



Pandemic Preparedness: Developing a Resilient Model for the Affordable Housing Sector

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Abstract

The study aims to build resilience in the process of delivery of affordable housing against future pandemics, considering consumer preferences and suppliers' perspectives collectively. The pandemic-induced repercussions and challenges have led to the need to investigate "How has the affordable housing sector reacted to the pandemic?". The research intends to examine the impact of the pandemic (Covid-19) on affordable housing consumption and production under the Affordable Housing in Partnership (AHP) vertical of Pradhan Mantri Awas Yojana -Urban (PMAY-U) in India. The research will be based on a qualitative approach combining the practical findings with previously identified arguments to produce the result. A literature review will identify the factors influencing housing preferences and supply pre and post-Covid 19. The pilot study in Uttar Pradesh will be conducted to analyze and validate the importance of identified factors among users (EWS/LIG) and suppliers (developers and government). Their implications on the construction cost of housing will be investigated. The resilience in the affordable housing sector will be developed based on the inquiry of its fundamental abilities of survivability, adaptability, and learnability against the pandemic(COVID-19) and future outbreaks. The study will suggest a framework to achieve these abilities. The resilient model will benefit the developers and government to reconcile their housing supplies as per changing preferences of EWS and LIG post-pandemic (COVID-19). The model will assist the suppliers in removing the bottlenecks arising out of increased construction costs and raw materials costs due to the pandemic (COVID-19).

Keywords: Resilience, Affordable Housing, COVID-19, Construction

Paper Type: Research Proposal

I. BACKGROUND

The plausible devastating effects of the pandemic (COVID-19) on health, economy, housing, and allied sectors have been impossible to rule out from documenting in various kinds of literature globally. COVID-19 was characterized as a pandemic by the World Health Organization (WHO) on 11 March 2020 (WHO, WHO Director's-General opening remarks at the media briefing on COVID-19-11 MARCH 2020, n.d.). Moreover, the novel coronavirus was declared to be constituted as a Public Health Emergency of International Concern (PHEIC) on 30 January 2020 by WHO (WHO, n.d.).

Historically, the PHEIC has been called upon several times in the past following the outbreak of the 2009 H1N1, Polio in 2014, Ebola in 2014 and 2019, and Zika in 2016 (Aubree Gordon, n.d.). Several studies have examined and ascertained the impact of the historical pandemic on the housing market. Francke and Korevar (2021) utilized the housing transaction data to study the 17th-century outbreak of plague and 19th-century outbreak of cholera in Amsterdam and Paris. They observed the transitory decline in housing prices about six months after an outbreak in severely affected areas due to the increased risk of housing premia caused by economic losses and uncertainty in the market (March Francke). Similarly, Wong (2007) found a decline of 1-3% in the average price of housing estates directly affected by 2003 (SARS) Severe Acute Respiratory Syndrome.

The covid-19 induced economic downturn and unprecedented short-term government measures have implored the demand and supply shocks in the housing sector across the world. The pandemic has evoked a shift in housing demand in the metropolitan area of Naples (Italy) owing to the changing preferences of the community towards larger homes with natural ventilation, more green and open spaces, and dwellings with proper acoustic and thermal insulation (Pasquale De Toro, 2021). The complete and partial lockdown in various states halted the construction activity directly and indirectly. The pandemic has disrupted the global supply chain of building materials (Jonas Biorck, 2020).

Furthermore, Mohammed et.al (2021) ascertained the positive and negative impacts of covid-19 on the housing market globally. The stay-at-home orders in the Yangtze river delta region in China revealed a positive increase in housing prices after the outbreak, inferring the housing needs at the time of distress (Minhua Yang, 2021). The rent eviction moratorium adopted by the U.S. government during the pandemic (Covid-19) benefitted the households (withstanding the job losses) with financial liquidity which helped to redirect their spending on other alarming consumption needs of food and groceries (Xudong An, 2021). The study exploited hedonic housing price indices to reveal the negative impact of covid-19 on the Australian housing market (Maggie R. Hu a, 2021). It has

witnessed a decline in housing prices by 0.35% to 1.26% every year for the increased number of confirmed outbreak cases (Maggie R. Hu a, 2021).

Many scholars have approached the pandemic-afflicted housing sector through the lens of affordability. (Malpezzi, 2021) summarized the short-term and long-term effects (positive and negative) on affordability in the stage of the pandemic (COVID-19).

II. NEED FOR THE RESEARCH

The impact of a pandemic on the housing sector can be conceived in two ways- First, the new challenges initiated by the outbreak, and second, the widening of persisting gap across the industry. The affordable housing sector is in no way less susceptible to COVID-19 repercussions. The users and developers have been badly affected by the aftermath of the outbreak (Anumita Roychowdhury, 2020). The pandemic has dampened the formerly existing gap in the affordable housing segment and posed challenges for Low-Income groups (LIG) and private developers (Anumita Roychowdhury, 2020). Hence, it is a prerequisite to inquire and delve deeper into “How has the affordable housing sector reacted to the pandemic (covid-19)?”. Moreover, Considering the historical evidence of outbreak disruptions (March Francke) and persisting repercussions of Covid-19, the research will envisage a framework to prepare the affordable housing sector for future pandemics. Previous studies have investigated the impact of the pandemic on the housing sector in general. This study will focus on building resilience in the process of delivery of affordable housing units against future shocks (outbreaks): utilizing the learnings of users and suppliers gained from the pandemic-induced impact on the affordable housing segment. The resilient model will utilize the evolutionary resilience approach (Bigolin, 2020)

The urban housing shortage was estimated at 18.78 million houses in India during 2012-17 provided that the low-income group (LIG) contributed a significant share of 95 percent (Report of Technical Group(TG-12) on Urban Housing Shortage, 2012). The launch of the Affordable Housing-in Partnership (AHP) vertical under Pradhan Mantri Awas Yojana-Urban (PMAY-U) in 2015 has enlightened the due importance of its acknowledgment by the government of India (Batra, 2021). As per the 52nd and 51st CSMC (Central Sanctioning and Monitoring Committee) meeting minutes data, held on January 2021 and August 2020 (post-COVID), Uttar Pradesh (UP) has performed poorly among 25 states, providing the completion rate of sanctioned houses under AHP vertical is less than 1% (GoI, 2021) (GoI, 2020) (Batra, 2021). Moreover, it estimated the highest shortage of 3.07 million houses across other states (Report of Technical Group(TG-12) on Urban Housing Shortage). Therefore, the state of UP will primarily be considered to conduct a pilot study under the research, investigating the imbalance and issues of demand and supply in the affordable housing segment (pre and post-COVID-19) targeting the EWS and LIG households. It is the exploration of “How COVID-19 has altered the housing consumption and production for the different groups of society?”

The incapability to reconcile housing choice and supply is the fundamental cause of the imbalance between the supply and demand of affordable housing units (Woon, 2017). Thus, the government and developer’s perspectives on housing delivery and preferences of EWS and LIG will be regarded simultaneously in the research inquiring “How much affordable housing supply will be adaptable as per changing preferences of consumers?” Several studies have addressed the demand side of housing preferences and the supply side of housing delivery separately. There is a dearth of studies focusing on housing demand and supply together. Thus, the research aims to focus on supply and demand holistically: pre and post-Covid-19 scenarios.

The report by Knight Frank 2019 estimated the share of construction cost at 50 percent of the total affordable housing cost (Anumita Roychowdhury). The pandemic (COVID-19) and abiding supply chain disruptions had soared the cost of raw materials by 11-36 percent in the Delhi region (Anumita Roychowdhury, 2020). Moreover, the substantial increase in material costs has escalated the construction cost of housing by Rs 500 per sqft (Faizan Haidar, 2022). This has prompted the developers to halt the construction activity (Faizan Haidar, 2022), which will affect the housing supply adversely. Hence, the research intends to achieve resilience in the affordable housing sector by addressing “How construction costs can overcome from acute or continuous stress of pandemic (Covid-19)?”

Conclusively, the study will contribute to providing housing suppliers (developers and Government) and users (EWS and LIG) with a comprehensive list of practically and theoretically identified factors influencing housing preferences and supply (pre & post-COVID-19) for amplifying their impact on the construction cost of housing. The outcome will assist in the development of a framework of resilience model for the affordable housing sector for future pandemics: providing the strategies to achieve the ability of survivability, adaptability, and learnability within the housing sector.

III. RESEARCH FRAMEWORK

A. Research Question

How has the demand and supply of EWS and LIG housing units under the AHP (Affordable Housing in Partnership) vertical of Pradhan Mantri Awas Yojana-Urban(PMAY-U) affected the housing cost of construction in India post-pandemic(Covid-19)?

B. Aim

To build resilience in the process of delivery of affordable housing against future pandemics, considering the consumer preferences and suppliers’ perspectives collectively.

C. Objectives

Objectives 1: To investigate the pandemic-induced change in housing preferences of EWS/LIG units’ delivery under AHP (Affordable Housing in Partnership)

- *Task A:* To identify the factors influencing housing preferences of EWS/LIG pre and post-COVID-19 through conducting a systematic literature review (using ProQuest, Scopus, and Google scholar)
- *Task B:* To conduct a pilot survey in Uttar Pradesh to test the significance of identified factors and the addition of new factors based on semi-structured interviews and content analysis

- *Task C:* To find the severity of factors influencing housing preferences for EWS/LIG according to opinion ranking and severity index

Outcome: Final list of factors influencing housing preferences of EWS/LIG post covid-19

Objective 2: To investigate the impact of the pandemic on the supply of EWS/LIG units under AHP from developer's and government perspectives

- *Task A:* To identify the factors influencing housing supply pre and post-COVID-19 from government and developers' perspectives
- *Task B:* To conduct a pilot survey in Uttar Pradesh to test the significance of identified factors and the addition of new factors based on semi-structured interviews and content analysis
- *Task C:* To find the severity of factors influencing housing preferences for EWS/LIG according to opinion ranking and severity index

Outcome: Final list of factors influencing housing supply post-covid-19; suppliers' perspective

Objective 3: To investigate the impact of identified factors influencing housing preferences and supply on the construction cost of Housing

Objective 4: To provide a model of Resilient Affordable Housing against future pandemics

- *Task A:* To investigate survivability ability by inquiring into "How construction cost can overcome acute or continuous stresses of the pandemic (covid-19)?"
- *Task B:* To investigate the ability of adaptability by inquiring into "How much affordable housing supply will be adaptable as per changing preferences of consumers?"
- *Task C:* To investigate the ability of learnability by inquiring into "What affordable housing users and suppliers have learned from the impact of covid-19?"

Outcome: Development of a resilient model of affordable housing segment against future pandemics encompassing the framework to achieve the fundamental abilities.

IV. Tentative Timeline

Activities/ Year	2021		2022				2023				2024			
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Course work														
Problem Identification														
Comprehensive viva														
Literature study														
Manuscript publication (1)														
Designing Research Framework														
Registration Viva														
Data Collection														
Data analysis														
Manuscript Publication (2)														
Proposals/Recommendation														
Thesis writing														
Synopsis Viva														

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