Abstract

Chinese Migration to Africa: Findings from the 2013 Chinese in Africa Health Survey

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Since the end of the 1990s, Chinese migration to Africa has increased dramatically. Statistics on the volume of this migration, and on the number of Chinese currently living in various African countries, are hard to come by. Most of what is known relates to countries with a longer history of migration from China, e.g., South Africa, Madagascar and Mauritius. Estimates of the total number of Chinese migrants in Africa range widely, from around 580 000 to over 800 000 (Park 2009; Li 2010). The uncertainty is proportionately larger for individual countries. Some of the problem is endemic in African census and statistical systems, and some is particular to the case of migration: lax immigration policies, poor tracking mechanisms, and corruption that facilitates illegal migration (Park 2009).

The forces behind this increase in migration flows are easier to enumerate. After decades of slow economic growth, many African economies are now showing impressive growth and the demand for Chinese manufactured goods is growing. African governments see an advantage in promoting cooperation with China. While most Western competitors are reluctant to invest in Africa, China is seen as a key participant in the African commodity trade and a keen investor. On the China side, the Chinese government is encouraging its domestic companies to move up the value chain and shift jobs to Africa (Brautigam and Tang 2011) close to the sources of raw materials (Brautigam 2010a). There is strong national interest in gaining access to Africa's natural resources and China is seeking to become Africa's major development partner with resource-backed development loans to countries that are resource-rich and cash-poor (Brautigam 2010a, 2010b). Africa is also providing the grounds for Chinese firms to expand business overseas, especially in the wake of the global financial crisis and high income countries' declining demand for Chinese exports (Zweig 2009; Battat 2006). With its rising middle class, a growing demand for Chinese products, and the increasing presence of Chinese companies offering higher wages than in China, Africa is becoming an attractive destination for employees of Chinese state-owned enterprises, for Chinese with meager job prospects at home as well as for people who may otherwise seek internal migration opportunities.

To date, except for a few qualitative case studies of Chinese communities in selected African countries, Chinese migration to Africa is poorly characterized. We know that some arrive under formal trade relations, with fixed expectations regarding departure and length of stay, but for many others the situation is more nebulous. A review of the limited scholarly literature and of the news media suggests two broad categories of migrants:

(1) "State-led" migrants on one-to-three year-long labor contracts linked to public building works, infrastructure projects undertaken by state owned Chinese enterprises, and to subsidiaries of Chinese companies with operations in mining, telecommunications, and the numerous industrial enterprises in the China-Africa cooperation zones recently established in many parts of the African continent (Brautigam and Tang 2011);

(2) "Independent" entrepreneurial migrants composed of merchants who come to Africa on account to undertake various types of business ventures. These include retailers and wholesalers of Chinese manufactured goods who populate the markets of African cities, small workshop owners providing services to local communities (e.g. auto repair), restaurant owners, owners of Chinese groceries and traditional Chinese medicine clinics who cater both to the growing Chinese population and to local communities. This second category also includes employed workers in these businesses, often relatives, friends or people from the same village/town in China. Reports also abound of people transitioning from state-led to independent migration once state-led migrants' labor contracts expire (Park 2009).

Much has been written, mainly in the form of journalistic accounts, on the presence of Chinese firms and Chinese communities in Africa. Some see this presence as harboring novel forms of development cooperation, others regard it as harbinger of a new world order yet to be revealed which will challenge the existing global order. This proposed paper is part of a larger project that seeks to quantify and describe the new phenomenon of Chinese migration to Africa and to examine its implications for the well-being of Chinese migrants and of African communities.

Compared with North-South migration flows, Chinese migration to Africa is unique because of the role directly played by the Chinese state in stimulating a share of the migration, which suggests that there may be important differences between types of migrants and that these differences may be associated with different patterns of selection governing state-led and independent migrants and differential individual outcomes. Very little is known about how Chinese migrants are faring in Africa, their migration experiences; how they are bearing up on a continent where good health remains a major challenge and whether any differences exist between state-led and independent migrants in labor and health behaviors and outcomes.

The two groups of migrants may be faced with different risk prospects: state-led migrants generally know their expected earnings at destination while the earnings of independent migrants are not guaranteed before migration. The costs of migration and barriers to migration of the former group are also lower than those for the latter group. Their risk preferences may also be different as the different paths leading them to Africa may select them differently for characteristics that are correlated with their risk preferences. These different risk preferences may be associated with different health-related behaviors, such as sexual risk-taking, smoking and drinking alcohol (Anderson and Mellor 2008).

The networks of state-led and independent migrants are also expected to differ as the kind of information and support provided by the migrant networks that are instrumental in helping migrants travel to a destination, find a place to stay, and get a job is less likely to be a precondition for state-led migrants' migration decisions.

We identify and describe the types of Chinese migrants in Tanzania, a country that has experienced a rapid growth of Chinese migration since the mid-1990s, with data from the Chinese in Africa Health Survey (CAHS), a pilot survey of the health of Chinese living in Tanzania's capital city, Dar Es Salaam, conducted in Summer 2013. The study was designed to (a) provide a preliminary characterization of Chinese migration to Sub-Saharan Africa and its

implication for migrants' health outcomes; and (b) test the viability of implementing a new network-based sampling approach for hidden populations in the field.

Sample design

Chinese migrants in Tanzania are a hidden population in the sense that there are no sampling frames that make the use of standard probability sampling approaches possible. Recent innovations in link tracing sampling designs provide a probability-based inferential structure for representation of hidden populations that (a) capitalizes on the network structure of the hidden population to identify and interview multiple waves of respondents and (b) on the assumed structure or actual knowledge of the network and the recruitment running over the network to generate estimates of population proportions by means of a post-recruitment reweighting of cases to correct biases towards sampling popular individuals. Respondent Driven Sampling (Heckathorn 1997, 2002; Salganik and Heckathorn 2004; Volz and Heckathorn 2008) and Network Sampling with Memory (NSM) (Mouw and Verdery 2012) are two such methods. Despite its recently acquired popularity in the public health field, RDS has been criticized for leading to biased samples when its stringent assumptions about the underlying network and the recruitment process are violated (see, *inter alia*, Wejnert 2009; McCreesh et al. 2012; Gile & Handcock 2010; Thomas & Gile 2011; Lu et al. 2011; Goel & Salganik 2010; Yamanis et al. 2013). In particular, evaluations of RDS have shown the poor performance of RDS estimates when recruitment is constrained by clustering and bottlenecks in the network (Goel and Salganik 2010; Mouw and Verdery 2012). Design effects – the ratio of the sampling variance to the sampling variance of simple random sampling – of RDS can be on the order of 10-20, which implies that much larger sample sizes would be required to reach the level of precision currently assumed from RDS samples typically in the hundreds.

NSM, through the collection of a detailed network roster of respondents, allows reconstructing the underlying population network by identifying individuals who were nominated by multiple respondents (Mouw and Verdery 2012), leading to much smaller design effects (98.5% on average), hence a smaller number of interviews to achieve the same level of statistical power. We recently used NSM to recruit a sample of Chinese migrants living in Dar es Salaam, Tanzania for a pilot study of the health of Chinese migrants in Africa. Eligibility for participation included residence in Tanzania for one month or longer and being at least 18 years old.

Data

Information in the CAHS survey was collected from 147 respondents who were each asked to nominate up to 10 network alters (other Chinese they knew who had resided in Dar es Salaam for a month or longer). The combined network rosters resulted in a total of 898 uniquely identified individuals and a total of 1,211 nominations. There were a total of 96 refusals for a response rate of 60.4%.

The network roster collected information on the demographic attributes (age, gender, Chinese province and city/county of origin, duration and type of relationship) of each alter together with identifying information (partial name and last four digit of cell phone number) for each alter

which can be used to reconstruct the underlying network by matching alters nominated by multiple respondents.

The questionnaire developed for the survey explored a wide range of topics related to the characterization of migrant groups, their migration experience, employment and income, social networks, health and health care utilization, and risk preferences. Survey modules covered:

1. Demographic characteristics (individual socio-demographic characteristics; living arrangements)
2. Pre-migration experience including pre-immigration labor market outcomes
3. Employment and wages
4. Income
5. Migration history including motivation for migration and intention to stay
6. Respondents' network composition by age, ethnicity and gender and type and ethnicity of personal ties they would rely upon for various needs
7. Awareness and knowledge of health risks and diseases in new environment
8. Health (self-reported health, health-related behaviors including sexual risk behaviors, smoking and alcohol use; chronic conditions; mental health; sources of health care; health insurance)
9. Health care utilization and daily activities
10. Attitudes towards risk, risk preferences

Figure 1 shows a graph of the social network of this sample. The nodes are color coded by the individual's home province, which provides a visual depiction of the degree of clustering by origin region, in and of itself an important substantive finding. As a pilot study, one of the goals of the 2013 CAHS was to show that it was possible to use NSM in the field, not to complete a full sample of the network. Nevertheless, a visual inspection of Figure 1 helps to illustrate the potential benefits of NSM in sampling from a hidden population. First, after 147 interviews, the accumulated roster of 898 nominated individuals provides a list of potential respondents drawn from the target population. NSM uses the revealed network to sample more efficiently. Its sample recruitment process places higher sampling probability on the nodes at the edges of the network which increases the chance of discovering previously unknown parts of the network.

Approach

To characterize Chinese migration in Tanzania, using CAHS data from the main questionnaire and the network roster, we will construct a typology of Chinese migrants in Tanzania, describe their demographic, socio-economic characteristics and their migration experience. We will also examine how measures of social ties in respondents' networks vary across migrant groups clustered by type, duration of stay in Tanzania and socio-economic status, and measure the structural location in the network of members of different groups of migrants.
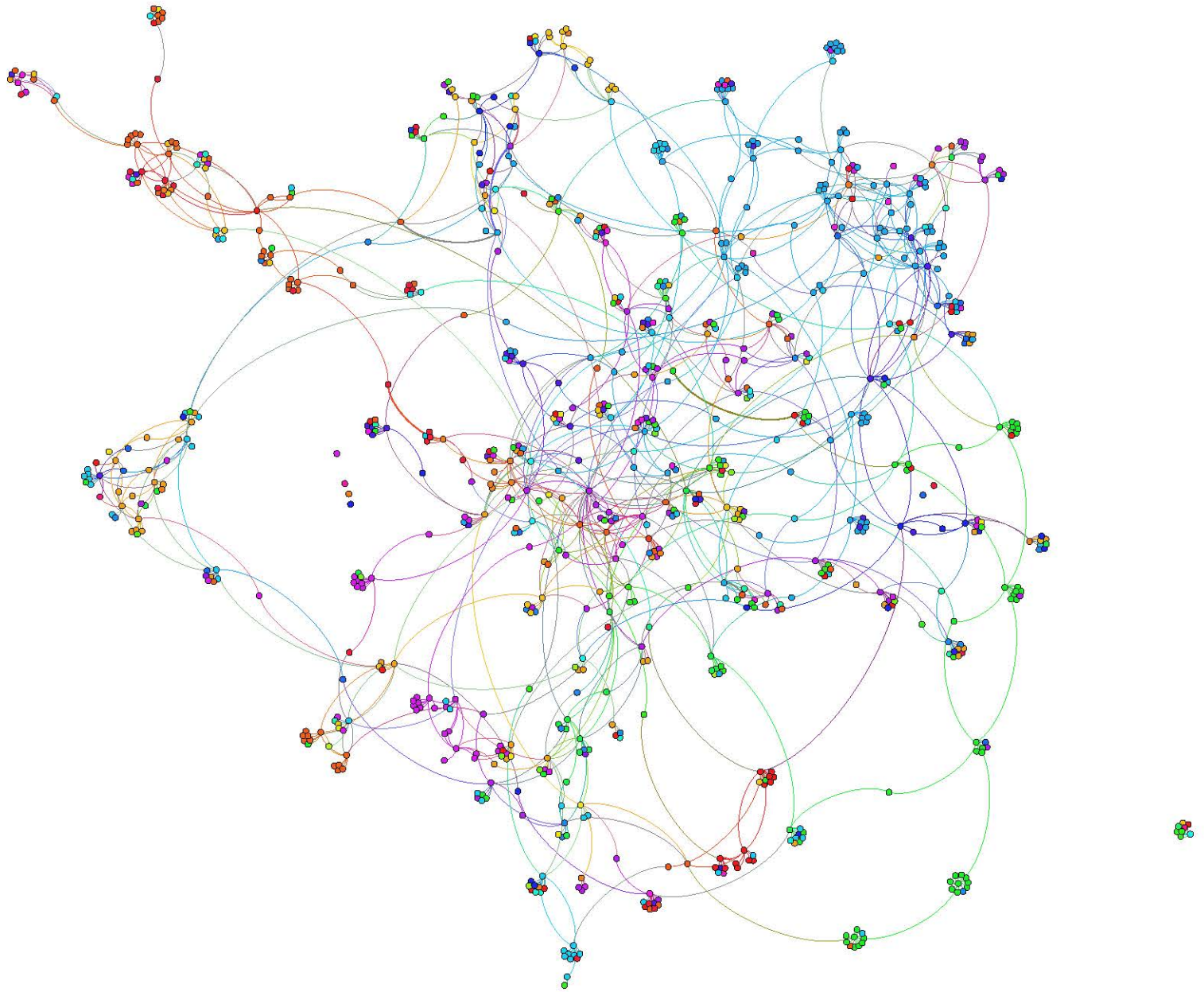
Figure 1: 2013 CAHS network
Node color shows the origin province
of Chinese immigrants in Tanzania