



13th World Conference on Earthquake Engineering
Vancouver, B.C., Canada
August 1-6, 2004
Paper No. 2927

THE PSYCHOLOGICAL AND SOCIO ECONOMIC ASPECTS OF EARTHQUAKE OCCURRENCE

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SUMMARY

The 26th January 2001 earthquake rocked one of the biggest states of Indian union Gujrat. In addition to rural areas (1) this 8.0 magnitude earthquake has affected a number of major urban centers. More than 75 high-rise buildings in the capital Ahmedabad have been reduced to rubble (4). A team of architects, economists and psychologists has conducted an in-depth study of one of the badly affected city Ahmedabad after the earthquake occurrence. Based on survey results and analysis this paper presents a picture of the city with reference to various architectural, socio-economic and psychological aspects. An effort have been made to raise various relevant issues as far as the city's growth is concerned in order to learn lesson from this event and take necessary steps to improve the current situation.

INTRODUCTION

The 26th January 2001 earthquake has rocked one of the most rich and developed states of India, which contributes around 15% to the country's GDP. The estimated loss because of this

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disaster is about 10,000 crores. State government had to divert nearly about 5,000 crore rupees for relief operations (4). The deteriorating socio-economic condition of the once prosperous city might take more than 10 years to regain its position. This event has revealed a number of facts with reference to the prevailing architectural practices. The failure of architectural building systems in a city like Ahmedabad having more than 3500 practicing architects has raised a number of relevant questions as far as city's architectural development is concerned (2). This also brought a noticeable change in the client's attitudes and consecutively affected the architectural practices. The architectural development, which was suddenly stopped after this earthquake, is now started once again but a remarkable change is observed as far as architectural, socio-economic aspects are concerned. In addition to the fear psychosis just after the earthquake occurrence a number of psychological disorders are observed amongst the victims and the city's environment has been changed to a considerable extent (6).

Effect of the earthquake on building industry

This earthquake have affected the building industry as a whole and brought a noteworthy change in its economic and social structure. There are short-term effects like increased employment potential, which was generated because of the repair, reconstruction activities, and long term effects like a considerable decrease in the investment pattern with reference to the construction sector. Increasing awareness of the common man towards seismic safety resulted in an increased demand for architectural consultancy services, which were not availed in more than 67 % of the cases prior to the event. The migration of the people from the affected areas resulted in an increased prices of land in the unaffected areas on the outskirts of the cities as observed in Ahmedabad, Gandhidham and Bhuj. Increased inclination of the people towards low-rise development was observed. Sale of bungalow plots increased considerably while residential units located in high-rise apartment buildings faced catastrophic down fall as far as sales figures during 2001-2003 are concerned.

Current status of the workers

In India about 56% of the workforce is indulged in building industry alone (3). The daily income of the workers ranges from Rs. 50 to 250 per day where there is no guarantee about the availability of jobs. It has been increased by 26%, because of the requirement for repairs and renovation of the affected buildings and structures for a certain period of time. Increased employment for unskilled workers was largely observed during the first 18 months just after the earthquake occurrence. It resulted in an increase in their monthly income by 20% on an average. This increase not sustained for a longer period and the building industry as a whole an estimated loss of about 5,000 crore-rupees. Fig.1 shows the sale of residential

Apartments in Ahmedabad during 2000-2003, while daily income of labors in building industry has been graphically presented in fig.2.

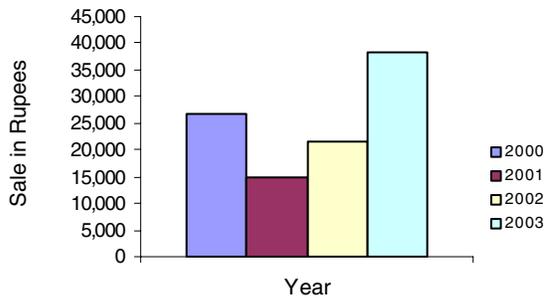


Fig.1
Sale of Apartment Buildings

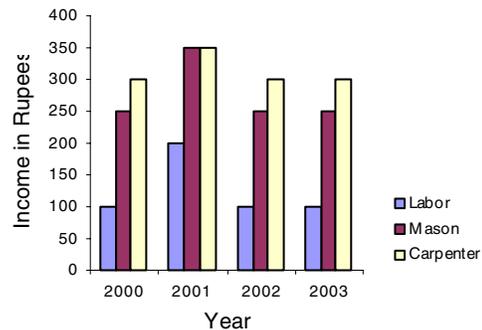


Fig.2
Daily Income of the Labors

Market scenario

The overall market scenario is changed considerably as far as the investment pattern of the residents of the affected areas is concerned. The sales figures of white goods during 2001-2003 indicate a drastic downfall in Ahmedabad, Bhuj and Gandhidham. Most of the available funds were diverted in most of the cases towards repairing and reconstruction operations. The willingness of the buyers to buy luxurious items was lowered down to a great extent as observed during the first 3-6 months after the earthquake occurrence. The situation is improved later in the majority of the cases, and people were succeeded to overcome from the economic as well as financial effects of the disaster very soon. Still the situation is not normal in some of the worst affected areas. Buyer's interest in real property transactions is largely reduced as observed during last 3 years.

Changing attitudes and preferences

Prior to this event an average resident of urban areas like Ahmedabad, Gandhidham and Bhuj was interested in buying a residential unit in an apartment building rather than an individual bungalow because of a number of reasons. Sky-reaching prices of land and ever-increasing cost of constructional operations coupled with a number of problems associated like maintenance and security are some of such reasons. This phenomenon has resulted in increased requirement for multistoried apartment buildings and consequent mushroom like development particularly in the heart of the city. Before to this earthquake it was observed that a high-medium class person who can afford an individual bungalow preferred a well-equipped flat in a housing complex. Such housing complexes are very popular in today's growing cities because of a variety of facilities they provide. The common amenities like community center, children's

play area, swimming pool, and gymnasium are some of such facilities, which proved the point of attraction to the buyers. They are preferred by the individuals having nuclear family majority of them having single child because they feel that their child will get a good company to play and for other extra curricular activities. The technical advancement resulted in the provision of an efficient vertical transportation system and availability of a number of luxuries like, landscaped garden and swimming pool (one of such an apartment having swimming pool on the seventh floor faced a catastrophic failure and claimed many lives in Ahmedabad) the upper floors affected the sale of bungalows as observed during 1990-2001(2). A remarkable change has been observed after this event; clients now prefer low-rise buildings and bungalows rather than a multistoried apartment.

Building Byelaws

This earthquake not only affected the architecture of the city but also influenced architectural practice as a whole. Building Byelaws in many cities throughout the country have been modified after this event and provisions for earthquake resistance made which were previously not observed. Consultancy services are increased as far as structural designers are concerned

Increasing awareness

One of the positive aspects of this earthquake is that it has resulted in an increased awareness of a common man towards seismic safety. Earlier this aspect, which was ignored by the client while buying a residential unit, now became probably one of the major criteria. The brochures and the project information which was previously devoid of any structural details is now found to be well equipped with structural details and specifications provided for earthquake resistance. In a number of cases such provisions are highlighted and they are used to attract the perspective clients. Builders who had constructed the multistoried apartments located in the affected areas and which survived this earthquake are making a profitable business their sales figures are unbelievable.

Psychological Aspects

Earthquake leaves behind a long lasting impression on the human's mind and may adversely affect the growth of the person who has experienced an earthquake (3). The psychological effects of an earthquake can be broadly classified in two categories viz. long term effects and short term effects. The intensity of short -term effect is more but its duration ranges from a minute to an hour depending on the mental status of the individual. The number of victims is less as far as this type of disorder is concerned but it is dangerous to certain extent as it may result in serious psychological disorders like madness or even may cause heart failure. Long- term effects are those, which sustain for a period longer than one hour and so on. Their intensity is comparatively less but their effect is more serious and considerable as far as the mental health of the individuals is concerned who have survived an earthquake. These effects basically

depend on the age group, mental set up of the victims while economic status is also one of the aspects as observed in the past earthquakes. Victims are found having Acute Stress Disorders, Post Traumatic Disorder, Adjustment Disorders and Depression, in a large number of cases as observed in the last earthquakes. The psychological impact of an earthquake has direct concern not only with the mental health of children below 5 years but also with their growth, which is not normal as noticed in a number of the cases. Many children were got affected with depression and lost the valuable period of learning and growth. Number of children affected by such type of disorders is although less, but seriousness of the problems is more. Fig.3 and 4 illustrates the psychological disorders amongst adults and children respectively.

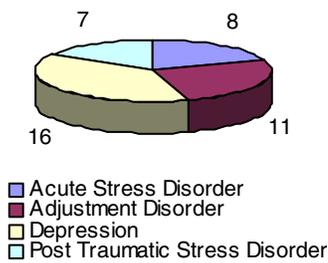


Fig.3
Psychological Disorders in Adults

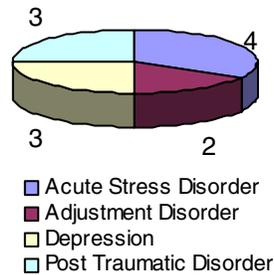


Fig.4
Psychological Disorders in Children

Source: Survey result of sample size 400

CONCLUSION

The widespread effects of earthquake are well known. It affects not only the physical aspects of the environment but also the economy, social life. In addition to the loss of precious lives, economic losses earthquake occurrence have affected the natural growth and mental health of the inhabitants to a great extent. The total economic structure changes which consequently affects constructional activities and architectural practices. It is often difficult to realize the true scale of a disaster because physical damage is visible but hidden damages could be much higher and affect the socio-economic growth of a city badly. There is some definite pattern emerging out of every disaster, which if studied and understood well can serve as an important pointer for the future.

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