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Social Capital Accumulation among Puerto Rican Mothers in Urban Neighborhoods

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Abstract: Social capital provides access to material and personal resources through participation in social networks and other social structures. Social capital may not function equally for all populations, especially those living in residentially segregated urban neighborhoods with increased levels of poverty. This is because inequalities exist in social capital accumulation and are found where disadvantaged socioeconomic groups cluster. Using probabilistic household survey data consisting of 205 Puerto Rican mothers in Springfield, Massachusetts in 2013, this research tests hypotheses regarding the association of social capital accumulation with Puerto Rican mothers' individual, neighborhood, and social network characteristics. Logistic regression results suggested that Puerto Rican mothers who were employed and lived in neighborhoods with other Latinos were more likely to accumulate social capital. In addition, mothers who participated in activities of their children also had increased social capital accumulation. This neighborhood effect on social capital accumulation may promote bonding social capital but not bridging social capital among these Puerto Rican mothers.

Keywords: bridging social capital; bonding social capital; civic participation; social capital formation; social cohesion; collective efficacy; trust; residential segregation; isolation

1. Introduction

Social capital is a mechanism for people to access otherwise unavailable information and resources through their participation in social networks and other social structures [1]. Social capital is important for Latinos as they develop an increased presence in the United States, so that they can access non-pecuniary resources to strengthen their socioeconomic position. The effects of poverty on Puerto Rican social capital have been studied [2], but a gap in the literature exists as to how Puerto Ricans accumulate social capital. Other research has identified that Mexicans, the largest Latino population in the United States, accumulate social capital through their employment and from living in neighborhoods with increased homeownership [3]. Increased residential segregation, especially in cities with a newly arriving population, could weaken the mechanisms through which social capital is accumulated [4]. Puerto Rican neighborhoods provide opportunities to accumulate social capital, but a combination of individual- and neighborhood-level factors could influence the type of social capital accumulated. Puerto Rican mothers' facility in accumulating bonding social capital developed through relationships with others who are primarily like themselves (e.g., ethnicity, family, age, educational attainment), in place of bridging social capital developed through relationships with others across pronounced social divisions (e.g., race, class, or religion) may be problematic.

A challenge in conducting social capital research is addressing its heterogeneity and multiple avenues of creation. Social capital implicitly embodies several dimensions: reciprocal social network

exchange, civic engagement, and neighborhood social cohesion. This research focuses on how social capital is accumulated through one dimension: reciprocal exchange. Even though Portes (1998) highlighted the need for research into mechanisms through which social capital is accumulated, to date a limited literature exists on individual-level determinants of social capital accumulation [5–10]. We are motivated to study Puerto Rican women's social capital accumulation (SKA) for two reasons. First, similar to other Latinas with increased rates of poverty, Puerto Rican women are a socioeconomically vulnerable segment of the population [11] that could be highly dependent on their accumulated social capital, but poorer Latino families tend to depend on kin networks that offer fewer opportunities for exchange [12] and have already lower resilience to added burden [13]. Second, Puerto Rican women play an important role in their families [14] and in matricentric families they are the primary brokers for formal institutional support systems and social networks [15]. Regardless of their family structure, they are also the primary activator of their multigenerational and multinational family networks [16]. This position places them in contact with institutional support necessary for SKA [17]. The current research tests hypotheses regarding the association of individual- and neighborhood-level factors with SKA. These factors include individual demographic characteristics (e.g., age, marital status, employment, income) and neighborhood and social network characteristics (e.g., collective efficacy, trust, civic participation, Latino population density).

1.1. Theoretical Underpinnings of Social Capital

Putnam's (2000) initial social capital research highlighted a dimension of community integration where dense reciprocal networks develop through civic engagement that facilitated resource transfers [1]. By social networks, we mean a set of interdependent relations among family, friends, or neighbors who exchange some form of support on a regular basis that influence social behavior [12]. We use the concept of resources when referring to supportive behaviors that demonstrate solidarity, trust, and other resilience-enhancing support; provide tangible aid and services to meet an immediate personal need for instrumental support; and/or share knowledge and information needed to facilitate problem-solving [18]. According to Putnam's theory, when relationships are reciprocal, trust develops among social network members. Thus, the combination of trust and exchange allows for the potential development and accumulation of more resources. Glaeser, Laibson, and Sacerdote made the distinction that this trust must be shared because by itself, trust is a necessary but not sufficient condition for reciprocity to develop [5]. Another dimension of social capital, social cohesion, arises when bonds link social network members to the larger group process. Sampson and colleagues further nuanced social cohesion with their research on collective efficacy: a process of activating social ties among neighborhood residents in order to achieve collective goals, such as public order or control of crime [10]. By developing collective efficacy, individuals engage in social networks, building trusting relationships that activate mechanisms for the common goal of social change. Underlying both trusting reciprocal relationships and social cohesion is a shared lived experience, where social networks develop among individuals with shared interests and identities. Thus, through a principle known as homophily, individuals are more likely to develop social capital among individuals with whom they share a cultural identity [19].

Two types of social capital have been identified: bonding and bridging [1]. Both strong ties (e.g., relatives and close relationships) and weak ties (e.g., acquaintances or friends of a friend) provide valued resources for SKA. Weak ties are crucial for bridging resources outside of one's neighborhood [3,20]. In fact, the strength of weak ties, as developed by Granovetter (1973) in his influential paper, depends on these relationships' ability to provide access to new information [21]. While strong ties found in dense networks can mobilize help more quickly and intensely, they often circulate redundant information [22]. Additionally, people with homogeneous networks may find themselves subject to the normative expectations and practices that must be met to ensure continued inclusion in a network, and this occurs at the expense of developing weak ties [5]. Weak ties, on the other hand, add a diversity of ideas, attitudes, backgrounds, goods, and services to a person's network,

facilitating access to non-redundant information and resources. Even though bridging and bonding social capital are distinct, at the neighborhood level the transformation of bonding social capital into bridging social capital is highly dependent upon residents' social status [23].

1.2. Social Capital in a Puerto Rican Neighborhood

Small's research on an urban Puerto Rican neighborhood in Boston demonstrated how social capital exists in a unique context of people's experiences in their environment [2]. This research highlighted the mechanisms behind social organization and social isolation that generate social ties necessary for SKA to occur. An important ecological artifact, neighborhood loyalty, can entice either attachment or dissociation, and this enticement may limit a resident's motivation to develop important weak ties with individuals outside of his or her neighborhood. Villa Victoria, the study's neighborhood, had public plazas that were actively used and were located only a short distance from individuals' homes, providing a resource-rich Spanish-friendly environment, but personal characteristics such as being employed influenced a resident's ability to generate external networks important for developing bridging social capital.

1.3. Individual and Demographic Characteristics and Social Capital Accumulation

The gendered provision of social support is a key mechanism by which social networks affect a variety of outcomes [7,24]. According to both the gender and social support literatures, women are more likely than men to seek and provide social support [25]. In general, women tend to incorporate a larger number of kin into their networks [26]. Fuhrer and Stansfeld found that women not only reported more close relationships than men but were also less likely to identify their partner as their closest relationship [27]. Martin and colleagues' research [28] identified a nuanced process highlighting how a historical dependency on strong ties hindered Latina women in developing and using weak ties after entering undergraduate engineering programs. Once in a program, school personnel offered support, but delayed recognition or identification of available resources slowed these women's access and activation of resources, leading to difficult university transitions. Once activated, these resources provided sources of social capital to assist in their academic success. In addition, other demographic and individual characteristics can shape SKA. Social capital was positively correlated with employment and financial capital, which provided important labor market information to Puerto Rican women that they used to acquire higher-paying jobs [29]. However, compared to Mexican men, employed Mexican women were less likely to accumulate social capital [3].

1.4. Neighborhood Effects on Social Capital Accumulation

Putnam's research suggested that social capital was strongest in areas with less diversity. Because homophily was associated with trust, it was a strong correlate with social capital, especially bonding social capital [30]. This does not mean that diversity was necessarily harmful to SKA. In fact, diversity may assist in developing bridging social capital. As contextual or city-level diversity increased in Canada, the level of participation in organizations and trust in others increased [31]. However, increasing Latino isolation in the United States [32] may limit opportunities to develop weak ties necessary for developing social capital. Residential segregation is problematic because it concentrates certain ethno-racial groups in a smaller geographic area. If poverty increases in segregated areas, poorly distributed resources become even scarcer because of a perceived helplessness and political apathy that can lead to a public abandonment of a segregated geographic area and the people living there [33–35]. A positive association exists for Latino residential segregation in metro areas with increased Puerto Rican populations, and Springfield has the fourth highest segregation index in U. S. metropolitan areas with high concentrations of Puerto Ricans [36]. Increased isolation of Latinos in segregated neighborhoods could thus be associated with a decline in bridging social capital. In contrast, both increased levels of neighborhood homeownership and population density in Latino neighborhoods

have been found to be positively associated with SKA [3]. These neighborhoods provided abundant opportunities for developing strong ties necessary for bonding social capital to be accumulated.

1.5. Civic Participation

Civic participation has garnered much attention in the social capital literature, especially among political scientists. Social capital is a dimension of community integration that is an artifact of people's ties to their communities and their institutions. Civic participation increases generalized social trust [6,31], and increasing participation in community institutions is generally viewed as an effective strategy for developing strong communities and democracy. Community participation and social capital have been found to be significantly higher for adults in households with children. These adults reported having increased reciprocity and trust in relationships [37]. This participation does not have to be active, but simply being affiliated with several organizations increases SKA through formal avenues of information sharing [9]. For example, church membership and (not necessarily regular attendance) is integral for the development of generalized social trust [8]. Participating in large civic organizations is related to developing homophilous personal networks, and participating in heterogeneous civic organizations provides more opportunities for individuals to form diverse personal networks [38]. Civic participation in organizations with individuals from diverse occupational backgrounds helps develop relations to high-status contacts, even for individuals with lower socioeconomic status [39]. Civic participation also appears to be related to the development of negotiation skills, and the creation of networks of mutual obligation that facilitate SKA [40]. When people are civically active, they encounter people whom they might not meet through their regular social network participation, especially if this participation changes over time.

2. Methods

Data used to test hypotheses about SKA are from an intervention study to evaluate the effectiveness of a theory-based culturally appropriate Spanish media campaign to improve Puerto Rican mother-child communication about sexual health [41]. Social capital was hypothesized to be a predictor of maternal communication, and questions about social capital were included in the survey instrument. A mother was not necessarily a biological mother: any woman in a full-time caregiving role for a child could be included in the study. These roles included grandmothers, aunts, sisters, and foster mothers. We merged these data with 2009–2013 American Community Survey block-level data. Our research was reviewed and approved by the Institutional Review Board and was conducted in collaboration with the Puerto Rican Cultural Center, Inc., a community-based organization that provides educational and cultural programs to support Puerto Rican residents in Springfield.

2.1. Sample Frame and Selection

Springfield, the third largest city in Massachusetts, was home to an estimated 61,586 Latinos as of the 2010 Census, and they made up 40.3% of the city's population. Puerto Ricans were the dominant Latino subpopulation, comprising 76.8 percent of the Latino population in the city [42]. Hampden County, where Springfield is located, ranked second in 2010 among U.S. counties where Puerto Rican residents had lived in Puerto Rico one year prior [43].

The sampling framework for the study began by identifying 10 census tracts of the 39 in Springfield, in which at least seven percent of households had a Puerto Rican mother and at least one child between the ages of 10 to 19 years. We randomly selected 100 census blocks from 298 populated blocks in the 10 tracts. Figure 1 highlights the sampling methodology used to collect the data for this research. Six teams containing an undergraduate student and a community resident enumerated 100 blocks and identified 4828 eligible households during the fall of 2012 [44]. Second, we randomly assigned approximately half (2252) of the enumerated households to this survey. Third, we screened the households assigned to the study and found 265 (11.7%) that met our study criteria. That is, living in the household was a self-identified Puerto Rican mother, with at least one child between the ages of

10 to 19 years, and able to carry a conversation in Spanish. Of the 265 eligible mothers, 60 refused to be interviewed, yielding a 65.2 percent AAPOR #3 response rate [45].

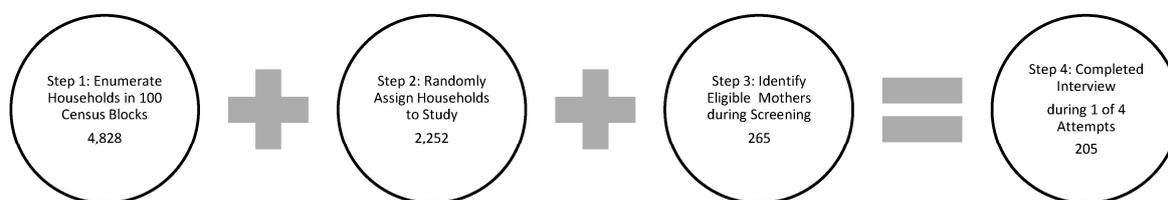


Figure 1. Sample Framework.

The fieldwork for screening and interviewing was conducted from July 2013 to January 2014. All interviews were conducted at a mother's home by one of twelve teams consisting of Spanish-speaking undergraduate students and community residents. Interviews were conducted in Spanish and averaged 56 min. All participants received US\$25 upon the interview's completion [44].

2.2. Variable Construction and Model Specification

The final data set contained a sample of 205 Puerto Rican mothers of children between the ages of 10 to 19 years. Survey questions used for variable construction are included in Table 1. Of this sample, three mothers did not provide complete social network information, and these observations were dropped from this analysis. Similar to previous research, the dependent variable social capital was generated through two questions addressing social network reciprocity [3,20]. A mother was prompted to identify up to five people she had spoken with regarding problems over the last year, and these people were considered to be her identified social network. A mother was asked how many times she received help from each identified person in her network, and how many times she gave help to each person. The dependent variable, SKA, used responses to these questions and was coded to receive a value of one (1) if a mother gave support to an individual in her social network *and* she relied on a person for similar support. Affirmative responses to both questions met the definition of network reciprocity necessary for accumulating social capital. The dependent variable received a value of zero (0) if a mother gave *or* received support, *or* gave *and* received no support.

The model was specified to estimate five individual and demographic characteristics: a mother's age, marital status, educational attainment, employment, and income. Age was a continuous variable that ranged from 20 to 73 years. Marriage was a dichotomous variable defined as being currently married and coded to receive a value of one (1) and received a value of zero (0) if a mother was widowed, separated, divorced, or never married. A mother's educational attainment was categorized as (1) less than a high school diploma; (2) high school diploma or its equivalent; (3) some college; or (4) a bachelor degree or higher. Those with less than a high school education are the comparison group. The model also controlled for labor force characteristics: a mother being employed and her income. Employed was a dichotomous variable receiving a value of one (1) if a mother was employed and a zero (0) if she was unemployed or not in the labor force. Income was measured subjectively. Mothers were asked "in general, would you say that you (and your family living with you) have more money than you need, just the amount of money you need, or not enough money to cover your needs?" If their income was more than needed or just the amount needed, the income variable was coded to have a value of one (1), and if the income was not enough to cover needed expenses, it was coded to have a value of zero (0). Five mothers refused to answer this income question, and they were dropped from this analysis.

Table 1. Survey Questions Used for Variable Construction.

Variables	Survey Questions
Social Capital Accumulation (SKA = Reciprocity)	<i>Received:</i> In the last 12 months, how many times have you helped [SOCIAL NETWORK MEMBER NAME] with problems of transportation, family, finances, health, home, or with some other kind of problem?
	<i>Provided:</i> How many times has [SOCIAL NETWORK MEMBER NAME] helped you with problems of transportation, family, finances, health, home, or with some other kind of problem?
Individual Demographics	<i>Age:</i> How old are you?
	<i>Marital Status:</i> Are you married, divorced, separated, widowed, or never married?
	<i>Education:</i> What grade did you reach in school?
	<i>Employment:</i> Are you currently employed and receiving a salary, either full-time or part-time?
	<i>Income:</i> In general, would you say that you (and your family living with you) have more money than you need, just the amount of money you need, or not enough money to cover your needs?
Neighborhood and Network	<i>Attends Child's Activities:</i> In the last 12 months, have you attended a sports event, concert, play, or art exhibition outside of school for your child?
	<i>Length of time in neighborhood:</i> How many years, more or less, have you lived in this neighborhood?
	<i>Race of SN member:</i> What is the race or ethnic origin of [social network member] is he/she Hispanic or Latino/a, white, black, Asian, or something else?
Perceived Collective Efficacy	<i>Perceived Collective Efficacy:</i> If a group of neighborhood children misbehave, skip school and hang out on a street corner, how many of your close neighbors do you think would do something about it—more than half, a few, less than half, or none?

The model estimated coefficients for seven neighborhood and social network characteristics: perceived collective efficacy, trust, civic engagement, race of social network members, time spent, and percentage of Latinos in the neighborhood. Collective efficacy was defined as the perception of people doing something about a problem in their neighborhood. Mothers were asked, "If a group of neighborhood children misbehave, skip school and hang out on a street corner, how many of your close neighbors do you think would do something about it—more than half, a few, less than half, or none?" The collective efficacy variable was coded to receive a value of one (1) if a mother responded with more than half or a few and received a zero (0) if a mother responded with half or none. Three mothers failed to answer this question, and they were dropped from the analysis. Trust addressed mothers trusting their neighbors. A mother was asked, "how much do you trust your neighbors—very much, some, a little, or not at all." The trust variable was coded to receive a value of one (1) if a mother responded with very much or some, and received a zero (0) if she responded with a little or not at all. Civic engagement was defined by participation in activities outside of the home, and this model controlled for a mother's participation in her child's activities. Mothers were asked, "In the last 12 months, had you attended activities like a sports event, a concert, a play, or an art exhibition for your child?" This civic engagement variable was coded to receive a value of one (1) if a mother responded yes, and a zero (0) if she had not. Mothers were asked how long they had lived in their current neighborhood. This time-in-neighborhood variable is a continuous variable measuring years and ranges from 1 to 36 years. Two mothers did not answer this question, and they were dropped from the analysis. To measure for Latino concentration in a mother's neighborhood, 2009–2013 American Community Survey data were used to estimate the percentage of a mother's census block who were Latino. This percentage is a continuous variable ranging from 25 to 100 percent. The social network variable measured a social network member's race. Mothers were asked if an identified social network

member was Hispanic or Latino/a, white, black, Asian, or something else, and this variable received a value of one (1) if any social network member was white and was coded as a zero (0) if all social network members were Hispanic or Latino/a, black, Asian, or something else.

A logistic regression model was specified and results using Stata 12 were generated to test hypothesis regarding a mother's social capital accumulation with individual, neighborhood, and social network characteristics. The logistic regression equation is below.

$$\begin{aligned}
 SKA = e^{b_0} + & e^{b_1(\text{age})} + e^{b_2(\text{married})} + e^{b_3(\text{educational attainment})} \\
 & + e^{b_4(\text{employed})} + e^{b_5(\text{income})} + e^{b_6(\text{child/s activity})} \\
 & + e^{b_7(\text{time})} + e^{b_8(\text{percentage Latino})} \\
 & + e^{b_9(\text{percentage homeowner})} + e^{b_{10}(\text{sn_race})} \\
 & + e^{b_{11}(\text{collective efficacy})} + e^{b_{12}(\text{trust})} + e
 \end{aligned} \tag{1}$$

Due to missing data, the final data set for this analysis contained 192 observations. Inversed probability weighting produced population-based estimates. Robust standard errors were generated to account for respondents' clustering within census blocks. The overall rate of correct classification was estimated to be 65.8%.

3. Results

This research tested hypotheses regarding the association of SKA with demographic and individual characteristics along with neighborhood and social network characteristics among Puerto Rican mothers living in neighborhoods with high concentrations of Latinos. These mothers lived in census blocks where 71.6 percent (SD 18.6) of their neighbors were Latino. Nearly two-thirds (64.9 percent) of the Puerto Rican mothers had reciprocal social network relationships that were used in creating the dependent variable SKA. Descriptive statistics and bivariate results in Table 2 suggested that attending activities of their children ($\chi^2 = 7.242, p = 0.007$) and living in neighborhoods with higher shares of Latinos ($t = 2.1898, p = 0.0298$) were statistically significantly associated with Puerto Rican mothers in Springfield having increased SKA.

After controlling for vectors of five individual variables and of seven neighborhood and social network variables, logistic regression results provided evidence that individual, neighborhood, and civic participation characteristics were associated with SKA. In addition to the bivariate results of attending events for their children and living in neighborhoods with higher concentrations of Latinos, this model also suggested that employed Puerto Rican mothers were positively correlated with SKA. Tests for interaction effects between employment and having a non-Latino white social network member were conducted, but results were not strong enough ($p = 0.084$) to be statistically significant at the 0.05 level.

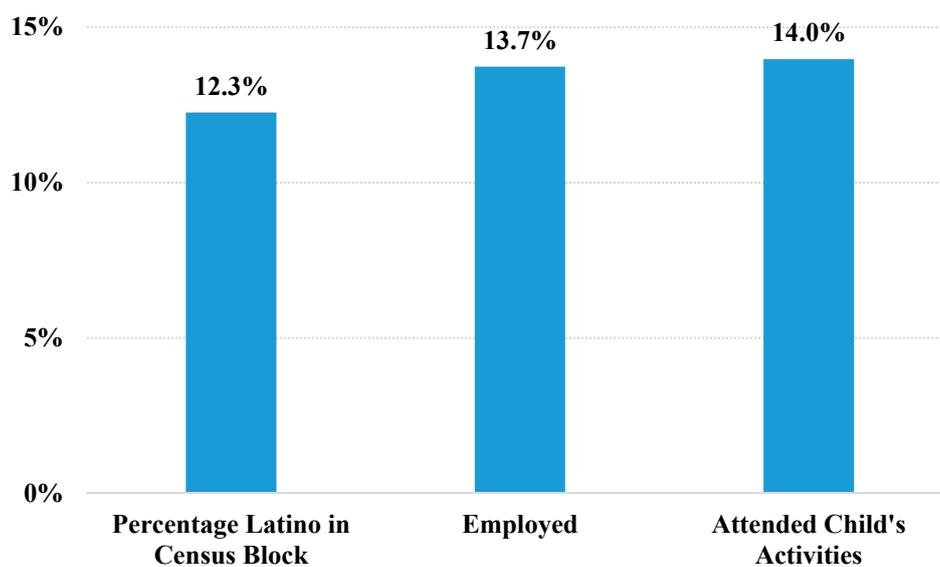
Assuming we have estimated causal rather than associational relationships, what were the probabilistic effects of these three statistically significant variables on social capital? Figure 2 converts these coefficients (Column 2 of Table 3) into probabilities and reports them on a bar chart. Specifically, being employed or attending activities of their children was estimated to have independently increased the probability that a Puerto Rican mother had accumulated social capital by about 13.7 and 14.0 percent respectively. In other words, Puerto Rican mothers with a job were 13.7 percent more likely than unemployed Puerto Rican mothers to have accumulated social capital, and Puerto Rican mothers who attended activities of their children were 14 percent more likely than those who did not attend any activities to have accumulated social capital. Furthermore, one standard deviation increase in the percentage of Latinos in a mother's census block (e.g., an 18.6 percent rise) augmented the probability of accumulating social capital by 12.3 percent.

Table 2. Descriptive Statistics of Explanatory Variables Used in Logistic Regression of Puerto Rican Mothers' Social Capital Accumulation.

Variable	Definition	H ₀	Mean High Social Capital	Mean Low Social Capital	Test Statistic
Dependent Variable					
SKA	Reciprocity in social networks		0.649	0.351	
Individual and Demographic Characteristics					
Age	Years since birth	+	40.5	40.8	$t = 0.9741$
Married	Married at the time of the survey	+	0.287	0.370	$\chi^2 = 0.4485$
Education		+			$\chi^2 = 1.4359$
Less than High	Up to high school but no diploma		0.440	0.427	
High School	High school diploma or equivalent		0.290	0.365	
Some College	Attended college but no Bachelor's degree		0.214	0.130	
College Degree	Bachelor's degree of higher		0.056	0.078	
Employed	Employed at the time of the survey	+	0.479	0.343	$\chi^2 = 2.1541$
Income	More or right amount of money to cover needs	+	0.479	0.599	
Neighborhood and Social Network Characteristics					
Attends Child's Activities	Attended a sports event, concert, play, or art exhibition for your child	+	0.673	0.458	$\chi^2 = 7.242 *$
Time in Neighborhood	Years Living in Neighborhood	+	7.40	6.07	$t = -1.8813$
Percentage Latino	Percentage Latino in census block	+	0.738	0.672	$t = -2.1898 *$
Percentage Homeowner	Percentage of homeowners in census block	+	0.116	0.120	$t = -0.7182$
Race—Social Network Member	Has Non-Latino white in social network member	+	0.260	0.216	$\chi^2 = 0.830$
Perceived Collective Efficacy	Percentage of close neighbors who would intervene in a specific neighborhood problem	+	0.479	0.432	$\chi^2 = 0.4206$
Trust	Trusts neighbors some or very much	+	0.417	0.364	$\chi^2 = 2.1623$
* $p < 0.05$	Unweighted $N = 192$		$N = 3590$	$N = 1920$	

Table 3. Logistic Results of Puerto Rican Mothers' Social Capital Accumulation.

Variable	Coefficient	95% Confidence Interval
Individual and Demographic Characteristics		
Age	−0.0092882	−0.0381712–0.0195947
Married	−0.5562095	−1.416847–0.3044283
Education		
Less than High	-	
High School	−0.3528094	−0.979637–0.2740181
Some College	0.0301	−0.7620988–0.8222988
College Degree	−0.840606	−2.318145–0.6369326
Employed	0.6047695 **	0.216603–0.992936
Income	−0.7210817	−1.455572–0.0134082
Neighborhood and Social Network Characteristics		
Attends Child's Activities	0.615501 *	0.0866646–1.144337
Years Living in Neighborhood	0.0159491	−0.042258–0.0741562
Percentage Latino	2.86277 **	0.8713682–4.854173
Percentage Homeowner	1.643363	−0.4618607–3.748587
Race of Social Network Member	0.055652	−1.074326–1.18563
Perceived Collective Efficacy	0.097684	−0.7300011–0.9253692
Trust	0.3114251	−0.5597921–1.182642
Constant	−1.543374	−3.525166–0.4384189

* $p < 0.05$; ** $p < 0.01$.**Figure 2.** The Probability of Having Engaged in Social Capital Accumulation.

4. Discussion

This research helped fill a gap in the literature by identifying mechanisms through which Puerto Rican mothers accumulated social capital. This research also supports existing literature that highlights how residentially segregated neighborhoods and the social organization shaped by them influenced the development of social ties necessary for Puerto Rican mothers to accumulate social capital in Springfield, MA in 2013 [2,4,34]. Interaction with individuals from a higher socioeconomic status can facilitate the transfer of more advantageous economic, political, and social resources and information [46,47]. SKA's positive association with percentages of Latinos in a mother's neighborhood suggested strong ties were being developed. Homophilous relationships shaped not only where a

mother lived but also with whom she interacted; that is she socialized in residentially segregated neighborhoods with people who were socioeconomically like herself [48]. Puerto Ricans were the largest Latino subpopulation in Springfield, and these mothers accumulated social capital in neighborhoods with more concentrated Latino populations. This segregation effect suggested that information and resources transmitted through social capital were shaped by the social organization in these segregated neighborhoods. As Small's research highlighted, this organization did not keep social capital from being accumulated; it just shaped the resources and information available to Puerto Rican mothers and subsequently the type of social capital accumulated [2,49]. This research also identified that having a non-Latino white social network tie was not associated with SKA, and these relationships could have been important for developing bridging social capital. Latinos' median household income was significantly lower (US\$20,874) than non-Latino whites' (US\$48,420) [50]. Based on this income distribution, information and resources transferred to Puerto Rican mothers by their accumulated social capital can enhance their ability to manage their daily responsibilities but may not enhance their ability to improve their socioeconomic standing [22,49]. Puerto Rican mothers developed reciprocal relationships with non-Latinos, even with their lower socioeconomic standing. Further analysis of our data showed that 23 mothers had non-Latino white social network members, and 87% ($n = 20$) received support and 70% ($n = 16$) gave support. This suggested that any limitations in developing cross ethno-racial social capital was more related to exposure to another population than to the lack of the ability to develop reciprocity due to income or other resource disparities [51].

As has been found for Mexican migrants, employment was an important domain for accumulating social capital [3]. Puerto Ricans' unemployment rate in Springfield in 2010 was nearly 20 percent compared to 13 percent for non-Latino whites [42]. Thus, labor market conditions could have a detrimental effect on these mothers' ability to accumulate social capital, but broader economic trends could also be shaping this outcome. For example, unemployment and the decreased access to SKA that it entails could also be related to a lack of child care when a mother's children were younger [46]. The absence of child care could have limited a mother's previous employment and development of job skills, making her a less qualified job candidate despite her now having less dependent care responsibility and more available time to work. To compensate, some mothers reported providing services such as childcare and event food preparation in the informal economy. These mothers used their social capital to develop jobs in the informal labor market, but this supplemental work could be limited in its ability to provide access to weak ties similar to those developed in the formal labor market that are important for developing bridging social capital [52]. Structural efforts to increase Puerto Rican mothers' participation in the labor market could provide both pecuniary and non-pecuniary benefits.

One strategy to overcome the effect of living in residentially segregated neighborhoods that Puerto Rican mothers experienced was through civic participation [39,49]. Similar to other research, these results suggested that mothers who attended events for their children were more likely to develop reciprocity and trust and thus enhance their SKA [37]. This supported Small's argument that institutions (not only or nor primarily people's own independent efforts) determine the extent and nature of social capital that people develop. A mother's engagement with her child's activities suggested that she benefitted from an array of institutional actions, arrangements, and activities regardless of her individual characteristics [12]. When mothers attended events for their children, these institutions provided access to opportunities. One of these opportunities was to interact with others from outside of their regular social networks and possibly help strengthen relations to high-status contacts and augment their social capital [37,39]. However, accumulated social capital can differ based on the civic organization attended, as people in socially advantageous positions facilitate the transfer of more desirable resources [47]. Community efforts to develop and strengthen institutions for sustainable engagement should be a priority for planners and policy makers in Puerto Rican neighborhoods [53].

5. Conclusions

This research addresses a component of social capital whose process of accumulation is not well understood. Using a sample of Puerto Rican mothers, this research tests hypotheses about these mothers' individual, demographic, neighborhood, and social network characteristics and found that mothers who were employed, attended activities of their children, and lived in census blocks with increased percentages of Latinos were more likely to accumulate social capital. Social capital can play an important role in Puerto Rican mothers' ability to access non-pecuniary resources to strengthen their socioeconomic position. This research used cross-sectional data, and although these weighted results allow for generalization to the Puerto Rican mothers of children between the ages of 10 to 19 years, their generalization to Puerto Ricans in other cities should be done with caution. Future research is needed to gather data on how these women perceive their SKA and to explore the information and resources that are transferred through this SKA.

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References

1. Putnam, R. *Bowling Alone: The Collapse and Revival of American Community*; Simon & Shuster: New York, NY, USA, 2000.
2. Small, M. *Villa Victoria: The Transformation of Social Capital in a Boston Barrio*; University of Chicago Press: Chicago, IL, USA, 2004.
3. Granberry, P.; Marcelli, E. In the Hood and on the Job: Social Capital Accumulation among Legal and Unauthorized Mexican Immigrants. *Sociol. Perspect.* **2007**, *50*, 579–595. [[CrossRef](#)]
4. Lichter, D.; Parisi, D.; Taquino, M.; Grice, S. Residential Segregation in New Hispanic Destinations: Cities, Suburbs and Rural Areas Compared. *Soc. Sci. Res.* **2010**, *39*, 215–230. [[CrossRef](#)]
5. Portes, A. Social Capital: Its Origins and Applications for Modern Sociology. *Am. Sociol. Rev.* **1998**, *24*, 1–24. [[CrossRef](#)]
6. Glaeser, E.; Laibson, D.; Sacerdote, B. An Economic Approach to Social Capital. *Econ. J.* **2002**, *112*, F437–F458. [[CrossRef](#)]
7. Kumra, S.; Vinnicombe, S. Impressing for Success: A Gendered Analysis of Key Social Capital Accumulation Strategy. *Gender Work Organ.* **2010**, *17*, 521–546. [[CrossRef](#)]
8. Stromsnes, K. The Importance of Church Attendance and Membership of Religious Voluntary Organizations for the Formation of Social Capital. *Soc. Compass* **2008**, *55*, 478–496. [[CrossRef](#)]
9. Wollebaek, D.; Selle, P. Participation and Social Capital Formation: Norway in a Comparative Perspective. *Scand. Political Stud.* **2003**, *26*, 67–91. [[CrossRef](#)]
10. Sampson, R.; Raudenbush, S.; Earls, F. Neighborhoods and Violent Crime: A Multi-Level Study of Collective Efficacy. *Science* **1997**, *277*, 918–924. [[CrossRef](#)] [[PubMed](#)]
11. Menjívar, C. *Fragmented Ties: Salvadoran Immigrant Networks in America*; University of California Press: Berkeley, CA, USA, 2000.
12. Bermúdez-Millán, A.; Damio, G.; Cruz, J.; D'Angelo, K.; Segura-Pérez, S.; Hromi-Fiedler, A.; Pérez-Escamilla, R. Stress and the Social Determinants of Maternal Health among Puerto Rican Women: A CBPR Approach. *J. Health Care Poor Underserv.* **2011**, *22*, 1315. [[CrossRef](#)] [[PubMed](#)]
13. Domínguez, S. *Getting Ahead: Social Mobility, Public Housing, and Immigrant Networks*; NYU Press: New York, NY, USA, 2011.

14. Torres, M.; Marquez, D.X.; Carbone, E.T.; Stacciarini, J.M.R.; Foster, J.W. Culturally Responsive Health Promotion in Puerto Rican Communities: A Structuralist Approach. *Health Promot. Pract.* **2008**, *9*, 149–158. [[CrossRef](#)] [[PubMed](#)]
15. Chavira-Prado, A. Latina Experience and Latina Identity. In *Handbook of Hispanic Cultures in the United States: Anthropology*; Weaver, T., Ed.; Arte Público Press: Houston, TX, USA, 1994; pp. 244–269.
16. Alicea, M. A Chambered Nautilus: The Contradictory Nature of Puerto Rican Women's Role in the Social Construction of a Transnational Community. *Gender Soc.* **1997**, *11*, 597–626. [[CrossRef](#)]
17. Small, M. *Unanticipated Gains*; Oxford University Press: New York, NY, USA, 2009.
18. Heaney, C.A.; Israel, B.A. Social Networks and Social Support. *Health Behav. Health Educ. Theory Res. Pract.* **2008**, *4*, 189–210.
19. McPhererson, M.; Smith-Lovin, L.; Cook, J. Birds of a feather: Homophily in Social Networks. *Annu. Rev. Sociol.* **2001**, *27*, 415–444. [[CrossRef](#)]
20. Granberry, P. More Social than Capital: Social Capital Accumulation through Social Network Exchange among Legal and Unauthorized Mexican Migrants. *Soc. Sci. J.* **2014**, *51*, 590–597. [[CrossRef](#)]
21. Granovetter, M. The Strength of Weak Ties. *Am. J. Sociol.* **1973**, *78*, 1360–1380. [[CrossRef](#)]
22. Stack, C. *All Our Kin: Strategies for Survival in a Black Community*; Harper: New York, NY, USA, 1975.
23. Larsen, L.; Harlan, S.; Bolin, B.; Hackett, E.; Hope, D.; Kirby, A.; Nelson, A.; Rex, T.; Wolf, S. Bonding and Bridging: Understanding the Relationship between Social Capital and Civic Action. *J. Plan. Educ. Res.* **2004**, *24*, 64–75. [[CrossRef](#)]
24. Granberry, P.; Marcelli, E. Social Capital is Associated with Earnings among Foreign-born Mexican Men but not Women in Los Angeles County. *Int. Migr.* **2011**, *49*, 113–128. [[CrossRef](#)]
25. Taylor, S. *Tending Instinct: Women, Men, and the Biology of Relationships*; Henry Holt: New York, NY, USA, 2002.
26. Moore, G. Structural Determinants of Men's and Women's Personal Networks. *Am. Sociol. Rev.* **1990**, *55*, 726–735. [[CrossRef](#)]
27. Fuhrer, R.; Stansfeld, S. How gender affects patterns of social relations and their impact on health: A comparison of one or multiple sources of support from 'close persons'. *Soc. Sci. Med.* **2002**, *54*, 811–825. [[CrossRef](#)]
28. Martin, J.; Simmons, D.; Lu, S. The Role of Social Capital in the Experiences of Hispanic Women Engineering Majors. *J. Eng. Educ.* **2013**, *102*, 227–243. [[CrossRef](#)]
29. Aguilera, M. The Impact of Social Capital on the Earnings of Puerto Rican Migrants. *Sociol. Q.* **2005**, *46*, 569–592. [[CrossRef](#)]
30. Putnam, R. E Pluribus Unum: Diversity and Community in the Twenty-first Century The 2006 Johan Skytte Prize Lecture. *Scand. Political Stud.* **2007**, *30*, 137–174. [[CrossRef](#)]
31. Pendakur, R.; Mata, F. Social Capital Formation and Diversity: Impacts of Individual and Place-Related Characteristics. *J. Ethn. Migr. Stud.* **2012**, *38*, 1491–1511. [[CrossRef](#)]
32. Logan, J. The Persistence of Segregation in the 21st Century Metropolis. *City Community* **2013**, *13*, 1–10. [[CrossRef](#)] [[PubMed](#)]
33. Massey, D.; Denton, N. *American Apartheid: Segregation and the Making of the Underclass*; Harvard University Press: Cambridge, MA, USA, 1993.
34. Wacquant, L.; Wilson, W. The Cost of Racial and Class Exclusion in the Inner City. *Ann. Am. Acad. Political Soc. Sci.* **1989**, *501*, 8–26. [[CrossRef](#)]
35. Wilson, W. *When Work Disappears: The World of the New Urban Poor*; Knopf: New York, NY, USA, 1996.
36. Sacks, M. The Puerto Rican Effect on Hispanic Residential Segregation: A Study of the Hartford and Springfield Metro Areas in National Perspective. *Latino Stud.* **2011**, *9*, 87–105. [[CrossRef](#)]
37. Wood, L.; Giles-Corti, B.; Zubrick, S.; Bulsara, M. Through the Kids . . . We Connected With Our Community: Children as Catalysts of Social Capital. *Environ. Behav.* **2013**, *45*, 344–368. [[CrossRef](#)]
38. McPhererson, M.; Smith-Lovin, L. Homophily in Voluntary Organizations: Status Distance and the Composition of Face-to-Face Groups. *Annu. Sociol. Rev.* **1987**, *52*, 370–379.
39. Benton, R. Uniters or Dividers? Voluntary Organizations and Social Capital Acquisition. *Soc. Netw.* **2016**, *44*, 209–218.
40. Green, M.; Brock, T. Organizational Membership versus Informal Interaction: Contributions to Skills and Perceptions that Build Social Capital. *Political Psychol.* **2005**, *26*, 1–25. [[CrossRef](#)]

41. Torres, M.I.; Granberry, P.; Person, S.; Allison, J.; Rosal, M.; Rustan, S. Influential Factors of Puerto Rican Mother–Child Communication About Sexual Health Topics. *Matern. Child Health J.* **2016**, *20*, 2280–2290. [CrossRef] [PubMed]
42. Granberry, P.; Rustan, S.; Karp, F. *Latinos in Massachusetts Selected Areas: Springfield*; Paper 176; Gastón Institute Publications: Boston, MA, USA, 2013; Available online: http://scholarworks.umb.edu/cgi/viewcontent.cgi?article=1177&context=gaston_pubs (accessed on 27 February 2017).
43. Silver, P.; Vargas-Ramos, P. *Demographic Transitions*; Centro RB2012-03; Center for Puerto Rican Studies: New York, NY, USA, 2012; Available online: <http://www.ahaa.org/Portals/0/Research/The%20Hispanic%20Consumer/Demographics/Puerto%20Rican%20Demographic%20Transitions%202012.pdf> (accessed on 27 February 2017).
44. Granberry, P.; Torres, M.I.; Allison, J.; Rosal, M.; Rustan, S.; Colón, M.; Fontes, M.; Cruz, I.; Puerto Rican Cultural Center Research Team. Developing Research and Community Literacies to Recruit Latino Researchers and Practitioners to Address Health Disparities. *J. Ethn. Racial Health Dispar.* **2016**, *3*, 138–144. [CrossRef] [PubMed]
45. Granberry, P.; Torres, M.I. Developing Social Capital among Research Team Members to Enhance Survey Response Rates. In Presented at the Annual Meeting of the Southern Demographic Association, Memphis, TN, USA, 15–17 October 2015.
46. Dominguez, S.; Watkins, C. Creating Networks for Survival and Mobility: Social Capital among African-American and Latin-American Low-Income Mothers. *Soc. Probl.* **2003**, *50*, 111–135. [CrossRef]
47. Fukui, H.; Menjivar, C. Bound by Inequality: The Social Capital of Older Asians and Latinos in Phoenix, Arizona. *Ethnography* **2015**, *16*, 416–437. [CrossRef]
48. Liebow, E.; McGrady, G.; Branch, K.; Vera, M.; Klovdahl, A.; Lovely, R. Eliciting Social Network Data and Ecological Model-Building: Focus on Choice of Name Generators and Administration of Random-Walk Study Procedures. *Soc. Netw.* **1995**, *17*, 257–272. [CrossRef]
49. Small, M. Racial Differences in Networks: Do Neighborhood Conditions Matter? *Soc. Sci. Q.* **2007**, *88*, 320–343. [CrossRef]
50. United States Census Bureau, American FactFinder. *S1903: Median Household Income in the Past 12 Months; 2009–2013 American Community Survey*; U.S. Census Bureau: Washington, DC, USA, 2016.
51. Pearson-Merkowitz, S. The Limits of the Homogeneity Model Segregation and Civic Engagement in Latino Communities. *Am. Politics Res.* **2012**, *40*, 701–736. [CrossRef]
52. Smith, S. Mobilizing Social Resources: Race, Ethnic, and Gender Differences in Social Capital and Persisting Wage Inequalities. *Sociol. Q.* **2000**, *41*, 509–537. [CrossRef]
53. Muñoz-Erickson, T.; Cutts, B. Structural Dimensions of Knowledge–Action Networks for Sustainability. *Curr. Opin. Environ. Sustain.* **2016**, *18*, 56–64. [CrossRef]



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