CROSSING BORDERS, CROSSING SEAS: THE PHILIPPINES

AND CONTINUITIES IN MIGRATION

by

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ABSTRACT

This study assesses how the composition of migrant workers from the Philippines varies with migration prevalence within Filipino communities. In doing so, this study tests the hypothesis of past cumulative causation scholars that increased migration prevalence results in a decline in migrant selectivity. The Philippines has a social, political and geographic context different from that of many other countries characterized by high migration. This study considers whether these different contexts and contingencies might alter the process by which the social phenomenon of cumulative causation occurs. Multiple fixed effects models were constructed at the municipality level with the dependent variable in each model relating to individuals' ability to secure a job or to ties and responsibilities that individuals have to their origin community (marital status, age, sex, years of education). This study finds that consistent with cumulative causation theory as posited by Douglas S. Massey, increased prevalence did yield a decline in selectivity for education and marital status. However, migration prevalence had no effect on the gender composition of migrants, while time did impact the gender composition, suggesting sustained selectivity by gender.

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SECTION I.

INTRODUCTION

In the mid-1970s, under leadership of then President Ferdinand Marcos, the government of the Republic of the Philippines encouraged exportation of labor as part of a plan to industrialize; the purpose of exporting labor was to ease unemployment while providing a solution to the problem of high foreign debt. In the year 1990 the number of Overseas Field Workers (OFWs) numbered 446,095. Ten years later, total OFWs had nearly doubled to 841,628 (Scalabrini Migration Center 2000), and by the year 2005 the number had exceeded 1 million, reaching 1.205 million (Philippine Overseas Employment Administration 2005).

This study assesses how the composition of migrant workers from the Philippines varies with migration prevalence within Filipino communities. In doing so, this study tests the hypothesis of past cumulative causation scholars that increased migration prevalence results in a decline in migrant selectivity. The Philippines has a social, political and geographic context different from that of many other countries characterized by high migration. This study considers whether these different contexts and contingencies might alter the process by which the social phenomenon of cumulative causation occurs. This study finds that consistent with cumulative causation theory as posited by Douglas S. Massey, increased prevalence did yield a decline in selectivity for

education and marital status. However, migration prevalence had no effect on the gender

composition of migrants, but time did impact the gender composition, suggesting

sustained selectivity by gender.

SECTION II.

LITERATURE REVIEW

Migration Theory

Cumulative causation theory, a dominant perspective in migration studies, states that migration is inherently self-perpetuating due to numerous feedback mechanisms brought about from past migration (Fussell and Massey 2004; Massey 1990; Massey et al.1993; 1994). Massey and Fussell (2004:152) identify accumulated social capital as "the primary mechanism" of cumulative causation. One of the earliest, fundamental conceptualizations of social capital was formulated by Pierre Bourdieu. Bourdieu identifies social capital as an "aggregate of the actual or potential resources" that arise from membership in a social group (Bourdieu 1985). The social group provides a network that provides its members access to credit and economic advantages. According to Bourdieu, social capital is an asset that is a result of social relationships between individuals. Despite its basis in social relationships, the nature of social capital is that it can provide benefits that transfer into an economic form (Bourdieu and Wacquant 1992). Applied to migration, social capital refers to networks composed of ties of kinship, friendship and shared community origin that lower the costs and risks of migrating (Massey 1987; Taylor 1987; 1987). According to cumulative causation theory, migrants from a sender community provide a form of social capital to other members of the home

community (Taylor 1986; 1987). This migration-related social capital leads to an increase in the number of migrants in the future by lowering the cost of migration for later migrants by providing "valuable information, moral support, and material assistance" (Palloni 2001) and making migration "easier" (Massey and Espana 1997).

While Massey and colleagues largely emphasized the role of migration-related social capital, they did not attribute cumulative causation solely to social capital. According to the scholars, one other cause of increased motivation to migrate is change in the distribution of wealth and incomes that occurs in migrant sending communities (Stark and Taylor 1991). Returned migrants often return with wealth external from the local economy. Massey's study of the effect of migrant remittances in Mexico revealed the use of relatively large sums of remittance money for the purchase of agricultural land as a long-term investment (Massey 1987). These investments resulted in lower demand for agricultural laborers as the land became underutilized (Fussell and Massey 2004). Massey and colleagues suggest migration then becomes a more relevant option for sender community residents as local employment opportunities disappear.

Cumulative causation also may occur from changes in relative deprivation that occur with migration. Nonmigrants witness the wealth of migrants and migrants' families and perceive themselves as poor by comparison. As the benefits of migration become increasingly exposed, migration becomes increasingly attractive to non-migrants (Stark and Taylor 1991; Kandel and Massey 2002). Further, the migrants themselves experience relative deprivation when the income from the foreign job ceases. The spending and consumption habits of a person change when they migrate and become accustomed to a rise in income (Massey 1987; Semyonov and Gorodzeisky 2006).

Domestic economic activities become insufficient to sustain these new lifestyle habits. This idea that loss of a migration income makes the former migrant feel deprived is supported by a study that has demonstrated that former migrants have high likelihood of returning to host nations (Massey 1987).

Massey and Fussell (2004:153) also speak of cultural effects that migration causes over time: "…at a cultural level, once the process of migration begins, it changes a community's values—by glorifying and romanticizing migrants, young people are drawn into the labor-migration stream". Cumulative causation and the feedback effect of past migration may be caused by a mezzo level value change that can occur as migration becomes an agreed upon achievement and positive experience in sender communities. In support, studies have found that in some communities in Mexico, migration has become a "rite of passage" for young men (Kandel and Massey 2002). In these communities, migration is viewed as an earned achievement and a means by which a young male proves himself to be a capable man.

In summary, cumulative causation refers to the social phenomenon of migration where migration causes further migration due to numerous mechanisms: Migration-related social capital develops through network connections; the spending habits of migrants and their families change; the influx of foreign currency deflates the local economy; nonmigrants perceive their deprivation relative to the wealth of observed migrants; entire communities come to view the act of migration as a positive achievement. A synergy occurs between these various feedback mechanisms and the cumulative effect of migration becomes powerful and self-sustaining.

Scholars of cumulative causation theory have conceived of stages in the migration process occurring at the community level (Garip and Curran 2009; Fussell and Massey 2004; Lindstrom and Ramirez 2009; Massey 1987; 1990; Massey and Espinosa 1997; Massey et al. 1994; Reichert 1979; Reichert and Massey 1980). By studying the characteristics of the migrants and how these characteristics differ at different stages in the cumulative causation process, some scholars have attempted to conceptualize generalizable patterns in the migration process. Among scholars who support the concept of cumulative causation—the idea that migration is inherently self-perpetuating—there is disagreement about how the process occurs, which mechanisms drive the process and how predictable migrant outcomes are. Through examination of the characteristics of migrants in communities across the Philippines, I seek to investigate whether the process of cumulative causation is occurring in the same way in that country as it has occurred elsewhere, or whether contexts and contingencies specific to the Philippines might be affecting the process of migration from the country.

According to cumulative causation theory as posited by Massey et al. (1994), a trend that occurs through the distinct phases of the cumulative causation process is a progressive decline in the selectivity of the migrants from the general population. In studying migrants from Mexico, Alejandro Portes (1979) demonstrated that the initial individuals that chose to migrate and were successful in doing so—the pioneers—were exceptional in certain ways. Specifically, they were young men of middle range socioeconomic status with relatively high levels of education (Portes 1979; Portes and Rumbaut 1990). Building on this idea of initial selectivity, Reichert and Massey identified the declining selectivity trend (Reichert 1979; Reichert and Massey 1980). As

the number of migrants originating from a community increase, migrants become increasingly heterogeneous and more reflective of the general population of the community.   The mechanisms of cumulative causation result in increasing migrant flows and effectively dampen the importance of the initially selected traits. Generalizing about migration as a universal process, Massey stated, "Over time….migration becomes progressively less selective and more representative of the community as a whole" (Massey et al. 1994:1500).

To rigorously study the process of cumulative causation, Massey et al. (1994) developed the migration prevalence ratio. The authors conceived of the migration prevalence ratio as a measure of a community's level of involvement in the migration process. The authors calculated the prevalence ratio as the number of individuals with any migratory experience divided by the total number of individuals in the community (Massey et al. 1994). Early studies using the migration prevalence ratio supported the conception of migration as a process that is selective in the earliest stages, but in subsequent stages becomes progressively less selective, such that migrants become more representative of the general population. Studying Mexican communities from 1982 to 1991 using tabulations of the prevalence ratio, Massey and colleagues (1994) found that migration in its initial stages consisted primarily of working age males. As prevalence increased, female migration began while male migration levels remained steady. As migration continued to progress, female migration continued to accelerate as prevalence progressed. In addition to a gender pattern, Massey demonstrated that the age of migrants varied with migration prevalence.   Initially, migrants were primarily males in their peak labor force years. As migration proceeded, other age groups became involved

in the migration process.   Initial female migrants were young, later followed by older women. In regards to marital status, initial male migrants were married, later followed by unmarried, younger men. In contrast, women were initially relatively young and unmarried, later followed by married and older women. At the highest levels of prevalence, migration appeared to reach a saturation point of mass involvement. At this stage the working age population of the sender community had been severely depleted and the population composed largely of children and the elderly. In summary, Massey found migration began with fathers, followed by older sons, next followed by older daughters, then young mothers and children and lastly older, married women. Massey and colleagues concluded that these trends reflect a traditional division of labor and established norms regarding "how men and women should occupy and move through space" (1994:1520).

Examining education, Massey and colleagues (1994) found increased migration prevalence was associated with a decrease in the education level of migrants. Initially, migrants were positively selected according to education. The decrease in education with increased migration prevalence caused migrants to become more representative of the general population—another indicator of the decline in selectivity of migrants. The authors hesitantly conclude that a general tendency was shown towards decreased socioeconomic selectivity (Massey et al. 1994). The authors' study of socioeconomic traits was problematic for two main reasons. For one, the socioeconomic measures consisted of land ownership and business ownership of the household of individuals prior to them leaving on a migrant trip as reported in a detailed life history. Because follower migrants are often from family members of previous migrants, high levels of ownership

of individuals might be due to the fact that these individuals have a relative who has already migrated and accumulated wealth for the household. This wealth is reflected in the wealth level of the later migrant. Further, a community's level of migration prevalence might correlate with the wealth of a community. In spite of these possible biases, the authors cautiously conclude that a general tendency was shown towards decreased socioeconomic selectivity although the relationship was not purely linear.

Massey and scholars (1994) qualified that while their theory is a general conceptual model, its applicability is contextually limited to a degree. The authors stated that the model "is meant to apply to cases of transnational labor migration where host-country immigration policies are relatively open, particularly those cases where clandestine migration is feasible" (1994:1496). Following studies using methods similar to those developed by Massey et al. (1994) have generally supported the idea that migration sustains and reinforces itself, however, contention has developed regarding how consistently the process of cumulative causation occurs, how community contexts affect the process and which mechanisms drive the process.

Fussell and Massey (2004) examined the process of cumulative causation originating from both rural and urban communities in Mexico. The authors' analysis found little cumulative causation effect to occur from urban communities. The authors posit several explanations. One is that urban settings do not allow the development of the close ties that comprise social capital. Second, the inflow of capital resulting from migrant work has little impact on a large urban economy. Third, urban areas allow more employment opportunities and hence migration appears less attractive relative to domestic opportunities. Fourth, the urban context may allow individuals to be exposed to

beneficial information regarding migration in lieu of close ties of social capital. The authors conclude that the cumulative causation process may be mediated by several factors that characterize cities—size, social complexity and economic heterogeneity.

Lindstrom and Ramirez (2009) studied migrants originating from communities across a range of Latin American countries—Mexico, Guatemala, Nicaragua, Costa Rica and the Dominican Republic. Migrants at all migration prevalence levels were positively selected from the general population.   The authors found initial migrants—in their work referred to as "pioneer" migrants—showed no difference in education levels in comparison with following migrant streams; in other words, selectivity by education did not change. However, "pioneer" migrants were slightly younger, less likely to be married, and less likely to own land in comparison with latter migrants. The authors posit that "pioneer" migrants are those who are tolerant of risk and have the least to lose from a failed trip. These findings are somewhat inconsistent with those found by Massey and colleagues (1994) studying migration from Mexico. In the latter authors' study, initial migrants appeared to be wealthier than following migrant streams—an opposite finding, though consistent with declining selectivity. Also, Massey and colleagues found a decline in selectivity by education whereas Lindstrom and Ramirez found no change in selectivity by education.

Garip and Curran (2009) studied the process of rural to urban migration within Thailand with a novel focus on the effect of distribution of migrant networks in communities. Contrary to the work of Massey and others, the authors argue that migrant networks do not become available to all the members of a community and hence the cumulative causation process is not as uniform as past theorists have claimed.   To

capture the influence of distribution of migrant network within communities in addition to the amount of past migration in the community, the authors conceived of the migration prevalence index as their measure of community migration experience. In contrast with the migration prevalence ratio used by Massey and others, this index multiplies the accumulated number of migrant trips by an inequality in distribution of trips variable. In their descriptive analysis, the authors tabulated communities into quintiles according to the communities' scores on the migration prevalence index. Examining average characteristics of the migrants within each quintile, the results showed a trend of declining selectivity of migrants relative to the general population along the characteristics of sex, marital status and land ownership with increased migration experience in a community. Increased selectivity was demonstrated by age and education with migrants becoming better educated and younger than the general population as community migration experience increased. Wealth showed a general trend towards reduced selectivity—but this variance was not completely consistent. The authors performed random effects logistic regressions predicting the odds of being a migrant within a quintile grouping based on individual level characteristics, including the inequality in migration history variable. The authors then repeated the regression after removing the inequality in migration history variable to assess the effect of the distribution of social capital. The results of the random effects regression before decomposing the migration index largely mirrored the results of the descriptive analysis; however, after the inequality in migration history variable was removed from the index, the results changed. Age now demonstrated a decline in selectivity, while selectivity by marital status increased. These findings by Garip and Curran suggest that consistent with

cumulative causation theory, past migration does influence future migration flows, but cumulative causation also appears to be contextually limited and contingent on other social dynamics.

These later studies all contend against the assertion that cumulative causation occurs in a generalizable pattern across varied contexts. Massey and Fussell (2005) and Garip and Curran (2009) both demonstrate that the context of the origin community can influence how or even if the process of cumulative causation will occur. Lindstrom and Ramirez question the basis of initial migrant selectivity to find differing patterns than those earlier posited by Massey and colleagues (1994). In the current study, migration from the Philippines will be examined to see if the migration process from the Philippines approximates the pattern identified by Massey and colleagues (1994) or whether the context of the Philippines results in a different process.

<p style="text-align:center">Migration, The Philippines and the State</p>

The context of the Philippines is in some respects unique relative to other labor exporting countries. The Philippines has been identified as a country in which the state has played an exceptionally active role in initiating large scale labor exportation (Acacio 2008). Studies of the Philippines have demonstrated that interventions by the state have affected migration although the state's influence on migration has not been previously linked to cumulative causation theory and the characteristics of migrant streams.

The role and activities of the state with respect to migration have changed over time, but the state still continues to play an active role in the management of migration (Acacio 2008; Ball 1997). Overseas employers are currently prohibited by law from recruiting workers directly. Under current policy, the link from employer to potential

employee is to be accomplished through recruitment agencies licensed by the Philippines Overseas Employment Agency (POEA). These recruitment agencies are both foreign and domestic in origin. The POEA was launched under the Department of Labor in 1982 to regulate and promote overseas migration work. The POEA has three main subbranches that correspond to different roles the state plays in managing migration: The Market Development and Placement Office is responsible for the recruitment and processing of laborers along with overseas marketing; The Workers Assistance and Adjudication Office provides advocacy services for workers; and The Land Licensing and Regulating Office oversees the regulation of both recruiters and foreign employers.

The exportation of labor first became a focus of state policy during the administration of President Ferdinand Marcos. Under Marcos, martial law was declared in a context of state indebtedness, government corruption and civil unrest (Acacio 2008; Ramirez 1987). During this period, President Marcos proposed a development program entitled "The New Society" (Acacio 2008). "The New Society" program was aimed at developing the country by integrating it into the world market by instituting policies largely consistent with prescriptions of the IMF and World Bank (Martin 2004; Ramirez 1987). As part of "The New Society" plan, Marcos signed into law the Labor Code of the Philippines, Presidential Decree No. 442 in 1974. With this law, the state became the sole institution organizing labor exportation, assuming the role of recruiting and placing workers in overseas positions. The recruitment of labor by private institutions was mandated as legally prohibited. Also notable with this law was the legal requirement that foreign workers must remit a mandated minimum amount of money back to the Philippines.

State policy regarding migration changed in 1978 with passage of Presidential Decree 1412. Private recruitment became legalized with the state assuming a more regulatory, less recruitment oriented role. Two years later with passage of Presidential Decree 1691, the state completely abandoned the practice of recruiting and placing migrants (Acacio 2008). The current agency of the state responsible for all migration regulation, the POEA, was formed in 1982 as a consolidation of the OEDB and NSB and other government offices. At the time of implementation the major functions of the POEA were migrant welfare services, the marketing of labor as an exported commodity, and the streamlining of all state regulation. Following controversies surrounding human rights abuses and the treatment of overseas workers, the state increasingly emphasized its role regarding the welfare and protection of OFWs. The 1995 Migrant Workers and Overseas Filipinos Act, Republic Act 80042, was passed offering increased protection for OFWs through social and legal services. Ostensibly, the act indicated a shift in the government's role as related to migration. Whereas the government previously encouraged labor exportation as a means to national development, the act referred to migration as an individual's option that the state serves to regulate (Acacio 2008). According to Labor Secretary Patricia Sto. Tomas, "overseas employment is a choice made by individuals. But once they leave for overseas, the government is duty bound to assure that migrants' contracts have ample provisions for their protection" (Martin et al. 2004:1558).

Over time, the general trend in state policies towards migration has been a decreasing regulatory role. According to Ball (1997), these changes in policy all directly relate to the state's interest in accessing foreign currencies and markets; the state ceded

regulatory control in the interest of removing barriers to migration in order to access new markets and continue to increase foreign currency reserves.

Acacio's empirical study (2008) indicates that these various policies did indeed impact migration levels. Acacio found statistically significant changes in migration levels following passage of major pieces of migration focused legislation. Specifically, the policies renewing private sector recruitment led to a large increase in levels of migration, while the establishment of the POEA slowed migration growth. Acacio's study indicates that any attempt to explain migration from the Philippines without accounting for the state's role would be short-sighted.

Douglas Massey has acknowledged the potential for some states to regulate and restrict migration (Massey 1999). Yet, Massey has not acknowledged whether the state's actions might affect the process of cumulative causation. My analysis will explore the process of cumulative causation of migration in the context of a strong state bureaucracy.

<center>The Global and National Contexts of Filipino Migration</center>

In addition to the influence on migration from the Philippines played by migrant networks and state policies, there is an important role played by the demands of the changing world market.

Filipino migration is not a phenomenon altogether new to the last 50 years. Migration occurred prior to the state's regulation oriented policies. In 1906 Filipino migrant workers became farmhands in sugar estates in Hawaii, followed by agricultural workers in the western United States (Ramirez 1987). The composition of Filipino migrants has changed dramatically in the last 50 years. During the Marcos era in the 1970s, labor migration from the Philippines was predominantly male, with women

comprising only 10% of overseas workers in 1975 (Semyonov 2004). These men mostly worked in Middle Eastern oil-producing countries as both skilled and manual laborers. Today, men continue to comprise the bulk of migrants in the Middle East where jobs exist in the construction and oil industries (Parrenas 2000; POEA 2005; Tyner 1999a).

Filipina women would begin to compose migrant streams in the 1980's as service workers in East Asia in such job positions as domestic workers, entertainers and nurses (Tyner 1999a). Global cities in advanced, capitalist areas of the world that have developed with globalization require low-wage service sector labor—work traditionally viewed as appropriate to women (Sassen 2006). In the last 30 years, Filipina women filled many of these positions in East Asia, Europe and North America (Parrenas 2000; Tyner 1999a). These shifts in the composition of migrants in the Philippines are related to globalization's demand for new types of labor in certain regions of the world (Parrenas 2000; Sassen 2006; Tyner 1999a, 1999b).

Previous studies have provided insight into the national social context of Filipino migration. Cecilia Tacoli's study, "International Migration and the Restructuring of Gender Asymmetries: Continuity and Change among Filipino Labor Migrants in Rome," suggests the importance of accumulated social networks in migration from the Philippines. In Tacoli's study of Filipino workers in Rome, a full 86% of Filipino workers had friends or relatives in the city when they arrived. These high rates suggest the existence and importance of networks on Filipino migration (Tacoli 1999).

Discussion thus far has focused on the impacts on migration from the Philippines caused by government policy, migrant networks, and the global economic system. There are other socially based influences on migration from the Philippines in addition to social

capital. Mina Ramirez argues that the Filipino migrant worker phenomenon is a result of a cultural value and ideal that originated under the Spanish colonial period. Under colonization "a policy of devaluing and demeaning the work of a peasantry" developed (Ramirez 1987:38). Spanish colonial values and economic practices developed the ideal of the "leisurely lifestyle" (Ramirez 1987:38) based on consumption of material goods— a lifestyle that is unachievable working as a domestic laborer. Post-colonial Filipino national leaders and local elite continued an economic and cultural system that devalues labor work and emulates Western consumption patterns and lifestyles. In a traditional agrarian community, opportunities by which to achieve this lifestyle are not available, yet the Western-based education system and mass media continue to promulgate ideas of consumerism and upward mobility. Ramirez suggests that government policy encouraging foreign work and the ready acceptance of this work by the multitudes is a reflection of these ingrained cultural values that originated during Spanish colonization.

There is evidence of migration as a cultural ideal as Ramirez proposes. Labor Secretary Patricia Sto. Tomas stated that migrants are a "permanent fixture of Filipinos' socio-economic life" (Martin et al. 2004:1545). Further, the press and national government leaders including the President refer to migrants as national heroes (Martin et al 2004). A secondary finding of Tacoli's study (1999) was the consistent statement by foreign workers that they enjoyed a high status in their home country, a finding that gives support to the idea of a positive cultural value placed on the act of migrating for work.

Studies have demonstrated that the sending of remittances is a central feature of Filipino labor migration. Rodriguez (1996) found 96% of contract workers remitted cash or in-kind remittances. Further, Rodriguez found urban areas received higher amounts of

remittances. (Rodriguez 1996). In later work, Rodriguez (1998) compared the income distribution of migrant and nonmigrant families using data from the National Statistics Office's family income and expenditure surveys (FIES). The data included demographic information and level of education of reporting households in the year 1991. Not surprisingly, migration resulted in higher incomes for families of migrants. Interestingly, the study also indicated that even though migration provides jobs, it does not reduce inequality within the country. Examination of inequality through the calculation of Gini coefficients indicates that migration actually results in higher inequality in household incomes (Rodriguez 1998). These findings of inequality associated with migration from the Philippines support cumulative causation theory's assertion that foreign currencies from migration alter wealth distributions, distort the domestic economy, and reduce the buying power of the domestic wage.

SECTION III.

PROPOSED STUDY, HYPOTHESES

The Philippines provides an important context for migration study because of characteristics of the country and the circumstances surrounding its labor migration. For one, the country has been experiencing large scale migration for several decades. Second, while labor migration varies in concentration in different regions of the country, the phenomenon has occurred throughout the country as opposed to being isolated to specific regions and communities. Third, the government has played an active and influential role in initiating and regulating migration, to a degree and in a matter unlike that of any other migrant sending country. Fourth, the country is an island nation. This geography makes migration a costly, complicated endeavor relative to migration between bordering nations. Fifth, there is evidence that migration of labor has positive values attached to it at the national level, as suggested by the label, "returning heroes" used by the government to refer to migrant workers (Martin et al. 2004). All of these qualities make the Philippines a distinctive case and one useful for assessing the accuracy and generalizability of cumulative causation theory.

I propose cumulative causation effects are being produced in the Philippines through numerous mechanisms. First, there are the social capital effects in terms of access to migrant networks as demonstrated by Tacoli (1999) and emphasized in the

works of Massey and colleagues (1994). Furthermore, migrant accumulation induces

motivation to migrate, such as through the relative deprivation experienced by non-

migrants who perceive the higher wealth of migrant families, as investigated by

Rodriguez (1998). There is interplay between these aspects that feed into each other. An

individual can be exposed to the economic benefits of migrating; at the same time

inflation due to remittances is causing a reduction in the real value of locally generated

income; and furthermore the migrant is exposed to a network that lowers the costs and

enhances the appeal of migration. I hypothesize that migration from the Philippines is

producing cumulative causation effects, but not through the same process outlined by

Massey. This context is different from that of Mexico and Latin America, the areas in

which the bulk of the study of cumulative causation theory has been performed. The

Philippines context limits the leveling effect of accumulated migration-related social

capital. I propose that the limitation of cumulative causation is due to an exceptionally

large, regulatory government bureaucracy; from high costs and significant obstacles to

migration due to island geography; and finally from dependence on changing global

market demands for migrant labor.

This study explores how migrant streams change through different phases of

migration through the use of the migration prevalence operationalization. Past migration

prevalence here refers to the level of migration at a previous point (Massey, Goldring,

and Durand 1994). This study assesses how the composition of migrant workers from the

Philippines varies with changing migration prevalence in a given community. In doing

so, this study tests the hypothesis of past migration scholars that increased migration

prevalence results in a decline in migrant selectivity. An alternative hypothesis to

declining selectivity of migrants associated with increased migrant prevalence would be sustained or increased selectivity in the Philippines because the ability to migrate remains constrained even as the benefits of migration become increasingly exposed. Increasing prevalence could result in a higher supply of individuals from the Philippines who desire to migrate. However, prospective employers still provide only a limited amount of jobs, island geography continues to prevent migration from declining in cost and government regulation continues to challenge illegal migration. Despite the development of migrant networks, these constraints might remain significant and influence who can successfully migrate. Prospective employers might now be able to pick from a larger talent pool which results in increased selectivity in certain respects. If this situation were the case, it would be likely that as migration prevalence increases in a community, education would remain selective as only the educated would be able to successfully overcome the barriers to migration. Gender too might remain selective, as migration from the Philippines depends largely on international demand for workers and the specific type of work demanded at a given time point may correspond to gender roles.

SECTION IV.

METHOD

Data Source, Measurement and Sampling

This study uses secondary data in the form of census micro data. Specifically,

micro data from Integrated Public Use Microdata Series International (IPUMS) was

aggregated to form a data set consisting of municipality level units of analysis. IPUMS

provides randomized micro data for the Philippines that includes information regarding

migration. These data were gathered during three censuses performed in the Philippines

in 1990, 1995 and 2000. The census of the Philippines was "designed to take an

inventory of the total population and housing units in the Philippines and to collect

information about their characteristics" (Africa 1990). The organizing body of the census

is the National Statistics Office, which deploys field personnel to oversee and supervise

the local census enumerators.

Local enumerators were formally trained and provided identification cards before

performing the census over a period of approximately 20 days (Africa 1990). The census

of the Philippines was conducted at the household level by interviewers performing

house-to-house-visits and interviews. Interviewers were to canvas a given mapped area.

Census directions stated that answers to the survey were to be obtained from "any

responsible member who can provide accurate answers to the questions and who can give

information for the household. The head of the household or his spouse would be the most qualified respondent" (Africa 1990). In the event that no respondent was at the home, an appointment slip was left and call backs were performed. In the event of three failed call backs, "last resort information" was obtained from other sources and is identified as such.

A municipality level variable for migration was formulated by compiling individual answers to an overseas worker question in the Philippine census. The census was conducted with reference to the household unit. Either a member of the household— usually the household head—reported about the characteristics of a member of the household abroad at the time of the census or the overseas worker was present at the time of the census while on vacation from his/her country of employment. Description of the requirements for those to be enumerated in the census read as follows:

> a. Filipino nationals permanently residing in the Philippines;
> b. Filipino nationals who are temporarily at sea or are temporarily abroad as of census date;
> ***c. Filipino overseas workers as of census date, even though expected to be away for more than a year;***
> d. Philippine government officials, both military and civilian, including Philippine diplomatic personnel and their families, assigned abroad;
> e. Civilian citizens of foreign countries having their usual residence in the Philippines or foreign visitors who have stayed or are expected to stay for at least a year from the time of their arrival in this country.
> (Africa 1990)

Census directions further delineate those who are not to be enumerated in the census:

> h. Residents of the Philippines on vacation, pleasure or business trip, study or training, etc. abroad who have been away or expected to be away from the Philippines for more than one year from departure.
> (Africa 1990)

As can be seen in c) and h) above, the census carefully specifies that overseas foreign workers are to be included in the census.

This study focuses on temporary, contractual labor migration. From a theoretical perspective, there are important distinctions between types of migrants from the Philippines. There is out-migration, or permanent migration to a foreign country, which is certainly pervasive in the Philippines and relevant to cumulative causation theory; however, it is not the subject being measured in this study. This data analysis is restricted only to levels of temporary labor migration—sometimes referred to in the Philippines as overseas contract workers. Studying only overseas workers provides a uniform measure of migration and moreover, the bulk of Filipino migrants are overseas workers with estimates of 85% of all migrants as overseas contract workers (Tyner 2009b). There is a specific question in the census posed in order to enumerate those considered overseas contract workers at the time of the census. This reporting is performed through a reporting family member. Instructions regarding this question read as follows:

Ask the respondent if there are members of the household who are overseas contract workers. You should also include them in the list of members.

Overseas contract workers are Filipino workers who are presently out of the country to fulfill an overseas work contract for a specific length of time or who are presently at home on vacation but still have an existing overseas work contract.
(Africa 1990)

In addition to the overseas worker question, other questions asked in the census relevant to this study are: age of subject, sex of subject, municipality of residence, marital status, education attainment, ownership of home, home building materials, and ownership of key household durables (radio, refrigerator, television, toilet). These data were used to assess how characteristics of migrants and their households varied with changes in migration prevalence.

The census includes questions regarding the geographic location of individuals' residence. Respondents were to name the region, province and municipality of their residence. The country consists of 83 provinces. These provinces contain 1,556 municipalities. Data regarding municipality of residence are available for most individuals. However the specific municipality of residence is not provided for individuals living in municipalities with populations of fewer than 20,000 people. Out of a total of 1556 municipalities, 1106 are specified directly. In terms of population size, of specified municipalities in the year 2000, the median population size is 39,238 residents. Across municipalities outliers exist; while Manila is subdivided into municipalities, some other cities qualify as municipalities, yielding seven particularly large municipalities with populations over 500,000 residents. Yet, the first and third quartiles yield mean values of 27,710 and 60,992 residents respectively, suggesting that in general municipalities represent a community level measurement, not out of the range of communities in past studies. In comparison, in the seminal study by Massey et al. (1994) communities under study were comprised of populations ranging from 52,291 to 1,080. In terms of migration prevalence, municipalities exhibit wide variation which allows for comparative research regarding changes within communities over time and also changes across communities at a single time point. Data used in the analysis consisted of a sample of the total population of 5% density, a reduction from the 10% sample density of the full census.

There is variation between sample years that had to be considered when employing this data set. For the year 1990, the sampling rate, or the proportion of households to be actually surveyed within each enumeration area, varies from one

city/municipality to another. It may be 100%, 20% or 10% depending on the expected population of the municipality or city in the year 1990. The census was conducted with a sample of 10% of the population for each of these years, with 6,013,913 individuals surveyed in 1990 and 7,417,810 in 2000. The National Statistics Office of the Philippines has calculated sample weights for these respective periods and coverage is considered to be 100%. When municipality level variables were constructed, these weights were employed. In the analysis performed in this study, the data set was reduced from 10% of the country's population to 5% of the population.

A good deal of aggregated data from the Philippines is available from another source, the Philippine Overseas Employment Administration (POEA). These data were not directly used in any analysis performed in this study, but these data were used to assess the validity of the IPUMS data by providing a basis for comparison. The Labor Assistance Center operates under the POEA at Benigno Aquino International Airport and documents departing and returning overseas workers. The POEA has made available annual nationally aggregated data beginning from the year 1992—with some statistics extending as far back as 1984. Statistics provided by the POEA include: total number of workers deployed per year; number of workers per country; top ten occupational groups; type of hiring and processing venue; remittance amounts by top ten sources number of workers as rehires and as new hires; deployment per skill per country per sex; and deployment per country per skill per sex (Philippine Overseas Employment Administration 2008).

In this study, the characteristics of migrants were averaged to the municipality level using IPUMS census data. These aggregated characteristics at the municipality

level were compared as migration prevalence ratios varied between communities and through time. More important than a most precise reflection of the actual rates of migration in the country is consistency across sample years in order that trends calculated over time be accurate and representative. Changes in rates of migration over the same period observed in the census data and the POEA data were compared to search for signs of non-reliability in the census data. To make the two data sources comparable, the IPUMS census data was tabulated at the national level, yielding the following findings:

- In the year 1990, of a 5% sample equaling 2.98 million, 25,432 individuals were reported as overseas contract workers. This yielded a migration rate of .8%

- In the year 2000, of a 5% sample of 3.65 million, 62,143 individuals were reported as overseas contract workers. This yielded a migration rate of 1.7%

Over this 10-year period, the tabulation of those enumerated as overseas contract workers exhibited a rate change of 112.5%. An important qualification must be stressed when comparing the POEA and census data—these two data sources capture somewhat different qualities. The POEA deployment data notes total number of migrants deployed per year. This is a different measurement then a tabulation of the census data—a stock measure which includes those deployed in the last year in addition to those who have been abroad for more than a year. In 1990, 334,883 migrants were deployed according to the POEA. In the year 2000, 643,304 migrants were deployed. As the census data used in this study are a 5% sample of the population, and the POEA data are a complete flow rate, these data sources are best compared as respective rates. The rate of change in annual deployment over the 10 years as measured by the POEA exhibited a 92% increase. In comparison, total overseas workers at the time of the census changed by

112.5% over the same ten year period. The difference between these two measures is not completely inconsiderable, but generally, the overall trends demonstrated by these two data sources are similar and indicate that the census data is not an unreasonable tool for analyzing migration trends over time in the Philippines.

<u>Data Adjustments</u>

Changes in the characteristics of migrants that associate with changes in migrant prevalence could be examined by comparing migrants across communities with varying migration prevalence at a given time point or by observing changes that occur in the composition of migrants within communities as migration prevalence varies over time. The census data were gathered at the individual level with subjects randomized in each sample, making longitudinal study of individuals impossible. In order to assess how migration occurs differently in different communities and how the characteristics of migrants within communities change with migration prevalence shifts, the data needed to be manipulated, reformed, and aggregated to the municipal level.

In this study migration prevalence ratios were calculated as the number of working age overseas workers in the municipality (virtually all overseas workers were of working age) divided by the number of total working age adults (ages 15-65) in the municipality. This measure is an adaptation of the migration prevalence ratio introduced by Massey et al. (1994). The authors' measure consists of the number of individuals living in a community who had previously migrated divided by the total number of individuals in the community. The authors posit that their measure "serves as a proxy for the extent of a community' involvement in the migratory process" (1994:1495). Similar to the Massey et al. measurement, the prevalence ratio calculated in this study is a

proportional measure of degree of migration in a community at a given point in time.

However, the Massey et al. (1994) operationalization captures all past migrant flows,

while the measurement in this study is a stock measurement of number of migrants a

given time point. Garip and Curran's study (2009) along with Lindstrom and Ramirez's

study (2009) also measure a community's degree of involvement in migration as a total

of all past migrant trips. Ideally, similar data would be available for this study.

However, the use of a stock measure in this study is justifiable due to the fact that this

study employs fixed effects regression models and focuses on change within

communities. An increase in a community in the number of migrants abroad across time

points is justifiable as a representation of an increase in the community's involvement in

the migratory process over the time period.

In order to be able to compare the characteristics of migrants with those of non-

migrants in a municipality it was determined best to limit the study to only working age

adults (15 to 65 years olds). Otherwise, information on characteristics of education and

marital status might be largely a reflection of differences in the age composition of

migrants versus nonmigrants, as migrant workers would be virtually all working age,

while nonmigrants would include children and the elderly. Therefore, before the data

were aggregated to construct measures at the municipality level, all subjects under age 15

and over age 65 were dropped.

In order for individual level data to be aggregated and averaged to the

municipality level, all individual level variables required a linear or dichotomous form.

For instance, marital status, which initially included four answers—single/never married,

married, divorced/separated, and widowed—had to be reduced to a currently married (1)

versus non-married (0) dichotomy. This dichotomy was then formed into a ratio consisting of the total working age individuals of non-married status in a municipality divided by the total population of working age individuals in a municipality. These calculations would not have been possible using ordinal categories. The same ratio was then calculated for nonmarried migrants in each municipality divided by total migrants in each municipality.

While past scholarship has examined how cumulative causation relates to migrant's wealth (Garip and Curran 2009; Lindstrom and Ramirez 2009; Massey et al. 1994), data limitations prohibit analysis of income levels or wealth levels of migrants in this study. No income variable exists in this data set. Numerous variables related to consumer durables and ownership are available in this data set; however, because of the manner in which these data were gathered, these wealth related variables are ambiguous in representation and do not allow conclusive study. Possibly these variables represent wealth of a migrant's family before the migrant began working abroad. Alternatively, because the data are gathered while the migrant is abroad, these variables could represent wealth that the migrant has accumulated through the overseas work. Because of these limitations, data analysis relating to individual's wealth was not performed. However, a wealth index was constructed to serve as a control variable for regressions performed on other dependent variables in this analysis. Using the individual level data and following the statistically supported practice of principal components analysis (Montgomery et al. 2000; Filmer and Pritchett 2000), a wealth index was constructed. First, household consumer ownership variables were formed into a wealth index that reflected the wealth of an individual's household. Next, this micro level index was then aggregated and

averaged to the municipality level to develop respective average wealth index scores for

migrants and the total population in a given municipality. The variables used were

ownership of radio, refrigerator, television, type of toilet and home construction

materials. Ownership of radio, refrigerator and television are simple dichotomous

variables. Type of toilet and home building materials are ordinal variables—and were

not easily transformed into a wealth index. These variables required manipulation to

become dichotomous variables. Type of toilet was reduced from four categories—no

toilet, latrine, nonflush, and flush—into possess a flush toilet or no flush toilet.

Predominant building material offered 10 possible answers: no wall, makeshift,

bamboo/reeds/grass, wood, brick/stone, asbestos, iron/aluminum, glass, mixed materials,

other materials. This building material variable was dichotomized through the use of a

cut point. Households using brick/stone, asbestos, iron/aluminum, glass, mixed materials

and other materials were assigned a (1); while households with no wall, makeshift,

bamboo/reeds/grass and wood received a (0). Once these variables were all

dichotomized, principal components analysis was performed and each variable was

assigned a weight in a single wealth index. Important to note is the fact that not all of the

components of the wealth variable were available at the 1995 time point and therefore the

wealth index is not available for 1995.

A new data set was formed with aggregations at the municipality level.

Probability weights were applied when forming this data set. Each municipality was

assigned the following variables based on aggregations for both migrants and the total

population at three separate time points (1990, 1995, and 2000):

1) gender percentage, equaling number of female residents divided by total residents

2) average age of residents of a municipality

3) nonmarried rate of residents, equaling number of nonmarried status divided by total

residents

4) average years of schooling

5) average wealth index ranking of residents

Municipality is the smallest community variable in the census data set. All

municipalities are individually represented in the new data set save for municipalities

with populations under 20,000 people.   Municipalities with fewer than 20,000 residents

were grouped together with other municipalities in a province with fewer than 20,000

residents. This study examined the effect of prevalence rate on the characteristics of

residents in a given community; therefore the grouping together of municipalities with

varying prevalence rates was problematic. For this reason, all municipalities with

population under 20,000 people were dropped from the data set. After these

municipalities were dropped, a total of 1,106 municipalities from a total of 1,556

municipalities comprised the units of analysis in the data set.

SECTION V.

ANALYSIS

Analyses were performed at the municipality level. Tables 1 and 2 present a
descriptive analysis of municipalities grouped according to migration prevalence levels
following the work of Lindstrom and Ramirez (2009), Garip and Curran (2009), and
Massey and colleagues (1994, 1996). I grouped all municipalities in the data set into
quintiles of migration prevalence ratios. Table 1 presents the average migration
prevalence ratio by quintile. Table 2 presents an average of all municipality level
characteristics of migrants (gender rate, average age, average years of schooling, rate of
singlehood) into a quintile average of migrant characteristics. This averaging to the
quintile level was then repeated for the total population. Grouping by quintiles served to
illuminate noticeable changes that occur in these various characteristics as migration
prevalence varies by a significant amount across municipalities.

Examination of tabulations of municipalities according to quintiles revealed
several shifts associated with change in migration prevalence over time and across
communities with varying rates of migration prevalence. In terms of age, it appears that
the working age population of the Philippines became slightly older from 1990-2000 as
aging of the overall population occurred across all prevalence categories. In contrast,
among migrants age change was indeterminate across time—rise and fall occurred

without pattern.   However, as prevalence ratios changed between quintiles within time points, migrants became generally older; in all years, communities with highest prevalence ratios had the oldest migrants. This trend did not occur for only migrants. The same trend of increased age according to increased prevalence ratio occurred for the overall population, but the magnitude of the change was noticeably smaller across the general population. Between the highest and lowest quintiles, the population aged by less than .5 year; whereas among migrants, age increased in 1990, 1995 and 2000 by 2.09, .80, and 2.71 respectively. It appears that an increase in migration prevalence is associated with an increase in age that shifted migrants from being initially younger than the general population, to becoming older and more representative of the population, or even older than the general population.

Gender was coded with a (1) for males and a (0) for females. When examining gender, there was a noticeable increase in the female composition of migrants that occurred with time. There was no discernable variance according to migration prevalence within a time period. Initially favoring males, migrants became increasingly feminized over time with parity being reached by the year 2000. Across prevalence quintiles, there appeared to be no determinable relationship between gender and migrant prevalence.

An examination of the marital status of migrants and nonmigrants proved compelling. Marriage status was coded with a (1) for nonmarried status and (0) for married status. It appeared that diverging trends occurred between the migrant population and the general population as migration prevalence varied. In the general population, there was an associated increase in singlehood as migration prevalence

increased; however, among migrants, there was an associated increase in the share of married migrants with increasing migration prevalence.

In contrast to the diverging trends observed between migrants and the general population when examining marital status, years of schooling appeared to increase among both the total population and the migrant population as prevalence increased.   This is counter to the relationship described in the literature regarding the effect of increasing prevalence which predicts that migrants become increasingly less educated as prevalence increases. Across municipalities in the Philippines, migrants' education levels increased as prevalence increased. However, it is difficult to draw conclusions from this pattern due to the fact that the total working age population also became better educated. There might be a spurious relationship related to the nature of these communities and general education trends over time.

When assessing the wealth variable, similar results to the education variable were found. There was a robust increase in the wealth of migrants and the total population associated with migration prevalence. Migrant households were observed to be increasingly wealthy along with an increasingly wealthy total population. Again, there appear to be qualities particular to these municipalities besides merely containing higher prevalence ratios.   One could venture that these communities are more "modern" or "developed"—and possibly migrants are more likely to originate from more developed communities. In regards to possible endogeneity bias arising from migrants being grouped together with the general population, migrants are a small percentage of the population, and it is doubtful that the higher wealth of migrants could cause a more than negligible increase in the average wealth of the general population.

In terms of theoretical arguments, consistent with the declining selectivity of migrants trend proposed in Massey's cumulative causation theory, these tabulations indicate a trend in migrants towards declining selectivity relative to the general population related to age and marriage. Wealth and education characteristics of migrants remained selective relative to the total population, although it could not be determined if this selectivity increased or decreased during the time period because both migrants and the general population became wealthier and better educated as migration prevalence increased.

Tabulation analysis is inherently limited in assessing relationships between variables. Other municipality level factors appear to be impacting these characteristics as there are observable differences occurring with changes in prevalence rate for both migrants and non-migrants. Observed changes in characteristics such as age, education and marital status observable between communities with differing prevalence rates are likely not solely due to the fact that there are differing numbers of migrants in these communities. Possibly, certain municipalities, such as urban centers, contain the relatively young, educated, wealthy and those likely to migrate. Therefore, it cannot be determined that the migration prevalence ratio is causing these associated changes.

To best assess the relationship between these demographic characteristics (marital status, age, sex, years of education) and migration prevalence, fixed effects models were constructed to hold for factors that vary by municipality that could be impacting these characteristics. This model is relevant for this study because not all control variables that could be influencing demographic characteristics are available from the census derived data set. Possibly, the migration prevalence ratio has a strong association with

level of development in a community. A spurious relationship with communities' level of development might explain observed associations between education levels of municipalities and migration prevalence. Also, it is likely that a municipality's level of urbanization is associated with variance in the migration prevalence ratio—and hence changes in demographic characteristics associated with change in the migration prevalence ratio could reflect a spurious relationship with level of urbanization. A fixed effects model was determined appropriate as it could control for these possible factors by focusing on only within municipality variance, under the assumption that level of development and urban status are not changing within the 10-year period under study (while the migration prevalence ratio is changing). Further, domestic and international economic factors that change through time could possibly be affecting these changes in characteristics. Period specific time variables were employed to hold for macro-economic changes that might be occurring across these time points. Compared with a random effects model, the fixed effects model was determined more appropriate as it provides larger standard errors, more consistent results, and further, the assumption of the random effects model that between municipality variance is random is not appropriate given the theoretically plausible associations with level of urbanization and level of development. Furthermore, Hausman tests indicate statistically significant differences between the fixed effects and random effects models

In each fixed effects model, one of the characteristics of migrants was modeled as a dependent variable with the independent variables being other available demographic variables, a period specific time variable, and the migration prevalence ratio. The characteristics chosen for examination relate either to individuals' ability to secure a job

or to ties and responsibilities that individuals have to their origin community (marital status, age, sex, years of education). I then repeated the model for the same characteristics of the total population. Associations with the migration prevalence ratio were then examined to determine how the prevalence ratio affected the given characteristic modeled as the dependent variable.

According to the descriptive analysis, education levels increased for both migrants and the general population as migration prevalence increased. However, as shown in Table 3, when a fixed effects model was constructed with the average education level of migrants by municipality as the dependent variable, the education level of migrants demonstrated a robust, statistically significant decline as migration prevalence increased over time within communities (model 1). This is in contrast to the effect observed when a fixed effects model was constructed with the average education level of the general population as the dependent variable; in model 2, the total population became more highly educated as prevalence increased—the opposite effect. In terms of education these models offer support for the hypothesis that increased migration prevalence yields a decline in selectivity of migrants.

In the cross tabulations displayed in Table 1, the total population demonstrated increased rate of nonmarried status associated with migration prevalence. For migrants, nonmarried status appeared to decrease, although the change for migrants did not appear consistent. Table 4 presents nonmarried status of migrants as a dependent variable predicted by migration prevalence ratio and other demographic variables in a fixed effects model. In model 1, migrants demonstrated no statistically significant change in marital status according to migration prevalence. In model 2, the total population

demonstrated an increase in married status with increased migration prevalence.

Comparing these two models, a decline in selectivity appears to have occurred; migrants

became more representative of the general population as migration prevalence increased.

However, this decline in selectivity was not due to change that occurred with the marital

status of migrants. This decline in selectivity was due only to the fact that the general

population of municipalities became increasingly married as migration prevalence

increased in these municipalities.

In the descriptive analysis (Table 1), there did not appear to be a consistent

relationship between change in the migration prevalence ratio in municipalities and the

average gender composition of migrants. Fixed effects modeling of gender composition

as presented in table 5 found similar results—change in migration prevalence yielded no

clear change in the gender composition of migrants, nor the gender composition of the

general population within municipalities (Table 5).   However, the period specific time

variable for the year 1990 did have a statistically significant effect on the gender

composition of migrants and the total population, with migrants becoming increasingly

male and total population becoming increasingly female over time. The effect was far

more robust for migrants compared with the general population with respective

coefficients of -.091 and .005. In 1990, migrants were more female than the general

population. By the year 2000, this had changed; migrants had become more male relative

to the general population except for the fifth quintile in which close to identical gender

composition had been reached with 49.3% of migrants being male and the general

population being 49.8% male (Table 1).

Table 6 presents fixed effects modeling of average age as predicted by migration prevalence for migrants and the general population.   No statistically significant relationship between age and migration prevalence was found for neither migrants nor the general population.

TABLE 1

MIGRATION PREVALENCE RATIO, BY QUINTILE, YEAR

Quintiles	I	II	III	IV	V	Across all Municipalities
MPR 1990	<=.0014	>.0014 & <=.0040	>.0040 & <=.0096	>.0096 & <=.0222	>.0222 & <=.0922	0.0117
MPR 1995	<=.0040	>.0040 & <=.0085	>.0085 & <=.0162	>.0162 & <=.0285	>.0285 & <=.1237	0.0165
MPR 2000	<=.0104	>.0104 & <=.0158	>.0158 & <=.0242	>.0242 & <=.0337	>.0337 & <=.1430	0.0231

Data Sources IPUMS 1990, 1995 & 2000 5% samples
Data collected from 15 to 65 year olds in 1006 municipalities

TABLE 2

AVERAGE EDUCATION, AGE, GENDER COMPOSITION, MARITAL STATUS
AND WEALTH COMPOSITION OF MIGRANTS AND
TOTAL POPULATION IN MUNICIPALITIES

Quintiles	Migration Prevalence in Municipality				
	I	II	III	IV	V
Mean age					
Migrants 1990	31.686	32.736	32.497	32.583	33.785
Migrants 1995	32.357	31.405	31.668	32.707	33.160
Migrants 2000	31.224	31.775	32.985	33.571	33.941
Overall 1990	32.097	32.293	32.552	32.607	32.551
Overall 1995	32.556	32.733	32.860	32.834	32.998
Overall 2000	33.020	33.185	33.290	33.170	33.406
Male (%)					
Migrants 1990	0.494	0.425	0.459	0.451	0.420
Migrants 1995	0.483	0.494	0.508	0.471	0.489
Migrants 2000	0.518	0.510	0.494	0.501	0.493
Overall 1990	0.487	0.490	0.493	0.498	0.503
Overall 1995	0.483	0.487	0.491	0.495	0.499
Overall 2000	0.483	0.487	0.491	0.495	0.498
Not married (%)					
Migrants 1990	0.539	0.511	0.508	0.573	0.632
Migrants 1995	0.492	0.486	0.477	0.536	0.567
Migrants 2000	0.547	0.518	0.581	0.609	0.613
Overall 1990	0.632	0.613	0.600	0.590	0.577
Overall 1995	0.629	0.615	0.600	0.593	0.582
Overall 2000	0.623	0.609	0.599	0.598	0.585
Mean education (in years)					
Migrants 1990	9.964	10.518	10.976	10.927	10.778
Migrants 1995	9.123	10.119	10.541	10.903	10.901
Migrants 2000	9.176	9.525	10.005	10.381	10.528
Overall 1990	6.039	6.575	7.146	7.765	8.521
Overall 1995	6.437	7.072	7.606	8.264	8.833
Overall 2000	6.870	7.371	8.065	8.619	8.904

Data Sources IPUMS 1990, 1995 & 2000 5% samples
Data collected from 15 to 65 year olds in 1006 municipalities

TABLE 3

FIXED EFFECTS REGRESSION OF AVERAGE YEARS OF SCHOOLING:
FOR EFFECT OF MIGRATION PREVALENCE RATIO

All Municipalities, 1990, 1995, 2000	Model 1 Migrants	Model 2 Total Population
Migration Prevalence Ratio	-19.949**	4.869**
	(.000)	(.000)
Average Age	-0.018	-0.113**
	(0.142)	(.000)
Gender Composition	0.432	1.570*
	(.059)	(.024)
Average Wealth Index Score	1.215**	.466**
	(.000)	(.000)
Average Marital Status	-0.204	-2.134**
	(.366)	(.000)
Year 1990	0.723**	-0.493**
	(.000)	(.000)
Year 1995	(dropped)	(dropped)
Constant	9.993	12.107
	(.000)	(.000)
R-Squared	0.4657	0.6182
F test	1.26	15.42
prob> f	(.0001)	(.0000)
N	1104	1106

Data Sources IPUMS 1990, 1995 & 2000 5% samples
Note: Characteristics were derived from working age individuals,
15-65 years old
Standard errors in parentheses
 *p < .05; **p < .01

TABLE 4

FIXED EFFECTS REGRESSION OF GENDER COMPOSITION: FOR
EFFECT OF MIGRATION PREVALENCE RATIO

All Municipalities, 1990, 1995, 2000	Model 6 Migrants	Model 7 Total Population
Migration Prevalence Ratio	.003	-.199*
	(.997)	(.031)
Average Age	.023**	.016**
	(.000)	(.000)
Gender Composition	-.177**	-.108
	(.000)	(.136)
Average Years of Schooling	-.004	-.023**
	(.366)	(.000)
Average Wealth Index Score	.006	.023**
	(.606)	(.000)
Year 1990	-.027	.008*
	(.057)	(.017)
Year 1995	(dropped)	(dropped)
Constant	-.0407	.3200
	(.601)	(.000)
R-Squared	.2698	.1136
F test	1.10	4.05
Prob> f	(.0694)	(0.0000)
N	1104	1106

Data Sources IPUMS 1990, 1995 & 2000 5% samples
Note: Characteristics were derived from working age individuals,
15-65 years old
Standard errors in parentheses
 *p < .05; **p < .01

TABLE 5

FIXED EFFECTS REGRESSION OF GENDER COMPOSITION: FOR
EFFECT OF MIGRATION PREVALENCE RATIO

	Model 1	Model 2
All Municipalities, 1990, 1995, 2000	Migrants	Total Population
Migration Prevalence Ratio	-1.392	-0.005
	(.082)	(.899)
Average Age	-0.005**	0.001
	(0.002)	(.086)
Average Years of Schooling	0.008	0.003*
	(.059)	(.024)
Average Wealth Index Score	-0.026*	-0.001
	(.027)	(.372)
Average Marital Status	-0.171	-0.019
	(.000)	(.136)
Year 1990	-0.091**	0.005**
	(.000)	(.000)
Year 1995	(dropped)	(dropped)
Constant	.7474	.4412
	(0.000)	(.000)
R-Squared	.1228	.1100
F test	1.64	2.88
prob> f	(.0000)	(0.000)
N	1104	1106

Data Sources IPUMS 1990, 1995 & 2000 5% samples
Note: Characteristics were derived from working age individuals, 15-65 years old
Standard errors in parentheses
*p < .05; **p < .01

TABLE 6

FIXED EFFECTS REGRESSION OF AVERAGE AGE: FOR EFFECT OF
MIGRATION PREVALENCE RATIO

All Municipalities 1990, 1995, 2000	Model 1 Migrants	Model 2 Total Population
Migration Prevalence Ratio	-13.726	0.451
	(.357)	(.798)
Gender Composition	-1.863**	2.357
	(0.002)	(.086)
Average Years of Schooling	-0.1262	-0.44**
	(.142)	(.000)
Average Wealth Index Score	1.033**	-0.134
	(.000)	(.075)
Average Marital Status	7.579**	5.697**
	(.000)	(.000)
Year 1990	0.0025	-1.232**
	(.992)	(.000)
Year 1995	(dropped)	(dropped)
Constant	30.180	32.133
	(0.000)	(.000)
R-Squared	.3062	.0008
F test	1.26	8.23
prob> f	(.0001)	(0.000)
N	1104	1106

Data Sources IPUMS 1990, 1995 & 2000 5% samples
Note: Characteristics were derived from working age individuals, 15-65 years old
Standard errors in parentheses
*p < .05; **p < .01

SECTION VI.

DISCUSSION

The data analysis revealed three compelling findings. First, the education level of migrants decreased relative to the total population as the migration prevalence ratio increased in communities (Table 2). Initial migrants were selected according to relatively high levels of education. However, the gap in education levels between migrants and the total population grew smaller, and migrants' education level became more reflective of the education level of the total working age population as prevalence increased. With respect to marital status, the average marital status of migrants did not show change with migration prevalence, but migrants changed relative to the total population due to the fact that the total population became increasingly composed of individuals with single marital status as prevalence increased, and hence migrants became more representative of the population [Table 4]. The findings in models of education and marital status are consistent with cumulative causation scholars who propose that migration prevalence leads to a decline in initial selectivity due to the fact that an increase in social capital makes migration more feasible for other segments of the population. Interestingly, more influential than change in migration prevalence on the gender composition of migrants was change in time period. Time was associated with migrants becoming more male, with migrants

in 1990 being more female than the total population and by the year 2000, migrants had become slightly more male than the population.

This study is limited in several ways. A possible complication in this study is the fact that the stock rates of migration from the census data were considerably lower than government statistics referring to annual deployment (POEA 2005). This would not be a problem for the study if the data were uniformly underreported across all time points. Generally, the prevalence ratios were small by a factor of .25. Fortunately, this underreporting rate was uniform across all time points. Bolstering the data reliability, both the POEA deployment data and the census data demonstrated a parallel increase in migration rates over the same time period. Further, probability weights were employed when aggregating the data to the municipality level. All these reasons suggest that underreporting did not contribute bias to the analysis.

A second possible complication is the fact that when migrants were compared to the total population, the total population included the migrants; and thus comparison might be inherently problematic. However, migrants very rarely approached 10% of the population of a municipality and were mostly under 2% with the 95% confidence interval of prevalence rate in 1990 being 1.09%-01.24%. With migrants being such a minor proportion of the population, it is not likely that migrants influenced the aggregated characteristics of the total population more than negligibly. Even if migrants did skew the wealth index score of the general population in this study, the bias would only downplay the demonstrated effect that migration prevalence had on non-migrants.

A third complication in this analysis is the fact that even in the fixed effects model, characteristics of the total population changed considerably with migration

prevalence.   The relationship between the migration prevalence ratio and these aggregated characteristics might be due to some changes occurring in the municipality that are spuriously associated with the migration prevalence ratio. One can speculate that these municipalities did "develop" over this time period. Associated with this development could be an increase in migration prevalence and also demographic characteristics. This would explain why communities that demonstrated an increase in migration prevalence over the 10-year period also witnessed an increase in singlehood in the general population in comparison with municipalities that did not demonstrate as much growth in migration over the period. The use of a period specific time variable should at least help to control for economic development that occurred across all municipalities.

A fourth complication in this study is the use of a stock measure as opposed to the flow measures employed by past scholars. Massey and colleagues' study (1994) featured communities with over 40% migration prevalence and Garip and Curran's study (2009) featured communities with migration prevalence as high as 68%. These authors' studies were comparative across communities, with ranges in prevalence rates as large as 60%. In contrast, the fixed effects models in this study tracked only small shifts in migration prevalence within communities over a ten year period. As calculated based on the census, average migration prevalence ratios of municipalities in the years 1990, 1995 and 2000 were .0117, .0165 and .0231 respectively. Because these ratios are based on a stock measure it would be reasonable to assume that there are returned migrants living in the communities that are not captured in this stock measure. Were prevalence calculated in the same manner as past scholars, prevalence would be higher than these calculations.

However, because this study measured change only internal to communities using fixed effects models, this study has the advantage of emphasizing declining selectivity as an internal change in the composition of migrants from a community.

SECTION VII.

CONCLUSION

Douglas Massey and colleagues (1994) qualified that the applicability of

cumulative causation theory is contextually limited to a degree. The authors stated that

the model "is meant to apply to cases of transnational labor migration where host-country

immigration policies are relatively open, particularly those cases where clandestine

migration is feasible" (1994:1496). Compared to Mexico, migration from the Philippines

is relatively constrained in a number of ways. The country is an island nation, thus

virtually all land based workers have to take airplane flights or sea ships to arrive at their

destination of work. This geographical constraint makes regulation by a state

bureaucracy more feasible and illegal migration less likely. It is logical that these factors

would restrict the declining selectivity effect of cumulative causation by persistently

making migration challenging. However, some decline in selectivity did occur. The

observed declines in selectivity on the axis of years of education and marital status

observed in this study are theoretically meaningful and support the declining selectivity

hypothesis posited by Douglas Massey and colleagues (1994; 1996).

   While migration prevalence did associate with a decline in selectivity for

education and marital status, it did not impact the gender composition or the age of

migrants. However, passage of time did impact the gender composition. The period

specific time variable for the year 1990 had a statistically significant effect on the gender

composition of migrants and the total population. In 1990, migrants were more highly

composed of females than the general population. By the year 2000, this had changed

and migrants had become slightly more composed of males than the general population.

These results suggest a role played by pull factors and varying global demand for

gendered occupations over time. Conceivably, global demand for specific types of labor

may mediate the declining selectivity trend associated with migration prevalence.

Cumulative causation theory argues that as the spread of migrant networks yields

increasing flows, individual characteristics become less determinant of the migrant. In

the Philippines, the spread of migrant networks appears to not have render gender

irrelevant to migration. Gender is certainly a determinant of where a migrant goes.

Destinations in the Middle East are associated with male migrants performing work in the

production and professional technical sector, while destinations in East Asia are

associated with female migrants performing service sector work (Appendixes B, C).

Migrant networks may indeed be inducing a more diverse pool of individuals who desire

to migrate. Still, Philippines overseas work is based on contractual arrangements. The

state does not directly recruit migrants, but it does regulate recruiters and migrants.

Strong state regulation and island geography present formidable barriers to illegal

migration outside of contractual arrangements. Receiving employers likely still play a

role in determining who is able to migrate as legal migrant workers require contracts

from destination employers and employers are likely selective of workers by gender.

Future study could further explore the relationship between demand for specific types of

migrants and how this demand mediates cumulative causation.

These findings are mostly counter to those found by Garip and Curran in studying internal migration in Thailand. Garip and Curran (2009) found no change in the education level of migrants. Their study found opposite results relating marital status to migrant prevalence; in their study, selectivity by marital status increased. Differing results in this case might be explained by the different context of domestic migration within Thailand compared to international migration. The empirical findings of Lindstrom and Ramirez were different in one key way—according to their modeling education showed no association with change in migration prevalence. However, the findings in this study of the Philippines of initial selectivity by education followed by decline could still be consistent with the theoretical argument of Lindstrom and Ramirez—that early migrants are relatively educated, but also risk tolerant.

In conclusion, when comparing these various studies and theoretical conclusions to the Philippines, the work of Massey and colleagues (1994) appears to be the most consistent with this study's results. This study finds migration prevalence associates with a decline in selectivity for traits of migrants; however, this decline in selectivity appears to be contextually limited as shown by the robust effect of change in time on the gender of migrants.

APPENDIX A

DEPLOYMENT OF OVERSEAS FILIPINO WORKERS,

1984 – 2002

Year	Landbased Workers	Growth Rate	Seabased Workers	Growth Rate	Total	Growth Rate
1984	300,378	-	50,604	-	350,982	-
1985	320,494	6.70	52,290	3.33	372,784	6.21
1986	323,517	0.94	54,697	4.60	378,214	1.46
1987	382,229	18.15	67,042	22.57	449,271	18.79
1988	385,117	0.76	85,913	28.15	471,030	4.84
1989	355,346	-7.73	103,280	20.21	458,626	-2.63
1990	334,883	-5.76	111,212	7.68	446,095	-2.73
1991	489,260	46.10	125,759	13.08	615,019	37.87
1992	549,655	12.34	136,806	8.78	686,461	11.62
1993	550,872	0.22	145,758	6.54	696,630	1.48
1994	564,031	2.39	154,376	5.91	718,407	3.13
1995	488,173	-13.45	165,401	7.14	653,574	-9.02
1996	484,653	-0.72	175,469	6.09	660,122	1.00
1997	559,227	15.39	188,469	7.41	747,696	13.27
1998	638,343	14.15	193,300	2.56	831,643	11.23
1999	640,331	0.31	196,689	1.75	837,020	0.65
2000	643,304	0.46	198,324	0.83	841,628	0.55
2001	662,648	3.00	204,951	3.30	867,599	3.08
2002	682,315	3.00	209,593	2.30	891,908	2.80

(POEA 2005)

APPENDIX B

NUMBER OF DEPLOYED LANDBASED OVERSEAS FILIPINO WORKERS

BY TOP TEN DESTINATIONS, NEW HIRES AND REHIRES,

JANUARY TO DECEMBER, 2009

1. Saudi Arabia	291,419
2. United Arab Emirates	196,815
3. Hong Kong	100,142
4. Qatar	89,290
5. Singapore	54,421
6. Kuwait	45,900
7. Taiwan	33,751
8. Italy	23,159
9. Canada	17,344
10. Bahrain	15,001
Other Destinations	224,920
TOTAL	1,092,162

(POEA 2009)

APPENDIX C

DEPLOYMENT OF LANDBASED OVERSEAS FILIPINO WORKERS –

NEW HIRES BY MAJOR OCCUPATIONAL GROUP, 2004-2005

	Female	Male	Total
Professional and Technical Workers	51,998	11,953	63,951
Administrative and Managerial Workers	109	381	490
Clerical Workers	3,553	1,985	5,538
Sales Workers	2,973	1,288	4,261
Service Workers	123,241	10,666	133,907
Agricultural Workers	39	311	350
Production Workers	23,108	51,694	74,802
For Reclassification	195	801	996
TOTAL	205,206	79,079	284,285
	72%	28%	

(POEA 2009)

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