. 1995).

may have on the people that are important to us, and (3) orientation driven by egoistic motives, given the enjoyment of the comfort and convenience obtained from the exploitation of natural resources (Berenguer et al. 2005).[4] These two lines of study are incorporated into this research by affecting the types of survey questions selected, as further discussed in the methods section.

Second, "most of the relevant public opinion research done so far has been carried out in advanced industrial societies, usually Western democracies" (Inglehart 1995). For example the NEP, DSP, and VBN are primarily conducted in America; however, NEP, DSP, and VBN provide conceptual frameworks that may be applied to examining developing countries. Other studies have included McBeth and Foster's Rural Environmental Attitudes Research, which exclusively examines Western America; Schultz and Zelezny's study using NEP for 14 counties is limited to America and Latin American Countries; Bogner and Wisemen's study of Urban and Rural Residencies in Bavaria; Rauwald and Moore's Three Country study between the United States, Trinidad, and the Dominican Republic; Dunlap's NEP study among Washington residents; Guagnano and Markee's study of metropolises in America; this list continues with additional surveys that utilize the aforementioned measurements in industrialized countries. In conclusion, Inglehart's proposition that all value surveys are conducted in industrialized nations, is addressed by studying sociodemographic and psychological affects on public opinion in China—a developing country.

[4] For more information see *Axelrod and Lehman* 1993; *De Young* 1996; *Stern et al.* 1993.

Third, research examining environmentalism as affected by geographic place of residence is scarce. A limited number of studies exploring the links between certain social structures and environmental attitudes, values, and actions exist; however, exploring the relationships between place of residence and environmental values is scarce and inconsistent (Arcury and Christianson 1993, Guagnano and Markee 1995, Berenguer et al. 2005). In addition, Guagnano and Markee's results state that while geographic region does not appear to have consistent additive effects, it does interact with other sociodemographic variables that influence environmental concerns. However their findings are inconsistent and occasionally contradictory due to an urban-biased geographic population sample, a lack of an instrument to measure environmental concern, and a lack of attention to interaction among the predictor variables. Guagnano and Markee's results indicate that examining regional interactions and social values will advance this field of study.

To understand environmental behavior, it is necessary to define the social context in which individuals develop (Berenguer et al. 2005, Vorkinn and Riese 2001). A scholarly void is present, because previous studies have relied on relatively small samples that were geographically limited (Guagnano and Markee 1995); thus, a demand exists for investigating distinct groups and cultural characteristics with respect to environmental evaluation, interpretation, and behavior (Stern et al. 1995, Olli et al. 2001, Zelezny et al. 2000). This research incorporates a national subculture-geographic distinction and utilizes the empirical divisions between urban and rural residents using *hukou.*

In conclusion, the study of environmental policy has evolved around correlating sociodemographic limitations and psychological values with environmentalism, but it is underdeveloped and lacks an academic consensus on paradigms and methods. In addition, these studies are limited to developed and mostly western nations (with a few exceptions). This necessitates examination of developing nations compared to industrialized nations—without adequate research, the plausible detrimental effects of industrially-developing nations on the environment are unpredictable. Despite principal investigations on this topic, results on geographical limitations are inconsistent, scarce, and unclear—thus, this study addresses these problems by adapting the sociodemographic-psychological value models and comparing urban and rural residents, the fundamental social structure, to determine the geographical affects on the environmental movement and economic development.

Geographical distinction: *hukou* literature review

A scholarly distinction specific to this research is the unique utilization of *hukou*—household registration categorized by urban or rural residency. The following is an overview of the CCP's distinct urban and rural measurement system and justifies why this measurement is necessary to understand economic and social reform in China. Additionally, this section will present socio-economic variables that affect respondents' cognitive reasoning in respective geographic areas.

Hukou is the official standard by which the CCP measures an individual's societal status,

resources allocated by the state, progress of China's urbanization, and direction of economic control. This is a tool that serves the state's interests and prioritizes interests in economic development, industrialization, and political stability.[5] Furthermore, this organizational system provides important administrative means for the government to exercise political-economic control and analyze socio-economic ramifications.

The origins and development of the *hukou* system is very similar to Russia's *propiska*. *Hukou* perpetuates a spatial hierarchy and defines the positions of villages in the Chinese social system (Cheng and Seldon 1994). According to Cheng and Seldon, "[*Hukou* is the] government's means to control population movement and shape developmental priorities. It is a demographic strategy that restricts urbanization and redefines city-country side to state-society relations." This is a bifurcated social order, based on a registration system from birth, where urban areas are owned and administered by the state and nothing is provided for rural citizens. As a result, rural citizens must be self reliant in their collective rural sub- units (ibid).

The CCP divides the population into two caste systems based on economic and social distinctions that vastly differ by an individual's socio-economic status. This dualism, which is characteristic of most developing countries, allows the government to prioritize economic development and socio-political stability. By using this variable, this research

[5] For more information on the origins, current structure, and impacts of the *hukou* system refer to Chan, Kam Wing and Li Zhang. 1999. "The Hukou System and Rural-Urban Migration in China: Processes and Changes." *The China Quarterly* (160): 818-855.

captures the affects of economic and public policy on the population. The *hukou* system has shaped China's collectivist society by creating a spatial hierarchy of a distinct urban and rural society, while prioritizing the city over the countryside (Cheng and Seldon 1994). The following will explain in detail China's urban and rural division.

China's population is unequally dispersed as roughly 20% live in urban centers and 80% live in rural religions—suggesting that if only 20% of the population attends to environmental protection, improvement will be slow. After all, according to Knight and Song in 1999, "the urban and rural divide is an outstanding characteristic of Chinese inequality, relative to most developing countries." China's rural-urban gap is what scholars commonly refer to as "The Invisible Great Wall." Therefore, China is a prime example of a non-western country with distinctive geographical limitations necessary for a more precise examination of the relationship between environmental behaviors.

The attitude and value differences between urban and rural citizens have been researched in western democracies; and, despite their ambiguities and inconsistencies, reports persistently claim that rural and urban populations differ in their environmental and ecological perceptions (Arcury and Christianson 1993, Bogner and Wiseman 1997). This research observes urban versus rural residents under three principles: relationship to natural resources, a local-distant rationale, and post-materialistic satisfaction—and determines that urban residents are more likely to view environmental protection as important based on evidence categorized in the three aforementioned relationships.

First, studies have argued that pro-environmental attitudes are higher in cities (Van Liere and Dunlap 1981), because urban residents are more concerned about the over-exploitation of natural resources (Arcury 1990). This value difference is justified by the rationale that rural residents are more likely to make direct use of their land through extracting natural resources, unlike their urban counterpart who values the environment in a more aesthetic or recreational sense. This suggests that rural residents, who depend on the land for substance, are willing to deplete natural resources to meet basic human needs. On the other hand, urbanites surrounded by edifices and industrial development have a desire for more "blue sky days" and greenery.

Second is a local-distant rationale—proximity to pollution versus nature—justifying urbanites as more concerned about the environment. Tremblay and Dunlap concluded that rural respondents are less concerned with environmental problems than urban respondents. The conclusion stemmed from a 1970 statewide survey of public attitudes towards environmental protection in Oregon, U.S.A. (Tremblay and Dunlap 1978). The statewide survey indicated that the further citizens are from pollution, the less likely they are to believe the environment is in need of protection. Therefore, since rural respondents live farther from cities like Guangzhou or Beijing where the air pollution is visible, they are unexposed to environmental hazards. This lack of exposure and knowledge diverts rural residents' focus to industrial-economic expansion. Oppositely, urban residents reaping economic benefits characterized with cities and large villages, are subject to intense vehicle-emissions, are economically satisfied, and are ready to

focus attention and additional finances towards cleaning up their natural environment. As one would expect, regions with relatively severe objective problems (as indicated by levels of air pollution and water pollution) are more concerned with the environment and willing to sacrifice a degree of comfort for ecological improvements (Inglehart 1995).

The third reason why urban dwellers are more concerned about environmental protection than rural dwellers is postmaterialistic satisfaction. This relationship is examined on a country level. It is assumed that a country's support for environmental protection is shaped by subjective cultural factors; publics of certain cultural countries tend to rank relatively higher on support for environmental protection due to postmaterialistic values (Inglehart 1995).[6] Inglehart's research found that people with postmaterialist values—emphasizing self-expression and the quality of life—are much more apt to give high priority to protecting the environment, than those with materialist values—emphasizing economic and physical security above all—(Inglehart 1990, Mueller-Rommel 1990, Bennulf and Holmberg 1990, Hoffman-Martinot 1991). By accepting this analysis, it is also true that geographical regions, defined by a common collection of urban and rural dwellers with similar subcultures, will also have respective postmaterialistic-materialistic values. City dwellers, categorized as having relatively high postmaterialistic ideologies, will rank higher in their readiness to make financial sacrifices for environmental protection.

[6] Postmaterialism was studied from Inglehart's 1990-93 World Value Surveys carried out in 43 countries. The theory of postmaterialism is that people and countries only will focus on the environment and social issues, once their basic survival needs are meet (Inglehart 1995).

Other studies concur with this assessment. For example, in a study of rural and urban pupils' verbal contracts on being eco-friendly, urban and suburban pupils professed a stronger verbal commitment to their environment than their rural peers (Bogner and Wiseman 1997). Additionally, because the educational demographics of urbanites are on average higher than rural residents, they have more knowledge and thus are cognitively aware of negative future impacts of a deteriorating environment (Arcury 1990). Furthermore, others have found that the perception of environmental problems increases with size of place of residence (Samdahl and Robertson 1989).

At this analytical junction, it is important to note that this field of study is limited and has not confirmed attitudinal or behavioral differences because of methodological limitations in the United States (Berenguer et al. 2005). This research assumes that urbanites are more environmentally inclined versus their rural counterparts.

China is at a delicate international stage of economic development, placing their natural environment at risk. This research hopes to fill a scientific gap and bridge connections between western and eastern nations' research on U.S.-China pro-environmental policies. Accordingly, based on the previous literature in the field, this research confidently uses an urban and rural independent variable to measure attitudes towards the CCP's environmental policies. Based on investigations in the United States, this research expects an urban bias for environmental protection.

Relevant and current environmental problems in China

China is the focus of this research, because of its alarming state of environmental depletion and rapid state of urbanization. China has an extensive history of environmental policy that has existed since 2100 B.C.—beginning with the Xia Dynasty, through the Zhou Dynasty, developed by Chairman Mao Zedong, and under the current administration (Wan 1998). Unfortunately, a blatant contradiction is made by the international community towards China's lack of environmental policies (Muldavin 2000).

This negative view spawns from theories that developing or lesser developed nations have more severe environmental problems than advanced industrial nations. Arguably, they have less resources and time to allocate to environmental protection. However, despite the Chinese Communist Party's multitude of policies, the country faces increasing negative international scrutiny because of air pollution and poor water quality.

Focusing scholarly research in improving China's environment, advocating a clean water initiative, is necessary. In November 2005, a series of chemical explosions created an 80 kilometer long toxic slick in the Songhua River contaminating China's Northeastern provinces into Russia's Khabarovsk Krai exiting into the Strait of Tartary. The toxic slick infected the drinking water supply for Jinlin Province's Songyuan City and Heilongjiang's Capital Harbin, China's largest city in the north (population greater than

60 million). The pollution is carcinogenic and exposure leads to progressive degeneration of bone barrow as well as leukemia.

The CCP, as reported by China Daily, has marked "the Songhua River [as] a top priority," and a five-year plan from 2006-2010 was enacted (Fangchao 2006). Songhua River is one of the most heavily polluted water systems in China and the CCP has made it a "primary goal to clean up and ensure that more than 90% of the population living within the drainage area will have clean drinking water by 2010 […] and demands to improve urban sewage systems in cities with populations over 200,000; hoping that by 2010 at least 60% of urban water and 95% of industrial waste will be processed in order to reach a certain environmental standard" (Fangchao 2006).

However these policies are urban-centric and little information can be found on pollution recovery in neighboring rural regions. In 2005, the BBC reported that 90% of urban China suffers from water pollution and that the situation is far worse in the country side (BBC 2005); thus reiterating the need to research environmental policy approval in both urban and rural China.

Other red zones are distinguished by the severe air quality and dust pollution: foreign suspended particles of Guangdong province and the deteriorating natural environment of the Pearl River Delta. Focusing on environmental matters is a crucial element of affective governance, because it could save lives lost to lung cancer and protect

endangered species like the endangered Indo-Chinese White Dolphins.

Attention towards this urban bias is necessary due to the rapid urbanization. According to Jinfa Shen, "government policies regarding urbanization and migration have changed in the reform period: urbanization is now regarded as a positive process which can stimulate socio-economic development, and the control of urban and rural migrations has been more relaxed" (Shen 1998). As a result of this population shift, urbanization is becoming an increasingly important issue. In addition, previous scholars note that it would be of interest to examine the population and development issues on a finer spatial scale such as at the provincial level, and that such analysis may become the focus on further research.[7]

Hypothesis

The primary theoretical focus of this research is to explain the relationship between place of residence and pro-environmental attitudes compared to economic development attitudes from 1995 to 2008; additionally, other models will be explored: individual and collective action. Subsequently, this research decreases the field problems stated in section one and builds scholarly evidence for future China population studies.

Following the logic derived from previous studies on urban versus rural value differences: this research hypothesizes that Chinese residents who are urbanites are

[7] For more information: Shen, Jinfa. 1998. China's Future Population and Development Challenges. *The Geographic Journal* 163(1): 32-40.

inclined to improve the environment over the economy. Conversely, Chinese rural residents are more likely to support economic development due to their relationship to natural resources, distance from pollution, and materialistic demands.

CHAPTER II

METHODS

Aside from personal observations in China's major and minor cities in the summer to spring of 2008, this research design analyzes social value surveys from 1995 to 2008. Personal studies included living in and observing environmental problems of Beijing, Shanghai, Suzhou, Xi'an, and Hong Kong. The data from these personal experiences provide an understanding of the local populations' attitudes and a first hand observation of the air and water crisis. For example, I observed that in Beijing the number of "blue sky days" were significantly less than "yellow sky days" requiring locals (including myself) to wear face masks to filter out the smog and dust.

This chapter provides an overview of the general methodology and political science surveys used in this research; as well as the theories, coding techniques, and additional cross-tabulations necessary to compare individual surveys.[8] The data are from The China Survey of 2008, and from the 2000 and 1995 World Values Survey. The quantitative portion of this empirical research theorizes that urban and rural residents differ in attitudes towards environment protection and economic development. The model, based on previous urban versus rural survey research, recognizes the dichotomous relationship

[8] The survey questions have slightly different sentence structures; however, respondents' cognitive reasoning is constant. Additionally the independent and dependent variables are recoded for comparability.

between urban versus rural residents as a predictor for economic and environmental policy approval.[9]

Due to differences in socio-economic demands, urban and rural respondents will statistically differ in opinion. Thus, the model operalizationalizes this theory by defining *hukou* (official registration as urban or rural resident) as the independent variable and selecting environment-economic trade off questions as the dependent variable. This research expects to observe a higher percentage of urban respondents supporting environmental protection over economic reform based on the assumption that urbanites are influenced by distinct socio-economic factors.

1995 and 2000 World Values Survey

The following section provides the research methodology for investigating the relationship between urban versus rural attitudes and environmentalism and economic development in 1995 and 2000. This information is examined in cross-tabulations.[10]

The 1995 WVS requires recoding for a proper *hukou* variable, because WVS does not ask respondents' household registration. Thus, a substitute variable was created with categories of urban-rural-mixed based on the population size of the locality best identified with the respondent. Recoding is required for the 1995 and 2000 data sets. The 2000 datum is more accurate since RCCC provided official provincial data which

[9] See appendix C for variables list

[10] SPSS 17.0

directly correlates to the 2000 census datum. The following provides the details for this coding process.

The 1995 respondents from towns with a population size of less than 9,999 people are coded as rural, between 10,000 and 49,999 are coded as mixed, and 50,000 to more than 500,000 are coded as urban. This research acknowledges that this method is not preferred because of assuming a population size of 55,000 is urban instead of mixed. However, the results will show that this discrepancy does not affect this research project's conclusion because even with more accurate 2000 census pairing there is a uniform response from the 1995 and 2000 set of respondents.

The 2000 WVS requires re-coding for *hukou,* supported by the 2000 census which provides information on the registered urban population in each province.[11] Then the percentage was calculated and coded for urban (1), mixed (2), rural (3) (see appendix A).[12] Because this census provides provincial level data, those respondents living in the respective provinces are recoded in the 2000 WVS (provided by the RCCC), which creates a new Urban Population Trichotomous variable (TriPop). This new variable has accurately created a substitute *hukou* variable that is consistent and comparable to the *hukou* used in the 1995 and the 2008 data sets.

[11] Total population – Rural population (registered) = Urban population (registered)

[12] Urban (1) is roughly 66.66% to 100.00%; mixed is roughly 33.333% to 66.666%; rural (3) is roughly less than 33.333%.

Within these two data sets a consistent dependent variable was identified. The population samples responded to the following question: *Here are two statements people sometimes make when discussing the environment and economic growth. Which one of them comes closer to your own point of view*?[13] This question requires the respondents to consider an economic-environmental policy trade off scenario. When analyzed with respective *hukou* variables, the results show urban and rural opinions towards environmental protection versus economic development.

The China Survey of 2008

The China Survey of 2008 reflects a period in China of unprecedented economic growth, a period of international environmental scrutiny, and a period prior to the 2008 Summer Olympics. A specific household registration question is asked, thus providing official *hukou*.[14] This research project identifies *hukou* as the best indicator of urban and rural in the survey because using other variables such as *the place you lived longest* and *the interview location* were inferior. Such variables, when predicting views on environmentalism, are subject to China's large migrant population and are not cognitively consistent with the purpose of this research.[15] Additionally, this eliminates scenarios where the interviewee is temporarily living in the location of the interview.

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[13] Respondents answered: Protecting the environment should be given priority, even if it causes slower economic growth and some job loss; or, economic growth and creating jobs should be the top priority, even if the environment suffers to some extent. Respondents who answered other answer or don't know were recoded as missing variables.

[14] Respondents answer: *What is your registration type*? See variable CS a9

[15] This helps respondents who do not know if their current location is urban or rural, thus allowing them to answer according to their official government issued registration.

These respondents are presented with the following situation: *some people believe there is a conflict between economic development and environmental protection. If you had to choose between economic development and environmental protection, which would you consider to be most important*?[16] Because of The China Survey's utilization of *hukou* this set's results are superior and accurate towards the theory of this research project. Additionally, investigating the theoretical framework in this data set reveals a shift in urban versus rural opinion which will be further discussed in the following results section.

[16] Respondents answer: Economic development more important, economic development somewhat important, environmental protection somewhat important, environmental protection more important; don't know and no answer was recoded as missing variables. See variable CS c4.

CHAPTER III

RESULTS

Results with *hukou* as a predictor and attitudes towards environmentalism versus economic development reveal three observations, as well as a trend indicating the future of economic and environmental attitudes. Ultimately, the results show that after 2008, scholars may conclude that the social values of Chinese citizens are closer to those of citizens in developed countries as both environmentalism and economic protection hold expected importance among urban versus rural residents; secondly, that urban citizens are biased towards protecting the environment, as seen by the constant preference for environmental protection over economic development. Rural citizens have become biased over time towards the necessity of economic growth, as seen by the steady increase in economic importance with an eventual overtake in 2008. However, most importantly, a study of the data from 1995 to 2008, reveal a trend suggesting a future for economic bias (see figure 1 and see figure 2).

Figure 1: Rural Attitude Trends from 1995-2008

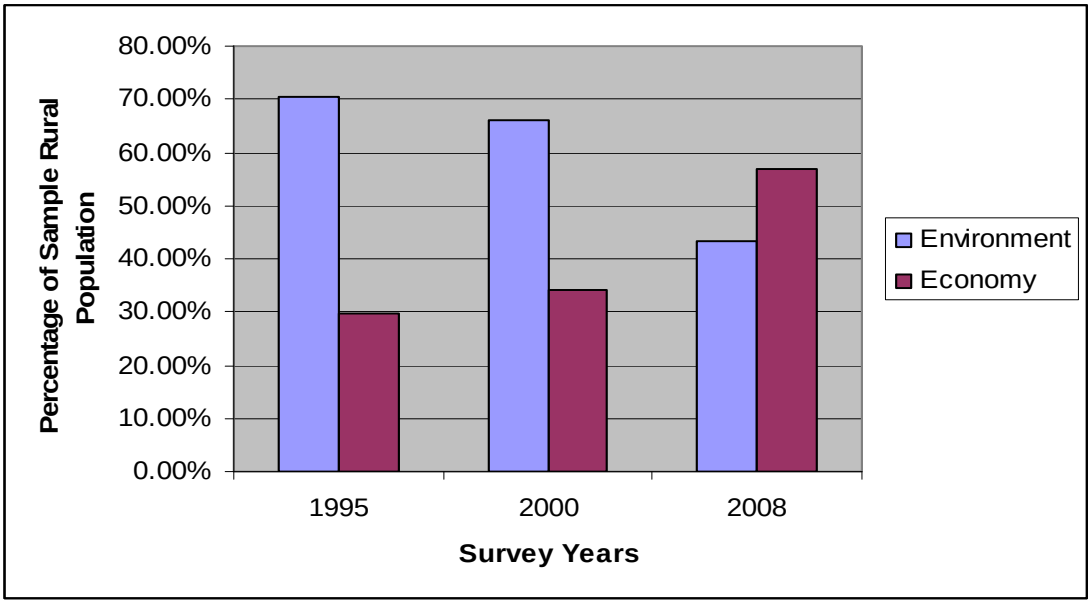
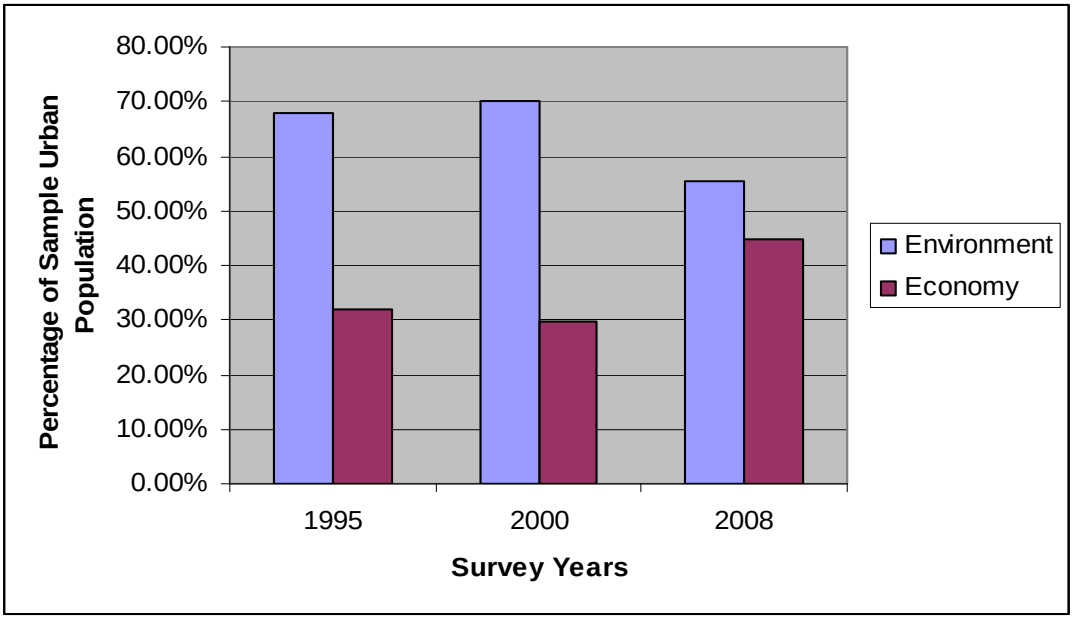


Figure 2: Urban Attitude Trends from 1995-2008



A primary observation may be made in the 1995 - 2000 WVS data sets (see appendix B). The results are notably different from previous research on the topic as China does not follow the preconceived western urban and rural distinction. The Chinese citizens statistically share similar views on natural environmental development (see figure 3 and figure 4). It is important to note that the 1995 - 2000 data sets use a *hukou* equivalence generated from census data and size of town.

This lack of a distinct dichotomy between China's urban and rural residence may be similar to why American researchers failed to find significant differences in United States' urban and rural residences. American researchers of the late 1980s report that this result is likely related to focus on national or state-level concerns, rather than community or local-level concerns (Freudenburg 1991). These scholars also conclude that studies focusing on environmental problems at the state or national level tended to find minor or negligible relationships, while those focusing on local-community level environmental problems generally found that rural respondents reported substantially lower levels of environmental concern than did urban residents. Thus, research must develop a second model as discussed in the conclusion and discussion section.

Figure 3: 1995-2000 WVS Environment vs. Economy Rural *Hukou*

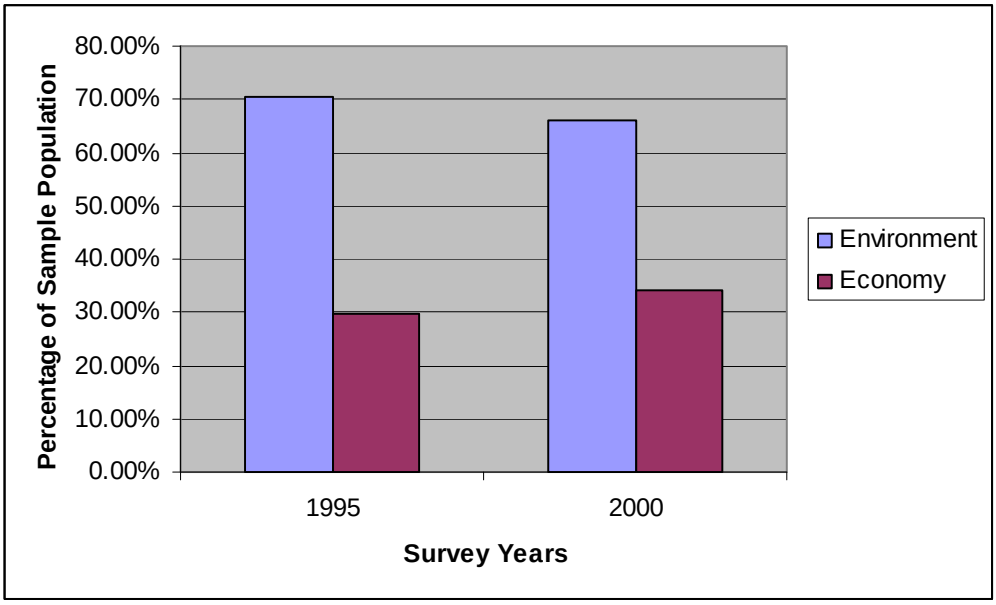
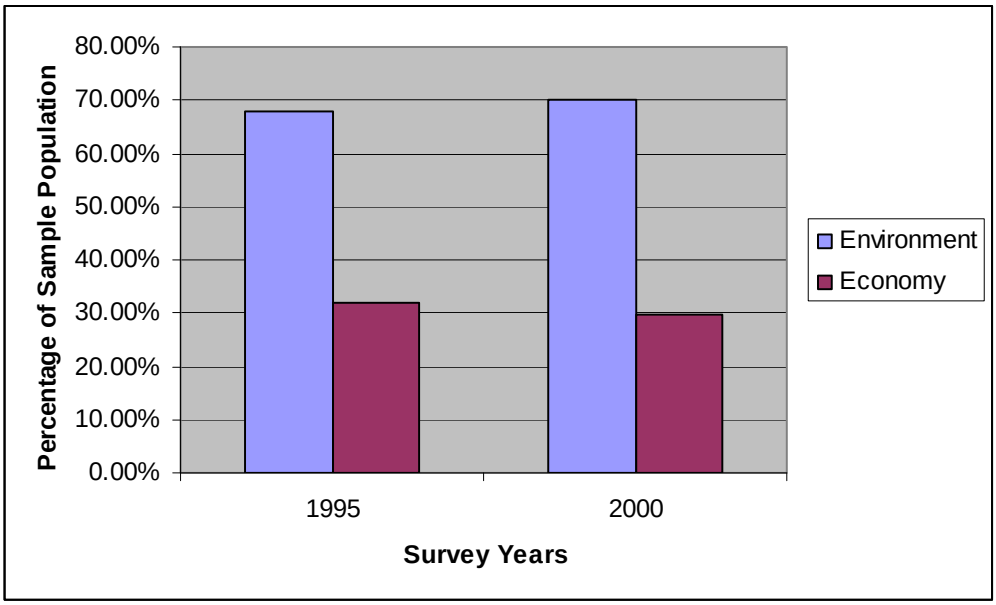
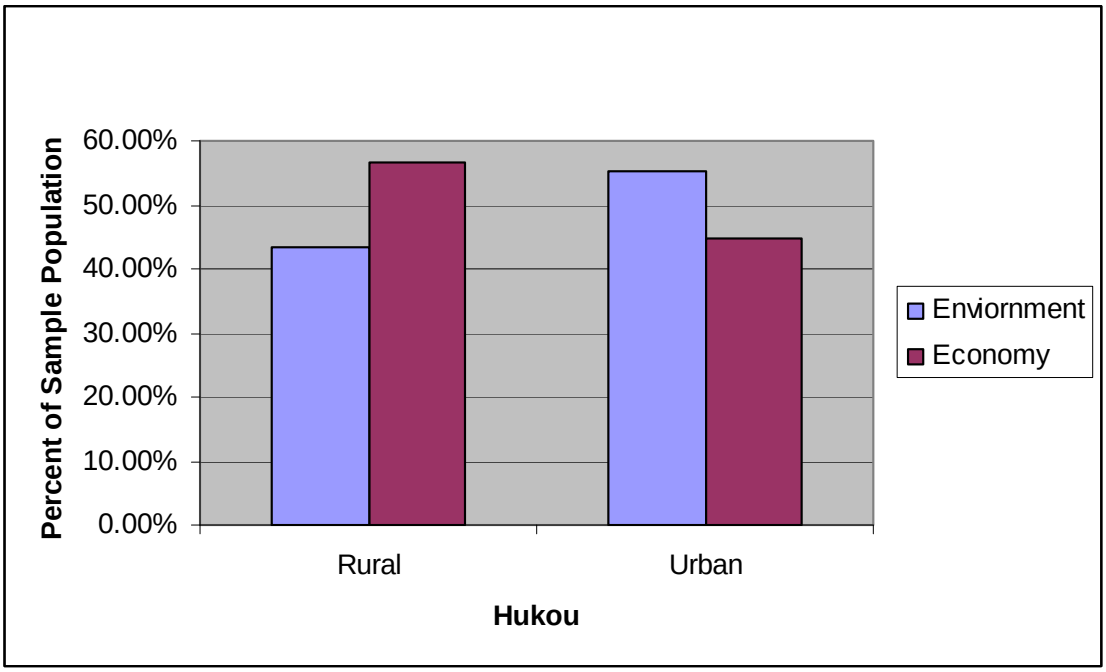


Figure 4: 1995-2000 WVS Environment vs. Economy Urban *Hukou*



The most revealing evidence comes from The China Survey of 2008. The China Survey provides official *hukou* registration and a clear environment versus economy dependent variable.

Figure 5: 2008 CS Environment vs. Economy and *Hukou*



The 2008 data clearly shows opposite relationships between rural and urban registered respondents (see figure 5). City dwellers in 2008 view the environment as more important than the economy; and, country side residents view the economy as more

important than the environment. This finding conforms to previous studies elsewhere on the attitudes of urban and rural residents, and supports the research hypothesis.

When the 2008 data are compared with the 1995 and 2000 data, two observations may be concluded (see appendix B). First, in both urban and rural scenarios a positively increasing slope for economic development is observed, with a negative slope for supporting environmentalism. This suggests that the future attitudes could result in a preferential dominance of economic policies over environmental regulations for both urban and rural attitudes. Upholding this logic would require scholars to categorize 2008 as an abnormality.

However the results from 2008 could indeed be an abnormal case; which is not farfetched as the country faced unprecedented international media attention due to the 2008 Olympic Games and 2009 World Expo. Additionally, during 2008, China announced its unprecedented economic growth and the international community continued to investigate China's environmental regulations. This surge of attention may have caused 2008 data to be an unusual sample. Therefore, this research demands further survey execution to investigate this phenomenon. Secondly, the results from 1995 and 2000 used a substitute *hukou* variable which may also account for what appears to be an attitudinal change. Again this research suggests the need for further survey investigation using a distinct *hukou* and economic versus environment variables.

Additionally, the environmental trends among urban and rural citizens reveal a decline in environmentalism. Within the rural sample population, the negative slope is observed at a greater rate; within the urban population, the declining slope is only suggestive. It is interesting to note that within the urban sample population from 1995 to 2008 environmentalism does consistently outperform economic development.

The research posits a continual positive economic demand slope which will overtake environmentalism; however, because the economic and environmental slopes are not dramatic, and only three years are observed, it is difficult to conclude whether or not the curves will continue on these trends or if there will be a leveling off—a balance—of attitudes.

CHAPTER IV

SUMMARY AND CONCLUSIONS

This research provides evidence suggesting that urban and rural attitudes towards environmental protection versus economic development in 2008 align with the previous research executed in developed nations; thus, suggesting that China's social values are now consistent with more developed economies. The model's theory postulates that due to socio-economic and psychological factors, urban and rural residents will have different views towards environmental protection and economic development.

Results suggest that as this research observes China's development from 1995 to 2008, urban and rural residents conform in attitudes thus supporting the hypothesis. The attitudes of urban versus rural respondents continue to be nearly equal in respect to their views of economic versus environmental protection. However, by 2008 the data cease to be homogeneous and instead show results which support the theory underlying this research. Urban residents in all three surveys continue to view protecting the environment as the most pressing issue, with a likelihood of economic preferential overtake; rural residents progress to a point where their demand for economic development overtakes needs for environmental protection.

Based on events that occurred in China during 2007, which may have affected The China Survey's field execution, this trend is expected. During this era, the CCP was

preparing for the 2008 summer Olympics and was placed under international scrutiny towards the lack of environmental policies. Additionally, by 2008 the country faces unprecedented economic growth. Thus, it is likely that these circumstances influenced and developed the social values of the Chinese population. On the other hand, this may be a methodological artifact because of varying *hukou* measurements.

Scholars should be aware of this growing preferential difference between the urban and rural population. Scholars must take this dichotomy into consideration when suggesting policy reforms and resource allocation decisions based on *hukou.* By taking into account the attitudinal differences of urban versus rural citizens, policy reformers may implement more effective policies targeted towards specific population needs.

Based on the findings, the socio-values of the Chinese public by 2008 appear to conform with literature conducted in western-industrialized nations; suggesting that the opinions and values of the Chinese public are in a sense developed as seen by a predictable dichotomous relationship. If these values are ignored or overlooked, policies may remain ineffective because of lack of public support.

As for future investigations—as this research is dependent on external surveys with inconsistant variables—this research would benefit from executing surveys with a proper *hukou* variable in a time-series-panel investigation. If surveys employing this methodological framework are conducted, scholars may be able to identify further

economic versus environmental trends. Additionally, due to the environmental disasters and concentration of pollution in specific provinces, this research would benefit from executing a second model: examining environmental attitudes in provinces facing extreme environmental problems or unprecedented economic growth. To continue scholarly empirical studies in this field may shed light on the relationship between economic development and environmental protection, information which is critical to creating sustainable nations.

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APPENDIX A

2000 Census Data

Chinese Code	Total Population	Population (Registered *Hukou*)	Urban Population (Total Population-Rural Population)	Rural Population	Percentage of Urban Population	Urban, Rural, Mix Code
西城区	706,691.00	792,201.00	706,691.00		100.00	1
邯郸市	8,386,814.00	8,304,999.00	1,964,038.00	6,422,776.00	23.42	0
保定市	10,471,123.00	10,451,802.00	2,419,839.00	8,051,284.00	23.11	0
定州市	1,107,903.00	1,117,232.00	273,301.00	834,602.00	24.67	0
绛县	264,708.00	266,428.00	70,106.00	194,602.00	26.48	0
锡林浩特市	173,796.00	134,030.00	142,846.00	30,950.00	82.19	1
东洲区	345,778.00	333,038.00	318,813.00	26,965.00	92.20	1
东辽县	396,121.00	396,121.00	58,470.00	337,651.00	14.76	0
宝清县	399,083.00	434,856.00	125,561.00	273,522.00	31.46	0
长宁区	702,239.00	604,191.00	702,239.00		100.00	1
江阴市	1,315,472.00	1,144,101.00	555,454.00	760,018.00	42.22	3
淮阴区	838184	849,933	190,519.00	647665	22.73	0
兴化市	1,441,659.00	1,549,030.00	412,891.00	1,028,768.00	28.64	0
瑞安市	1,207,788.00	1,197,207.00	465,230.00	742,558.00	38.52	3
芜湖市	2,115,421.00	2,170,166.00	904,872.00	1,210,549.00	42.78	3
霍邱县	1,461,066.00	1,617,473.00	226,146.00	1,234,920.00	15.48	0
仓山区	482,039.00	335,089.00	482,039.00		100.00	1
进贤县	687,203.00	685,265.00	137,258.00	549,945.00	19.97	0
历城区	878,131.00	803,961.00	510,868.00	367,263.00	58.18	3
海阳县	654,594.00	693,544.00	180,227.00	474,367.00	27.53	0
莱芜市	1,233,525.00	1,227,530.00	486,737.00	746,788.00	39.46	3
曹县	1,335,422.00	1,397,126.00	264,451.00	1,070,971.00	19.80	0
博爱县	419,228.00	417,520.00	94,136.00	325,092.00	22.45	0
郾城县	826,902.00	882,574.00	81,549.00	745,353.00	9.86	0
新蔡县	918,237.00	1,001,626.00	58,270.00	859,967.00	6.35	0
黄梅县	966,416.00	979,414.00	157,200.00	809,216.00	16.27	0
天门市	1,613,739.00	1,741,711.00	425,090.00	1,188,649.00	26.34	0
衡南县	982,217.00	1,037,695.00	127,152.00	855,065.00	12.95	0
龙山县	490,363.00	527,621.00	64,883.00	425,480.00	13.23	0
茂南区	644,301.00	706,216.00	644,301.00		100.00	1
惠来县	961,658.00	1,058,566.00	286,581.00	675,077.00	29.80	0
荔浦县	346,169.00	372,701.00	75,966.00	270,203.00	21.94	0
长寿县	874,307.00	883,520.00	264,308.00	609,999.00	30.23	0
平武区	187799	188722	34,502.00	153297	18.37	0
达州市	5,793,144.00	6,248,001.00	895,104.00	4,898,040.00	15.45	0
普安县	259,881.00	281,701.00	33,998.00	225,883.00	13.08	0
元谋县	202,779.00	196,532.00	36,521.00	166,258.00	18.01	0
内江市	4,160,305.00	4,212,361.00	1,189,181.00	2,971,124.00	28.58	0
莲湖区	631,224.00	564,974.00	631,224.00		100.00	1
商南县	227,636.00	234,800.00	31,762.00	195,874.00	13.95	0

APPENDIX B

Cross Tabulation for 1995 World Values Survey

1995 Environmental Protection vs. Economic Development

			Hukou			
			1 Urban	2 Mixed	3 Rural	Total
Environment vs. Economic Growth	1 Protecting the environment	Count	302	172	295	769
		% within Hukou	68.0%	63.2%	70.4%	67.8%
	2 Economic growth and creating jobs	Count	142	100	124	366
		% within Hukou	32.0%	36.8%	29.6%	32.2%
Total		Count	444	272	419	1135
		% within Hukou	100.0%	100.0%	100.0%	100.0%

N=1500 (N Valid=1135; N Missing=365)

Cross Tabulation for 2000 World Values Survey

2000 Environmental Protection vs. Economic Development

			Hukou		Total
			1 Urban	3 Rural	
Environment and economic growth	1 Protecting environment	Count	106	344	450
		% within Hukou	70.2%	65.9%	66.9%
	5 Economy growth and protecting jobs	Count	45	178	223
		% within Hukou	29.8%	34.1%	33.1%
Total		Count	151	522	673
		% within Hukou	100.0%	100.0%	100.0%

N=1000 (N Valid=673; N Missing=327)

Cross Tabulation for The China Survey of 2008

Environment vs. Economy and Hukou

			Hukou		
			1 rural	5 urban	Total
Environment vs. Economy	1 Economic development	Count	1386	395	1781
		% within Hukou	56.7%	44.6%	53.5%
	2 Environmental protection	Count	1057	491	1548
		% within Hukou	43.3%	55.4%	46.5%
Total		Count	2443	886	3329
		% within Hukou	100.0%	100.0%	100.0%

N=3989 (N Valid=3329; N Missing=660)

APPENDIX C

V2 1995 WVS Country Code (V2=39=China)

V41 1995 WVS Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view?

V232 1995 WVS Size of Town

V2 2000 WVS Country Code (V2=29=China)

V36 2000 WVS Here are two statements people sometimes make when discussing the environment and economic growth. Which of them comes closer to your own point of view?

V241 2000 WVS Size of Town (+ *Hukou*)

A9 2008 The China Survey What kind of registration do you have (*Hukou*)?

C4 2008 The China Survey Some believe there is a conflict between economic development and environmental protection. If you had to choose between economic development and environmental protection, which would consider to be more important?

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