


## CHAPTER 32

# Quantitative characterization of the housing of the elderly person mining from the 2013 PNAD

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### Eleusy Natália Miguel

Doctor

E-mail: [eleusy.arq@gmail.com](mailto:eleusy.arq@gmail.com)

### Simone Caldas Tavares Mafra

Doctor

E-mail: [sctmafra@ufv.br](mailto:sctmafra@ufv.br)

### Márcia Barroso Fontes

Doctor

E-mail: [mbfontes@ufv.br](mailto:mbfontes@ufv.br)

### ABSTRACT

The increase in life expectancy of the country's population reflects directly on its demographic structure, causing significant changes to occur in the various population strata, especially in the elderly population. Housing for this population is an

important factor, even because housing for the citizen is a physical and emotional need, that is, it is a fundamental question in your life. This article aims to present the housing characteristics experienced by the elderly population of Minas Gerais. To this end, we opted for a descriptive research with secondary data from the PNAD 2013 (IBGE). Both the extraction and the entire data processing and analysis process were performed using the statistical program *STATA – Data Analysis and Statistical Software, version 12.0*. It was concluded that the elderly population of Minas Gerais lives in their own houses made of masonry and covered with slabs or tiles, and they are served with basic sanitation and appliances, such as a stove and refrigerator.

**Keywords:** Elderly Person, Housing, Elderly Person from Minas Gerais.

## 1 INTRODUCTION

The increase in life expectancy of the country's population reflects directly on its demographic structure, causing significant changes to occur in the various population strata, especially in the elderly population. This fact intensifies the interest of scholars from different areas for the theme of aging and its consequences.

Aging is a phenomenon that all individuals go through, that is, it affects all social classes without distinction. The elderly person can be understood as the result of the junction of aging and old age (BERNIZ and BORGES, 2012; MONTEIRO, 2012). It is believed that aging, as it has been observed over time, can be considered a great triumph of humanity, after all, this was a desired condition. In the same perspective, this advance can be seen as the success of public policy investments in the lives of citizens. However, it brings with it important challenges within the scope of social policies that should fully meet fundamental rights and the dignity of the citizen (BERNIZ and BORGES, 2012).

Brazil is inserted in the scenario of population aging, with the Southeast region being the most prominent in this context. The Brazilian Southeast is the region that concentrates the largest population volume in the country, and has the highest percentage of elderly people in relation to other regions. In 2000, the percentage of elderly people was 9.3%, while the country average was 8.6%. The State of Minas Gerais

is the third with the highest rate of elderly people in the Southeast region, losing only to the States of Rio de Janeiro and São Paulo, in this sequence (CAMARANO, 2010).

The Minas Gerais population also exhibits the demographic changes observed in the country. In 2000, the population was around 18 million, while in 1950 it was 7.7 million. Thus, the population more than doubled in 50 years (CAMARANO, 2010).

Starting from the premise that the individual begins to age as soon as he is born, aging should be highlighted as a dynamic process throughout life, which can be successful through active actions and processes throughout life. The habitat of the elderly person favors or not this process.

Considering that the house is the extension of the individual's life, the living of this population segment requires special attention in relation to the changes that appear with advancing age, such as decreased motor coordination, visual and hearing acuity and emotional losses.

The Brazilian reality regarding the housing issue is quite complex, the result of a combination of factors such as the difficulty of access to formal work, the disorderly occupation of urban land, the pressure of the real estate market, the lack of regulation of this market by well-established governments. such as the application and enforcement of existing legislation. Data show that about 50% of the population lives irregularly or illegally in irregular or clandestine subdivisions in tenements and favelas. This population is not served by satisfactory urban infrastructure and equipment, thus suggesting a housing deficit (GENOVOIS, 2001).

In this perspective, Braga (2001) states that this problem directly affects the life of the elderly. Aging with dignity requires favorable conditions in all aspects, including the social, emotional and physical, all guided by legislation and not expropriating this individual to citizenship, since the fact that a person grows old does not change his rights as a Brazilian citizen.

It is also worth emphasizing that housing for citizens is a physical and emotional need, that is, it is a fundamental question in your life. By experiencing unfavorable socioeconomic conditions, the less favored population does not appear in society as citizens with rights. It is in this sense that the low-income Brazilian elderly population is subjected to a situation of social risk, due to the difficulty of accessing adequate housing, health, leisure, among other rights that are guaranteed by law, but little implemented in practice (CAMARANO, 2010).

The proposal of the World Health Organization (WHO) that refers to active aging mentions that the elderly individual needs to enjoy effective actions that guarantee health, community/social participation and safety (MONTEIRO, 2012). In this way, policies aimed at this portion of the population are fundamental and housing is an important component in guaranteeing this tripod.

Considering this point of view, regarding Brazilian aging and housing for the elderly, it can be inferred that, researching the profile of this population and the way in which this population segment inhabits, are configured in a contemporary and pertinent reflection, in the sense of focus on this population

that grows significantly in Brazil, and of course, in the State of Minas Gerais as well, a growth that reflects in all organisms of society.

This article is the result of a master's thesis, by the Federal University of Viçosa, which characterized the elderly and their living in the State of Minas Gerais. Housing for the elderly can be seen as an important parameter of well-being and quality of life. Thus, this article deals with housing for the elderly in the State of Minas Gerais.

## 2 METHODOLOGY

### *Research characterization:*

To understand the elderly person-housing relationship, a descriptive approach was used, which best outlines, organizes and summarizes the set of observed characteristics.

According to Gil (2010), descriptive research is based on explaining the characteristics of the object, which is in line with the purpose of this research. To meet the descriptive approach, quantitative methods were used, with secondary data from the PNAD – National Household Sample Survey 2013.

### *Sample Description:*

We chose to use the 2013 data because they are the most up-to-date information and because they were available during the period in which this article was being prepared.

In principle, the information obtained from the PNAD database consisted of the file of people and households distributed throughout the national territory. However, depending on the nature of the work, a cut was made, delimiting the households established in the State of Minas Gerais in which at least one person aged over 60 years lived. So that the data could support the understanding of the objectives of the study and starting from the premise that a young elderly person may have different characteristics from the oldest elderly, the ages were sectioned. Thus, the contingent of elderly people, defined in Brazil as individuals aged 60 and over, was subdivided by age into three groups

It is noteworthy that the PNAD comprises a representative sample of the population. However, in the present research, we used the specific command *fweight = weight\_pes*, in order to expand the results to the entire population.

### *Method of data analysis:*

Both the extraction and the entire data processing and analysis process were performed using the statistical program *STATA – Data Analysis and Statistical Software, version 12.0*, licensed by the Federal University of Viçosa – UFV, with production of tables and graphs, generating a synthesis for better visualization of the variables used in this study.

### 3 RESULTS AND DISCUSSIONS

The population in the state of Minas Gerais, in 2013, consisted of 20,627,585 people, of which 10,053,140 were men and 10,574,445 were women, which corresponds to 48.74% men and 51.26% of women. The elderly population, on the other hand, was equivalent to 13% of the total population and was composed of 2,796,421 individuals, of which 1,243,801 were men, 44.48%, and 1,552,620 were women, 55.52%.

Most elderly people live in urban areas, 2,269,749 (81.17%) to the detriment of 526,673 (18.83%) living in rural areas. However, their distribution by sex is different. In urban areas, there are more elderly women, 1,299,809 (57.27%), which can be understood by the fact that living conditions are supposedly easier in the city, especially for elderly women who often live alone. In rural areas, there is a higher incidence of elderly men 273,862 (52%).

In relation to race, a balanced value of the white and non-white population was verified, that is, there is a difference of only 1.58 percentages more of white elderly people, however, the differences become more expressive when the analysis is carried out back to age groups. In the group of elderly people over 80 years of age, the category of white color is more frequent, 59.49%, compared to 40.51% of non-whites. Among the youngest, in the group of people between 60 and 69 years old, 48.09% are white compared to 51.97% of non-white people.

In terms of education, it was found that the training of most elderly people is limited to elementary school (78.22% did not go beyond elementary or elementary school). This data allows us to infer that our elderly people are poorly educated. Even with teaching incentives aimed at the elderly, such as adult education and university for the elderly, while 12.07% completed high school, only 9.28% are graduates and 0.43% obtained a degree in some postgraduate .

It is clear, according to Morais (2002), that access to adequate housing and urban infrastructure services promote social inclusion and can fight poverty. One of the reasons housing is considered a basic need and a citizen's right. "Housing is a meritorious good, which presents high positive externalities in terms of social well-being" (MORAIS, 2002 , p.110).

Regarding the type of household where the elderly person resides, the house was the highest occurrence when analyzing people over 60 years of age in Minas Gerais. The majority live at home, 89.70%, and 10.12% in apartments. However, when evaluating the three groups divided by age, it was noticed that the older the person, the lower the demand for living at home. In Group 01, 90.04% were observed; and 89.34%; and 87.88% for Group 02 and 03, respectively, lived at home. It can be inferred, then, that, throughout life, the elderly person tends to move to apartments, motivated by the fact that they become dependent on younger people who access this housing typology more frequently. Many need care from family members, who are the first point of support for the elderly individual.

Of the 2,082,553 households, 87.36% were owned and, in 8.12%, the occupancy condition was in rented properties. This statement is also observed in the different groups studied. In Group 01, 86.67%, and

in Group 02, 87.87% lived in their own homes, while in Group 03, 95.29%. One hypothesis for this situation is that the older the elderly person, over the years, the more financial resources he accumulates, enabling him to buy his own home. This is associated with the fact that owning the property in which one lives is a desire rooted in Brazilian culture. As Mirela Camargos , a researcher at the FJP puts it, this property condition differs from other Minas Gerais inhabitants. While 84.90% of individuals over 60 years old lived in their own homes, only 65.30% are owners when analyzing the group from 15 to 59 years old.

It was found that most homes that had at least one resident elderly person had a bathroom, 99.22% of the total. This pattern was maintained in the three groups. The presence of a bathroom at home represents an improvement in the hygiene, comfort and health conditions of the family. The bathroom in the house is one of the necessary requirements for habitability <sup>1</sup>in the house (BARTH *et al* , 2009; MASSENA, 2002; MIRANDA, 2005 ).

As for the number of rooms per dwelling, the pattern observed was 2 and 3-bedroom dwellings, that is, comprising dwellings with 4 to 6 rooms and 7 to 9 rooms. The highest incidence was in households with 4 to 6 rooms, 48.98%, and those with 7 to 9 rooms, 38.52%. This distribution occurred both in Group 01, with 47.56%, and in Group 02, with 47.59%; because they lived in a house with 4 to 6 rooms; group 03, 49.94%, lived in properties with 7 to 9 rooms. It can be inferred that the elderly start to be included in the Extended Family or in the Compound Household due to issues related to the dependence of the elderly person, physical care and assistance in day-to-day activities, such as managing their income or even caring for the elderly. of the House. This implies a greater number of people co - living, consequently, a dwelling with a greater number of rooms.

Table 01: Percentage Distribution of Housing Characteristics for Elderly People from Minas Gerais

Variables	Distribution by age section			
	Total Elderly	Group 01 60 to 69 years	Group 02 70 to 79 years	Group 03 from 80
<b>Elderly distribution</b>	100	55.17	42.76	2.07
<b>Type of Household</b>				
<b>House</b>	89.70	90.04	89.34	87.88
<b>Apartment</b>	10.12	9.88	10.40	12.12
<b>Convenient</b>	0.11	0.08	0.16	0.00
<i>Missing</i> <sup>2</sup>	0.07	0.00	0.10	0.00
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Domicile Occupancy Condition</b>				
<b>Own</b>	87.36	86.67	87.87	95.29
<b>rented</b>	8.12	8.33	8.10	2.70
<b>given</b>	4.31	4.80	3.79	2.01
<b>Other Condition</b>	0.14	0.15	0.14	0.00
<i>Missing</i>	0.07	0.05	0.10	0.00
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

<sup>1</sup> *Habitability* : the dwelling must be habitable, having adequate physical and health conditions. (Source: MIRANDA, Lívia. Human development and housing in Recife p. 02).

<sup>2</sup> It is the absence of values for certain variables caused by records with incomplete data or non-response situations.

<b>Number of Rooms in the Housing</b>				
<b>1 to 3 Rooms</b>	2.13	2.24	2.09	0.00
<b>4 to 6 Rooms</b>	48.98	47.56	47.59	35.93
<b>7 to 9 Rooms</b>	38.52	37.85	38.84	49.94
<b>10 to 15 Rooms</b>	10.00	11.72	10.50	14.13
<b>16 to 24 Rooms</b>	0.37	0.58	0.88	0.00
<i>Missing</i>	0.00	0.05	0.10	0.00
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>Existence of Bathroom</b>				
<b>Yea</b>	99.22	99.31	99.13	98.68
<b>No</b>	0.71	0.64	0.77	1.32
<i>Missing</i>	0.07	0.05	0.10	0.00
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Own elaboration (2016).

The spatial dimensioning of the housing compositional environments (such as bedrooms, bathrooms, kitchens, among others) is one of the factors that most influence the suitability for the function performed by a given environment. Spaces with very large or very small dimensions in relation to the specific use of the room, for example, a bathroom, can negatively affect the use of this environment ( BRANDÃO , 2006; REIS and LAY, 2002).

Access to urban services plays an important role in reducing urban poverty and preserving the health and well-being of family members. According to Massena (2002):

[...] the services, being a constant process of services to society, must be qualified not only in meeting the needs of hygiene and comfort of the family inside their dwelling, especially those of basic sanitation (water, sewage and waste solids), electricity, gas, telecommunications, but also in meeting the needs of mobility, safety, health, education, leisure, sanitation (drainage, sweeping the streets) and which are provided outside the home unit (MASSENA, 2002). , p. 06).

Regarding the materials used in the shape of the house (wall and roof), it was noted that most of the dwellings were made of masonry, 99.56%; and that their coverages were 71.38% of tiles and 26.87% of slabs, extending this trend to the three groups.

Regarding the urban infrastructure of basic sanitation services, it was found that almost all households were supplied with piped water, that is, in 98.31%. It is worth noting that, within the interface of the quality of life concept, an admittedly subjective concept, there is agreement on the indicators that express basic and sanitation services such as water, garbage, lighting and urban equipment such as hospitals, squares, etc. Access to these elements that promote quality of life, and which are supported by law, makes older people feel more secure, respected and valued ( ALMEIDA ; GUTIERREZ 2007; VECCHIA , 2005).

Regarding sanitary sewage, it was observed that most houses were served by the sewage or rainwater collection network. In Group 01, 74.82% of the households were connected to a collection network; in Group 02, 74.30% and, in Group 03, 66.35%. According to Razzolini and Gunther (2008), the lack of adequate water supply puts the population at risk to health, favoring the incidence of contagious infectious diseases, especially affecting children, the elderly, malnourished and immunocompromised .

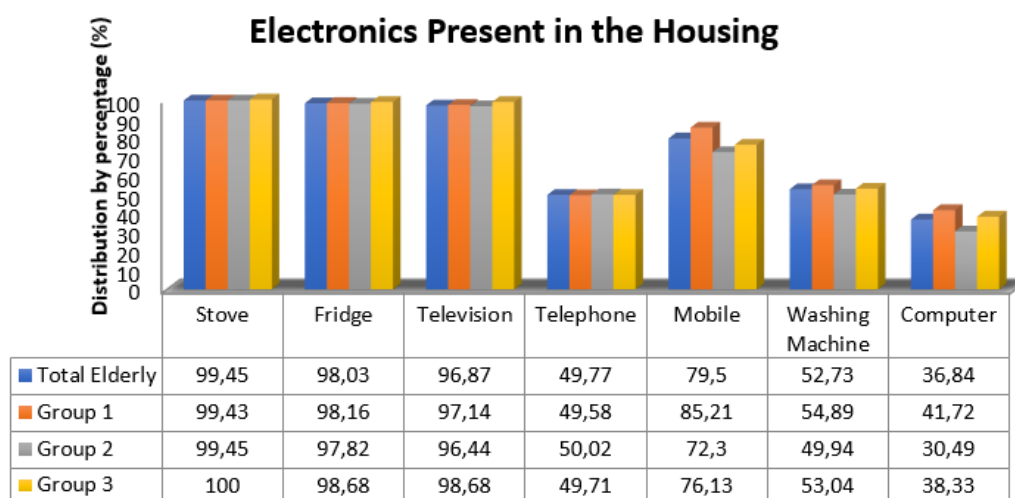
The absence, or even the inadequate and/or precarious supply of housing, basic sanitation and urban infrastructure, favors the social risk of the population exposed to these living conditions. Furthermore, the qualitative housing deficit indices increase (BONDUKI, 2000; MORAIS, 2002; PASTERNAK, 2003 ). These factors reinforce the existing pattern of spatial segregation and social exclusion. Thus, it is evident that housing has “[..] a strong impact on reducing poverty and improving the quality of life in Brazilian cities” (MORAIS, 2002, p.117).

The form of lighting revealed that almost all, 99.82% of households, were supplied by the electric lighting system and 0.11% by other sources of lighting, such as kerosene fuels and gas.

The reality regarding the destination of household waste behaved in the same way for the three groups. Garbage collected directly or indirectly by cleaning services or companies was 85.77% of the total, while 12.76% of residential waste was burned or buried on the property and the remaining 1.40% had another destination, such as thrown into rivers, land commons and others.

The technological advances of the 20th century reflected directly on the individual's life. Access to durable consumer goods, such as home appliances, encouraged the improvement of the lives of Brazilian families, as pointed out by Almeida and Guitierrez , (2007).

Graph 01: Percentage Distribution of Domestic Equipment Present in the Household, by Age Groups of Elderly People in Minas Gerais.



Source: Own elaboration (2016).

Durable goods associated with quality urban services, accessibility, urban mobility and personal safety; significantly improve the individual's living conditions, favoring their physical and mental well-being . Furthermore, they add value to housing, making it more qualified and adequate (ALVES, 2004; MASENA, 2002).

The most frequent household appliances were: the stove, with 99.45%; the refrigerator, with 98.03%, and the color television, with 96.87%. As expected, Groups 01 and 02 follow this same percentage frequency. Only Group 03 had a slightly higher percentage in the three appliances, corroborating the hypothesis that older elderly people have more accumulated resources. The refrigerator is a durable good

that is fundamental to the well-being and health of families, due to its nature of food preservation and also for adding value to income, since it favors the reduction of food loss. The refrigerator occupies the third place in the ranking of Brazilian consumer goods, and just like the stove, which is present in almost 100% of Brazilian households, they are directly linked to food and family health (ALVES, 2004).

Regarding the existence of a landline telephone, about half of the households with elderly people had such equipment, that is, 49.77%. The cell phone device was a consumer good with a very different existence in relation to the fixed one, since it was found in 79.50% of the households: in Group 01, with 85.21%; in Group 02, with 72.30%, and finally, in Group 03 with 76.13%. For Silva (2011), adherence to the use of electronic devices predisposes factors such as age, sex, educational level, economic level and housing. It is noted that the elderly people who are more receptive to technology are males, living in urban areas, with higher education and economic level.

Also in Graph 01, it was observed that in 52.73% of the households there was a washing machine and in 36.84% a microcomputer was present. It was observed in the 2000 census that 33% of households in Brazil had a washing machine. The busy life of most families makes this equipment of great value in the shape of domestic activities (ALVES, 2004).

The microcomputer is in full growth and diffusion in Brazilian society. It acts as a vehicle for work, leisure and helps in educational activities, and has been changing the current way of life (ALVES, 2004; REQUENA, 2002). However, [...] “The presence of microcomputers is essential to assess the number of residents connected to the Internet. The “Web” is an increasingly important interaction space for communication between people and for the creation of networks of work, education, citizenship” (ALVES, 2004, p. 34). Here, it would be appropriate to reflect, not necessarily the household that has a microcomputer and internet access has its elderly as users, many are not comfortable with technology and sometimes discouraged by their own family members.

#### **4 FINAL CONSIDERATIONS**

Housing is a component in the life of the elderly that deserves attention. It is in the habitat that this individual lives his daily experiences; moreover, it is inside the house that the elderly person tends to develop artifices and skills to deal with the inherent challenges of advancing age.

The research showed that the socio-demographic profile of the elderly person from Minas Gerais and the way of living have been changing. Individuals over 60 years old mostly live in their own 2 or 3 bedroom house made of masonry. Schooling shows a growing curve, because the younger the elderly person, the more educated, revealing possible changes in the profile of this contingent in the future. There are more elderly women than elderly people and a significant amount of this population lives alone and, for the most part, in urban areas.

Along with urban infrastructure services, access to durable goods at home gives the elderly person an improvement in living conditions, favoring their physical and mental well-being. Home appliances and

electronics are present in most homes of elderly people, especially the refrigerator with 99.45%; for the stove with 98.03% and for the televisions with the percentage of 96.87%. Information and communication equipment such as TV, telephones and microcomputers allow the elderly to interact with the extra-domestic environment.

Adequate housing is essential for the elderly to live in a healthy way, experiencing conditions that favor their well-being. The spatial organization of a house must promote this well-being, in addition to being compatible with the formation of the family (or families) that live there . Housing infrastructure and urban infrastructure where housing is located are fundamental components in the physical quality of the space where you live, thus providing housing with a fundamental character in the life of the elderly.

## REFERENCES

ALMEIDA, M. A. B.; GUTIERREZ, L. G. Índices de qualidade de vida no Brasil: instrumento para análise crítica dos indicadores e políticas públicas. **Revista Gestão Industrial**. Universidade Tecnológica Federal do Paraná - UTFPR Campus Ponta Grossa - Paraná - Brasil ISSN 1808-0448 / v. 03, n. 03: p. 148-159, 2007.

ALVES, J. E. D. **As características dos domicílios brasileiros entre 1960 e 2000**. Rio de Janeiro: Escola Nacional de Ciências Estatísticas, 2004.

BARTH, F.; BECSI, P. T.; BUNN, J. **Banheiro Pré-fabricado voltado para Habitação de Interesse Social**. In: II Encontro Nacional de Pesquisa-Projeto-Produção de Concreto Pré-moldado, 2009, São Carlos. II Encontro Nacional de Pesquisa-Projeto-Produção de Concreto Pré-moldado. São Carlos: Editora UFSCAR, 2009. v. 1. p. 1-6.

BERNIZ, M. V.; BORGES, M. C. (org). **Políticas Públicas para um país que envelhece**. São Paulo: Martinari, 2012.

BONDUKI, N. **Política habitacional e inclusão social no Brasil: revisão histórica e novas perspectivas no governo Lula**. 2000 Disponível em [http://www.usjt.br/arq.urb/numero\\_01/artigo\\_05\\_180908.pdf](http://www.usjt.br/arq.urb/numero_01/artigo_05_180908.pdf). Acesso em 05.06.2014.

BRAGA, P. M. V.. **Envelhecimento, Ética e Cidadania**. 2001. Disponível em <http://direitodoidoso.braslink.com/pdf/Envelhecimento.pdf>. Acesso em 21.05.2014.

BRANDÃO, D. Q. Avaliação da qualidade de arranjos espaciais de apartamentos baseada em aspectos morfo-topológicos e variáveis geométricas que influenciam na racionalização construtiva. **Ambiente Construído**, v. 6, n. 3, p. 53-67, 2006.

CAMARANO, A. A.; KANSO, S. As instituições de longa permanência para idosos no Brasil. **Revista brasileira Estudo Populacional**, Rio de Janeiro, v. 27, n. 1, p. 233-235 jan./jun. 2010. Disponível em [http://www.abep.nepo.unicamp.br/docs/rev\\_inf/vol27\\_n1\\_2010/vol27\\_n1\\_2010\\_notapesquisa\\_p233a235.pdf](http://www.abep.nepo.unicamp.br/docs/rev_inf/vol27_n1_2010/vol27_n1_2010_notapesquisa_p233a235.pdf) Acesso em 03 julho de 2014.

CAMARGOS, M. C. S. *Fundação João Pinheiro*. Disponível em <http://www.fjp.mg.gov.br/index.php/noticias-em-destaque/2866-governo-de-minas-lanca-estudo-sobre-populacao-acima-de-60anos> Acesso em 02 de Setembro de 2015.

GENEVOIS, M. L. B. P; COSTA, O. V. Carência Habitacional e Déficit de Moradias: Questões Metodológicas. **São Paulo Perspec**. São Paulo, v. 15, n. 1, Jan. 2001. Disponível em [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S010288392001000100009&lng=en&nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S010288392001000100009&lng=en&nrm=iso) . Acesso em 03 Junho 2014.

GIL, A. C. **Como elaborar projetos de pesquisa**. Atlas São Paulo, 2010.

MASSENA, R. M. R. **Tema habitação na Pesquisa por Amostra de Domicílios (PNAD)**. Rio de Janeiro: IPEA, 2002.12p. ((IPEA. Texto para Discussão; 895)).

MIRANDA, L. Desenvolvimento humano e habitação no Recife. **Atlas do desenvolvimento humano no Recife [CD-ROM]**. Recife: Secretaria de Planejamento Participativo, Obras e Desenvolvimento Urbano e Ambiental, 2005.

MORAIS, M. da P.. **Breve diagnóstico sobre o quadro atual da habitação no Brasil**. Ver. POLÍTICAS SOCIAIS: acompanhamento e análise. 2002.

MONTEIRO, L. C. A. **Políticas públicas habitacionais para idosos: um estudo sobre condomínios exclusivos.** Tese (Doutorado em Engenharia Urbana)- Centro de Ciências Exatas e de tecnologia. Universidade Federal de São Carlos, São Carlos (SP), 2012. 145f.

PASTERNAK, S. Um olhar sobre a habitação em São Paulo. **Cadernos Metr pole. ISSN (impresso) 1517-2422; (eletr nico) 2236-9996**, n. 09, p. 81-117, 2003.

REQUENA, C. Habita o e Novas M dias: Equipamentos e seus Usos no Habitar Contempor neo. **Relat rio final de Inicia o Cient fica FAPESP, S o Carlos: Nomads-USP**, 2002.

REIS, ATL. Adi es espaciais: rea es dos residentes e a constru o do espa o habitacional responsivo. **IX ENTAC-Encontro Nacional de Tecnologia do Ambiente Construido-Coopera o e Responsabilidade Social**, 2002.

SILVA, D. O. **Uso de aparelhos eletr nicos por idosos em ambientes dom sticos.**2011. 76f. Disserta o (Mestrado) – Programa Interunidades Bioengenharia – Escola de Engenharia de S o Carlos, Universidade de S o Paulo, S o Paulo. 2011

VECCHIA, R. D.; RUIZ, T.; BOCCHI, S. C. M.; CORRENTE, J. E.. Qualidade de vida na terceira idade: um conceito subjetivo. **Revista Brasileira de Epidemiologia**. vol.8 no.3 S o Paulo Sept. 2005.