

# The Status of Age-Friendly Community Research

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## Abstract

The study presents the status of age-friendly community (AFC) research. A systematic review of AFC research from Scopus database up to November 2018 was used to identify 19 journals that published a total of 51 AFC related academic papers. The study categorised AFC papers into five main research types with empirical research studies emerging as the highest published research type. The study also identified a handful of position papers, theoretical papers, and review papers. The analysis of the highest impact citation papers revealed the following themes: development of AFC; urban environment pressures on AFC; challenges for improving AFC; integration of existing AFC theoretical models with the analysis of economic and social forces; application of ecological theory in AFC; and assessment of AFC. The findings from the study will be helpful to provide more profound insights into the AFC research field. It serves as a piece of referable information for experts and new researchers in the AFC research field. The status and the trending themes from the highest citation impact papers provide a good foundation for researchers to position their research and make suggestions for future research investigation in the AFC.

**Keywords:** Age-friendly community, Cities, Review, Research trend

## 1. Introduction

The world is experiencing an unprecedented increase in urbanisation; global urbanisation is increasing exponentially. In the 1950s, the global population was mostly rural with only 30 per cent of the global population residing in urban areas (751 million). Today, urban areas accommodate 55 per cent (4.2 billion) of the world's population, and it is projected to increase to 68 per cent (6.7 billion) by 2050 (United Nations, 2018). Asia currently homes 54 per cent of the global urban population, followed by Africa and Europe hosting 13 per cent each. However, 90 per cent of the projected world's urban population increase between 2018 and 2050 is expected to occur in Asia and Africa (United Nations, 2018). While the world is urbanising rapidly, it is also rapidly ageing; by 2050, most regions in the world will have more than 40 per cent of their population aged 60 and above (United Nations, 2017). In 2015, the global population recorded 12% of people aged 60 years or above, representing 901 million people. According to the United Nations in World Population Prospectus, it is projected that 1.4 billion people will be 60 years or above by 2030 and 2.1 billion by 2050, and 3.2 billion by 2100. 13% of the increase between 2015 and 2050 will occur in Africa (United Nations, 2015). For the foreseeable future, the global population is expected to age, and most of the older adults will be living in urban environments.

Population ageing has been one of the most significant transformers of the twenty-first century with implications on virtually all sectors of the society (United Nations, 2015). It has resulted in the creating of a research field called “Age-friendly communities” in the academic community. This field has received considerable research publications over the past years. With the increasing demand of the ageing population and urbanisation, it is expected that this field will attract the interest of more researchers. For this reason, this study aims to reveal the existing research publications in the age-friendly community (AFC) research field. Accordingly, a systematic review of publications can inform AFC researchers on the current research status in the AFC field. The findings from the study will be helpful to provide more profound insights into AFC research field. To this end, this research aims to systematically analyse the publications in the AFC research with the following objectives:

- (1) Identifying the journals that have published on AFC research;
- (2) Identifying the AFC academic papers;
- (3) Categorising AFC academic papers into research types;
- (4) examine highly cited AFC papers and themes.

## 2. Methodology

Regarding the research aim, this study adopts similar review methodology proposed by Lin et al. (2018) and Tsai and Wen (2005) to review the existing research publications in the AFC. Thus, AFC research journals, AFC research papers, research types; highly cited papers and topics were analysed in detail. A brief description of the research method of this study is as follows.

### 2.1 Identifying the journals that have published on AFC research

In November 2018, the Scopus database was searched using keywords identified in the literature. These keywords – “age-friendly city”, “elder-friendly community”, “liveable community” and “lifetime neighbourhood” – were used throughout the literature to describe an AFC (Lui et al., 2009; Feldman and Oberlink, 2003; Hanson and Emler, 2006; Alley et al., 2007). As the name suggests, AFC provides the needed support, services and policies for older adults to age actively (WHO, 2007; Alley et al., 2007). The search was conducted at the end of November 2018 and was not limited to any specific year in order to retrieve all the relevant literature present in the Scopus database up to date. However, the search was limited to article and review document type; and documents in English. The full search code with the appropriate Boolean operators is as follows:

TITLE-ABS-KEY ( "age-friendly city" OR "elder-friendly community" OR "liveable community" OR "lifetime neighbourhood" ) AND DOCTYPE ( ar OR re ) AND ( LIMIT-TO ( LANGUAGE , "English" ) )

A total sample of 86 journals that published AFC researches was identified from the Scopus database. Subsequently, these journals were assessed based on a criterion adopted from Owusu et al. (2017), Osei-Kyei and Chan (2015), Hong et al. (2011) and Darko and Chan (2016). According to the criterion, journals that did not publish two or more papers relating to AFC were eliminated from the study. Based on this criterion, 19 journals were selected as journals that have published AFC research.

## **2.2 Identifying AFC related papers**

All the publications that have been published up to November 2018 were identified as the sample for this study. A sample of 54 papers was retrieved from the 19 AFC journals. The study considered only publications in peer-reviewed academic journals because peer-review academic journals go through a relatively more rigorous review process before their acceptance for publication (Yalcinkaya and Singh, 2015; Darko and Chan, 2016). Hence, conference papers were excluded from the sample papers for the study. In order to confirm that these 54 papers were focused on AFC matters, the authors manually examined the abstracts and keywords of all the 54 papers to confirm its applicability in the AFC research domain. 51 papers were finally identified to be related to AFC research.

## **2.3 Categorising AFC papers into research types**

The categorisation of research type was based on Lin et al. (2018) and Tsai and Wen's (2005) classification. Five categories, including (1) empirical research article; (2) position paper; (3) theoretical paper; (4) review paper and (5) others, were used to categorise all the 54 identified papers. Empirical research articles are based on empirical evidence such as qualitative, quantitative and mixed research method (Tsai and Wen, 2005; Lin et al., 2014). Position papers include articles in which the authors express his or her position on a topic in the AFC research field (Tsai and Wen, 2005; Lin et al., 2014). Theoretical papers include papers with formulated theories or conceptual frameworks in the AFC research field (Tsai and Wen, 2005; Lin et al., 2014). Review papers include papers that summarise previous publications on AFC. Others include papers that discuss AFC propositions in a specific community, city or region.

## **2.4 Identifying highly cited AFC papers**

The highly cited papers were identified to ascertain the papers that have profoundly influenced the AFC research domain. The citation data of each of the 51 papers were retrieved from the Scopus database (on 20 December 2018). The highly cited papers were limited to the top ten cited papers in the AFC domain. Revealing the characteristics of these papers will be valuable for AFC researchers.

# **3. Result and Discussion**

The study analysed published article and review papers in the AFC research field. The journals, papers, research types, and highly cited papers in the AFC research field are further analysed and the results presented and discussed in this section.

## **3.1 Journals publishing AFC research**

Journal of Ageing & Social Policy published the highest number of papers relating to AFC. In 2014, Journal of Ageing & Social Policy published a special issue on the theme 'Age Friendly Cities and

Communities Around the World’ with the aim of supporting the AFC movement. This is the main reason why this journal is the highest contributor to the AFC research field. International Journal of Environmental Research and Public Health had the second highest publication on AFC research as shown in Table 1. All the papers in this journal were published within the last four years which makes the publications very recent and timely for the AFC researchers. Ageing & Society, Cities, and Journal of Housing For the Elderly emerged as the third-ranked journals that have high number publications on AFC research. Publications in these journals have been consistent since 2012. Social Sciences, Techne (as known as, Journal of Technology for Architecture and Environment), and Urban Policy and Research were the journals with the least publications to the AFC research domain. The result from the journal ranking presented in Table 1 is solely based on the number of publications and should not be misinterpreted as the quality or impact of the journals to the AFC research domain.

*Table 1: Journals that have Published AFC Research*

Number	Journal	Number of publications <sup>a</sup>	Percentage (%)
1	Journal of Aging & Social Policy	6	11.11
2	International Journal of Environmental Research and Public Health	5	9.26
3	Ageing & Society	4	7.41
4	Cities	4	7.41
5	Journal of Housing For the Elderly	4	7.41
6	Journal of Social Work Practice	3	5.56
7	Journal of Urban Health	3	5.56
8	Working with Older People	3	5.56
9	Architectural Design	2	3.70
10	Canadian Journal on Aging	2	3.70
11	Family & Community Health	2	3.70
12	Generations	2	3.70
13	Gerontechnology	2	3.70
14	Journal of Aging and Health	2	3.70
15	Journal of Gerontological Social Work	2	3.70
16	Plan Canada	2	3.70
17	Social Sciences	2	3.70
18	Techne/Journal of Technology for Architecture and Environment	2	3.70
19	Urban Policy and Research	2	3.70
	<b>Total</b>	<b>54</b>	<b>100.00</b>

<sup>a</sup> Note: the search was conducted on November 30, 2018

### 3.2 AFC related papers

Among the 54 papers identified in the journals, only 51 papers as shown in Table 2 were entirely or partially devoted to matters relating to AFC. All the papers in the Journal of Aging & Social Policy were entirely devoted to matters relating to AFC. It also confirms that the special issue that was published by this journals in 2004 was entirely dedicated to promoting the AFC movement. The following journals – Ageing & Society, Canadian Journal on Aging, Working With Older People – had one paper each which was not entirely or partially devoted to any matters of AFC. Therefore, were not considered as AFC related papers. Also, most of the papers were focused on developed countries. This infers that most developed countries are aware of the AFC research. It plausible explains why most of the member cities and communities in the WHO’s Global Network for Age-friendly Cities and Communities are dominated by cities and communities in the developed countries (WHO, 2018).

*Table 2: AFC Related Papers*

Number	Journal	AFC related paper(s) <sup>a</sup>	Percentage (%)
1	Journal of Aging & Social Policy	6	11.76
2	International Journal of Environmental Research and Public Health	5	9.80
3	Ageing & Society	3	5.88
4	Cities	4	7.84
5	Journal of Housing For the Elderly	4	7.84
6	Journal of Social Work Practice	3	5.88
7	Journal of Urban Health	3	5.88
8	Working with Older People	2	3.92
9	Architectural Design	2	3.92
10	Family & Community Health	2	3.92
11	Generations	2	3.92
12	Gerontechnology	2	3.92
13	Journal of Aging and Health	2	3.92
14	Journal of Gerontological Social Work	2	3.92
15	Plan Canada	2	3.92
16	Social Sciences	2	3.92
17	Techne/Journal of Technology for Architecture and Environment	2	3.92
18	Urban Policy and Research	2	3.92
19	Canadian Journal on Aging	1	1.96
	<b>Total</b>	<b>51</b>	<b>100.00</b>

<sup>a</sup> Note: the search was conducted on November 30, 2018

### 3.3 Published AFC papers by research types

From Table 3, more than half of the publications in the AFC research domain were empirical research. Most of the empirical studies were focused on assessing the older adults' perception of AFC using questionnaire surveys, interviews, focus groups, photovoice techniques. Theoretical papers and others category contributed about 9.80 per cent each to the AFC research domain (see Table 3). The first paper that was published in the AFC research domain was a theoretical paper in 2003. The first theoretical paper was from the AdvantAGE Initiative, and a four-component model of an elder-friendly community was proposed (Feldman and Oberlink, 2003). A theoretical paper published by Alley et al. (2007) proposed 15 characteristics of an elder-friendly community based on the perception of practitioners. Furthermore, Plouffe and Kalache (2010) presented a theoretical paper on the WHO (2007) age-friendly cities framework. Eight main determinants of AFC were proposed in the WHO (2007)'s study. Building on WHO (2007)'s model, Menec et al. (2011) proposed seven AFC features based on ecological theory. The others category was dominated by AFC proposition or implementation in developed countries and cities. Review papers and position papers covered about 11.76 per cent each of the total published papers in the AFC research domain (see Table 3). Further analysis of the papers revealed that the number of publications across all the four AFC research types has been increasing published after 2012. It infers that there is an increasing interest in AFC research.

*Table 3: AFC research types*

Research Type	Number	Percentage (%)
Empirical research	29	56.86

Review paper	6	11.76
Position paper	6	11.76
Theoretical paper	5	9.80
Others	5	9.80
<b>Total</b>	<b>51</b>	<b>100.00</b>

### 3.4 Highly cited papers in AFC

Table 4 present the top 10 highly cited papers and their respective field-weighted citation impact (FWCI) as of 20 December 2018. The Scopus database provided an up to data citation and FWCI of each paper. The FWCI is the ratio of the paper’s citations to the average number of citations received by all similar papers over three years. The FWCI considers the year of publication, document type and discipline of the paper to indicate how the number of citation of a paper compares with the average number of citations received by all other similar papers indexed in the Scopus database. FWCI value less than one means that the paper has been cited less than the average citation of all similar papers. Likewise, a value more than one means the paper was cited more than the average of all similar documents.

In general, most of the highly cited papers were empirical studies — the top four highly cited papers in the AFC research domain as shown in Table 4 aimed at developing a conceptual model for the AFC. The papers were all empirical research except for ‘Conceptualizing Age-Friendly Communities’ which was a position paper. The first three highly cited papers were cited more than 100 per cent more times than the normal average – which means that these concepts are still relevant in the AFC research domain up to date. However, the concept proposed by the AdvantAGE Initiative have been cited 16% less than the expected average. The model proposed by AdvantAGE Initiative has received less citation lately.

Currently, the paper (Buffel and Phillipson, 2016) published by Cities, Elsevier – ‘Can global cities be ‘age-friendly cities’? Urban development and ageing populations’ – has the highest impact on the AFC research field (see Table 4). This paper was cited more than 700 per cent more times than the expected average. Further review of the paper revealed that the paper covered four main themes in the AFC: (1) development of age-friendly approach; (2) urban environment pressures on AFC; (3) challenges for improving AFC; and (4) integration of existing theoretical models with the analysis of economic and social forces. With this paper having the highest impact, it is inferred that these four themes are currently trending in the AFC research domain. Canadian Journal published the second-highest citation impact paper (Menec et al., 2011) on Aging – ‘Conceptualizing Age-Friendly Communities’ as shown in Table 4. This study was a theoretical study that introduced the application of ecological theory to the WHO (2007)’s model. It inferred that the proposed application of ecological theory is trending and has received much attention in the AFC research. Another paper (Steels, 2015) published by Cities, Elsevier – ‘Key characteristics of age-friendly cities and communities: A review’ also has a high citation impact in the AFC research as shown in Table 4. The paper examined the current approaches and interventions used to create AFC. The main theme in this paper was similar to Buffel and Phillipson (2016)’s theme on the development of age-friendly approach. It confirms the relevance of this theme in the AFC research domain. Alley et al. (2007)’s publication – ‘Creating Elder-Friendly Communities’ – in the Journal of Gerontological Social Work also has a high citation impact on the AFC field. The relevance of the development of AFC theme also reflected in the study. The assessment of AFC was captured in this study as well.

*Table 4: Highly cited AFC papers*

Paper	Author (s)	Journal	Citation	Field-Weighted
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				Citation Impact
Towards global age-friendly cities: determining urban features that promote active aging	Plouffe and Kalache (2010)	Journal of Urban Health	104	2.58
Creating elder-friendly communities	Alley et al. (2007)	Journal of Gerontological Social Work	101	4.76
Conceptualizing age-friendly communities	Menec et al. (2011)	Canadian Journal on Aging	99	6.14
The AdvantAGE initiative developing community indicators to promote the health and well-being of older people	Feldman and Oberlink (2003)	Family and Community Health	57	0.84
An overview of age-friendly cities and communities around the world	Fitzgerald and Caro (2014)	Journal of Aging & Social Policy	44	4.15
Developing age-friendly cities: case studies from Brussels and Manchester and implications for policy and practice	Buffel et al. (2014)	Journal of Aging & Social Policy	34	3.6
Can global cities be ‘age-friendly cities’? Urban development and ageing populations	Buffel and Phillipson (2016).	Cities	30	8.87
Assessing a community's elder friendliness: A case example of the Advantage initiative	Hanson and Emlet (2006)	Family and Community Health	29	0.74
Key characteristics of age-friendly cities and communities: A review	Steels (2015)	Cities	28	4.98
Older adults’ perceptions of age-friendly communities in Canada: A photovoice study	Novek and Menec (2014)	Ageing and Society	26	2.29

## 4. Conclusion

The rapidly ageing population coupled with urbanisation has resulted in an increasing amount of research publications to address the demands of the ageing population. The present study has systematically analysed the publications in the AFC research field up to November 2018. The study achieved its aim by identifying all the journals that have published on AFC research; the papers that have been published in these journals; categorising the research types; and examining the highly cited papers. A total of 19 journals were retrieved from the Scopus database to have published AFC research. Journal of Aging & Social Policy; International Journal of Environmental Research and Public Health; Ageing & Society; Cities; and Journal of Housing For the Elderly were the top five journals that publish AFC research. A total of 51 publications were identified to have fully or partially addressed an issue relating to AFC. Also, more than half of the publications were empirical studies using questionnaire surveys, interviews, focus groups, and photovoice techniques. The themes identified in the highest citation impact papers in the AFC field included the development of AFC; urban environment pressures on AFC; challenges for improving AFC; integration of existing AFC theoretical models with the analysis of economic and social forces; application of ecological theory in AFC; and assessment of AFC.

The findings from the study will be helpful to provide more profound insights into AFC research field. It serves as a piece of referable information for experts and new researchers in the AFC research field. The status and the trending themes from the highest citation impact papers provide a good foundation

for researchers to position their research and make suggestions for future research investigation in the AFC. The readers are advised to be cautious when interpreting the findings of this study because the results presented in this study were based on only 19 journals and 51 papers identified from the Scopus database.

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## References

- Alley, D., Liebig, P., Pynoos, J., Banerjee, T., and Choi, I.H. (2007). Creating elder-friendly communities: Preparations for an aging society. *Journal of Gerontological Social Work*, 49(1-2), pp.1-18. DOI: [https://doi.org/10.1300/J083v49n01\\_01](https://doi.org/10.1300/J083v49n01_01)
- Buffel, T., and Phillipson, C. (2016). Can global cities be ‘age-friendly cities’? Urban development and ageing populations. *Cities*, 55, pp.94-100. DOI: <https://doi.org/10.1017/S0144686X1200150X>
- Buffel, T., McGarry, P., Phillipson, C., De Donder, L., Dury, S., De Witte, N., Smetcoren, A.S., and Verté, D. (2014). Developing age-friendly cities: Case studies from Brussels and Manchester and implications for policy and practice. *Journal of Aging & Social Policy*, 26(1-2), pp.52-72. DOI: <https://doi.org/10.1080/08959420.2014.855043>
- Darko, A., and Chan, A.P. (2016). Critical analysis of green building research trend in construction journals. *Habitat International*, 57, pp.53-63. DOI: <https://doi.org/10.1016/j.habitatint.2016.07.001>
- Feldman, P.H., and Oberlink, M.R. (2003). The AdvantAge initiative: Developing community indicators to promote the health and well-being of older people. *Family & Community Health*, 26(4), pp.268-274. DOI: 10.1097/00003727-200310000-00004
- Fitzgerald, K.G., and Caro, F.G. (2014). An overview of age-friendly cities and communities around the world. *Journal of Aging & Social Policy*, 26(1-2), pp.1-18. DOI: <https://doi.org/10.1080/08959420.2014.860786>
- Hanson, D., and Emlert, C.A. (2006). Assessing a community's elder friendliness: A case example of The AdvantAge Initiative. *Family & community health*, 29(4), pp.266-278. DOI: 10.1097/00003727-200610000-00005
- Hong, Y., Chan, D.W., Chan, A.P., and Yeung, J.F. (2011). Critical analysis of partnering research trend in construction journals. *Journal of Management in Engineering*, 28(2), pp.82-95. DOI: [https://doi.org/10.1061/\(ASCE\)ME.1943-5479.0000084](https://doi.org/10.1061/(ASCE)ME.1943-5479.0000084)
- Lin, T. J., Lin, T. C., Potvin, P., and Tsai, C. C. (2018). Research trends in science education from 2013 to 2017: A systematic content analysis of publications in selected journals. *International Journal of Science Education*, pp.1-21. DOI: <https://doi.org/10.1080/09500693.2018.1550274>
- Lin, T.C., Lin, T. J., and Tsai, C.C. (2014). Research trends in science education from 2008 to 2012: A systematic content analysis of publications in selected journals, *International Journal of*



*Science Education*, 36 (8), pp.1346-1372, DOI: 10.1080/09500693.2013.864428

- Lui, C.W., Everingham, J.A., Warburton, J., Cuthill, M., and Bartlett, H. (2009). What makes a community age-friendly: A review of international literature. *Australasian Journal on Ageing*, 28(3), 116-121. DOI: <https://doi.org/10.1111/j.1741-6612.2009.00355.x>
- Menec, V.H., Means, R., Keating, N., Parkhurst, G., and Eales, J. (2011). Conceptualizing age-friendly communities. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, 30(3), pp.479-493. DOI: <https://doi.org/10.1017/S0714980811000237>
- Novak, S., and Menec, V.H. (2014). Older adults' perceptions of age-friendly communities in Canada: A photovoice study. *Ageing & Society*, 34(6), pp.1052-1072. DOI: <https://doi.org/10.1017/S0144686X1200150X>
- Osei-Kyei, R., and Chan, A.P. (2015). Review of studies on the critical success factors for Public–Private Partnership (PPP) projects from 1990 to 2013. *International Journal of Project Management*, 33(6), pp.1335-1346. DOI: <https://doi.org/10.1016/j.ijproman.2015.02.008>
- Owusu, E.K., Chan, A.P., and Shan, M. (2017). Causal factors of corruption in construction project management: An overview. *Science and Engineering Ethics*, pp.1-31. DOI: <https://doi.org/10.1007/s11948-017-0002-4>
- Plouffe, L., and Kalache, A. (2010). Towards global age-friendly cities: Determining urban features that promote active aging. *Journal of Urban Health*, 87(5), pp.733-739. DOI: <https://doi.org/10.1007/s11524-010-9466-0>
- Steels, S. (2015). Key characteristics of age-friendly cities and communities: A review. *Cities*, 47, pp.45-52. DOI: <https://doi.org/10.1016/j.cities.2015.02.004>
- Tsai, C. C., and Wen, M. (2005). Research and trends in science education from 1998 to 2002: A content analysis of publication in selected journals. *International Journal of Science Education*, 27(1), pp.3-14. DOI: <https://doi.org/10.1080/0950069042000243727>
- United Nations (2015). *World population ageing 2015*. Department of Economic and Social Affairs, Population Division. Working paper No. ST/ESA/SER.A/390.
- United Nations (2017). *World population prospects: The 2017 revision, key findings and advance tables*. Department of Economic and Social Affairs, Population Division. Working paper No. ESA/P/WP/248.
- United Nations (2018). *World urbanization prospects: The 2018 revision*. Department of Economic and Social Affairs, Population Division.
- WHO (2007). *Global age-friendly cities: A guide*. Geneva: WHO Press.
- WHO (2018). *Membership to the global network - Age-friendly world*. Available at <https://extranet.who.int/agefriendlyworld/membership/> (Accessed on December 5, 2018).
- Yalcinkaya, M., and Singh, V. (2015). Patterns and trends in building information modeling (BIM) research: A latent semantic analysis. *Automation in Construction*, 59, pp.68-80. DOI: <https://doi.org/10.1016/j.autcon.2015.07.012>