

**Quality assessment of Social Interest Housing in Latin America: a
systematic review**

Marcela Luana Sutti

Master Student, UNESP, Brasil
marcela.sutti@unesp.br

Maria Solange Gurgel de Castro Fontes

PhD Professor, UNESP, Brasil
solange.fontes@unesp.br

Renata Cardoso Magagnin

PhD Professor, UNESP, Brasil
renata.magagnin@unesp.br

SUMMARY

Historically, Latin America has accumulated problematic issues regarding the quality of social housing, as it does not meet the minimum standards (requirement) of adequate housing listed by the United Nations. These problems are identified through non-compliance with certain parameters and quality indicators, therefore, there is a need for further research into the evaluation of housing quality. Based on this understanding, this paper presents a systematic review on how the quality of social housing has been assessed in Latin America. The "Systematic review method" was applied on the Scielo and CAPES periodic platforms, based on the selection of articles that fit the theme and (was) carried out in the stages of: scope definition, planning of search words, systematic research, screening of results, eligibility, and discussion of the results. The sample obtained consisted of 34 articles, within which, a concentration of publications centered on Southern Brazil and the presence of seven different thematic approaches, which indicated the multidisciplinary of the subject, highlighting the method of 'Post-Occupation Assessment', in addition to gaps in scales-based assessment of housing and in the consideration of quality parameters classified as essential by UN-HABITAT (2015).

KEYWORDS: Systematic literature review. Quality assessment. Social housing

1. INTRODUCTION

The quality of housing consists of several factors which must be considered together in order to offer the occupant adequate housing. Pedro (2000, p. 9) defines housing quality as "the adequacy of housing and its surroundings to the immediate and foreseeable needs of residents, making individual needs compatible with those of society, and encouraging the considered introduction of innovations that lead to development". The author also points out the following aspects of residential quality: architectural and urban quality, environmental quality, constructive quality, social quality and the quality of the process.

In Latin America, access to housing has been considered a problem by states since post-World War II, which was a period of underdevelopment and poverty. Adequate housing as a right has spread very slowly, which has caused cities to expand in a deregulated manner which forms precarious settlements, resulting in substandard housing for the vulnerable socioeconomic strata that do not have access to the housing market. The institutionalization of housing policies is linked to this process. Most Latin American governments had instruments and institutions specialized in housing solutions in the mid-20th century (UN-HABITAT, 2015) with a focus on improving housing quality.

According to the United Nations (UN-Habitat, 1996) in the "Programa Hábitat. Conferencia de las Naciones Unidas sobre los Asentamientos Humanos", Istanbul (Turkey), 1996, the notion of adequate housing includes minimum standards of material quality, adequate space, access under safe tenure conditions, comfort, sanitation, and adaptation to the environmental conditions of the surroundings. Also, it includes the capacity of the housing itself to provide access to urban and social opportunities (introducing aspects associated with location, transportation, sources of work, social facilities, and public spaces) and it is necessary that this access be at a fair economic cost for the various social groups in need.

However, some research on housing quality shows that not all housing meets the needs of its residents and the basic parameters that correspond to adequate housing defined by the United Nations Commission on Human Rights (UNITED NATIONS, 1991):

Security of tenure is related to housing that offers a degree of security of tenure to its occupants and guarantee legal protection against forced evictions, persecution, and other threats (MARICATO, 2001; ROLNIK, 2015);

Availability of services, materials, facilities and infrastructure, deals with access to drinking water, basic sanitation, energy for cooking, heating, lighting, food storage or garbage collection (ORNSTEIN, 1992; MARICATO, 1997);

Affordability is related to the cost of housing in relation to the income of the occupants, and should not threaten or compromise the exercise of other human rights (BONDUKI, 2008; ROLNIK, 2015);

Habitability is the set of aspects that ensure physical and structural security that provides adequate space as well as protection against cold, damp, heat, rain, wind, and other health and structural hazards (BOUERI, 2004; MONTANER, 2011);

Accessibility addresses the specific needs of disadvantaged and marginalized groups in both social and technical aspects (ROLNIK, 2015; ABNT, 2015);

Location involves close proximity to employment opportunities, health-care services, schools, day care centers, other social facilities, and the distance from polluted or dangerous areas (ATHENS CHARTER, 1933).

Cultural adequacy when considering that housing must respect and take into account the expression of cultural identity (RAPOPORT, 1969).

In addition to these previously mentioned characteristics of housing quality, others to be considered are: irregular dwellings (which are not properly registered), the quality of its insertion in the urban or rural surroundings, the level of physical and social integration, access to social facilities, services, opportunities for work, green areas. Also, the structural conditions, the conditions of sanitation, the level of comfort, and the conditions of the inadequate material are taken into account.

A survey conducted by UN-HABITAT (2015) with Latin American countries (Argentina, Brazil, Chile, Ecuador, Mexico, Nicaragua, Dominica, Suriname and Uruguay) listed the parameters/indicators of adequate housing. The results showed that the availability of services was the criterion listed in first position by all countries. The indicators listed in the ranking, in sequence order, were habitability (2nd position - defined by 9 countries); security of tenure (3rd position - 8 countries); location, urban accessibility and constructive material (4th position - 7 countries); economic accessibility (5th position - 6 countries); suitability or cultural belonging and other criteria (6th position - 4 countries).

The 'Banco Interamericano de Desenvolvimento' (BID) published the result of a survey in 2012, which revealed that Latin America still has low housing quality rates, as most homes lack infrastructure. The most frequent cases are those without access to electricity or sanitation (21%), but there are also houses with inadequate construction materials, without flooring and with excess residents, which are all situations that are harmful to health. Also, 11% of families do not have regularized housing, without legal titling, and security of tenure.

According to Pedro (2020, p. 55), "the methods of analysis contribute to the knowledge and characterization of reality, and the methods of evaluation allow the classification and improvement of solutions." As the Latin America social housing problem is focused on lack of quality and adequate housing, there is a need to improve the quality assessment of these homes in order to promote greater accuracy in published research on the subject. In this context, a systematic review of the literature can point out the positive aspects and the gaps in the published research on the subject, which can provide the basis for possible improvements in the housing programs themselves.

2. OBJECTIVE

This paper aims to present a systematic review on the topic of housing quality in Latin American social housing.

3. METHODOLOGY

The systematic review of the literature on housing quality followed the definitions presented by Galvão and Ricarte (2019) and Siddaway (s.d.), which suggest the delimitation of the issue to be addressed in the review, and then the selection of bibliographic data for consultation, elaboration of strategies for advanced search, selection of texts and systematization of information found, which has been defined in six stages: scope, planning, research, screening, eligibility and discussion of results.

1st stage - Scope: the definition of the issue guiding the research and verify if there are already systematic reviews on the subject.

The guiding question of this article refers to the identification "how housing quality is being evaluated in social housing in Latin America".

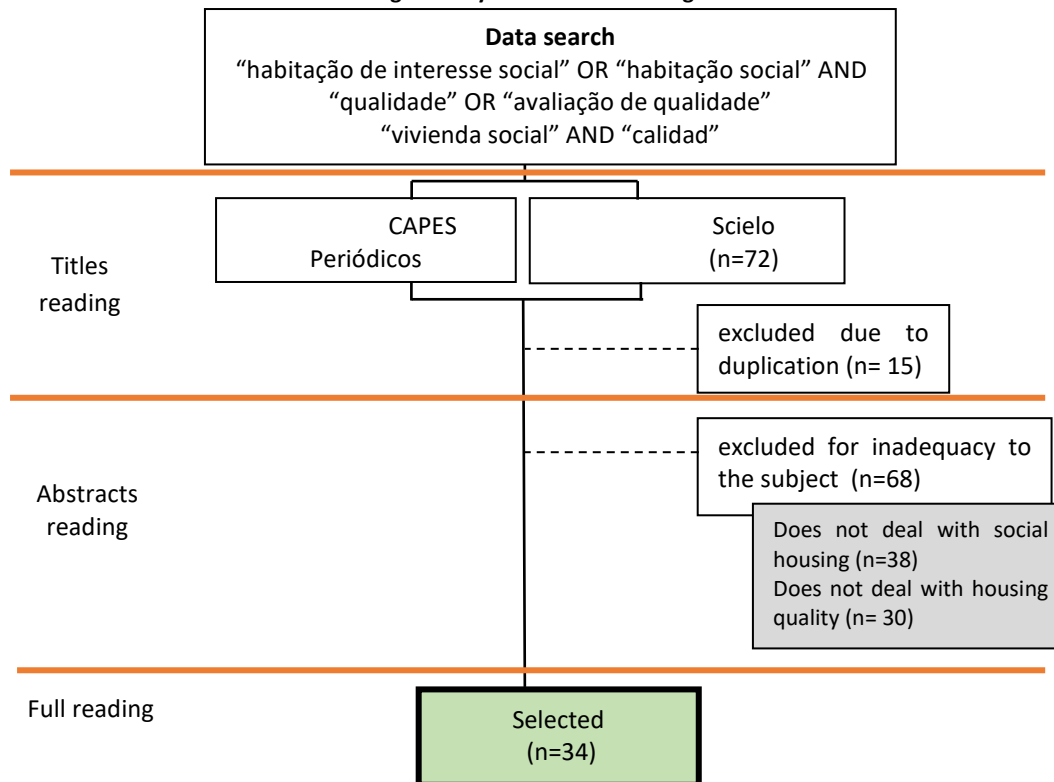
2nd stage - Planning: the definition of keywords to be used in searches; formulation of inclusion and exclusion criteria, and the recording of all searches and results. The keywords used in Portuguese were: Habitação de Interesse Social (social housing); qualidade (quality); avaliação de qualidade (quality assessment); and the keywords used in Spanish were: vivienda social (social housing); calidad (quality), (Figure 1).

3rd stage - Searching: To perform searches on at least two different relevant platforms.

The search was carried out in the period of July 2020 and the databases used were CAPES periodicals and SciELO, whose publications are associated with Latin American countries, with articles in Portuguese and Spanish contemplating the themes: social housing and housing quality assessment (Figure 1). The CAPES portal directs searches to other platforms, the most frequent were the 'Directory of Open Access Journals', 'Arquitetura Revistas Unisinos', and 'Hygeia'.

4th stage - Screening: To read the article's title and abstract and select those appropriate to the subject in question. The first screening referred to the reading of the title of the articles. Those that were in duplicity in the platforms used for the search were excluded (Figure 1). Next, the reading of the abstract was performed. The 102 abstracts selected in this stage were classified into two themes: 'articles that encompass the social housing theme' and 'articles that encompass the housing quality theme'. From this selection a thorough reading of the topic material was carried out (Figure 1).

Figure 1: Systematic review diagram



Source: The authors, 2020.

5th stage - Eligibility: To organize texts for reading, to select quantitative and qualitative data to be collected; to perform analysis of results in a systematic way with identification of links between studies.

In this stage, the analytical reading of the papers were carried out in full, for the subsequent analysis of qualitative and quantitative information, with the purpose of identifying the parameters that would enable a comparative investigation regarding the quality of Social Housing. The reading was directed to collect data on: the year of publication, authors, the journal in which it was published, the university where it was produced, the location researched, subject of origin, keywords, objectives, theoretical basis, thematic approach, methods and techniques used, scales of evaluation, parameters identified, results, and conclusions.

When searching the databases cited, with the keywords selected, a large number of results were noted that did not fit the theme of "social housing" (38 articles) and therefore were excluded. Among those were ones related to the area of health, quality of life, quality of life of the elderly, diseases, or also political issues. Other excluded articles were those that, despite covering the topic of social housing, did not have in their approach the evaluation of housing quality (30 articles), some cases included only public policies or urban analysis, among other topics. Thus, a result of 34 selected articles were obtained for the review (Figure 1).

Global issues: The set of keywords analyzed in this research were those which were identified by the authors. All words that were repeated at least once, were translated into Portuguese when necessary. Some rearrangements were needed in order to allow a more precise analysis. The word "qualidade" (quality) was considered when found as an isolated term and when it formed other expressions such as "qualidade urbana" (urban quality), "qualidade

espacial" (spatial quality), "qualidade de vida" (quality of life), and "indicadores de qualidade" (quality indicators). The key words "empreendimento de habitação de interesse social" (social housing enterprise) or "vivienda prioritária" (priority housing) were considered as "habitação de interesse social" (social housing). The words related to "habitação, habitar, habitat, conjunto habitacional" (housing, to inhabit, habitat, housing complex) were included in the same category and considered to be of the same value.

Other elements which were evaluated are: the University that conducts the research and the place of study; Thematic approach; Methods and techniques; Scales; and Parameters. The form of analysis of the first item was that of a word cloud. Data on the research university and study sites were collected and analyzed quantitatively through the distribution of points on the map of Latin America in addition to the study cities presented by the sampling and the other data through statistical techniques.

Specific topics associated with housing quality: Based on the definitions given by UN-HABITAT (2015), the following scales of assessment were defined: i) housing unit analysis (materials, space, comfort, and sanitation), ii) physical and climatic environment (climate adaptation and resilience, natural and man-made risks, energy usage) and iii) urban and social environment (availability, access and quality of services, social facilities public spaces, green areas, employment opportunities and sociability). In addition to the individual analysis of the parameters of each scale of assessment, an analysis of the scales encompassed by the studies was conducted. All this data was evaluated using statistical techniques.

Other parameters defined by the UN (1991) were also evaluated: security of tenure (degree of security of tenure); availability of services, materials, facilities and infrastructure (drinking water, basic sanitation, energy for cooking, heating, lighting, food storage, or garbage collection); economy; habitability, (physical and structural security, protection against cold, damp, heat, rain, wind, other hazards to health); accessibility; location (employment opportunities, health services, schools, daycare centers and other social facilities); and cultural suitability.

To analyze the parameters obtained in the systematic review, we return to the research conducted by UN-HABITAT (2015) in Latin American countries on the main criteria and indicators used to define adequate housing, which addresses the criteria in order of relevance: availability of basic services, habitability, security of tenure, location, urban accessibility, standard of constructive material, economic accessibility, suitability or cultural relevance, and other criteria, respectively. The results of the data collected on the evaluation parameters were represented through a bar chart.

6th stage - Results and analysis: To summarize and discuss the results impartially and point out the strengths and limitations of the literature selected in the sample.

4. RESULTS AND ANALYSIS

Analysis of keywords shows that the terms "habitação de interesse social", or its abbreviation "HIS", were the most frequent, appearing 25 times in 34 texts. It should be noted that from the sample of 32 revised texts, all articles present the keyword "habitação" or versions related to it¹. Other terms identified were "habitação de interesse social", "qualidade" and

¹ The articles that do not present keywords related to "habitação" are "GIRALDO, W.; HERRERA, C. Ventilación pasiva

Figure 3: map with demarcation of the study sites of the reviewed articles



Source: The authors, 2020.

Ten of the works originated from studies conducted by UFRGS, a very significant number in this sample. UEL (Universidade Estadual de Londrina) had three publications. The other universities presented only 1 or 2 publications. It is noted that UFRGS has a research group called NORIE (Núcleo Orientado para a Inovação da Edificação), in which the professors who authored the articles from the institution participate. Five of the papers were developed by Professor Luciana Inês Gomes Miron, together with PhD student Deyvid Aléx B. Monteiro, and four papers were developed by Professor Carlos Torres Formoso with collaborations from several other authors.

It is worth mentioning that this discussion applies only to the sampling in question, of publications filtered by 'SciELO' and 'CAPES Periódicos' databases, and there may be different results when adding other databases. However, in relation to the number of articles reviewed, the geographical concentration of studies in the south of Brazil is significant and should be highlighted here.

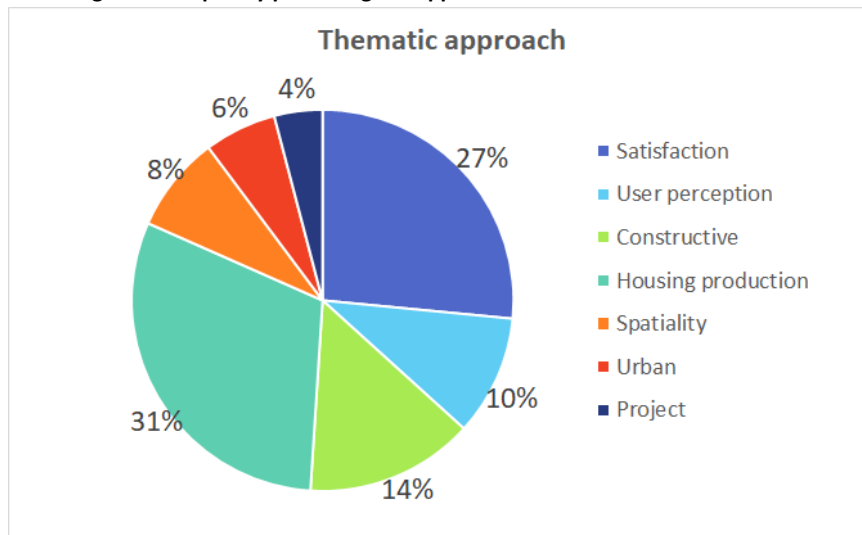
The analysis of the themes approached by the articles showed that the most frequent one was 'housing production', which reflects the great concern with the housing deficit, a relevant theme, but one which is not addressed in this research. A total of 15 articles (HORONGOSO; BOGO, 2018; LONGSDON *et al. et al.*, 2019, 2020; FORMOSO *et al.*, 2011, 2018, 2019; ARAGÃO, 2016, 2018; TAMI, 2020; TAUBE, 2017; HERRÁN-CUARTAS, 2017; REIS, 2010; FISCARELLI, 2018; ESCALLÓN, RODRÍGUEZ, 2010; VÉLEZ *et al.*, 2012; JIMÉNEZ *et al.*, 2007) dealt with this issue, which attempts to correlate the qualitative deficit with mass housing production, resulting from the most popular social housing policies (Figure 4).

The themes of 'satisfaction' and 'user perception' were classified separately by the authors, despite these terms having pragmatic commonalities, being both about the resident's opinion on the quality and conditions of their housing. The term 'satisfaction' is used by DEZEN-

KEMPTER *et al.*, 2015; MONTEIRO; MIRON, 2016, 2017; IRABI *et al.*, 2017; ARAGÃO; HIROTA, 2016; SHIGEHARU; KANAHIRO, 2017; FORMOSO *et al.*, 2011, 2015; HERRÁN-CUARTAS, 2017; PÉREZ, 2014; REIS; LUZ, 2010; DELGADO-HERNÁNDEZ *et al.*, 2013, and the term 'user perception' is used by TABBAL *et al.* 2015, MONTEIRO and MIRON, 2016, 2017, and LIMA and FORMOSO 2011. Together, they appear in 18 of the 34 articles reviewed, which signifies that most of the articles consider the resident's point of view as an important element in assessing housing quality.

Another approach that appeared significantly in the review was the 'constructive' approach (BERR; FORMOSO, 2012; RANGEL *et al.*, 2019; KRUGER; LAROCA, 2009; BERR *et al.*, 2015; CARRARO; DIAS, 2014; RASTREPO-ZAPATA; CADAVID-RESTREPO, 2019; GERGHAN *et al.*, 2015). Seven articles considered such issues, identified at various stages of construction, from foundation to the interior/exterior finishes, with emphasis on the materials used and the evaluation of thermal, acoustic, and visual comfort.

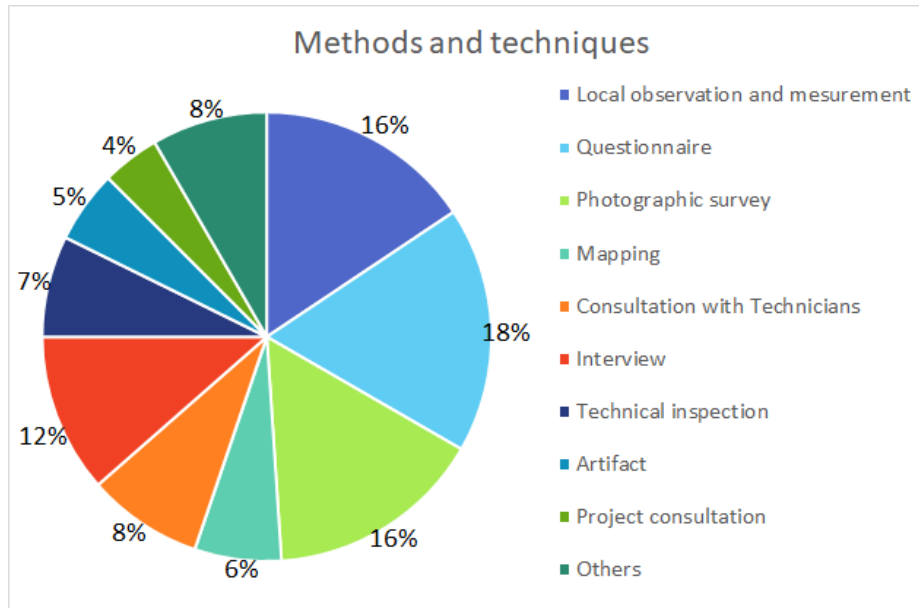
Figure 4: frequency percentage of approach used in the reviewed articles.



Source: The authors, 2020.

The analysis of the housing quality research techniques (Figure 5) showed that the methods of 'questionnaire', 'local observation', 'photographic survey' (articles where the photograph was merely illustrative were excluded), and 'on-site measurement' represent 46% of the analyzed articles.

Figure 5: percentage of frequency of techniques used in the reviewed articles



Source: The authors, 2020.

The method of using a questionnaire was used in 17 articles (DEZEN-KEMPTER *et al.*, 2015; TABBAL *et al.*, 2015; MONTEIRO; MIRON, 2016, 2017; SCHAFER; GOMIDE, 2014; HORONGOSO; BOGO, 2018; MONTEIRO *et al.*, 2016; IBABI *et al.*, 2017; SHIGEHARU; KANASHIRO, 2017; LIMA *et al.*, 2011; TAUBE; HIROTA, 2017; BERR *et al.*, 2015; REIS; LAY, 2010; DELGADO-HERNÁNDEZ *et al.*, 2013; ALZATE *et al.*, 2012; PÉREZ, 2011), while the measurements and observations *in loco* and the photographic survey method were each used in 15 articles (DEZEN-KEMPTER *et al.*, 2015; TABBAL *et al.*, 2015; MONTEIRO, MIRON, 2016, 2017, 2017; SCHAFER, GOMIDE, 2014; RANGEL, *et al.*, 2019; SHIGERU, KANASHIRO, 2017; KRUGER, LAROCA, 2009; HERRÁN-CUARTAS, 2017; CARRARO, DIAS, 2014; PÉREZ, 2011, 2014; REIS, LAY, 2010; ESCALLÓN, RODRÍGUEZ, 2010; BERGHAN, *et al.*, 2015; ALZATE, *et al.*, 2012). The use of interviews - structured, semi-structured or open - (MONTEIRO; MIRON, 2016, 2017; SCHAFER; GOMIDE, 2014; BERR; FORMOSO, 2012; HORONGOSO; BOGO, 2018; SHIGEHARU; KANASHIRO, 2017; LIMA *et al.*, 2011; TAUBE; HIROTA, 2017; HERRÁN-CUARTAS, 2017; CARRARO; DIAS, 2014; REIS; LAY, 2010) together with the questionnaire, results in 20 articles that use one or the other for investigation of the resident's opinion of the housing or the opinions of professionals related to the cases in question.

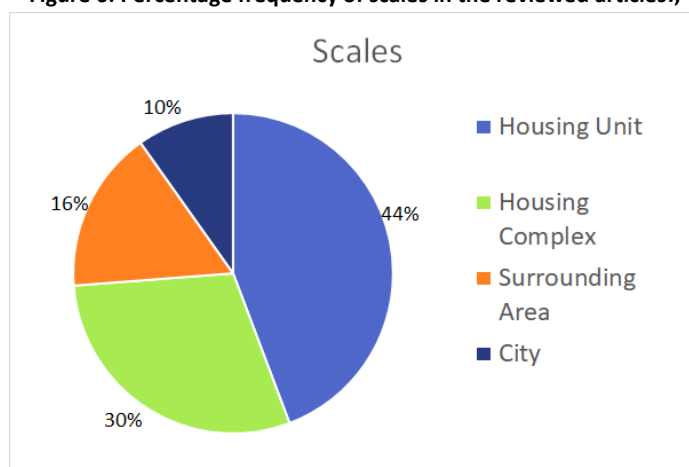
It is worth mentioning that the 'Post Occupancy Evaluation' method, named in only 9 articles (DEZEN-KEMPTER *et al.*, 2015; TABBAL *et al.*, 2015; MONTEIRO; MIRON, 2016, 2017; SCHAFER; GOMIDE, 2014; HORONGOSO; BOGO, 2018; LIMA *et al.*, 2011; TAUBE; HIROTA, 2017), is frequently present in the assessment of housing quality, that is, surveys have considered the importance of investigating the opinion of residents as a measure of quality evaluation, via the application of a questionnaire or interview.

Of these works, six addressed the resident directly in their objectives, to 'analyze how the problem of socio-spatial segregation, defined by factors of location and access to social facilities and infrastructure, affect urban quality and the resident's perception of place' (DEZEN-KEMPTER *et al.*, 2015), 'verify the quality of life perceived by people with physical disabilities' (TABBAL *et al.*, 2015), the 'analysis of the concepts of retention; satisfaction and value perceived by residents' (MONTEIRO; MIRON, 2016, 2017), to 'present a study on the processing of

requirements of a set of projects of the Residential Lease Program, based on the integration of different data sources, with perception of the different clients involved in the project.' (LIMA *et al.*, 2011), or to 'verify the applicability of Mass Customization (CM), used by the manufacturing industry to better meet customer demands' (TAUBE; HIROTA, 2017).

Figure 6 shows that of the four scales of analysis, the 'housing unit' is present in 27 of the 32 articles reviewed, then the scale of the 'housing complex' was addressed in 18 articles, the 'surrounding area' in 10 articles and the 'city' was considered in the assessment of housing quality in only 6 of the articles reviewed. Only three authors evaluated the four scales (TAMI, 2020; ESCALLÓN; RODRÍGUEZ, 2010; PÉREZ, 2011), while 19 articles considered only one of the scales to address housing quality, and 9 considered two or three of the scales cited. The authors dealing only with 'housing unit' were TABBAL *et al.* (2015); KRUGER (2009); HERRÁN-CUARTAS (2017) and CARRATO and DIAS (2014).

Figure 6: Percentage frequency of scales in the reviewed articles.;



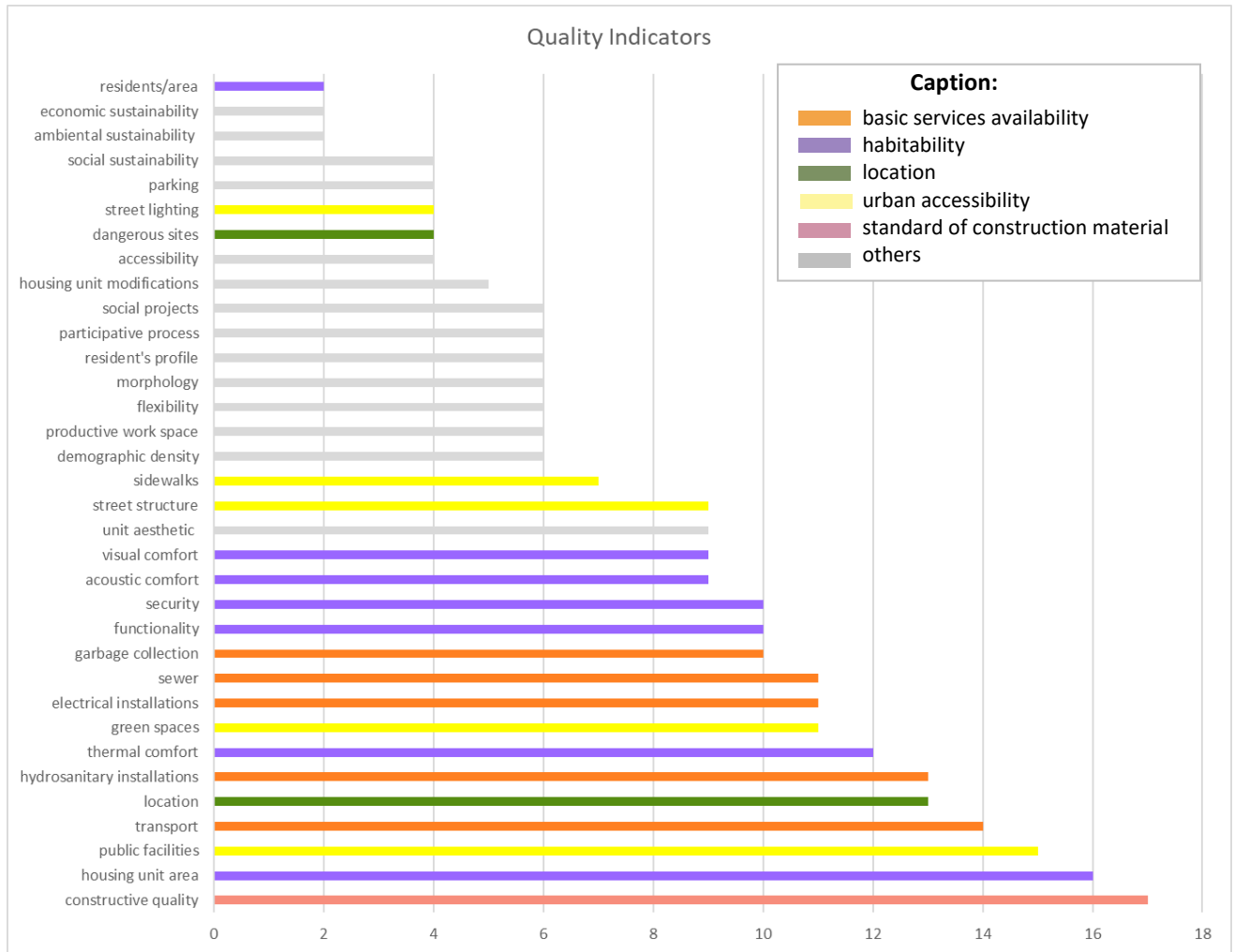
Source: The authors, 2020.

From these results, it is understood that there is the need for publications to cover more scales of assessment when dealing with housing quality, since most focus too much on the 'housing unit' itself and do not carry out the necessary investigations in an egalitarian way with regards to the other areas pointed out by UN-HABITAT (2015).

Based on the parameters defined by the UN (2015) on the quality of social housing, it can be observed that the standard of construction material (4th place in relevance by the UN) is studied in 17 articles (MONTEIRO; MIRON, 2016; 2017; BERR; FORMOSO, 2012; MONTEIRO *et al.*, 2016; RANGEL *et al.*, 2019; ARAGÃO; HIROTA, 2016; LIMA *et al.*, 2011; BERR *et al.*, 2015; CARRARO; DIAS, 2014; PÉREZ, 2011, 2014; REIS; LAY, 2010; RESTREPO-ZAPATA, CADAVID-RESTREPO, 2019; BERGHAN, *et al.*, 2015; DELGADO-HERNÁNDEZ *et al.*, 2013; VÉLEZ; LÓPEZ, 2012) (Figure 9)².

² The term 'parameters' was used here to represent what the papers referred to: parameters, requirements, indexes, indicators, categories, and others.

Figure 9: Frequency of parameters used in the reviewed articles.



Source: The authors, 2020.

When it comes to habitability, it encompasses the parameters of comfort, available space, functionality and security, as defined by the United Nations Commission on Human Rights (2013). The unit area is evaluated 16 times (MONTEIRO; MIRON, 2016, 2017; HORONGOSO; BOGO, 2018; LONGSDON *et al.*, 2019; FERNANDES *et al.*, 2018; ARAGÃO; HIROTA, 2016; LIMA *et al.*, 2011; TAUBE; HIROTA, 2017; HERRÁN-CUARTAS, 2017; PÉREZ, 2011, 2014; FISCARELLO, 2018; ESCALLÓN; RODRÍGUEZ, 2010; DELGADO-HERNÁNDEZ *et al.*, 2013; ALZETE *et al.*, 2012; JIMÉNEZ *et al.*, 2007) being the most frequent parameter in articles, and thermal comfort 12 times (TABBAL *et al.*, 2015; MONTEIRO; MIRON, 2016, 2017; HORONGOSO; BOGO, 2018; ARAGÃO; HIROTA, 2016; LIMA *et al.*, 2011; KRUGER; LAROCA, 2009; PÉREZ, 2011, 2014; GIRALDO; HERRERA, 2017; DELGADO-HERNÁNDEZ *et al.*, 2013; ALZETE *et al.*, 2012), while the others mentioned are evaluated in 10 or fewer articles, such as the list of residents per unit area, which is pointed out in only two of the reviewed studies.

It can be seen how habitability can be evaluated in several ways, as it is a parameter with many possible indicators, and not all are considered of equal importance. Each article used the indicators they considered pertinent to their research objectives, but none of them focused on habitability, which is a parameter of great importance to Latin American countries.

The location of the housing complex is evaluated in approximately 38% of the articles (DEZEN-KEMPTER *et al.*, 2015; MONTEIRO; MIRON, 2016, 2017; IRABI *et al.*, 2017; ARAGÃO;

HIROTA, 2016; LIMA *et al.*, 2011; TAMI, 2020; PÉREZ, 2011, 2014; ESCALLÓN; RODRÍGUEZ, 2010; DELGADO-HERNÁNDEZ *et al.*, 2013; ALZATE *et al.*, 2012), being the 5th most evaluated parameter, a result very close to that presented by the UN (2015). Urban accessibility was related in this case to several of the parameters collected: proximity of social facilities, open areas and green spaces, quality of the road surfaces, and public lighting.

The economic accessibility, pointed out by the UN survey (2015), related to affordability as defined by the United Nations Commission on Human Rights (2013), was not significantly considered in any of the revised works, nor was the security of tenure, or cultural adequacy. This comparative analysis shows the need to include these criteria in publications in this particular academic field, as they are extremely important in assessing housing quality and essential to generate adequate housing.

It is concluded that some quality parameters need to be further explored by the published investigations, with emphasis on economy, security of tenure, and cultural suitability that are not studied frequently or relevance. In addition to this, it would be beneficial to further focus on habitability, which is a broad concept that involves several parameters, and to not solely consider the area of the unit and thermal comfort.

5. CONCLUSION

When analyzing all the articles obtained in the systematic review, which aimed to understand how housing quality is being evaluated in Latin America, we came across a wide variety of approaches and areas of knowledge. That, therefore, leads one to the conclusion of how the subject is multidisciplinary and even with possible focal analyses in some areas - such as analyzing only the thermal comfort or the functionality of the furniture - which is extremely important, we also need a global view of the situation.

Through the results obtained in the revised sampling, some analyses were considered of greater relevance to understand the proposed objective. In relation to the production of these studies and the respective research locations, one can perceive the impulse given to the studies in the theme of housing quality evaluation, when explored by research groups or authors with domain in the area. Thus, the products obtained by frequent authors in the high-quality sample, also coincide with the authors of research groups identified with publications in renowned journals in the area of architecture and urbanism such as 'Ambiente Construído,' which was the most frequent (11 publications) in the sample studied.

By crossing the data obtained through the collection of the most frequent keywords, the most studied approaches and the most used techniques, one realizes the importance of the 'Post occupancy Evaluation' as a method of investigation for the subject in question. For this method, the use of the technique of questionnaires and interviews on the approach towards 'satisfaction' and 'perception' of the resident about the housing is highlighted. Studies have already pointed out the relevance of this method, mainly from authors like Ornstein (2003), Villa; Ornstein (2013), who are frequently cited in the revised articles that use the method.

Regarding the scales of assessment, the revised studies do not uniformly cover all of them as indicated by UN-HABITAT (2015), which also results in a larger list of parameters directed only to the housing unit or set. Thus, it is possible to adapt these to a distribution between the scales that can more effectively include the 'surroundings areas' of the housing and the 'city' when defining housing quality.

In summary, there is a lack of agreement between the parameters considered essential for adequate housing by UN-HABITAT (2015) and the parameters and indicators most considered in the evaluations of social housing. This discrepancy is serious because parameters such as security of tenure, economic accessibility, and cultural adequacy are not being considered with relevance in the revised work, because according to the 'João Pinheiro Foundation' (2018), one of the most influential factors in the housing deficit is the excessive burden of rent, which reflects directly on the parameters of economic accessibility and security of tenure. Therefore, these parameters should be added to the list of considerations when investigating the housing quality of social interest housing developments.

6. BIBLIOGRAPHICAL REFERENCES

ABNT – ASSOCIAÇÃO BRASILEIRA DE NORMAS TÉCNICAS. **NBR 9050: Acessibilidade a edificações, mobiliário, espaços e equipamentos urbanos**. 2015. Rio de Janeiro, 2015.

ALZATE, Erika; VÉLEZ, María Alejandra; LÓPEZ, Yolanda Lucía. Vivienda nueva rural enmarcada en la estrategia de vivienda saludable: copacabana, antioquia (Colombia). **Hacia la Promoción de la Salud**. Dez 2012, Volume 17 Nº 2 Páginas 40 – 59.

ARAGÃO, Danilton Luis; HIROTA, Ercília Hitomi. Sistematização de requisitos do usuário com o uso da Casa da Qualidade do QFD na etapa de concepção de unidades habitacionais de interesse social no âmbito do Programa Minha Casa, Minha Vida. **Ambiente Construído**. vol.16 no.4 Porto Alegre Oct./Dec. 2016.

BANCO INTERAMERICANO DE DESENVOLVIMENTO. **Estudo do BID revela que América Latina e o Caribe enfrentam um déficit de habitação considerável e crescente**. Comunicados de Imprensa, maio (2012).

BERGHAN, Francine Finger.; STUMPF, Marco González.; PARISI, Andrea Kern. Control de la obra terminada: inspección final de calidad en un proyecto de interés social. **Revista ingeniería de construcción** Ago 2015, Volume 30 Nº 2 Páginas 147 – 153.

BERR, Leticia Ramos; ECHEVESTE, Marcia Elisa Soares; LORENZI, Luciani; FORMOSO, Carlos Torres. Indicador de falhas de qualidade baseado na percepção dos usuários de Habitação de Interesse Social. **Ambiente Construído** . vol.15 no.4 Porto Alegre Oct./Dec. 2015.

BERR, Leticia Ramos; FORMOSO, Carlos Torres. Método para avaliação da qualidade de processos construtivos em empreendimentos habitacionais de interesse social. **Ambiente Construído** . vol.12 no.2 Porto Alegre Apr./June 2012.

BONDUKI, N. Política habitacional e inclusão social no Brasil: revisão histórica e novas perspectivas no governo Lula. **Revista Eletrônica de Arquitetura e Urbanismo**, São Paulo, n.1, p.70–104, 2008.

BOUERI, José Jorge. **Recomendações Índices Ergonômicos de Dimensionamento e Avaliação da Habitação**. Faculdade de arquitetura e urbanismo da Universidade de São Paulo. São Paulo. São Paulo. 2004.

CARRARO, Carolina Lemos; DIAS, João Fernando. Diretrizes para prevenção de manifestações patológicas em Habitações de Interesse Social. **Ambiente Construído** . vol.14 no.2 Porto Alegre Apr./June 2014.

CIAM. **Carta de Atenas**. 1933. In: IPHAN-Cartas Patrimoniais. Disponível em: <<http://portal.iphan.gov.br/uploads/ckfinder/arquivos/Carta%20de%20Atenas%201933.pdf>> Acesso em: 9/out/2020

DELGADO-HERNÁNDEZ, David Joaquín; ROMERO-ANCIRA, Liliana. Satisfacción de las necesidades del cliente en el sector vivienda: el caso del Valle de Toluca. **Ingeniería, investigación y tecnología** Dez 2013, Volume 14 Nº 4 Páginas 499 – 509.

DEZEN-KEMPTER, Eloisa; ANHAIA, Juliana C; TERRA, Luana O. Questões de localização e conectividade na avaliação de qualidade urbana em empreendimentos de habitação de interesse social em Indaiatuba. **Pesquisa em Arquitetura e Construção**, 01 September 2015, Vol.6(3), pp. 155-168.

ESCALLÓN, Clemencia; RODRÍGUEZ, Diana. Las preguntas por la calidad de la vivienda: ¿quién las hace?, ¿quién las responde? **Dearquitectura**, 01 July 2010, Issue 6, pp. 6-19.

FERNANDES, Guilherme Von Der Heyde; FORMOSO, Carlos Torres.; TZORTZOPOULOS-FAZENDA, Patrícia. Método para verificação automatizada de requisitos em empreendimentos Habitacionais de Interesse Social. **Ambiente Construído** . vol.18 no.4 Porto Alegre Oct./Dec. 2018.

FISCARELLI, Diego Martín. Aspectos cualitativos de la vivienda de interés social. Aproximaciones teóricas desde la complejidad del proyecto. **Arquisur revista**, 01 July 2018, Vol.8(13), pp. 32-43.

FUNDAÇÃO JOÃO PINHEIRO. **Déficit habitacional no Brasil 2015**, Diretoria de Estatística e Informações. - Belo Horizonte. FJP, 2018.

GALVÃO, Maria Cristiane Barbosa; RICARTE, Ivan Luiz Marques. **Revisão Sistemática Da Literatura: Conceituação, Produção E Publicação**. Logeion: Filosofia da Informação, [S.l.], v. 6, n. 1, p. 57-73, sep. 2019. Disponível em: <<http://revista.ibict.br/fiin/article/view/4835/4188>>. Acesso em: 15 apr. 2020.

GIRALDO, Walter; HERRERA, Carlos A. Ventilación pasiva y confort térmico en vivienda de interés social en clima ecuatorial. **Ingeniería y Desarrollo** Jun 2017, Volume 35 Nº 1 pp. 77 – 101.

HERRÁN-CUARTAS, Coppelia. Vivir formalmente en 45 metros cuadrados. **Bitácora Urbano Territorial** Dez 2017, Volume 27 Nº spe4, pp. 67 – 75.

HORONGOSO, B; BOGO, A. Avaliação pós-ocupação das condições de habitação em conjuntos habitacionais do PMCMV em Blumenau SC. **HOLOS**, 2018, Vol.34(8), pp.59-71.

IRABI, Matheus M. A.; FERREIRA, Nágela M. L.; VIEIRA Alexandre B. A (in)acessibilidade aos serviços de saúde em dourados - MS: o caso dos moradores do loteamento Dioclécio Drtuzi I e II. **Hygeia: Revista Brasileira de Geografia Médica e da Saúde**, Dec 2017, Vol.13(26), pp. 58-70.

JIMÉNEZ Claudia, *et al.*. Sistema de información para la generación de soluciones técnicas personalizadas para la construcción de vivienda de interés social. **Revista de Ingeniería** Mai 2007, Nº 25 pp. 22 – 32.

KRÜGER, Eduardo; LAROCA, Christine. Avaliação de desempenho térmico de protótipo de baixo custo em madeira de reflorestamento. **Rem: Rev. Esc. Minas** vol.62 no.4 Ouro Preto Oct./Dec. 2009.

LIMA, Lisiane Pedroso; FORMOSO, Carlos Torres; ECHEVESTE, Márcia Elisa Soares. Proposta de um protocolo para o processamento de requisitos do cliente em empreendimentos habitacionais de interesse social. **Ambiente Construído** . (Online) vol.11 no.2 Porto Alegre Apr./June 2011.

LOGSDON, Louise; FABRICIO, Marcio Minto; Instrumentos associados de apoio ao processo de projeto de moradias sociais. **Ambiente Construído** Mai 2020, Volume 20 Nº 2 Páginas 401 – 423.

LOGSDON, Louise; FABRICIO, Marcio Minto; SOUSA, Dayanna de Mello; PADILLA, Yasmin G. Funcionalidade e mobiliário da habitação: contribuições para o projeto de moradias sociais. **ArquiteturaRevista**, v.15, n.2, jul/dez, 2019.

MARICATO, E. **Habitação e Cidade**, 7. ed. São Paulo: Atual, 1997.

MARICATO, E. **Brasil, cidades: alternativas para a crise urbana**. Petrópolis, RJ: Vozes, 2001.

MONTANER, J. M. **Herramientas para habitar el presente**. La vivienda del siglo XXI, Edición Máster Laboratorio de la vivienda del siglo XXI, Universitat Politècnica de Catalunya, 2011.

MONTEIRO, Deyvid Alex Bitencourt; MIRON, Luciana Inês Gomes. Contribuições do modelo Means-End Chain para retroalimentação de dados em empreendimentos habitacionais de interesse social. **Gestão & Tecnologia de Projetos**, São Carlos. v.12 n.1 p69-83 Jan/Abr 2017.

MONTEIRO, Deyvid Alex Bitencourt; MIRON, Luciana Inês Gomes. Contribuições para avaliação pós-ocupação: Uma abordagem por meio da percepção de usuários de empreendimentos habitacionais de interesse social. **Arquisur revista**, 01 December 2017, Vol.7 (12), pp. 90-109.

MONTEIRO, Deyvid Alex Bitencourt; MIRON, Luciana Inês Gomes. Avaliação da retenção, satisfação e valor percebido pelos usuários de empreendimentos habitacionais de interesse social. **Arquisur revista**, 01 December 2016, Vol.6(10), pp. 84-107.

MONTEIRO, Deyvid Alex Bitencourt; MIRON, Luciana Inês Gome.; *et al.*. Avaliação das territorialidades em empreendimentos habitacionais de interesse social: estudo de caso no Programa Integrado Entrada da Cidade (PIEC). **Arquiteturarevista**, Jul-Dec 2016, Vol.12(2), pp. 175-193.

NAÇÕES UNIDAS. **Committe on Economical, Social and Cultural Rights. General Comment Nº 04: The Right To Adequate Housing (Art. 11, Para. 1)**. Geneva, 1991. Disponível em: <<http://www.unhchr.ch/tbs/doc.nsf/0/469f4d91a9378221c12563ed0053547e>>. Acesso em: 24/set/2020.

ONU-HABITAT, **Déficit Habitacional En América Latina Y El Caribe: Una Herramienta Para El Diagnóstico Y El Desarrollo De Políticas Efectivas En Vivienda Y Hábitat**, 2015.

ORNSTEIN, Sheila. **Avaliação pós-ocupação (APO) do ambiente construído** – Colaborador: Marcelo Romero – São Paulo: Studio Nobel: Editora da Universidade de São Paulo, 1992.

PEDRO, João B. **Definição e avaliação da qualidade arquitetônica habitacional**. Tese de doutorado. Lisboa, Faculdade de Arquitectura da Universidade do Porto – LNEC (Laboratório Nacional de Engenharia Civil), 2000.

PÉREZ, Alex Leandro. El hábitat residencial según sus transformaciones. Soluciones del Instituto de Crédito Territorial en Bogotá. **Saúde e Sociedade** Set 2012, Volume 21 Nº 3, pp. 747 – 759.

PÉREZ, Alex Leandro. La calidad del hábitat para la vivienda de interés social: Soluciones desarrolladas entre 2000 y 2007 en Bogotá. **Revista INVI** Ago 2011, Volume 26 Nº 72, pp. 95 – 126.

RANGEL, Pablo Andrés; FORMOSO, Carlos Torres; MIRON, Luciana Inês. Gomes; ECHEVESTE, Márcia Elisa Soares. Método para a avaliação técnica da qualidade pós-ocupação de áreas de uso comum de habitações de interesse social. **Ambiente Construído** Dez 2019, Volume 20 Nº 1, pp. 171 – 194.

RAPOPORT, Amos. **Vivienda y Cultura**. Milwaukee: Ed.University of Wisconsin, 1969. | Capítulo 3 - Los factores socioculturales y la forma de la casa.

REIS, Antônio Tarcísio da Luz; LAY, Maria Cristina Dias. O projeto da habitação de interesse social e a sustentabilidade social. **Ambiente Construído** Set 2010, Volume 10 Nº 3, pp. 99 – 119.

RESTREPO-ZAPATA, Gloria; CADAVID-RESTREPO, Carlos. Mejora del desempeño ambiental y energético de la vivienda de interés prioritario en Medellín con el uso de ladrillos cerámicos modificados. **Revista Ingenierías Universidad de Medellín** Dez 2019, Volume 18 Nº 35, pp. 33 – 49.

ROLNIK, R. **Guerra dos Lugares: a colonização da terra e da moradia na era das finanças** - São Paulo: Boitempo, 2015

SCHÄFER, Eduardo Francisco; GOMIDE, Fernanda Paes de Barros. Avaliação Pós-Ocupação do conjunto habitacional Moradias União Ferroviária Bolsão Audi/União, Curitiba (PR). **Engenharia Sanitária e Ambiental**, 01 June 2014, Vol.19(2), pp. 155-164.

SHIGE HARU, Mariana Alves; KANASHIRO, Milena. Diagnóstico do senso de comunidade: estudo de caso empreendimento habitacional São Lourenço, Londrina, PR. **Ambiente Construído** Dez 2017, Volume 17 Nº 4, pp. 269 – 284.

SIDDAWAY, A. **How to do a systematic literature review and meta-analysis**. [s. d.].

TABBAL, Luciane; PICCOLI, João C. J.; QUEVEDO, Daniela M. Acessibilidade e qualidade de vida na habitação de interesse social: avaliação das unidades habitacionais acessíveis do DEMHAB em Porto Alegre. Pós. **Revista do Programa de Pós-Graduação em Arquitetura Urbanismo da FAUUSP**, 01 February 2015, Vol.21 (36), pp. 142-158.

TAMI, María Fernanda Uribe. La calidad como objetivo Propuesta metodológica. **Bitácora Urbano Territorial** Abr 2020, Volume 30 Nº 1 Páginas 167 – 179.

TAUBE, Jaqueline; HIROTA, Ercília Hitomi. Customização em massa no processo de provisão de Habitações de Interesse Social: um estudo de caso. **Ambiente Construído**, Porto Alegre, v. 17, n. 4, pp. 253-268, out./dez. 2017.