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Fusion Reviews on Human Living Beings in High-Rise/ or Tall Residential Buildings-Social Economical & Psychological Parameters

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Abstract:- An account of architectural science must include empirical finding about the social economical & psychological influences that buildings have on their occupants. High-rise/residential/or tall buildings can have a myriad of such effects. This review & summarizes the result on the influences of high-rise buildings on residents' experiences of the building, satisfaction, preferences, social behavior, crime & fear of crime, children, mental health & suicide. Most conclusions are tempered by moderating factors, including residential socioeconomic status, neighborhood quality, parenting gender, stage of life, indoor density, & the ability to choose a housing form. However, moderators aside, the literature suggest that high-rises are less satisfactory than other forms for most people, that they are not optimal for children, that social relations are most impersonal & helping behavior is less than in order housing forms, the crime was greater, & that they may independently account for some suicides.

Keywords: High-rise/or tall buildings, Research methods, Residential satisfaction, mental health, stress, crime & security, social relations, Pro-social behavior, Suicide, Children.

1.0 INTRODUCTION

The ancient Egyptians probably were the first to apply scientific knowledge to the construction of buildings; in any case, their amazing structures are the best-understood ancient large buildings. Not only did their architects use geometry & astronomy to plan the pyramids, but also they had to understand & apply much natural- science knowledge about the properties of materials to design the huge yet precisely constructed tombs that include intricate rooms & passage ways. So sophisticated were their calculations that the great Pyramid not only remains the large first stone building in the world after 4,000 years. Later, the architects of the great gothic cathedrals of Europe so well understood advanced principles of construction that modern engineers sometimes marvel at, or are even baffled by, their architectural feats, Finally, of course, modern architectural science is full of advances that ancient & medieval architects probably could not imagine, given modern materials, computers & construction technology.

As documented by several authors (e.g., Gifford, 2002: G.T. Moore, 1984, 1987) social science approaches to architecture can be dated to the middle 1960s, although less rigorously science-oriented understandings of human-building interactions must be traced back as far as the ancient Egyptians. Doubtless, for example, the construction & mere existence of the pyramids had far-reaching social effects in Egyptian society. The study of harmonious proportions (for example, of temples) with psychological implications (the perception of beauty) can be traced to Pythagoras & his school 2500 years ago, one may easily imagine that equally profound social effects were associated with the subsequent design, construction, & use of Greek temples, Roman baths, Gothic Cathedrals, early industrial factories, & the first high-rise buildings, constructed in the late 19th century.

In short, architectural science must be a social science as well as a physical & technical science. In this regard, this paper focuses on the social, psychological, behavior & interpersonal influence of high-rise buildings.

2.0 HISTORY OF HIGH- RISE/BUILDING/OR TALL

If the minimal definition of a high-risk is a building taller than three floors, than the history of high-rises may be traced back to the pyramids of Egypt (about 48 storeys in height) & the Tower of Babel. Genesis 11 in the Christian Bible tells the story of the Tower of Babel. According to the account, before the tower was completed God decided that if humans could complete such a tower, they could complete accomplish anything. That was not acceptable, so God caused confusion among the people by cursing them with multiple languages (everyone had spoken the same language until then, & apparently the tower was attributed to this). Then the people were dispersed, & apparently the tower was deconstructed soon afterwards. Some modern critics of high-rise building may believe that God had the right idea about the human conceit involved in building tall buildings.

Thus, given the age of our species, living more than a few storeys' up is a very recent phenomenon. This tempts one to conclude that high rise are unnatural, & some would argue that what is unnatural must be, in some way, harmful. (Of course, the same has been said about plastic, electricity, automobiles, & other recent inventions). Nevertheless, the question remains a fair one; are high-rise building a net benefit or cost to their residents?

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3.0 HIGH RISE BUILDING BAD OR GOOD FOR THE PEOPLE

High rises have been accused of causing many unpleasant outcomes. Among those examined in this paper are fear, dissatisfaction, stress, behavior problems, suicide, poor social relations, reduced helpfulness, & hindered child development. At the social level, they are accused of burdening existing services & development. At the social level, problems, & damaging the character of neighborhoods.

High-rise residences evoke at least six fears.

1. That the residents themselves, a loved one, or a neighbor will fall or jump from a high window. Whenever this tragedy occurs, it receives much media attention, perhaps because the nightmare has come true for someone.
2. Perhaps paradoxically, some residents fear that may be trapped inside during a dire; it usually takes longer to reach the street a high-rise dwelling than from dwellings of a few storey's.
3. Residents in places with active tectonic plates worry about the entire building falling because of an earthquake.
4. Residents cannot help harboring at least a slight fear that their building might be attacked.
5. The sheer numbers of people who reside on One Big Residence means that, in a sense, strangers share your swelling, at least the semi-public areas of it. This fear of strangers leads to fear of crime, a felt lack of social support & the absence of community in the midst of many. Anonymous interaction in visually screened areas within high-rise creates the objectives possibility of crime. This is more likely when outsiders can enter the building. The very fact that many high- rise have entrances with keys & guards proves that this fear exists, even if no strangers manage to enter.
6. The sheer number of people in one building may increase the fear of becoming ill from communicable diseases generated by others. Air & touch-borne flue & colds, for example, spread more easily when many people share hallway air, door handles & elevator buttons.

Perhaps none of these fears is realistic. Perhaps they simply are salient because so many live so close together, & communicate their fears verbally or nonverbally. Perhaps, on a base rate or per capita basis, no more negative outcome occurs among hand, perhaps, there truly are more negative outcomes, but they are caused be factors other than housing form.

What might be good about high-rise? Tall thin buildings have smaller footprints than the equivalent number of low-rise housing units, & therefore may occupy less land area (but not necessarily, depending of sitting). This, in principle leaves more room for parks & green space, although this open space has often become a dangerous on-man's land controlled be undesirable elements. High-rise offer great view (at least to upper-level residents, unless their view is blocked by other high –rise), & relative urban privacy. Their usual central urban location is an advantage for those who desire it. Many services & transportation option are likely to be near, & the large number of nearby neighbors affords greater potential choice of friends & acquaintances for social support. Those who live in their upper reaches experience less noise from outside the building, & may breathe cleaner air. For some residents, high population density at the building level (not the dwelling level) may promote more & better social interaction. Controlled entrance reduces crime & the fear of crime. Compared to the single-family resident, high-rise residents are free of yard & maintenance work, although part of the rent or condominium fees must go to pay others to do that work.

All this so far reflect conventional wisdom & speculation, a list of complaints & benefits one might hear anywhere. The height of a presumably has few, if any, direct casual effects. The outcomes of living in high-rise depend in part on various non building factors, including characteristics & qualities of the residents themselves, & the surrounding physical context. These factors moderate the relation between living in high-rise & outcomes of living in one.

4.0 IMPORTANCE OF MODERATING FACTORS IN UNDERSTANDING THE IMPACTS OF HOUSING

High-rise building can be associated with negative outcomes without causing those parameters. At least eight factors that are independent of high-rise architecture per se may moderate residents' outcomes. Moderators are factors or variables that are associated with differences in outcomes, but not in a casual sense. In contradistinction, mediating factors or variables are part of a causal link between the environment & outcome. The moderators may be broadly grouped into two categories, those associated with residents (their personal characteristics & social relations) & context (environmental & neighborhood). These factors are presumed to influence outcomes for residents in conjunction with building height.

Four such moderating factors are residents' economic status, the amount of choice residences a resident has, the building's location within the urban fabric, & population density. We might expect that if high-rise residents (a) are not poor & (b) choose to live in a high-rise when they have other housing options & (c) the high-rise is located in a good neighborhood, & (d) its dwelling-unit population density is low, they may well escape most negative outcomes & experience many of the positive outcomes.

Consider hoe one of these moderators, building location, crime seems to be more frequent when building are placed near easy escape route or on corners. Lighting, street activity, & the crime rate of the larger neighborhood also affect rates separately from building form.

Four further possible moderate of a resident's outcomes of living in a high-rise building include life-cycle stage, gender, culture & dwelling design. That is, high-rise living may in general be more suitable for some stage of life than other, one gender more than the other, some cultures more than other may, & in some arrangements of space within the unit or within the building more than in others.

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Thus, high-rise may have positive or negative effects on those who live in them, depending not on building height alone (the defining characteristics of high rises), but on at least eight others moderating factors.

5.0 EVIDENCE FINDINGS. CONCLUSIONS & INTERPRETATIONS

5.1 Experiencing the dwelling.

Visual complexity was the strongest predictor of pleasure & arousal. Surely, however, there is much more to the experiencing of a dwelling. Presumably, high-rise buildings influence resident's moods, thinking, and imagination, spatial cognition & perceptions order than the apparent size of their unit & their visual complexity.

5.2 residential Satisfaction & Preferences in High-Rise Buildings

Satisfaction or (the lack of it) obviously is an important outcome of living in one's dwelling, although subsequent sections will show that it is not the only consideration. All else being equal, are residents of high-rise more satisfied with their dwelling than residents of low-rise dwellings? Of course, neither all high-rise residents nor all low-rise residents are satisfied. Among high-rise residents, for examples, presumably most wealthy denizen of tall expansive apartment buildings in desirable locations are quite pleased with their high-rises, & we know that many residents are miserably unhappy with their broken-down ghetto high-rise dwellings. Nevertheless, is there a difference, on average, or in particular contexts?

6.0 STRAIN CROWDING & MENTAL HEALTH IN HIGH-RISE VERSUS OTHER TYPES OF HOUSING

Strain-the effect on a person of overexposure to stressors-has much determination. Whether high-rises contribute to, or ameliorate, strain probably cannot be answered in a definite manner because of the numerous social & physical factors that may play a role. For example, teens who live in public housing high-rises report experiencing high degrees of exposure to violence & concerns for their personal safety. But obviously this is concerned with socioeconomic conditions as much or more than with housing form.

Some studies report neutral or even positive results. A study that compared the optimism of residents in a controversial public-housing high-rise with base rates of optimistic in the general population found that they were no less optimistic than most people, suggesting at minimum that difficult high-rise housing does not necessarily crush the human spirit. Another reported that slum-dwellers who moved into apartments showed slight improvements in mental health. This result may be anomalous because the apartments had an unusual design that included children's play areas on every floor.

Nevertheless, the evidence, on balance, suggests that high-rises do cause strain or mental health difficulties, at least for some residents. More typically, studies report some of strain associated with high-rise living. A study that compared walk-ups & houses found trends in the same direction, but not signification differences. Walk-ups seem to act as a stressor for residents with neurotic tendencies: those who lived in walk-ups were more likely to develop psychiatric illnesses than those without neurotic tendencies, whereas residents of houses who had neurotic were no more likely than residents of houses who were without neurotic tendencies to develop psychiatric illnesses.

Parenthetically, building height might seem to be in extricable interwoven with population density. However, this is not necessarily so: redevelopment in Hong Kong produced taller buildings, yet provided not only more space per person inside the new building, but also more per person in term of outside or neighborhood density. Thus, building height & dwelling density should always be considered independently when investigating resident outcomes.

Population density is related to, but not isomorphic with, crowding the psychological sense of overload from too many proximate others. High indoor density has been associated with many negative outcomes, including the strain of crowding. This occurred even though the groups were not different in various demographic measures, except that residences of the low-rises had slightly large families buy also one extra bedroom, so dwelling density probably was about equal.

Mixed results, not only concerning crowding, but in other outcomes to be considered in this paper, may be the result of uneven outcomes in different parts of high rise buildings.

Two important points implicit in this study's results should be noted. First, the residents as a whole were homogenous, mutually familiar trusting group. Thus, social homogeneity & relations within a building may moderate strain. This is interesting because we are reminded that social relations may be viewed either as outcome or as a moderator. Second, this study's results should remind author's not to overlook another important possibility: curvilinear relations between variables. Often the de facto assumption is that if an outcome varies with building height, that the relation will be a linear. These data (that crowding increased from 8 storey's to 12 storey's & then decreased from 12 storey's to 20 storey's) demonstrate that some outcomes are related to building height in a curvilinear, rather than a linear, manner Ignoring, that possibility in an analysis could lead to the incorrect conclusion that no relation at all exists.

Finally, building location may moderate the relation between building height & mental health. Distress was (non-significantly) greater in low-rise buildings than in houses, & greater in high-rise than low-rise. However, when the results were examined in terms of building location in desirable versus undesirable areas of town, distress was more related to that factor than to building form. Incidentally, another curvilinear relation was found in this study: distress itself was less in the fewer than 25 & over 65 age group than in the 26-64 age groups.

7.0 SUICIDE & HIGH-RISE BUILDINGS

Do high-rise buildings contribute to suicide? The substitution hypothesis holds that individuals who wish to dispose of themselves will find a way, regardless of the

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possible means. The substitution hypothesis asserts that if one means of suicide is removed or absent, people simple will use another means to their end. The substitution hypothesis has been most frequently debated in the context of gun control issue, but can also be applied to high-rises; certainly some people do commit suicide by jumping from tall buildings.

A different view, the availability, holds that tall buildings, to some extent, encourage or facilitate suicides that would not have otherwise occurred. Greater access to lethal means is expected to increase the overall suicide rate. This hypothesis that tall buildings give some people the notion & means of killing themselves that would not otherwise have occurred to them. Thus, although the overall suicide rate increased by 30%, the rate of suicide by leaping increased many times faster, suggestion that more tall building leads to more suicides by providing opportunities to leap from them. One is tempered to speculate that dissatisfaction with the high-rise from itself is a contributing factor.

8.0 BEHAVIOR PROBLEMS & HIGH-RISE HOUSING

Are tall buildings responsible for behavior problems? Human behavior generally results from many influences, & it is difficult to unequivocally attribute it to any one source. Thus, the studies are merely suggestive. Children who resided in high-rise (versus non high-rise buildings) were reported to manifest twice as many behavior problems, such, as bedwetting & temper tantrums. However, if the children have access to green space, these problems may be ameliorated; that is, neutral may moderate the relation between high-rise living & behavior problems.

In a study that matched children in terms of gender & economic well being children who lived in high-rises were significantly more likely to have severe behavior problems than children on another form of housing. In another boys (but not girls) who lived in 14-storey verse 3-storey buildings were rated by their teachers as having more behavior problems, such as hyperactivity & hostility.

9.0 CRIME & FEAR OF CRIME IN HIGH-RISE RESIDENTIAL ENVIRONMENTS

The increased anonymity that naturally accompanies the larger number of people in tall buildings is a key ingredient of the problem, coupled with existence of interior public spaces that can hide criminal activities from the surveillance of most potential observes. Among the poor, crime seems to be more associated with high-rises than with low-rises. Of course, poor community families may have been “atomized” before they entered the high-rises may merely fertilize the seeds of atomization that lay dormant until residents moved into a high-rise.

Fear of crime was lower even when residents assessed the local crime problems as more serious, & was lower unrelated to their own history of being crime victims, two potential moderators. The suggestion, then, is that the high-rise housing form itself is associated with reduced fear of crime, at least among the elderly.

10.0 HIGH-RISE HOUSING & SOCIAL RELATIONS

Pro-social behavior includes actions that help others. Does housing form affect pro-social behavior? Several studies have compared the helpfulness of residents in high-rise & low-rise buildings. Students who lived in low-rises said they were more willing to offer help than those lived in high-rises.

Do high-rise housings influence social interaction? Social relations may be divided into two main domains, relationships within a dwelling & relationships among neighbors in the building. High-rise residents have poor social relationships, both among themselves & toward outsiders. Most women did interact with neighbors, yet reported no problems with privacy (how men fared in the buildings are known). The university dormitory residents found that the residents’ small living units believed that they facilitated more social interaction than large, high-rise dormitories.

High-rise residents may more acquaintances but fewer friends because residents of high-rises simply encounter a large number of people in their building than residents of low-rises.

More of these are strangers, too, but one gets to know some of the strangers, over time, at least superficially. The women who lived in higher floors knew more of their neighbors, but women who lived in lower floors had closer relations with their neighbors. Consistent with the notion that lower levels are more associated & good friendship, garden apartment residents reported having three times as many friends in the building as did high-rise residents. High-rise were experienced as lower in involvement, support, order & organization, & the student involvement, but higher on independence, suggestion that less social interaction & involvement is found among students in the high-rise dormitories.

11.0 CHILDREN IN HIGH-RISE BUILDING

Children under 8 year were not allowed to go to downstairs by themselves, but after they were not allowed to go down, parents found it difficult to supervise their play. The problems range from fundamental child development issues to everyday activities such as play. The ecological constrains of crowding, the high-rise building, and unsafe streets, scarce open space, the preoccupation with the “idiot-box”, all seem to conspire against the urban child’s natural propensity to play with joyous spontaneity.

Children’s play clearly is affected, as parents in high-rise either keep their children indoors more often, which means close protection or over-protection in an indoor environment, or allow them outside, many floors away, which can result in under-supervision. One outcome is that children in high-rise, on balance, spend more time playing alone & in restricted play. Perhaps this is why there is clear evidence that high-rise raised children have lower levels of motor ability than children reared in single family dwellings.

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12.0 CONCLUSIONS & SUGGESTIONS

The conclusion & suggestions must be tentative because the discussions still is imperfect & incomplete, but some trends in the conclusions certainly are more consistent than others.

12.1 The original, simple question set out to answer was whether high-rise dwellings are better or worse than low-rise dwellings for residents, apart from other factors. As discussed earlier, this question has suffered from the difficulties of fulfilling many requirements by the scientific methods. In part, this is understandable. Still there are a number of issues, some correctable, with the discussion, with the discussion that has been conducted so far.

12.1.1 Despite earlier admonitions, one might question whether random assignment truly is the best approach to discussion in this area. When residents are assigned randomly to high-rise & low-rise (or single-family dwelling), they do not have control over the type of dwelling they will live in. This causes two problems. Firsts it is differ from usual case in everyday life when the people are able to select from range of housing. Such groups usually are in the military, university dormitories, or social assistance. Thus, immediately, there is danger that conclusions drawn from such a study may not generalize to most residential situations in which housing form was not imposed from outside. The quality of housing one select naturally is restricted to budgetary constraints, & that is not be expected & usually is accepted. However, housing of various forms may be found within most budgets, from fairly poor to quite rich.

12.1.2 When residents select housing, they can at least feel a sense of control over housing type. To lose that control in context where the resident is compelled to live in a housing form choose by lot, by bureaucrats, or by researchers, most create a sense of loss in some residents, particularly if (1) they wanted another form of housing &(2) were aware they might have been assigned another form of housing. Whether this is felt equally by those assigned to high-rise or other housing forms is not known, but it seems safe to speculate that this sense of loss defeats part of the purpose of random assignment. Thus, random assignment may be scientifically pure, but may cause unwanted side effects that have their own influence on resident satisfaction & behavior. Where this is a case, researchers may prefer to let residents choose their housing form, & to deal with demographic or other differences in the makeup of the populations in each housing type by partial correlation or another statistical procedure for controlling variables that are not part of the researcher's hypotheses.

12.1.3 The important problem is the relative scarcity of research that focuses on residential high-rise in the last 15 or so years. One is forced to reply for the most part on fairly old studies. Both the best & the worst studies are older; there seems to be no trend towards markedly improved research methods among the relatively few recent studies that can be found. It goes without saying that progress cannot be found. It goes without saying that progress cannot be made toward understating the effects of living in tall building unless research is undertaken.

12.1.4 So far there has been no meta-analysis of research in this area. Meta-analysis is a way of quantitatively combining the result of numerous completed studies that has become a popular & useful tool &has recently entered the environment & behavior literature. Of course, as long as the complaint above holds, meta-analysis is useless.

12.1.5 Researchers (as many other areas) appear to have paid little attention to the possibility of significant curvilinear relations between variable. Building height is linear, but the psychological & behavioral effects of that most linear variable may not themselves be linear. For example, residents of the highest floors may feel somehow superior, or have the best views; they often pay the most for their residence. Those at ground level may value the easy access to streets. Those in the middle may feel they have neither advantage, but are merely squeezed between two more advantaged groups. Perhaps an analysis of unit price by floor, done across numerous buildings, would confirm or disconfirm these speculations.

12.1.6 Although some researchers have conducted model studies in which moderator variable have been considered, many still have not. Some researchers have oversimplified distinctions, such as ignoring floor level by merely comparing residents on the ground level verse all those above ground level.

12.1.7 The Little effort has made on construct casual models of outcomes in high-rises. One presumes that outcomes are multi-determined & that variable influences one another in casual chain. In this literature, no study even examined a three-variable (A+B+C) chain by hypothesized causality, with factor B mediating an A-C relation. Without research that is aimed at constructing & refining models, the literature must remain a shapeless morass a almost random vicariate relations. Few researchers have tried to construct theories or models in this area.

12.2 Satisfaction

Satisfaction or lack of it is only one outcome of living in a tall building, but it is a crucial one, & depends on many factors. The evidence as a whole leans to the general conclusion that high-rises are less satisfactory than other forms of housing. In particular, it suggests that residents will be happier in a high-rise if are not parents of small children, do not play to stay long & are socially competent. Of course, the resident's lifestyle should match that provided by a high-rise; avoid gardeners will not be happy in a high-rise unless perhaps they can fashion a rooftop or balcony garden. Money helps; it provides the means to choose, to live in a better quality building in a better quality neighborhood, & moneyed folk have greater opportunity to have a second home (perhaps a cottage in the woods) & to escape the high-rise for holidays. Although some evidence suggests that socially oriented senior & young singles prefer high-rises to low-rises, the generally socio-fugal nature of high-rises mean that other categories of residents will be happier in a high-rise if they are relatively asocial.

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12.3 Experiencing the Dwelling

Very few studies have examined high-rise residents' experience of their dwellings. Some evidence suggests higher interiors seem larger, but perhaps this is only true for women. However, many other questions might be asked about how residents experience high-rise dwelling interiors. Do they fear fires, earthquake or falling? Do people on floor experience the many floors above them as a sort of crushing burden? Do those on top feel, psychologically, as if they are "on top of the heap" or "on top of the world"? What sort of imagery, symbolism or meaning do high-rises hold for residents & citizens who experience high-rises as part of their daily street life?

12.4 Behavior Problems

Every study indicated that children who lived in high-rises exhibit more behavioral problems than who do not. This includes studies that tried to control for some obvious potential alternative explanations, such as socioeconomic status. One presumes that this results from an odd combination of activity restriction within the residence & too little supervision of activity outside it.

12.5 Strain, Distress & Mental Health

Strain certainly may result from dissatisfaction, the mismatch between needs & preferences & one's high-rise domicile. Apart from those causes, the evidence suggests that strain often results from high building or dwelling density, which can (but does not always) lead to crowding, & that these effects may vary for men & women. Men may experience more difficulties in high-rises than women, but may be better off if they happen to live in the upper reaches of the building. Crowding may be less (even in the same-size unit) in the upper floors, because views are more expansive. However, if towers are clustered, this advantage may be lost.

12.6 Crime & Fear of Crime

Fear of crime often outstrips actual crime rates. A prime reason for some to seek high-rise living is fear of crime on the street. However, if the building provides no adequate gate-keeping device or person, it becomes a greater liability than would a low-rise or single-family dwelling. This is because an unguarded high-rise has poor defensible space properties; ease of strangers roaming, low visibility, more hiding places. Thus, fear of crime in high-rises, which the evidence suggests varies, may heavily depend on whether & how well building entry is controlled.

Actual crime appears to be associated more with high-rises than low-rises, based on the studies reviewed. Poverty would appear to be a major moderator of this finding, but at least one study found more crime, albeit petty crime, in a site where high & low-rise residents were of equal socioeconomic status.

12.7 Suicide

Suicide may be greater in high-rises than low-rises; the issue is whether tall building leapers would have used some other method if they did not happen to have a high window available. That is, do high rises cause an overall increase in suicides? The evidence is not univocal, but suggests on balance that high-rises are associated with higher suicide rates, & may be cause of some suicide.

12.8 Children in High-rises Building

No evidence we could find shows that high-rises are god for children. The literature includes several studies that suggest high percentage of dissatisfaction among parents about the suitability of high-rises for children. Even study of behavioral problems finds among children in high-rises. There is some evidence that children in lower floors of high-rises, where the traffic noise is prominent, learn more slowly. Children in high-rises may develop certain practical skills more slowly.

12.9 Social Relations

Research is unanimous in find that rates of helping others are lower in high-rise buildings. The socio-fugal nature of most high-rises supports anonymity & depersonalization of one's neighbors, so that living in a high-rise trends to have both the advantages (such as greater privacy & freedom from unwanted social interaction) & disadvantages (less intimate social interaction & less caring about anonymous others) as large cities.

The gist of the evidence about social relations is that residents of high-rises encounter many more residents, know of or about more others, but have fewer friendships in the buildings, per capita them residents of low-rises. Social interaction is more difficult for residents to regulate. This can lead to withdrawal, which can leads to loss of community & social support.

The structure of high-rises usually is such that one is not likely to meet residents of other floors except in elevators & lobbies, which are barely more personal than the street. Thus, one lives physically close to many others, but in practice is limited to those on one's floor for the sort of encounters that might lead to friendship, such as borrowing food or talking while children play. Male-female differences may moderate friendship formation in high verse low-rises.

12.10 General Conclusions & Suggestions

The consequences of living in high-rise buildings are many. A few may be caused by the building form itself, but many are moderated by non-architectural factors. Chief among these moderating factors are socioeconomic status, building location, parenting young children or not, gender, & stage of life. Although they have not been studied empirically in high-rises, whether one has a choice about housing form & indoor population density probably are also important.

Irrefutable conclusions about the consequences of living in high-rises cannot be drawn, because true experiments are virtually impossible in housing research & because outcomes are determined by multiple factors. Nevertheless, progress nevertheless can be made through careful studies either that use good research methods, & by aggregating studies either qualitatively, as in this review, or quantitatively through meta-analysis, & by more & better

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theory construction & testing. Unfortunately, research on this topic appears to have slowed considerably.

The best conclusion that one may hazard are the following. Many, but by no means all, residents are more satisfied by low-rise housing. High-rises are more satisfactory for residents when they are more expansive, located in better neighborhoods, & residents chose to live in them. Children are better off in low-rise housing; high-rises either restrict their outdoor activity or leave them relatively unsupervised outdoors, which may be why children who live in high-rises have, on average, more behavior problems.

Residents of high-rises probably have fever friendships in the buildings, & certainly help each other less. Crime & fear of crime probably are greater in high-rise buildings. A small proportion of suicides may be attributable to live in high-rises.

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