

# Street Urbanism in a Global Context: Research Methods in Understanding Health and Place

MARY ANNE ALABANZA AKERS

Morgan State University

## I. INTRODUCTION

Street urbanism is the dynamic interplay of people, streets, vehicles, sidewalks, and buildings. In an Asian context, street urbanism implies seemingly chaotic architecture; disorganized array of signs; deafening sounds of honking vehicles, shouts, and urban noises; concoction of vehicular exhaust, construction dust, and other smoke producing activities; and street vendors who impede movement on sidewalks and streets. The informal vendors are common “fixtures” in Asian streets and are often misunderstood and become prime targets for strict regulations. However, they are integral to the vibrancy of Asian streets. They provide goods and services to urban citizens (Bhowmik, 2005). They take on the role of public “police” with their “eyes constantly on the street.” And they contribute by generating income and spending in the local economy.

However, street vendors work long hours in perilous settings. They are exposed to dust, vehicular pollution, and extreme weather conditions like monsoon rains, violent hurricanes, and exhausting summer heat. These conditions affect their health and well-being, especially in Baguio City, the most vulnerable city in the Philippines, which is the most vulnerable country in the world (World Wildlife Fund, 2015; Yusef, 2009).

Baguio City is an upland city founded on health and healing by the American government during its occupation of the country. To provide respite from the sweltering lowland heat, the American government developed Baguio City as the rest and recreation headquarters for its military personnel (Reed, 1999). In 1909, Architect Daniel Burnham was commissioned to design a plan for 10,000 residents. He did not anticipate the city’s growth in his plan (Moore, 1921).

Today, Baguio City has 319,000 residents and exploding at its seams. As the educational, business, and medical hub for the northern region, it has attracted people from all over the country. However, because of its topography, the city’s economic base is not manufacturing, nor industrial; rather, it is grounded heavily on the service sector. Urban citizens who are under-skilled, or cannot find jobs in the formal economy usually end up establishing informal microenterprises in prime urban spaces. Women, particularly, find street vending a safety net for themselves and their families.

## II. THE STUDY

A team of American and local Filipino researchers conducted a longitudinal study of street vendors and their places of work in Baguio City’s central business district. Based on Hippocrates’ treatise on “On Airs, Waters, and Places” as a starting point, the entire research project examined health and disease in the context of the physical attributes of downtown Baguio’s streets (Hippocrates, 400 BC). The transdisciplinary team consisted of researchers with expertise in urban planning, anthropology, sociology, environmental science, public health, and medicine. We were guided by an inductive approach to understanding their socio-economic and business conditions, as well as health situations in the context of their physical environments (Figure 1). Mixed methods and multi-faceted research tools were used in 1999, 2001, 2003, and 2005 (Table 1). From 2006 to 2015, site visits and informal observations of these vendor sites were conducted. If funding is obtained, an ethnographic study will be done in 2017.

For this ACSA 2016 Building for Health conference proceedings, this paper will address the following research questions:

1. How did the various research methods produce data and information to better understand the relationship between health and place?
2. What were the strengths and limitations of these methods?
3. How were these research methods applied in a cultural context?

## MEASURING PLACE

To collect data on street vendor sites, several measures were used to understand place at various scales. The most basic measure was the actual square footage of the vending area. Depending on the type of goods they were selling, most women simply had a basket placed on top of a stand, measuring about 1.5 ft (length and width) by 2.5 ft (height). Other measures of Place included the following: sidewalk width, curb height, street width, street incline, land use of adjacent building, building overhang, pedestrian and vehicular density, and material of building façade, distance to a garbage



Figure 1: Inductive Research Framework

Year	Study Focus	Methods Used
1999	Socio-Economic, public spaces, and location choice	Survey of 211 vendors and analysis of 33 vendor sites
2001	Analysis of the relationships between street vendors and formal businesses	Photo documentation of 20 vendor sites and informal interviews with 10 vendors
2003	Health conditions and analysis of vendor sites	Survey of 187 vendors and 33 vendor sites
2005	Air Quality monitoring	Scientific monitoring of air pollutants and assessment of 33 vendor sites
2006	Health screening and visual analysis of the material culture of streets	Physical biometric exams and personal interviews with 10 vendors and a photo documentation of streets
2009 to 2015	Observation of street changes and vendor behavior	Informal observations and photo documentation
2017	Climate change and street vendor resiliency (in planning stage)	Ethnographic methods

Table 1 A Longitudinal Time-Series Research Study of Street Vendors and Public Spaces in Baguio City, Philippines

disposal area, distance to a runoff street drain, and sidewalk cleanliness. Another important measure of Place was the air quality. We used scientific equipment (laser photometer aerosol monitors with dataloggers and Langan CO monitors) to collect street-level data of PM2.5, PM10, and carbon monoxide concentrations in real time (Cassidy, 2007). The results were important predictors of vendor site quality. Qualitatively, we conducted a visual documentation of vendor sites and the sidewalks and streets in which they worked.

#### MEASURING HEALTH

The team conducted a health survey of 187 vendors in-situ. They were asked whether they experienced 73 types of health conditions in the past five years. Some of the conditions were chest tightness, heart palpitation, allergies, chronic cough, stomach ulcer, severe headaches, swelling of ankles, bladder trouble, back problems, etc.... Well-being measures were also used (i.e., spirituality, presence of social support). In addition to the health survey, vendors were interviewed about their daily habits that may impact their health.

In 2006, ten vendors were asked to volunteer to undergo a health screening protocol at the local hospital. The medical director at that

time personally examined the vendors. Physical tests included a complete head and neck exam and evaluation of their cardiovascular, pulmonary, and neurological systems. Laboratory blood work was also done to test for carbon monoxide and lead content, as well as for sodium, potassium, bilirubin levels.

### THE STREET VENDORS

Most of the street vendors were, on the average, middle-aged married women (43 years old) who worked 10 hours a day for seven days a week (Akers & Akers, 2008) Most of them had children, 40% of whom were caring for young children. Many were relatively educated — 40% with high school degrees and 15% with college degrees. They lived in informal housing settlements and only 45% of these vendors had access to running water. Although many of them lived in Baguio City, there were several who travelled from the lowlands on public transportation to work in the city.

### III. STUDY RESULTS

The use of the mixed method approach benefitted our understanding of health and place (Johnson & Onwuegbuzie, 2005). Because vendors settled in different sites, we had robust information about their work places, such as the types of businesses that surround them, whether they are in crowded sidewalks, and whether they are in areas that are highly polluted. The quantitative health data was used to find correlates with the physical environments. Some of the general results that describe the interaction between health and place are summarized below:

- The highest air pollution concentrations occurred during the early morning hours and afternoon rush hours (Akers, et.al., 2005). Several vendors complained their eyes itched in the afternoons between 4-6 p.m.
- Vendors who were located in highly sloping streets tend to report asthma as a health condition.
- Those who settled under overhangs that covered most of the sidewalks tended to get sick in November and December, two of the four coldest months.
- Vendors who complained of leg and feet cramps were found in areas that had high concentrations of particulate matter 2.5 and carbon monoxide.
- Those who worked close to runoff drainage grates tended to suffer from diarrhea.

The study results listed above are just a few of the numerous observations of how Place and Health intersect. These statistically significant bivariate relationships are just the tip of the iceberg. There are other results that combine quantitative and qualitative data to depict how the physical environment impacts people's health and well-being.

### IV. DISCUSSION

The use of the survey method in 1999 and 2003 was necessary to scale-up. A sample of close to 398 street vendors would not have been achieved if a survey instrument did not guide the personal interviews. Local Filipino researchers and I conducted the surveys in the local dialect while the vendors were working. We spent approximately 30 minutes completing each questionnaire with our respondents. The advantage of this method was that we were able to reach vendors in most parts of the central business district, which gave us a diverse range of settings. Some vendors were found in places where they spilled into the streets. We interviewed others who located on the edges of a major park. Others preferred to work in streets designated for public transportation pick-up and drop-off.

The team was successful in soliciting vendor participation. Not only did we pay them for their time, but after an interview, the respondent would encourage their vendor friends to speak to us as well. This depicts the snowball effect of research.

The survey method also allows less subjectively and bias since the responses to the survey questions were pre-coded. Furthermore, it was convenient to enter, manage, and analyze the data compared to a qualitative interview.

What the survey method lacked in detail and depth was compensated with in-depth interviews in 2001 and 2006. Although we reached only between 10-15 vendors, we spent hours conversing about their relationships with the formal businesses around them, as well as their health histories and daily routines. In 2006, a few of the researchers were able to accompany their respondents to their homes to observe their home settings. In one particular instance, they observed that the vendor's home did not have flooring except for the damp ground. We then realized that the home environments may also have bearing on their health conditions.

The measures related to Place were straightforward. Measurements of sidewalks, distance to garbage disposal area, street incline, building overhangs, etc... did not change since the study started in 1999. Since air quality monitoring was expensive to conduct, we used this method only once, in 2005.

The transdisciplinary team seriously considered the cultural context in which these mixed methods were implemented. Some of the proactive strategies we put forward included the following:

- We asked our local Filipino research team to review the questions for validity language interpretation, western biases, and insensitivity.
- At all phases of the fieldwork, we regularly held meetings with the local researchers to discuss the interview activities. For example, we observed that new Muslim immigrants from southern Philippines refused to participate in our study. This occurred only after about four years



into the study. And because they tended to agglomerate in a certain section of the central business district, we noticed a gap in our data gathering.

- Issues related to data interpretation were dealt with at the end of every phase. A one-day retreat was usually held with the local researchers when data collection is completed. An evaluation of the research process and preliminary results are the focus of such retreats.

## V. DESIGN AND PLANNING IMPLICATIONS

This longitudinal study of street vendors in Baguio City, Philippines has led to the development and articulation of design and planning solutions. As described earlier, air quality and street incline correlates with respiratory issues like breathing difficulties, cough, and colds. A comprehensive land use/transportation study to address three components is necessary. The first component involves rerouting traffic to decongest the downtown district, which currently is the hub for all public transportation vehicles. A plan to disperse traffic and build nodes outside of the central business district is one way of decongesting the area. A second component is to regulate the number of taxi licenses. Empty taxis regularly roam the area for passengers because of a taxi glut. The third component deals with

Figure 2. Street vendors are mostly middle-aged women who work 10 hours daily.

programming the use of streets. Pedestrianizing the main thoroughfare, Session Road, will not only decongest the concentration of vehicles but will offer a destination for urban citizens. Developing a friendly pedestrian experience will boost the retail sector because it will attract people who will linger and spend. It will also encourage the celebration of the local culture by allowing artists and performers to use public spaces that were previously dominated by vehicles

Another solution to mitigate urban health is to design small pocket parks throughout the downtown district. Baguio City, which in the past was often referred to as the City of Pines, should recover its brand as a green city. Parks with trees and natural vegetation should replace concrete. Flowers

## VI. CONCLUSION

The intersection of health and places is best examined when mixed methods are used. This is not only a matter of scale and representation but also the appropriation of specific tools to gather in-depth data about a subject matter. We would not have understood the street vendors' health situations if we did not delve into

other aspects of their lives through intensive personal interviews. Furthermore, our observation and photo documentation of their vending sites throughout the years gave us the nuances of place over time. Although the vendors changed, though not drastically, their sites were our unit of analyses that stayed constant. As designers and planners, we then were able to develop urban solutions to mitigate the negative impact of the physical environment on health and well-being.

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