

Understanding COVID-19's Impacts on Multisector Stakeholder Values on Housing Resilience

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ABSTRACT

Multisector stakeholders (e.g., public, private, and the nonprofit sector) have different values on housing resilience, which may shift with extreme events. Despite emerging research on changing stakeholder values after hurricane events, there is limited knowledge on how stakeholders may modify their values on housing resilience after public health crises. An example of such crises is the COVID-19 pandemic, which has altered the home and work environment of many. To address this gap in the literature, this paper analyzes how COVID-19 has impacted multisector stakeholder values on housing resilience. It is mainly based on semi-structured interviews with 50 multisector stakeholders. The results indicate that COVID-19 has impacted stakeholder values on different aspects of housing resilience, such as comfort and health, recreation, design and use of open space, and connectivity. The study's findings may inform multisector stakeholders (e.g., planners, architects, contractors, engineers, and NGO representatives) on how to better plan, design, and develop value-centered resilient housing systems that take into account the challenges faced in a public health crisis.

Keywords: Stakeholder values, Housing resilience, Multisector stakeholders, COVID-19

INTRODUCTION

Housing resilience is the intentional design and development of residential buildings and communities in response to vulnerabilities to disasters and disruption of normal lives. Facilitating housing resilience is not an easy task. It requires collaboration and integrated efforts involving multisector stakeholders such as all levels of government, the private sector, non-governmental organizations (NGOs), and residents (NAS 2012). Multiple sectors of stakeholders need to devote resources, invest in, and enact policies to support more resilient housing systems (RICE 2018, Taeby and Zhang 2019). Moreover, "local jurisdictions, planning agencies, residents, and developers need to find ways to make resilience a value throughout the housing systems" (RICE 2018, p.5). However, making "resilience a value" overlooks the fact that resilience is a high-level conceptual construct that may carry different meanings to different stakeholders. Stakeholders could value different "things" on housing resilience, such as affordability, structural robustness, resource efficiency, or profitability. They may also attach different levels of importance or priorities to resilience values. Such difference could trigger conflicts and may create obstacles and delays in the process of delivering resilient housing to the community (Sanyal and Mukhija 2001).

In addition, stakeholder values on housing resilience are not static. They may shift with extreme events or public health crisis. An example of such crises is the COVID-19 pandemic. Much of the world today as we know it has changed one way or another due to the COVID-19's highly contagious nature. Evidence shows that this virus can remain airborne for a long time, and the spread of the virus may occur via airborne particles in indoor environments (US EPA 2021). This highly contagious disease has changed the outlook of much of human indoor activities due to the strenuous emphasis on social distancing to prevent infections. Furthermore, this novel virus has caused a rethinking of the concept of resilience and what makes a city or a house resilient (Afrin et al. 2021). Given the significant impacts COVID-19 brought, there is a need to understand multisector stakeholder values on housing resilience in the context of COVID-19. Such understanding is important to inform multisector stakeholders (e.g., planners, architects, engineers) on how to better plan, design, and develop value-centered resilient housing that accounts for the challenges faced in a public health crisis.

Despite such need, there has been limited research focusing on stakeholder values on housing resilience in the disaster and housing/building science domains. Many disaster studies (e.g., Burnside-Lawry and Carvalho 2016, Wells et al. 2013) have emphasized the importance of engaging multisector stakeholders in decision-making processes for community resilience or proposed stakeholder engagement approaches for building more resilient communities (e.g., Bostick et al. 2017, Taeby and Zhang 2019). However, they have not explicitly studied multisector stakeholder values on housing resilience. Studies in the housing/building domain have explored what stakeholders value or prefer in housing attributes or building design. For example, Zhang and El-Gohary (2016) discovered 50 stakeholder values (e.g., building aesthetics, thermal comfort, energy conservation) in the context of residential, commercial, and educational buildings. Zavei and Jusan (2012) introduced a theoretical framework on the relationship between user needs and housing attributes, which builds on Maslow's theory of hierarchy of needs. Coolen et al. (2002) studied the relationship between motivational factors (e.g., values, goals) and housing attribute preferences. Nevertheless, these studies have not explored how stakeholder values on housing may shift during a public health crisis. To our knowledge, no study has been devoted to studying multisector stakeholder values on housing resilience in the context of COVID-19.

To address the knowledge gap, this study aims to answer the following question: How has the COVID-19 pandemic impacted stakeholder values on housing resilience in the City of Miami (CoM)? Based on 50 semi-structured interviews with multisector stakeholders from government, private, nonprofit sector, and academia, we classified stakeholder values into the four categories based on Schwartz's theory of basic human values (Schwartz, 2012): self-enhancement, self-transcendence, conservation, and openness to change. We found that the COVID-19 pandemic has changed stakeholder value priorities on housing resilience.

SCHWARTZ'S THEORY OF BASIC HUMAN VALUES

Schwartz's theory of basic human values aims to conceptualize a list of universal values that are recognized throughout different cultural backgrounds (Schwartz 2012). This theory shares three essential features. First, values refer mostly to desirable goals that motivate and orient decision-making processes of stakeholders. Second, multiple values are ordered from the most important to the least important depending on the priorities that stakeholders have. Different stakeholders may have different value priorities. Third, the tradeoffs that result from competing values tend to guide and orient stakeholder decision-making processes. According to this theory, human values consist of 10 universal values: self-direction, stimulation, hedonism, achievement,

power, security, conformity, tradition, benevolence, and universalism (Schwartz 2012). Schwartz (2012) further classified these values into four categories – self-enhancement, self-transcendence, conservation, and openness to change – under two bipolar dimensions. Under each dimension, the two value categories contrast each other. First, self-enhancement values emphasize the set of values that pursue one's own interest, whereas self-transcendence values emphasize the set of values that are concerned with the interest and welfare of others. Second, conservation is concerned with the preservation of current conditions or ways of thinking, whereas willingness to change emphasizes the ability to have independence of thoughts and readiness for change.

There is a growing literature that applies Schwartz's theory of basic human values to understand the relationship between individual-level values and employee workplace attitudes. Specifically, this literature has looked at value relationships with organizational commitment, organizational justice, organizational learning, and innovative behaviors (e.g., Cohen et al. 2011; Purc and Laguna 2019). Recent research has also applied Schwartz's theory of basic human values to disaster management. For example, Rawluk et al. (2017)'s work emphasized that values offer the possibility of identifying what is important to both individuals and communities, especially differentiating between abstract and concrete values. In a more recent study, Pathak et al. (2020) showed how stakeholder values vary across different sectors and different disaster phases (i.e., preparedness, response, recovery, and mitigation) in Hurricane Michael.

Despite the importance of existing studies on human values, several research gaps remain. First, there are few studies that look at stakeholder values in the context of a public health crisis, and none of the studies center on the impact of the COVID-19 on housing resilience values. Second, little is known on how multistakeholder value systems are impacted by different disasters and how value priorities of stakeholders change accordingly. Given these gaps in the literature, this study sets out to examine how multistakeholder value systems on housing resilience have changed after the onset of the COVID-19 pandemic.

RESEARCH METHODS

This study employed a qualitative research approach to analyze the change of stakeholder values in the context of COVID-19 pandemic. The qualitative approach was chosen for its capacity to offer an insight into stakeholder values based on their detailed descriptions of feelings, opinions, and experiences. Since human values and value priorities are embedded into people's consciousness, the qualitative method offers the best approach to analyze stakeholder values.

Interview Design. The semi-structured interviews consisted of a set of open-ended questions grouped into seven major sections: (1) background on interviewees' organizations and involvement in resilience initiatives; (2) values, concerns, and vision related to Miami; (3) values, concerns, and vision related to housing in Miami; (4) values, concerns, and vision related to resilient city; (5) values, concerns, and vision related to housing in a resilient city; (6) how COVID have affected values related to Miami, housing and resilience; and (7) demographics. The questions in Sections (2) to (5) focused on soliciting stakeholder values on housing resilience in a normal context, while the questions in Section (6) mainly focused on asking how stakeholder values were affected by COVID-19 (i.e., what stakeholders valued before and after the onset of COVID-19). Below are some example questions from the interview instrument:

1. What do/does you/your group/your organization/your community/your constituents value the most about housing in the CoM?

2. What does resilient housing mean to you/your group/your organization/your community/your constituents? What should be the key characteristics of housing in a resilient city?
3. Please tell me how the COVID-19 pandemic has changed your understanding of how housing in a resilient city should look like.

Data Sampling and Data Collection. The interviews targeted individuals who live or work in the CoM. These individuals were representatives from: (1) public sector agencies, (2) private sector entities, (3) nonprofit organizations, and (4) academia. The potential interviewees were initially identified through review of secondary sources, including websites of government agencies, private agencies, nonprofit organizations, and universities, and local news websites and articles. A snowball sampling technique was then used for recruiting additional interviewees. Snowball sampling technique is a nonprobability sampling technique, in which existing interviewees help researchers recruit future interviewees among their acquaintances (Pathak et al. 2020).

We interviewed a total of 50 stakeholders, with 10 from public agencies, 12 from private sector entities, 12 from nonprofit organizations, and 16 from academia. The interviews were conducted via the video telephone software Zoom or face-to-face in 2020. They were conducted in a semi-structured format, which allowed for a more comprehensive and insightful dialogue between the interviewee and the researcher. Once the video telephone interviews were recorded, the audios were transcribed using Sonix, a transcribing software. The transcriptions were manually checked for accuracy and imported into NVivo software for further qualitative analysis.

Data Analysis. This study benchmarked Pathak et al. (2020)'s data analysis method, which includes top-down and bottom-up methods. Schwartz's four main value categories (i.e., self-enhancement, self-transcendence, conservation, and openness to change) provide a framework to derive the sublevel values. Each of Schwartz's four value categories was coded as a parent node for their capacity to explain stakeholders' motivation and orientation towards a desirable goal. From this set of universally recognized values, we derived a set of sublevel values to link Schwartz's value categories to what stakeholders in the 'ground' were arguing and striving for developing resilient housing in Miami.

To understand stakeholder value priorities, we quantitatively analyzed qualitative interview data. We determined the priorities or importance of stakeholder values through the number/percentage of times the interviewees mentioned or discussed about a specific value. By analyzing the interviewees' answers to the questions in Sections (2) to (5), we counted and tabulated the number/percentage of times the interviewees discussed about each identified value. Since we also aimed to understand how the COVID-19 pandemic influenced what stakeholders were prioritizing, the interview data on Section (6) were analyzed in terms of what stakeholders were arguing for in the context of COVID-19 pandemic. In particular, we distinguished the interviewees' answers on what they valued before COVID-19 and after the onset of COVID-19.

RESULTS AND FINDINGS

Identification of Stakeholder Values. A total of 8 values were identified from interview data and coded based on Schwartz's Theory of Basic Human Values. These values were then categorized into two dimensions and four categories: conservation, openness to change, self-enhancement, and self-transcendence (Figure 1).

- (1) Self-enhancement values include health and comfort and recreation. Comfort and health refers to a value that is concerned with the capability of housing to ease the psychological and physiological hardship of residents. Recreation refers to a value that is concerned with the capability of housing to allow individuals to relax and enjoy personal activities.
- (2) Self-transcendence values include access to resources and affordability. Access to resources refers to a value that is concerned with the capability of housing to connect with various public services (e.g., transportation, sewer, hospitals). Affordability refers to a value that is concerned with housing being inexpensive enough to be able to be bought by most of the individuals.
- (3) Conservation values include resource efficiency and regulatory compliance. Resource efficiency refers to a value that is concerned with consuming resources in a more efficient manner. Regulatory compliance refers to a value that is concerned with housing being compliant with existing codes and regulations.
- (4) Openness to change values include adaptability and connectivity. Adaptability refers to a value that is concerned with the capability of housing to adapt to the changing environments. Connectivity refers to a value that is concerned with promoting the use of technology to connect with others.

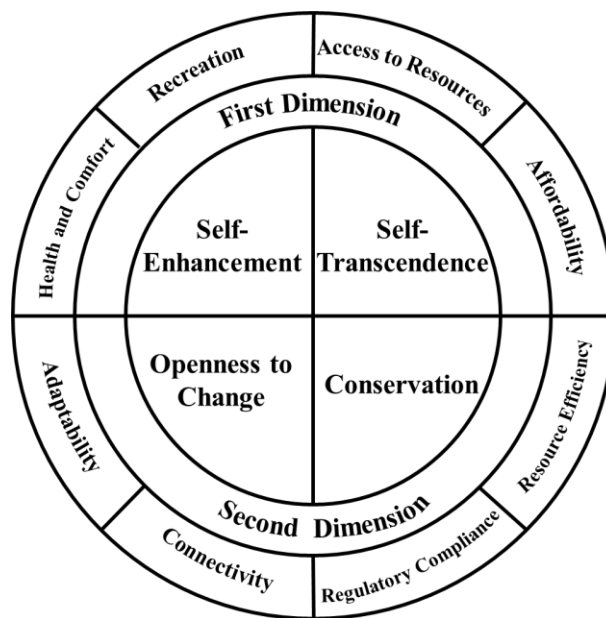


Figure 1. Stakeholder values on housing resilience (adapted from Schwartz 2012).

Stakeholder Value Priorities. The identified values were ranked according to the percentage of times that interviewees mentioned the values during the interview (Figure 2). As per Figure 2, overall, health and comfort, adaptability, affordability, and access to resources were the top ranked values. Of all the values coded, the value of health and comfort was the most referenced among the interviewees. Some interviewees highlighted that ensuring occupant comfort and health is essential for enhancing occupants' long-term quality of life. By controlling air infiltration, temperature, humidity, daylights, views, and acoustics, housing can be designed and operated in a way that allows its occupants to live in a comfortable and healthy manner. Adaptability is another highly prioritized value. In most cases, adaptability was mentioned by the stakeholders in relation

to taking actions and making plans prior to being hit by disasters, thus better coping with adverse shocks, stresses, and associated uncertainties. The third most referenced value was affordability. The stakeholders highlighted that affordable housing is an essential element of CoM's long-term resilience as it helps cope with such challenges as persistent poverty, under-investment, and rapid gentrification. Another value mentioned frequently by different stakeholders was access to resources. The interviewees highlighted that housing resilience was dependent on the number of resources available to those who mostly needed it. The resources ranged from economic incentives to rent subsidies, and to having access to jobs, goods, services, and amenities.

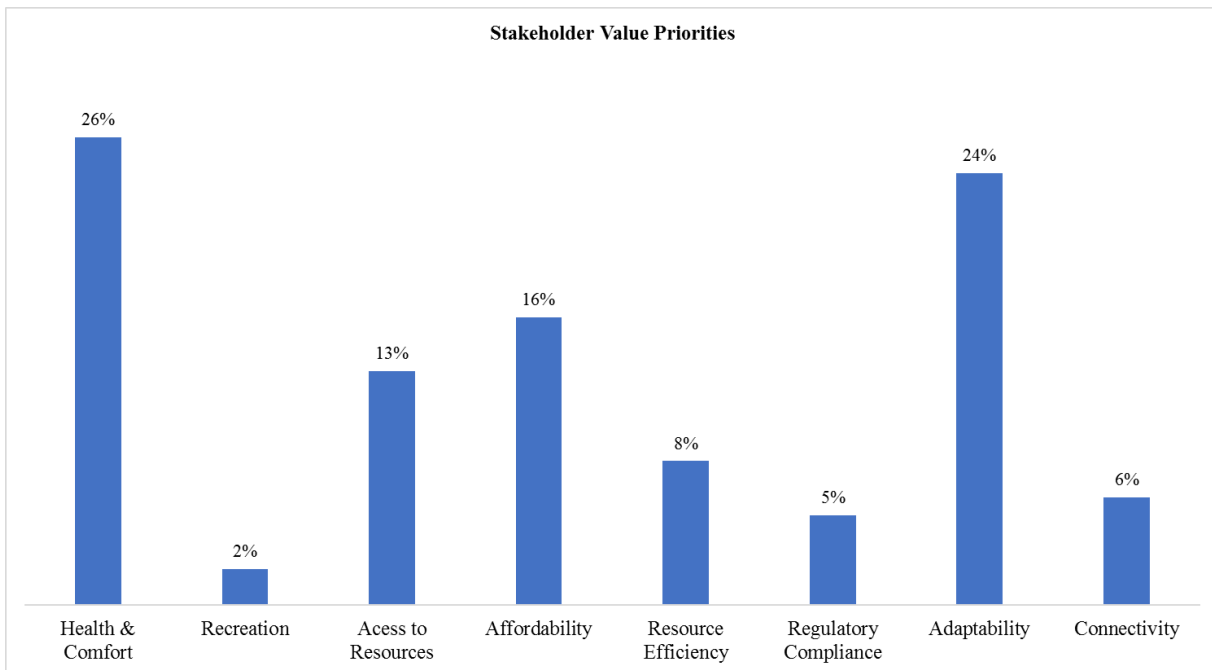


Figure 2. Stakeholder value priorities.

Stakeholder Value Priorities in the Context of COVID-19. Stakeholder value priorities were also analyzed in terms of how they changed due to the onset of the COVID-19 pandemic. Most interviews were conducted during the summer of 2020 when the interviewees had already seen some of the most detrimental aspects of this public health crisis. According to Figure 3, the stakeholders were more concerned with adaptability and affordability before COVID-19. Both adaptability and affordability are critical components of long-term resilience of housing system. For adaptability, the interviewees mostly focused on climate change, which posed major threats to housing systems in Miami, and other natural hazards. Climate change brings a high probability of increased average temperatures, more frequent and intense extreme events, flooding, and sea-level rise (Boon et al. 2012), all of which require the residents to take actions to get prepared and adapt to the impacts. “I think a resilient city would definitely account for sea level rise frequency, intensity of hurricanes, and [other] natural disasters through its plans and policies”, said an interviewee from the nonprofit sector. “Fifty percent of our population is one disaster away from homelessness”, highlighted an interviewee from academia. “We must learn to adapt to such disasters to be resilient”, the interviewee added. Many interviewees emphasized the importance and urgency of taking actions and making plans prior to disasters instead of preparing them after disaster events. “It [all] depends on how we act now”, said an interviewee.

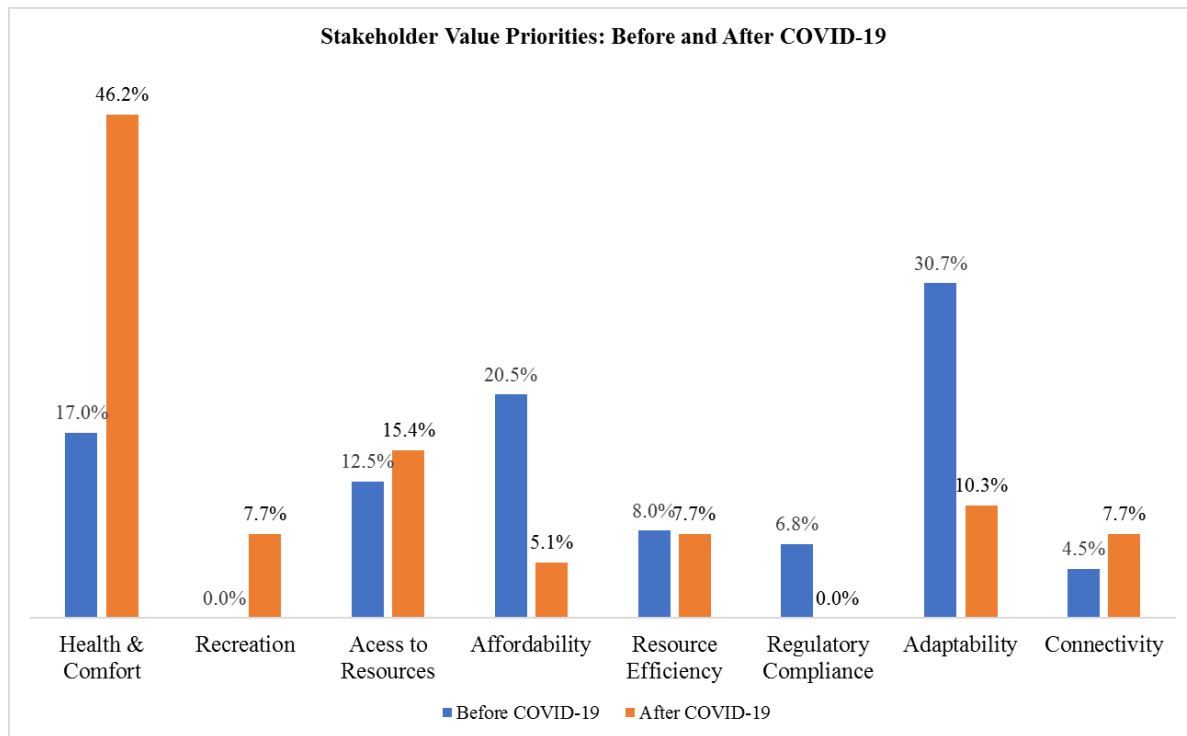


Figure 3. Stakeholder value priorities before and after COVID-19.

After COVID-19, some other values quickly became priorities for all stakeholders. A good example is the value of health and comfort, which referred to how housing supports the physical and psychological well-being of occupants. Multiple interviewees emphasized that the pandemic drove a rethinking on what housing resilience means to them – resilience cannot be achieved without allowing residents to feel healthy and comfortable. Many interviewees realized that our current housing systems may not offer the full protection to their occupants against the worst outcomes of this pandemic, especially for those who live in high-density neighborhoods. It is challenging for those residents to constantly maintain social distancing rules. In addition, the growing popularity of working from home made people realize the importance of housing's environmental dimensions that are associated with workplace productivity, such as indoor air quality, and acoustic and visual comfort. According to several interviewees, it is also important to look at the role of income inequalities on occupant comfort and health as some residents simply cannot afford a comfortable living environment and a healthy lifestyle.

Another value that gained prominence after COVID-19 was access to resources. After the public health restrictions were enacted, many people were either furloughed or unemployed, which ultimately made them more vulnerable to economic precariousness. The value of access to resources became more prioritized as it was evident that individuals within the most vulnerable communities needed more access to resources to guarantee their well-being in the middle of the pandemic. One other value that became slightly prioritized after COVID-19 is connectivity, which refers to the use of new technologies to connect with others and the outside world. Several interviewees highlighted the importance that condominiums and other multi-housing development should offer their residents access to high-speed internet as an amenity. In addition to connectivity, recreation is a value that was only mentioned after COVID-19. This value referred to housing that allowed people to have access to open spaces when all other public places were closed due to

public health restrictions. The fact that many open spaces like public parks, shopping plazas, cinemas, bars, and restaurants were closed during the initial months of the COVID-19 pandemic greatly reduced people's access to public spaces and recreation. The dramatic reduction of recreational spaces hit those who lived in multi-housing facilities the most. Those who lived in single-family homes retained recreational opportunities through their backyards and therefore had some degree of normalcy in their lives. Several interviewees highlighted the importance of creating and redesigning outdoor spaces. In part due to limited access to public outdoor spaces, many have invested on the redesign of patios, backyards, and gardens as recreational extensions to the houses.

DISCUSSION

Our multistakeholder value analysis shows that stakeholder values in housing resilience are not written in stone, as highlighted by earlier literature on public values (e.g., Nabatchi 2018). Much of the literature on housing resilience has focused on a set of values such as pollution prevention, resource efficiency, building safety, and financial values (Zhang and El-Gohary 2016) and tied the concept of resilience to commonly thought natural hazards (e.g., hurricanes, wildfires, earthquakes, floods). Most stakeholders, when asked what they valued before the pandemic, mentioned how they valued the resiliency and adaptability of the building codes in Miami. They said that the building codes in Miami were well-ahead than many other cities in the U.S. in terms of the in-built resilience it had against hurricanes and floods. In the wake of a rare pandemic like the one we are experiencing, many of these values were not as relevant as they were thought to be against all disasters. Values such as connectivity, access to resources, and recreation have come into the picture with more prevalence. Other values such as health and comfort that were previously mentioned in the literature as relevant, yet peripheral values now have gained increasing importance. It is also worth noticing that stakeholder value priorities have shifted to place more focus on self-enhancement values (e.g., health and comfort, recreation) in the context of COVID-19. All of this goes to show that systems of stakeholder value priorities change depending on the disaster context as well as the societal context. Since the pandemic resulted in public health restrictions, many of the stakeholders interviewed saw the capacity to follow these restrictions as an indicator of resiliency among different social groups. Those individuals who lived in houses that safeguarded their health and comfort, while giving them an opportunity for recreation and normalcy were considered more resilient than those who did not have the same opportunity. The fact that COVID-19 has caused widespread impacts on all different aspects of everyone's personal lives further drove stakeholders to place more focus on improvement of their own living conditions and qualities.

Not only did stakeholders continuously mentioned that value priorities had to be considered in the COVID-19 pandemic, but also they made it clear that these values need to encompass more than physical building systems. The concept of resilience would have to encompass more of the social context that individuals live in and how such context influences their capacity to be resilient. Social resilience has been a concept well studied within the resilience literature, particularly by studies that use this concept around natural hazards and disasters (Pelling and Manuel-Navarrete 2011, Cashman 2011). This literature emphasizes the importance of looking at all impacted societal factors in the context of a slow-onset disaster. In some respects, the COVID-19 pandemic has been a slow-onset disaster in the sense that it has and will persist for years to come. Since COVID-19 is likely to become an endemic disease, with slow but continuously ravaging effects, it is expected that the detrimental socioeconomic effects on employment, homelessness, evictions,

school closings, mental and physical health are expected to remain constant. Hence, when stakeholders mentioned that housing resilience needed to incorporate a societal component, they were referring to this same aspect. They understood that housing resilience needs to incorporate aspects other than a resilient building code alone. Many of them called for a stronger government and nonprofit sector presence to boost whatever social safety net is left to prevent further socioeconomic impacts from the pandemic. Interestingly some stakeholders from the private sector also called for further regulations on the affordability of houses, which was signaled by the stakeholders as one of the main housing resilience problems in Miami after COVID-19.

CONCLUSIONS

The uniqueness and the severity of the COVID-19 pandemic have generated a tremendous amount of attention on how to improve the resilience of existing and future housing in CoM. This paper aimed at providing an understanding of how COVID-19 pandemic has changed stakeholder values on housing resilience. The values with increased prevalence in the context of COVID-19 are all related to the social component of resilience, that is how building systems can consider those other social components that get worsen over time after a slow-onset disaster began to affect communities. A clear comprehension of these values can facilitate and improve the implementation of policies designed to tackle these detrimental socio-economic impacts. Future studies on multistakeholder value priorities can focus on addressing the following questions: Do different sectors of stakeholders have different value priorities? Are slow-onset disasters more likely to cause differences in stakeholder value priorities? If so, how is it that stakeholder value priorities are affected by the rapid-onset disasters? These questions are essential to offer a better understanding of stakeholder values to foster a decision-making process that seeks to establish value-driven and human-centered resilience practices for housing.

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