



## Research Paper

# Exploring the role of neighborhood walkability on community currency activities: A case study of the crooked river alliance of TimeBanks



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## ABSTRACT

Social capital is increasingly considered a means to address important planning objectives such as societal wellbeing and livability. Community Currency (CC) is considered one of the most effective forms of social capital. Understanding factors contributing to CC participation is the key to promoting successful CC systems. Despite the well-documented work on the demographic, socioeconomic, and policy factors related to CC, the roles of the physical environment, such as neighborhood walkability, have not been explored. Using the survey data collected from 77 users and 42 nonusers of CC, this exploratory study examined how neighborhood walkability influenced the levels of CC activities and community attachment. After controlling for demographic factors, the analysis showed walking-friendly neighborhood features were positively related to CC membership and CC activities. Further, CC participants and those living in walking-friendly neighborhoods showed significantly higher levels of community attachment compared to their counterparts. The results suggest that neighborhood physical environments may function to deter or promote CC participation, and that an effective CC promotion strategy may involve targeting walkable communities.

## 1. Introduction

Today, increasing social capital is considered important as a means to strengthen individuals' community satisfaction and community sustainability (Jun & Hur, 2015). Social capital refers to the ways communities enhance social efficiency through good will, trust, networks, and reciprocity, and has been shown to be related to a community's social, cultural, and physical infrastructure (Putnam, 2001). To enhance social capital, neighborhood walkability has been regarded as a significant factor, since residents can learn about their neighborhood's tangible or intangible resources while walking (Handy, Boarnet, Ewing, & Killingsworth, 2002; Richard, Gauvin, Gosselin, & Laforest, 2009; Zhu, Yu, Lee, Lu, & Mann, 2014). Although studies on the relationship between walkability and social capital have not been fully consistent and sometimes shown contradictory results (Baum & Palmer, 2002; du Toit, Cerin, Leslie, & Owen, 2007; Hanibuchi et al., 2012; Leyden, 2003; Rogers, Aytur, Gardner, & Carlson, 2012), walkable neighborhoods still seem to hold strong potential to enhance social trust and community commitment by facilitating casual encounters among residents.

Moreover, social capital can be generated and regenerated through the implementation and use of a Community Currency (CC) (Jacob, Brinkerhoff, Jovic, & Wheatley, 2004; Wheatley, Younie,

Alajlan, & McFarlane, 2011). A Community Currency (CC) is a complementary currency that is created and traded by a local community as a medium of exchange. It is used interchangeably with the local money/currency. CC – an asset-based currency – is a tool for sustainable community development (Collom, 2005). Empirical studies have illustrated that CC has positive social, economic, and environmental outcomes, such as reducing social exclusion (Seyfang, 2001), improving local economies (Julia, 2011), and promoting local sustainable consumption (Seyfang & Longhurst, 2013).

Yet, CC systems flourish in some places but not in others. One reason is that both human behavior and community viability are influenced by the physical environment (Ferreira, Johansson, Sternudd, & Fornara, 2016; Knudsen & Clark, 2013; Lewicka, 2011; Leyden, 2003; Najafi, 2011; Raymond, Brown, & Weber, 2010). Research has found that features of physical environments, such as neighborhood walkability, can positively or negatively influence social environments often measured as social interactions and community cohesion (Leyden, 2003; Zhu et al., 2014). Thus, it seems reasonable to hypothesize that differences in physical environments can be associated with CC activity as a form of social behavior. Despite growing research contrasting neighborhood differentiation in social environments, research on the effect of the physical environment on CC activities has been limited. To fill this gap, this research aims to examine the

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relationships between neighborhood walkability, CC activities, and community attachment. Such research might lead to a better understanding of policy and planning strategies around CC that can contribute to creating more socially, economically, and environmentally livable communities.

## 2. Literature review

The conceptual foundation of this study is derived from the fact that people's social participation, social activity levels, and community attachment are influenced by the physical environment of their neighborhood. Previous literature examined the roles of neighborhood environments on various behavioral outcomes (Canter, 1977; Rogers et al., 2012; Wood & Giles-Corti, 2008). In this paper, CC is used as an example of social activities in a community to improve community vitality through community initiatives.

### 2.1. Community currency

More than 6500 CC systems are operating worldwide as of 2016 (Community Currency Knowledge Gateway, 2016). CC, a grassroots social movement, is different from national currency in three ways. First, CC is circulated only in limited geographic areas (Pacione, 2011). Second, CC has no interest rates, which decreases the storage function of money while increasing its exchange function (Pacione, 2011; Primavera, 2010). Third, CC can generally be designed in two ways: printed vouchers (e.g., Ithaca HOURS) or digital credits (e.g., Local Exchange Trading System [LETS] or Time Banking) (Julia, 2011). Printed vouchers resemble and are used like general national currency. Meanwhile, digital currency is only accessible through a user's individual online account.

CC systems enable communities to exercise control over money circulation and their local economies against the current global economic system (Pacione, 2011). They also allow community members' personal skills and resources to be rediscovered and circulated within the community (Jacob et al., 2004; Nakazato & Hiramoto, 2012; Primavera, 2010). Through CC, community resources are maintained within, and by, the community; the goods and services are exchanged only within. The local community's ultimate resources, level of productivity, and residents' creativity are not limited by a lack of money (Gómez, 2010; Jacob et al., 2004; North, 2014; Pacione, 2011; Primavera, 2010). As a result, CC values people over profits and is not dominated by scarcity. CC can offer opportunities for employment and ways to restore confidence, particularly for the vulnerable and socially disadvantaged (Collom, Kyriacou, & Lasker, 2012; Lasker et al., 2011; Wheatley et al., 2011).

CC programs through social exchange in networks create social capital, which influences sharing information, boosts solidarity, and increases economic wealth among community members (Kwon & Adler, 2014; Soder, 2008). Specifically, social capital is crucial in supporting vulnerable people as economic inequality increases (Wheatley et al., 2011). CC facilitates social capital through promoting social interaction, providing information channels by interaction with other members, and intensifying community attachment while increasing civic involvement (Soder, 2008).

One specific form of CC, Time Banking, is a time-based community currency invented by Edgar Cahn in the late 1980s. As of 2012, Time Banking systems were operating across the globe in 22 countries (Marks, 2012). In a Time Banking system, each hour spent helping another member equals a time credit recorded into a Time Banking online account, and all work has the same value per hour. Time Banking has been applied to community support programs such as elder care, child welfare, teen courts, prisoner reentry, and local small businesses (Lasker et al., 2011; Jacobsohn, 2014). Based on Cahn's co-production theory, the recipients are considered partners in the processes of service planning and execution to improve program outcomes and strengthen

local communities (Marks, 2012). Time Banking ultimately promotes a shared vision of social justice and energizes local communities (Cahn, 2006: 9).

### 2.2. Neighborhood walkability, community currency, and community attachment

A social ecological approach has been popularly used as a broad conceptual guide in behavioral or behavior change studies related to walking and various other physical and social activities (Giles-Corti & Donovan, 2003; Sallis et al., 2006). According to the social ecological model, multi-level factors of environmental, social, and personal factors influence individuals' behaviors through dynamic interplays (Giles-Corti & Donovan, 2003; McLeroy, Bibeau, Steckler, & Glanz, 1988; Sallis et al., 2006). While we were unable to test the interactions between factors from different levels due to the small sample size, the social ecological model helped us conceptualize the three levels of factors important for a CC program as a type of social activity. Those factors include socioeconomic characteristics as the personal factors, community attachment as the social factors, and walkability as the environmental factors, all of which are either known correlates of CC use in previous studies or newly hypothesized factors being examined in this study. In this context, this section is organized as follows: the next section reviews the literature regarding the association between environmental factors (i.e., neighborhood walkability) and CC activities, followed by the literature review into the relationship between CC activities and social factors (i.e., community attachment) and the correlation between environmental factors (i.e., neighborhood walkability) and social factors (i.e., community attachment).

#### 2.2.1. Neighborhood walkability and community currency

People living in compact neighborhoods in which homes are located within walking distance from routine destinations spend more time walking, increasing the chances of face-to-face encounters and casual conversations with neighbors (Rogers et al., 2012). Specifically, areas with greater amenity density and street connectivity encourage utilitarian walking to various destinations and thereby facilitate encounters with a variety of people, ideas, social issues, and societal forces (Knudsen & Clark, 2013). This interaction can generate collective actions in response to community issues, a creation of trust among the individuals and organizations within the neighborhood, and a raised awareness that neighbors might need public goods. These ideas reflect the social capital theory associated with urban design (Baum & Palmer, 2002; Leyden, 2003; Wood & Giles-Corti, 2008). Neighborhood physical environments that are suitable for walking and have a greater amenity density can generate more social capital, which in turn will make people more actively engaged in community activities like CC. Furthermore, according to place theory (Canter, 1977), residents' neighborhood activities such as socialization, cultural activities, and physical activity are influenced by objective physical environmental attributes from the perspective of environmental psychology. Thus, CC activities performed in the neighborhood physical setting could be affected by neighborhood physical environments such as walkability.

A study on walkability by Knudsen and Clark (2013) indicated that "frequent casual contact, whether intentional or spontaneous," is crucial for social cohesion. Notably, these casual encounters bolster various social activities and the creation of Social Movement Organizations (SMOs) through the acquisition, formation, and conveyance of ideas, as well as by linking diverse groups (Knudsen & Clark, 2013). This level of connectivity makes cities places of social change and hubs of innovation for the economy, culture, and policy (Knudsen & Clark, 2013). Likewise, encounters with various viewpoints are essential to the generation of SMOs, which focus on social, environmental, or human rights advancement work such as CC programs (Knudsen & Clark, 2013). Knudsen and Clark (2013) specifically demonstrated the strong positive effects of objectively measured walkability such as "density,

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