

Confronting chronic shocks: Social resilience in Rio de Janeiro's poor neighborhoods



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ABSTRACT

While much of the literature on social resilience is concerned with how cities overcome “shocks” to the urban system, much less is known about the strategies of survival and adaptation among its poorest residents. We argue that residents in poor, often informal, neighborhoods are faced with *chronic shocks*, or constantly recurring disasters, such as floods, severe illness, or violent police invasions. In this paper, we draw on focus groups, participant-observation and a survey ($n = 989$) based on a participatory action research methodology in Cidade de Deus, one of Rio de Janeiro's poor neighborhoods (or “favelas”). We examine how concentrated poverty and violence affect residents' well-being and survival strategies. We find that residents in these areas address chronic shocks along varying levels of: (1) ‘formality,’ or engagement with the state apparatus or formal economy; (2) contentious politics; and (3) collectivity, from addressing the needs of the individual or kinship network to the neighborhood. We conclude that the variability in strategies reflects residents' ability to adapt to an uneven and unjust urban environment. Poor residents seek the same rights, resources, and privileges of other urban citizens.

1. Introduction

Despite the dramatic expansion of work on social resilience, this body of scholarship has been largely silent on the strategies of adaptation and survival employed by those in poor urban neighborhoods (Pu & Qiu, 2016). While much of the literature on resilience is concerned with how neighborhoods and cities overcome “shocks” to the local system, we draw on the experiences of residents in informal settlements in the Global South to reframe the discourse on resilience with a focus on *chronic shocks*. These shocks can include the impacts of natural disasters, as well as concentrated poverty, un(der)-employment, and gang and police violence. These frequent disasters can be viewed as a larger consequence of urban inequality, an impermeable public infrastructure, violence, and social marginalization by urban society. Our goal is to bridge the theory and practice of social resilience of urban areas by asking: how do poor urban residents survive and adapt—that is, become more resilient to the chronic nature of concentrated poverty and violence—in the developing world?

Rapid urbanization, growing inequality, and a host of other issues have made local-level armed conflict—often between state and non-state actors—one of the greatest contemporary threats to human

security and resilience. Yet, there is little research that examines the intersection of resilience and concentrated poverty in the developing world. Increased public attention from institutions such as the United Nations and the declarations of the New Urban Agenda and Sustainable Development Goals serve as a call to action. A greater understanding of how residents in poor urban areas collaborate to improve local conditions is needed to inform more effective and holistic public policies. Such an understanding will re-frame how we view the implementation of resilience policies and bridge the gap between the theory and practice of improving the conditions of poor neighborhoods—for people and place.

Drawing on the case of Cidade de Deus, a low-income neighborhood in Rio de Janeiro, Brazil, we utilize a participatory action research approach to examine the multiple dimensions of social resilience in poor, informal settlements and the lessons that these teach us about social resilience more broadly. In the following section, we consider the case of urban development in Brazil and its implications for its poor citizens. In Section 3, we synthesize the literature on social resilience and its impacts on informal patterns of development. In Section 4, the methodological approach is outlined. In Section 5, the summary findings are reviewed. In Section 6 and Section 7, the findings are

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interpreted as strategies of social resilience and organized according to their thematic dimensions in a matrix of social resilience. In Section 8, conclusions and policy implications are presented.

2. Background: the case of Brazil

Brazil, the largest country in Latin America, is home to over 210 million residents. Brazil's cities are among the most populous in the western hemisphere, with some 80% of its population residing in large agglomeration centers (Vicino, 2017). With a long history of rural to urban migration, Brazilian cities reflect the nation's multiethnic population (Ribeiro, 2000; Saunders, 2011). Its nascent democracy led to an opening for the globalization of its economy and culture (Fausto, 1999). Despite its growth, Brazil's economy and society has been defined by boom and bust cycles. During the 2000s, Brazil experienced rapid economic growth and development, moving 40 million residents out of poverty (Baer, 2013). However, since 2014, economic crises and political instability have defined the political economy of Brazil (Reid, 2016; Vicino and Fahlberg, 2017). International observers have captured the essence of the ups and downs of Brazil with headlines spanning from “the new Brazil” (Roett, 2011) and “Brazil on the rise” (Rohter, 2012) to “Brazil's fall” (*The Economist*, 2016). The 2010s ushered in a new era of political and economic uncertainty in Brazil. In 2014, falling commodity prices and a weak international market, coupled with a national political bribery scandal, contributed to an economic recession that persisted for years. Following the impeachment of president Dilma Rouseff and imprisonment of former president Luiz Inácio Lula da Silva, congressman Jair Bolsonaro was elected to the presidency on a conservative, populist platform. The growing polarization between Bolsonaro's far-right government and supporters of the progressive Worker's Party is further weakening Brazil's economy and its democratic institutions.¹

The case of Brazil offers a novel opportunity to explore the resilience of society in the wake of these broader changes. Rio de Janeiro, perhaps Brazil's most well-known city, was the imperial capital of the nation from 1763 to 1960 (Gilbert, 1988; Skidmore, 1999). Today, the city of Rio de Janeiro has approximately 6.6 million residents, with a population of 12 million across the metropolitan region. The principal feature of the city's development is the prevalence of its poor communities, known as “favelas” or “slums” (McCann, 2014; Fahlberg, 2019), which contain high levels of informal housing. The Brazilian Institute of Geography and Statistics (IBGE, 2011) estimates that 1.4 million residents live in the favelas of Rio de Janeiro, representing one-fifth of the city's population. The first favelas were constructed in the late 1890s and early 1900s by freed slaves and poor migrants from northeastern Brazil with little access to well-paid, formal employment or housing. Favelas grew dramatically in size and population throughout the 20th century, when industrialization and population growth were not accompanied by sufficient public investments in infrastructure or social services (Davis, 2005; Neuwirth, 2004). Although in most major cities, informal settlements often emerge on the outskirts of urban centers, the city of Rio de Janeiro broke from this pattern, as poor residents constructed shacks on hillsides bordering business districts or wealthy residential areas. However, in more recent years, poverty has also increased in the suburbs of Rio de Janeiro (McCann, 2014). Coupled with the institutionalized segregation and harsh security policies of the state in favelas, these conditions have created a dual city within Rio de Janeiro (Fahlberg and Vicino, 2016; Richmond, 2019).

In the 1960s, the municipal government began to “relocate” (often

¹ As of this writing, former president Luiz Inácio Lula da Silva was released from prison; however, legal proceedings continue. For a recent analysis of the political and economic crisis in Brazil, see Braga and Purdy (2018). For a recent analysis of the politics of current president Jair Bolsonaro, see Hunter and Power (2019).

through forced eviction) residents from informal settlements to public housing projects in the under-developed west zone of the city. Cidade de Deus was among the first of these public housing projects. Situated in the Jacarepaguá neighborhood area in the West Zone of Rio de Janeiro, it is a neighborhood of an estimated 60,000 residents (see Fig. 1). Residents from 64 different favelas were brought to Cidade de Deus during its early years. Some families were allotted state-subsidized houses or apartment units; many were placed in temporary substandard housing, and others built their own shacks (see Figs. 2 & 3). By the 1970s, what had begun as a formal housing project became “favelized” as residents informally extended electrical wires, water pipes, sewer lines, and paved roads to accommodate for the growing population. Drug gangs, seeking to enter the expanding global drug trade, established processing centers in Cidade de Deus and the city's other favelas, where they could operate with little state intervention. By recruiting local residents and executing those who spoke out against their activities, gangs grew their control over favelas throughout the 1980s and 1990s (Fahlberg, 2018a). In response, police have pursued an aggressive, militarized approach, including lethal invasions. Urban violence, chronic poverty, and inequality have plagued Cidade de Deus, and Rio's other favelas, for decades (Perlman, 2010).² Local residents have had little choice but to develop strategies to endure chronic shocks to its socioeconomic and built environment. Next, we examine some of these strategies and consider their implications for our understanding of social resilience more broadly.

3. Literature review

Studies of social resilience of urban areas have historically aimed to understand how cities recover from natural disasters, catastrophic events, or other shocks to the built and natural environment. Social resilience in the city is commonly defined as:

the ability of an urban system—and all its constituent socio-ecological and socio-technical networks across temporal and spatial scales—to maintain or rapidly return to desired functions in the face of a disturbance, to adapt to change, and to quickly transform systems that limit current or future adaptive capacity (Meerow, Newell, & Stults, 2015, p. 39).

More simply put, scholars view resilience as a system's ability “to deal with adverse changes and shocks” (Béné, Wood, Newsham, & Davies, 2012, p. 11), both in the present and the future. The “urban” is understood as a complex and dynamic ecosystem that, when resilient, is able to continue functioning even in a state of non-equilibrium (Folke, 2006; Zhang & Li, 2018). Shocks can include natural disasters, as well as economic shocks, political crises, terrorist attacks, war, or other human-made cataclysms, which all impact the core urban infrastructure, economy, and political systems (Berke & Campanella, 2006; Vale & Campanella, 2005).

The analytical category of “urban,” however, overlooks the particular experiences of survival and adaptation of the city's most marginalized residents. Conditions such as concentrated poverty, the social and political exclusion of racial or ethnic minorities, disparities in access to formal employment or transportation create important differences in how the poor experience shocks (Gilbert, 2007). Specifically, studies that focus on the experiences of the urban poor find that they typically bear the brunt of natural disasters and other urban disasters. For example, Akter and Mallik (2013) found that poor residents in Bangladesh were much more likely to experience economic, physical, and structural damage from cyclones than other urban dwellers. In another case, the escalation of violence on the Gaza Strip in 2014 had a significant impact on the resilience capacity of Palestinian households

² These challenges were prominently displayed in the internationally-acclaimed movie “City of God,” released in 2002, on the violence perpetrated by drug gangs and the police in Cidade de Deus.



Fig. 1. Map of Cidade de Deus, Rio de Janeiro, Brazil. (Barrionuevo, 2010).



Fig. 2. A neighborhood view of Cidade de Deus.

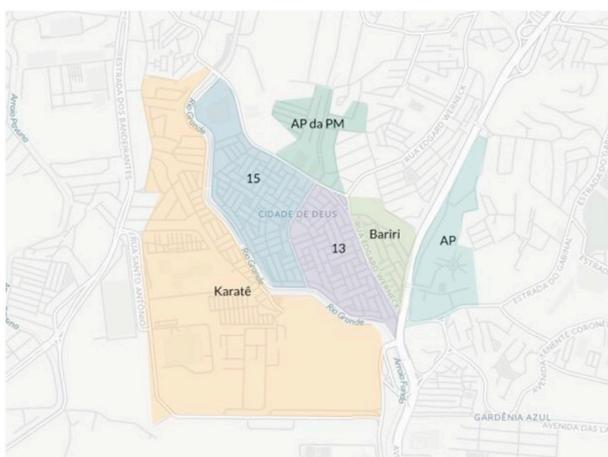


Fig. 3. Map of neighborhoods in Cidade de Deus.

(Brück, d'Errico, & Pietrelli, 2019). Urban areas with a history of neglect by the state have fewer resources to recover from natural or human-made disasters.

A number of studies identify the informal strategies developed by poor urban residents to recover from environmental disasters. For instance, in villages in the Philippines, where landslides and floods caused by typhoons are common, residents rely on trust between neighbors, social cohesion, and shared culture and values in order to promote cooperation and collective problem solving (Usamah, Handmera, Mitchell, & Ahmed, 2014). In another case, residents in an informal neighborhood in Bangladesh dealt with regular flooding through physical strategies (building barriers and drainage facilities), economic strategies (investing in regular savings), and social strategies (relying on social networks for assistance) (Jabeen, Johnson, & Allen, 2010). Finally, in a study of the Tōhoku region following the tsunami in Japan, social capital, networks, and good governance practices facilitated the rebuilding of cities after natural disasters in the region (Aldrich, 2019).

While these studies offer a number of insights into informal post-disaster recovery efforts by the urban poor, much less is known about resilience to the challenges provoked by neoliberal economic policies and the growth of inequality and concentrated poverty in developing cities. Hall and Lamont (2013), for instance, argue that social resilience must account for how communities respond to urban transformations sparked by market deregulation, rising unemployment, and the expansion of concentrated poverty, among other issues. In this case, the “disasters” from which populations must recover include unsustainable consumption patterns and widespread urban inequality produced by the global restructuring of the economy (Chelleri, Waters, Olazabal, & Minucci, 2015).

Within the context of sustained urban exclusion, we argue that the disasters that strike the urban poor, whether environmental, economic, or political, are best understood as *chronic shocks*: constant, repetitive, and ordinary upsets to everyday life rather than immediate, singular events that disrupt an otherwise functional status quo. Conditions such as intergenerational poverty, endemic unemployment, and exclusion from state resources are not sudden disasters with prospects for recovery but rather “slow burn” struggles (Pendall, Foster, & Cowell, 2010, p. 81). While a flood, the sudden loss of a primary income, a shootout provoked by a policing operation, or a premature death in the family do create immediate shocks, these events are routine in the lives of the urban poor. Indeed, they are embedded within fragile, unstable, and under-resourced environments that offer few possibilities for a full “recovery” from the immediate disruption.

Not only do the urban poor experience different types of challenges than wealthier urban residents, and must therefore utilize different survival strategies, but their challenges are often negatively correlated to the resilience of the urban core. In a context of limited resources, a city—or, more specifically, its centers of economic, political, and social power—frequently rely on channeling resources *away from* the periphery and *toward* the needs of international corporations, private investors, and economic elites of the urban system (Harvey, 2006; Wacquant, 2008). Indeed, the regionalist movement in the United States represents one such example whereby common economic resources across the region are pooled to support the urban center (Orfield & Luce, 2009). In the case of Bangladesh, many municipalities believe that “tolerating shack areas inevitably means urban squalor, social unrest and illegality because these are difficult places to upgrade and manage” (Seeliger & Turok, 2013, p. 184). Consequently, officials frequently opt to evict slum dwellers rather than invest in slum development; the city thereby provokes shocks to the poor in order to maintain stable urban center.

By overlooking the relationship between social resilience and its impact on poor urban residents, scholars have largely neglected to examine how the urban poor cope with chronic shocks created by the unequal distribution of urban resources. As Chelleri et al. (2015, p. 182)

observe, the question we should ask is: “resilience of what to what?” We draw on this question to ask: how do the urban poor survive, adapt, and seek to transform chronic shocks in a context of urban exclusion? To do this, we employ a more robust definition of social resilience as “the ability of a human community to cope with and adapt to stresses such as social, political, environmental, or economic change” (Adger, 2000, p. 347).

Thus, a useful starting point is the growing body of literature on informality, or the process of auto- or collective construction of homes, infrastructure, local economies, and governance as mechanisms of survival and adaptation (Fischer, McCann, & Auyero, 2014; Roy & Aysaayad, 2004). Indeed, the people most negatively impacted by neoliberal policies are those residing in areas of informal housing and economic practices (Davis, 2005). Scholars of urban informality have found that the urban poor often develop alternative economic systems, local governance networks, child care cooperatives, and other community-based initiatives to account for the neglect of the state and their exclusion from the formal sector (Roy, 2005). However, these studies are broadly focused on entire systems of survival, while our concern here is with the responses to the immediate disruptions caused by chronic shocks. To better understand this response, we examine the case of Cidade de Deus, a poor neighborhood in the city of Rio de Janeiro characterized by high rates of housing and economic informality, poverty, and armed conflict between local drug traffickers and invading police forces.

4. Mixed methods and participant-driven data

While traditional approaches to research are centered on designs by the investigator, this study employed a participatory action research (PAR) approach. The initial aim was to design the research questions around what the residents of Cidade de Deus viewed as the issues of greatest concern to them. In other words, our starting point was not a literature-driven set of questions, but a participant-driven discussion about what factors were most salient for favela residents within their everyday lived experiences.³ The study draws on focus groups with residents, a community-wide online discussion platform, a face-to-face survey instrument administered by trained local research assistants, and discussions with residents about the results.⁴ After framing the PAR approach to this study, we outline the approaches to participant-driven data collection and analysis for our understanding of social resilience in informal territories.

At its core, participatory research can be defined as “a school of approaches that share a core philosophy of inclusivity and of recognizing the value of engaging in the research process (rather than including only as subjects of the research) those who are intended to be the beneficiaries, users, and stakeholders of the research” (Macaulay, 2017, p. 256). While participatory research takes many different forms, the methods we employed in this study were guided by three tenets. First, research subjects should be included in each phase of the research process, from designing the questions and collecting data to analyzing and publishing the findings (Minkler et al., 2010). Second, the construction of social theory from the data should be based on a dialogical standpoint theory, which views the process of approximating the truth as part of a discursive relationship among subjects who are differentially situated (Yuval-Davis, 2011). This means that no one person's perspective is privileged over others, but that instead it is through collective reflection that we come closest to a holistic understanding of an issue. Third, the *action* component of PAR suggests that the findings

³ The methods employed in this study complemented a three-year ethnography (see Vicino, 2017).

⁴ It is important to note that two of the authors are residents of Cidade de Deus and helped to lead various phases of data collection, analysis, and dissemination.

should promote positive social change for participants and their wider community (Málovicsa, Creţanb, Méreine-Berkia, & Tótha, 2019).

These principles were applied to Cidade de Deus as the research site to provide a comprehensive analysis of social resilience in Rio de Janeiro's favelas. The project was carried out across four phases (see Table 1). In the first phase, we worked with over 100 residents in the research site to design a questionnaire that reflected their concerns. These focused primarily on the effects of insecurity and resource scarcity on social resilience in a multitude of spheres, such as housing, healthcare, employment, infrastructure, and mobility. Five focus groups were convened with local residents from diverse backgrounds of race, gender, age, and socioeconomic status and from different areas within the neighborhood. In each focus group session, participants were asked to discuss their everyday lives and what was of greatest concern to them. Another session occurred on a popular Facebook page, where residents could share what issues most affected them. The final questionnaire, which underwent multiple revisions by dozens of residents, contained 84 closed-ended questions. Residents and researchers worked together to determine likely responses, and the option of “other” was provided whenever appropriate. Field notes were utilized throughout the data collection process, and a focus group with research assistants was conducted after the data collection to reflect on the process.

Next, in the second phase, the research team was joined by 15 local residents who were trained to administer the survey to the residents of Cidade de Deus.⁵ Utilizing a web-based survey on mobile devices, the research team knocked on doors of residences and businesses in every area of the neighborhood to survey those residents available and willing to participate (see Fig. 2).⁶ In total, 965 respondents completed the in-person survey and another 24 completed the online survey, for a total of 989 respondents.⁷ The sample is generally representative of the age, gender, and geographic distribution of the neighborhood.

In the third phase, we designed and distributed a pamphlet with initial findings to 3000 residents and shared results with policymakers, NGOs, and activists. Then, we created a website to share the results. The findings were presented in public forums to local residents and non-profit organizations, where we collectively analyzed the data and discussed how they might be used to promote social change. Many of these constituents sought to use the data to demand greater investments in development and security in Cidade de Deus—that is, to make their community more resilient. The fourth phase was focused on publication of the results based on community discussions and co-authorship with local residents.

5. Barriers to social development

Most of the survey questions developed by residents measured the barriers that residents face in their everyday lives in accessing basic goods and services needed for survival and well-being. These included barriers related to education, healthcare, housing, public infrastructure, mobility and transportation, and security. A description of key survey findings is provided to identify the barriers to social development. To

⁵ The survey was administered face-to-face by a 17-person team over the course of a 10-day period in March 2017 in Rio de Janeiro. The research team was representative of the demographic and socioeconomic profile of Cidade de Deus.

⁶ Respondents were chosen from a geographically stratified sample among the following neighborhoods in Cidade de Deus: “Karatê,” “13,” or “Treze,” “15,” or “Quinze,” “Bariri,” “AP,” or “apartamentos,” and “AP da PM,” or “apartamentos da polícia militar.”

⁷ The final sample size was 989 respondents for all completed surveys. While some residents chose not to participate in the survey, non-responses were not counted. Cases were removed in which the respondent decided not to participate after answering some questions. The survey was conducted during weekdays and weekends during the day. It was prohibitive to survey in the evenings due to safety concerns.

Table 1
Summary of methodical approach.

Timeline	Approach	Key Activities
Phase I: Jan. – Feb. 2017	Community-engaged research design	<ul style="list-style-type: none"> ● Led five in-person focus groups and online discussion on Facebook page with 100 participants to develop survey questions ● Revised survey instrument with approximately 30 participants ● Designed a comprehensive field survey in Portuguese
Phase II: Mar. – Jun. 2017	Community-engaged data collection	<ul style="list-style-type: none"> ● Hired and trained 15 local residents as research assistants ● Built a web-based survey to conduct on mobile devices in the field ● Conducted in-person, live surveys with 965 households across all areas of the neighborhood ● Collected an additional 24 responses through online survey
Phase III: Jul. – Dec. 2017	Community-engaged participation and dissemination	<ul style="list-style-type: none"> ● Convened community meetings to share initial findings ● Prepared and distributed pamphlet on initial findings to 3,000 residents ● Presented data to policy-makers, NGOs, local activists, and residents ● Launched a website with data
Phase IV: Jan. – Dec. 2018	Data analysis	<ul style="list-style-type: none"> ● Organized original dataset from survey ● Geocoded survey responses ● Summarized analysis of the survey responses

begin, income levels were low: in 2017, one-third (33%) of households lived on one minimum salary a month or less and 67% lived on two minimum salaries or less.⁸ Poverty among black residents was nearly 10% higher than among whites (37% and 28%, respectively). Twenty-eight percent of households received cash assistance from the *Bolsa Família* national welfare program.⁹

Given that Cidade de Deus was first erected as a public housing complex and has continued to be a site for new public housing developments, access to formal housing remained an issue for only small portion of the population. In the survey, 4% of respondents resided in an auto-constructed shack or temporary housing (“triagem”), and 72% lived in a house and another 24% lived in an apartment. Most residents who lived in auto-constructed housing were either new arrivals from other favelas or those who could no longer reside with their families.

More than one-third (35%) of respondents had not completed primary school, and only 3% completed post-secondary education. Children faced many barriers to overcome intergenerational poverty and low educational attainment. Approximately one-third (32%) of children under the age of six were denied a space in a legally mandated public preschool. Among children attending school, 87% had missed class the year before because of armed police operations in the neighborhood, and 46% had missed 11 or more days of school.

Only 16% of respondents had a “carteira assinada,” or registered, benefits-eligible employment in the formal economy. More specifically, 23% of respondents engaged in informal work, and 23% of them were registered as autonomous workers or entrepreneurs. Furthermore, one-third of respondents were not engaged in any employment. Discrimination against residents of favelas in the job market, particularly against black residents, has been widely documented (Rocha, Pessoa, & Machado, 2011). Additionally, many residents did not have the formal training, access to public transportation, or child care needed to procure well-paying jobs. Many mothers chose to work near their homes to prevent their children from joining the gangs.

Gaining access to the health care facilities was also a challenge for many residents. More than one-third (34%) of children had no or irregular medical care. Forty-two percent of households had at least one resident on a waitlist to receive an important medical procedure; the average wait time was two years. Another 41% of residents reported having received an incomplete medical exam by doctors, and in nearly half of these cases, the medical issue was exacerbated by a poor

⁸ In 2017, one minimum monthly salary was R\$ 937, or approximately USD \$250.

⁹ In 2017, the maximum amount provided to an individual on *Bolsa Família* was between R\$ 85 and R\$ 170, or approximately USD \$24 to USD \$49.

diagnosis or treatment. Many more residents reported a lack of medical supplies and mistreatment by staff at the local health facilities.

Residents also struggled with other issues, including regular electrical outages (84%), broken and neglected public infrastructure near their homes, such as clogged sewers (53%) or potholes (35%), and difficulty getting serviced by public or private utility companies due to residing in a location considered an “area of risk” (50%). Recent cuts to bus routes to accommodate for the needs of tourists arriving for Rio de Janeiro's mega-events had also extended 62% of residents' commutes to work or school.

Given these struggles with accessing the basic institutions and services needed for survival and upward mobility, what do residents do to overcome these obstacles? And, more importantly, how do residents select these activities within the larger political, economic, and social context? The activities that we have come to think of as “social resilience” occupy spaces within a larger fabric of everyday life, as well as larger dynamics unfolding across the city. It is by considering the place of the favela within this broader urban ecosystem that we are able to understand both their struggles and their varied attempts to move beyond the limits currently imposed on their well-being and possibilities for upward mobility.

6. Strategies of social resilience

Residents of Cidade de Deus employed a variety of strategies to confront the chronic shocks of concentrated poverty, inequality, and urban violence. Of the 84 questions on the survey, 20 of them related directly to actions that residents or members of their household engaged in to improve their well-being, future prospects for upward mobility, or the well-being of the neighborhood. In this section, we report the findings of such strategies by the themes of education and employment; health; housing and infrastructure; and civil society. Then, we discuss the various elements embedded within these strategies and what they tell us about the multiple dimensions along which resilience unfolds in poor urban areas.

6.1. Education and employment

Residents employed a number of strategies to improve their educational and economic prospects. One-third (38%) of survey respondents noted having received some kind of informal training for a profession (such as a mechanic, cook, or beautician) from a friend or relative. Residents also reported enrolling in professionalizing courses, such as a technical course (18%), professionalizing course (20%), or high school equivalency program (12%). Many children had been enrolled in sports (44%), artistic activities (14%), a religious activity (36%) or a technical class (8%), reflecting an effort among parents and guardians to invest in their children's long-term development and skills.

Many of these activities were offered by non-profit organizations.

Twenty-three percent of respondents engaged in informal employment, and another 19% engaged in autonomous employment. It is worth noting that men were much more likely than women to declare informal or autonomous employment. A possible explanation for this is that men were more likely to engage in informal paid work, while women were more likely to engage in unpaid domestic work. Women were nearly twice as likely as men to declare no paid employment. Nearly one-third (30%) of respondents reported helping another person find work or enroll in a professional or technical course. Again, men were more likely than women to engage in this form of assistance, perhaps as a result of their increased connections to paid labor networks.

6.2. Health

Obtaining access to quality health care was among the greatest challenges for residents of favelas like Cidade de Deus. In the focus groups, healthcare concerns were among the issues that residents were most likely to mention. Nearly all residents recounted multiple occasions of being denied care, of having to wait hours in local clinics or years on waitlists for surgeries, and of having experienced substandard treatment. Residents coped with these challenges in a number of different ways. One frequently mentioned in focus groups was the need to “fazer um barraco,” or “make a ruckus” at the clinic or hospital in order to get attendants to allow them to be seen. In the survey, 34% of respondents had utilized this confrontational strategy to get seen by a doctor. Women were much more likely than men to do so, perhaps because they were more likely to take children or other sick family members to seek care. A less confrontational approach to treating medical conditions was to treat oneself (or one's own children) or ask for help from a friend or family member believed to have medical expertise. In fact, 60% of residents engaged in some type of informal self-treatment. One of the more vocal participants had close relationships to the pharmacist, who would administer her antibiotics and other medications without a doctor's prescription. It was a testament to her ability to cultivate strategic relationships with local actors to circumvent the barriers of an unresponsive healthcare system. While self-treatment was risky, for many residents it was no riskier than waiting weeks for an appointment or accepting treatment from an inattentive doctor. In addition to self-treatment, 4% of respondents sought care from a non-profit organization, and 13% paid for private health insurance, suggesting that some residents utilize the private sector when public services are unavailable or unreliable.

6.3. Housing and infrastructure

In informal settlements and other poor neighborhoods, obtaining safe and affordable housing was often among the greatest challenges. Because much of the housing stock in Cidade de Deus was originally built by the municipal government, access to brick-and-mortar homes was much more common than in other favelas. In fact, 72% of respondents lived in a house and another 24% lived in an apartment. However, the population grew faster than the number of available homes, forcing many residents to find their own solutions. In many cases, residents built extensions onto their relatives' homes with construction materials and extended electrical wires and water pipes into these spaces. In other words, many of the living arrangements captured in the survey represent a combination of formal and informal housing and infrastructure.

We also spoke informally with some respondents who had built their own shacks by hand, or who lived in temporary housing, or substandard small houses built by the government. In our observation, building one's own home was a method of last resort, as these homes are extremely precarious, easily penetrable by bullets, often have no access to sanitation, and are typically built near swamps, garbage disposal

sites, and other precarious (and dangerous) areas.¹⁰ However, building one's own shack by hand allowed for greater personalization. One couple, for example, had decorated the outside of their shack with a house-sized sheet printed with their wedding picture, while many others adorned their shacks with colorful carpets or gardens. What they lacked in infrastructure was made up for in personality. For those who could afford to stay with relatives in brick and mortar homes, a common strategy was placing one's name on a waitlist for public housing: one third twenty-nine% of households had at least one family member on a waitlist. Yet, this was not an especially effective strategy since nearly half (42%) of those on a waitlist had been waiting more than six years, and three-quarters had been waiting more than three years.

Suitable living conditions also relied on functioning electricity and infrastructure. Because residents were often denied service by public and private utility companies, they were required to fix issues themselves or pay another local resident to make the repairs. One-third of respondents reported paying someone to fix public utilities, including electricity, internet, flooded roads or homes, clogged sewer, or broken pavement. While this was costly for payers, it provided small stipends to those with construction and repair skills. Another 12% reported fixing broken public equipment (such as park benches or playground equipment), and 34% of respondents had cleaned a public place littered with trash. Whether within their homes or in the shared spaces of the neighborhood, residents had to spend much of their own time and resources to address problems when the government or the private sector would not.

6.4. Civil society

In addition to these more targeted adaptation and survival efforts, residents also engaged in a number of activities aimed at improving their neighborhood more generally as well as the life chances of groups of people beyond their kinship network. For example, 8% of residents volunteered at a non-profit organization or similar social service project. Notably, black residents were nearly twice as likely as whites (9% and 5%, respectively) to report volunteer work. Furthermore, men were more likely than women to report engaging in volunteer work. In our observations, this discrepancy corresponds to the large number of sporting activities organized for children and young adults, in particular, soccer and martial arts classes, which were usually led by men. Furthermore, men often had more free time than women, who engaged in the bulk of domestic labor. Finally, 6% of residents were part of a social movement aimed at making demands for the neighborhood.

The availability of digital technologies, particularly social media, was a vehicle for promoting the collective resilience capacity of the neighborhood. In this survey, 12% of respondents claimed to have shared information about the neighborhood on social media and another 2.3% had created a page on Facebook or WhatsApp with the purpose of improving the neighborhood. More than two-thirds of households in Cidade de Deus had a cellphone and about half had a computer. Of those, three-quarters had access to the Internet, which reflects the declining digital divide in Brazil (Nishijima, Ivanauskas, & Mori Sarti, 2017). Most residents relied heavily on social media and sharing information about neighborhood violence, employment opportunities, and a host of other local topics. Some residents also sought to effect change through formal political channels: 7% reported having called their elected officials to make demands for Cidade de Deus, 7% had helped on a political campaign, and five respondents had run for public office. Collectively, these data demonstrate that residents participated in a broad and varied set of practices aimed at survival,

¹⁰ According to the 2010 national census, 11% of residents lived in an “informal community,” defined as a cluster of auto-constructed shacks (IBGE, 2011).

adaptation, and the improvement of their neighborhood in the face of constant shocks and threats to their well-being.

7. The matrix of social resilience

These survey results suggest that social resilience in areas of chronic shocks operate along multiple dimensions, which challenge popular assumptions about the relationship between the urban poor to the state and the private sector. In this section, we present a matrix of social resilience along three dimensions (see Table 2). First, residents did not simply employ informal systems of survival and adaptation. In many cases, residents attempted to gain access to public services or the formal economy. A second dimension was related to the level of contention among the actions of residents who sought to improve the conditions of their lives or neighborhood. While some of these strategies were directly contentious, others operated outside of the state rather than directly challenging it. Finally, social resilience was not just targeted at bettering the individual actor, but was also aimed at the kinship network and the neighborhood and, in some cases, transforming society at large.

7.1. Levels of (in)formality

The first dimension of social resilience we observed was related to the differential levels of engagement by residents with the state and the

formal economy. Engagement with formal institutions was constituted by a variety of efforts. These included activities such as participation in the formal economy or the formal political system, entry into formal development institutions (such as public schools or the local health clinic), or utilization of social connections to formal state or economic actors to improve conditions. In contrast, informality was observed as the construction of autonomous spheres of survival, such as by harnessing skills to be used in the informal work sector or addressing one's problems without assistance from a formally trained or employed professional.

Favelas like Cidade de Deus are neither entirely formal nor entirely informal. The government remains partially present through its local public institutions, elected officials, and welfare benefits, though the actual provision of these services fluctuates with the availability of funding, election cycles, security changes, and other factors. Furthermore, residents can access the formal sector in areas such as private health care and higher education. However, due to the underinvestment of resources for public programs and other market failures (i.e., discrimination or information asymmetry), residents struggle to gain access. They must constantly choose between attempting to gain entry to these formal systems or establishing their own independent mechanisms of survival. According to McFarlane (2012, p. 101), "... rather than viewing informality and formality as fixed categories, or as mutually exclusive, the two appear as lines of changing practice and movement, taking place not above or in advance of urban life, but

Table 2
Matrix of social resilience.

Strategies of social resilience	Response	Levels of (in)formality	Levels of contention	Levels of society
Education				
• Received professional training from a relative or friend	38%	Outside the formal system	Not contentious	Kinship
• Enrolled child in private school	17%	Within the private sector	Not contentious	Kinship
Employment				
• Worked as an autonomous worker	19%	Within the political system, outside the economic system	Not contentious	Individual
• Worked informally	23%	Outside the formal system	Not contentious	Individual
• Helped another person to get a job or enroll in a course	30%	Attempting to gain access to the formal system	Not contentious	Kinship
Health				
• "Made a ruckus" at the health clinic or emergency room to receive care	34%	Attempting to gain access to the formal system	Highly contentious	Individual
• Used alternative forms of medical care	60%	Outside the formal system	Not contentious	Kinship; individual
Housing				
• Lived in an "improvised housing"	4%	Outside the formal system	Not contentious	Kinship; individual
• Placed name on a waiting list for public housing	32%	Attempting to gain access to the formal system	Not contentious	Kinship; individual
Infrastructure				
• Paid a neighbor or friend to fix your electricity, sewer, road, internet, phone, or television	29%	Outside the formal system	Not contentious	Kinship
• Cleaned a public place or fixed public equipment	34%	Improving the formal system	Not contentious	Neighborhood
Civil society				
• Volunteered at an NGO or social service project	8%	Within the political system, outside the economic system	Not contentious	Kinship; neighborhood
• Created or shared information on social media with the purpose of helping the City of God	12%	Outside the system and attempting to gain access	Not contentious	Neighborhood; city
• Called a politician to make demands for the City of God	7%	Attempting to transform system	Varies	Neighborhood; city
• Participated in a social movement aimed at improving favelas	6%	Attempting to transform system	Highly contentious	Neighborhood; city

within its unfolding.” We draw on this perspective to argue that social resilience in poor urban neighborhoods similarly flows along a continuum that helps to both produce and resist the mechanisms of urban exclusion. As the state and the formal economy work to deny its poorest citizens access to its privileges, the poor, in turn, target multiple levels of interaction with these institutions in their pursuit of survival. Resilience is therefore constituted by residents' constant negotiation around how much energy to invest in their relationship to the state and the market.

The variation can be observed among several strategies. For example, the practice of informal labor and the giving and receiving of informal employment training occurs outside of the formal economy, whereas the offering of high school equivalency programs for adults who did not complete primary school reflects an attempt to gain the skills needed to access formal employment. Meanwhile, applying for welfare benefits or for public housing rely directly on the formal state apparatus. Similarly, in residents' pursuit of healthcare, common strategies include demanding care at a clinic—an attempt to gain access to the state—as well as self-treatment, which occurs outside the formal apparatus of care.

Finally, participating in public health campaigns, most of which have been sponsored by municipal or state government, reflects an attempt to collaborate with the state in order to improve the overall health of the community. Perhaps the clearest examples of formal strategies of resilience include running for office, supporting a political campaign, and calling elected officials. If we recognize that informality is itself an urban planning strategy, whereby government officials determine which activities receive the formal authorization and support from the state, then it is no surprise that poor residents must constantly traverse these barriers in an effort to survive and thrive. It should be noted that clientelism, or the exchange of goods, favors, and resources for votes, is a common practice in Cidade de Deus and throughout Brazil. This was not captured by the survey due to the security issues involved with attempting to document illegal practices. However, as many Latin American scholars have noted, attempting to gain access to government resources by participating in local political networks is a practice employed by some local residents. Ultimately, these practices demonstrate how residents traverse the spectrum of formality in their survival strategies (Arias, 2007; Auyero, 2001; Goldstein, 2016; Murphy, 2015).

While urban informality is often viewed as an adaptation to a lack of formal alternatives, the process of auto-construction of homes, infrastructure, local economies, and governance also helps to produce shared identities, collective mobilization, and new claims to urban citizenship (Fischer et al., 2014; Roy & Aysayyad, 2004). In examining São Paulo's poor settlements, Holston (2008, p. 8) argued that through the process of auto-construction, residents built not only their homes, but “also a new kind of political and symbolic space within Brazil's social geography,” thereby challenging urban inequality and giving light to an insurgent citizenship. Thus, informality as a practice extends beyond survival and challenges the very systems that promote urban exclusion. It is the poor's ability to navigate strategically between formal and informal systems of support that best characterizes their capacity to work against the constant challenges of everyday life.

7.2. Levels of contention

Social resilience is often theorized as the strategies employed to re-equilibrate the system. However, municipal governments rarely have sufficient funds to address the needs of the entire population. Insofar as the city's emphasis is on equilibrium at the core, rather than rights and justice for all, the urban poor may very well continue to bear the brunt of the city's uneven distribution of resources and rights. Within this context, residents must constantly decide whether to adapt to an unequal and violent system or to contest it. We suggest that a second dimension of social resilience in poor neighborhoods operates along

multiple levels of contention by residents with the formal system. The least contentious of these include the activities outside the formal economic or government system, where residents do not struggle for rights but instead adapt by identifying alternative resources for survival. In other cases, residents make demands for rights without using direct confrontation, such as when they place their names on waitlists or use government grants or private donations to fund social service projects.

These “small-power politics” can be categorized broadly by their levels of contention (Tarrow, 2001, p. 4). More contentious acts can be seen, for instance, when residents “make a ruckus” to get care at the local health clinic, when they participate in a social movement, or when they call a politician to demand improvements to the neighborhood (Ziervogel et al., 2017). Indeed, residents' daily lives are defined, in part, by making demands on public institutions to fulfill basic living needs. In other cases, residents join social movements, many of which advocate against police violence, racial discrimination, and economic inequality (Fahlberg, 2018b). These contestations shape the experiences of resilient behavior among residents.¹¹

Thus, in Cidade de Deus, we find that strategies of social resilience among those most excluded from the formal urban landscape span multiple levels of contention and struggles to fight against the system. In other words, favelas and other sites of urban poverty are not characterized by solely complacent acceptance of marginality or collective efforts to challenge the state, but rather by the constant negotiation of multiple scales of contentious action. Deciding which battles to fight is often based on what resources they are likely to obtain from public programs or the market and which threats they face if they challenge these institutions. Drawing on our field research, these decisions were not easily made. Many of the activists we met chose to deploy their professional skills to support collective organizing efforts instead of securing paid employment in the formal economy. However, many had to reconsider these decisions when a close relative became ill, a sibling needed help paying school fees, or security risks impacted their physical and mental well-being. Both the activities undertaken for survival and the emotional labor of having to choose when to fight and when to surrender provoked anger, exhaustion, and stress, further eroding residents' well-being.

7.3. Levels of society

A third dimension along which strategies of social resilience vary is the levels of society being targeted. In many cases, residents were focused on improving their own well-being or the well-being of their children. In other cases, their efforts aimed to support their kinship network, such as extended family and friends. Finally, residents also invested their time and resources into improving their neighborhood and, in some cases, attempting to transform society at large. While this observation may appear obvious, it is one that is often overlooked in the literature on both social resilience and the politics of urban poverty. The lack of theorizing about the various levels of change at which social resilience is targeted inaccurately overemphasizes the importance of systems of adaptation without taking into account the multiple and sometimes competing priorities that people face when deciding how to engage these systems. Caring for a sick child, looking for a job, lending a hand to a neighbor, and volunteering at a local social service organization each require time, energy, and resources. It would be impossible for any one person to do all of them, particularly in a context of

¹¹ Many scholars have identified membership in a drug gang as an additional mechanism for attaining financial resources as well as political and social capital (Zaluar, 2010). This was not explicitly examined on our survey given security concerns, but it is important to acknowledge that the illicit economy does offer an informal, and often contentious, avenue for procuring resources in an exclusionary urban environment.

violence and poverty. This becomes more possible when the labor of social resilience is divided between members of the household or the community. While some participants focused on keeping the household running and family members cared for, others offered assistance to neighbors, contributed to the local informal economy, or pursued government resources through direct confrontation.

It is worth noting that these tasks are, in many cases, not evenly distributed along race, class, and gender dimensions. For example, women were more likely to make demands for healthcare at the local clinic while men were more likely to engage in paid informal labor. Meanwhile, black residents were more likely to engage in a number of volunteer and social movement activities. Each of these can be related to one's positionality, which Sánchez (2010) defines as “the notion that personal values, views, and location in time and space influence how one understands the world.” Based on this definition, one's positionality influences the resources they are able to access, the interactions they are likely to experience with the formal state and economy, and the expectations society has of them in relation to care work and strategies of survival. We argue, then, that one's position within the dynamics of race, class, and gender of urban development also impact the strategies of social resilience employed by residents.

8. Conclusion

In June 2017, a resident of Cidade de Deus posted the following comment on Facebook: “Good morning. [Police] operation, no school, and lots of rain. Life continues in CDD [Cidade de Deus].” This quote reveals that residents are accustomed to the constant crises of state-provoked armed conflict, poorly functioning public institutions, and natural disasters. These, coupled with numerous other obstacles, render life in the favelas of Rio de Janeiro a constant struggle for survival, one that residents engage in out of necessity and at great personal and collective cost. We cannot speak of social resilience if we do not consider the challenges faced by those at the margins.

According to Cannon and Müller-Mahn (2010, p. 623), “the notion of resilience—whether derived from natural (ecosystem) or technological (physics or engineering) usage—is dangerous because it is removing the inherently power-related connotation of vulnerability and is capable of doing the same to the process of adaptation.” In other words, we must contend with inequality in the city if we are to comprehend resilience. The implications of this study suggest that we need to examine the practice of social resilience in poor neighborhoods. Participant-driven analysis provides an opportunity to incorporate the views of people from a host of social positions. This approach is much more likely to capture the variety of experiences of adaptation and survival and to apprehend the multiple dimensions along which social resilience operates in this context. Future studies should utilize more in-depth data collection through PAR and use the tool of comparison to learn about the experiences of other cities.

Taken together, the findings of this study provoke a number of interventions into how we might think about and practice social resilience in the context of chronic shocks. First, even in spaces of concentrated poverty and violence, there is no one-size-fits-all social resilience strategy: it is residents' constant negotiation of varied practices that we must recognize and seek to better understand. Second, the chronic shocks faced by the urban poor are not exceptional practices deployed in isolated moments to re-stabilize the system. Instead, they are the routine and necessary byproducts of the poor's uneven integration into the urban fabric (Perlman, 1979). Consequently, social resilience in the context of recurrent, micro-disasters requires a constant negotiation between formal and informal, contentious and collaborative, individual and collective demands that correspond to the complex relationship between the city and its poor. Third, we must take care in how we promote social resilience in a context of inequality. Poor urban residents' “success” in surviving chronic shocks may actually reinforce an unjust urban landscape, allowing the wider urban system

to function *because* the poor do for themselves what the urban infrastructure does not. In the case of Cidade de Deus, residents do not want to simply survive: they want to be given the same rights, resources, and privileges of other urban citizens. Fourth, because local residents and institutions define social resilience differently (Eadie, 2019; Walsh-Dilley, Wolford, & McCarthy, 2016), frameworks for resilient public policies and planning practices should take into account local residents' interests into such frameworks and practices. Kaika (2017, p. 99) argues that “these instances and practices of dissensus, [the widespread practice of dissent], can therefore potentially act as living indicators, as signposts of what urgently needs to be addressed and where.” To make cities better places for all residents, municipal governments should prioritize the voices and needs of their poor residents, incorporating these complex and multi-faced lived experiences of survival as the starting point for developing urban policies that make resilience from chronic shocks less necessary. Resilient public policies and planning practices should account for how social resilience impacts its most marginalized residents and incorporate their voices and needs into planning strategies and government actions.

CRediT authorship contribution statement

Anjuli Fahlberg: Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing - original draft, Writing - review & editing, Supervision, Project administration, Funding acquisition. **Thomas J. Vicino:** Conceptualization, Methodology, Resources, Writing - original draft, Writing - review & editing, Supervision, Funding acquisition. **Ricardo Fernandes:** Conceptualization, Methodology, Investigation, Resources, Project administration. **Viviane Potiguara:** Conceptualization, Methodology, Writing - original draft, Project administration.

Declaration of competing interest

The authors declare that they have no conflict of interest.

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Open source link

The study's design approach, instrument, and summary data are publicly available at: [www.construindojuntos.com].

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