



Received: 11 October 2018
Accepted: 22 November 2018
First Published: 26 November 2018

*Corresponding author: Daniel D.M. Leung, Social Work, Chinese University of Hong Kong, Hong Kong
E-mail: dleung@cuhk.edu.hk

Reviewing editor:
Gabriela Topa, Social and Organizational Psychology, Universidad Nacional de Educacion a Distancia, Spain

Additional information is available at the end of the article

APPLIED PSYCHOLOGY | REVIEW ARTICLE

Use of Q-methodology in a study of older community dwellers facing the largest urban redevelopment and renewal project in Hong Kong

Daniel D.M. Leung^{1,2,3,4*}

Abstract: Purpose: The aim of this methodology paper is to draw on the procedural decisions of a study that used Q-methodology to study older community dwellers facing the largest single urban redevelopment project in Hong Kong, one that involves complex issues and multiple stakeholders.

Methodology/approach: This is a methodology paper that is supported by the literature. Q-methodology was a part of the mixed methods study and was followed by focus groups.

Result: Findings provided existential understanding of the older community dwellers and the knowledge base for subsequent studies.

Discussion: This paper discusses and argues the use of Q-methodology in a community study with older residents. The theoretical and philosophical positions and the methodological implications are outlined. The results can also be transformed into concrete, useful information to inform policymaking.

Implications: The application of Q-methodology in a large-scale urban redevelopment project among older community dwellers has been scant. The research, social and practice implication of this paper is to highlight the distinguishing characteristics of the Q-methodology by providing a contextual background and discussing the methodological considerations of the study. The advantages of using Q-methodology in the fieldwork and older adults are identified.

ABOUT THE AUTHOR

Daniel D.M. Leung is an Honorary Research Fellow of the University of Hong Kong—Sau Po Centre on Ageing, a Chartered Psychologist (United Kingdom) and an Associate Fellow of the Hong Kong Psychological Society. Currently, he is a research associate at the Chinese University of Hong Kong and worked at the Open University of Hong Kong as lecturer. His research interests include life/teaching satisfaction, health psychology, developmental psychology and gerontology. He published in the *International Nursing Review*, *Psychogeriatrics*, the *International Journal of Lifelong Education*, *Asian and Pacific Migration Journal*, the *University of Hong Kong*, the *Hong Kong Polytechnic University*, etc.

PUBLIC INTEREST STATEMENT

To make a response to trends in aging and urbanization, two historically significant demographic changes stressed by the World Health Organization (2015) and the European Commission, this paper discusses an alternative research method, Q-methodology, used in the first study that examined perceptions and needs from perspectives of older adults on the largest urban redevelopment and renewal project in Hong Kong. Eight themes related to time, space and person aspects were identified. Understanding these contextual themes can help the authority and the non-government organizations to plan and construct communities to be age-friendly and environmental sustainable and in turn, promote well-being and welfare of the community dwelling older adults.

Originality/value: Responding to trends in aging and urbanization, two historically significant demographic changes stressed by the World Health Organization and the European Commission, this paper focuses on the procedural decisions of the first study using Q-methodology to study older community dwellers facing the largest urban redevelopment and renewal project in Hong Kong to understand their perceptions and attitudinal patterns.

Subjects: Statistics for Social Sciences; Social Work; Urban Research Methods; Environmental Psychology; Health Psychology; Testing, Measurement and Assessment

Keywords: Q-methodology; urban redevelopment; urban renewal; older community dwellers; methodological; Hong Kong

1. Introduction

This paper focuses on the importance and utility of using Q-methodology among older community dwellers facing a large-scale urban redevelopment and renewal project. Originating from psychology and then extending to the social sciences and other disciplines, the Q-methodology was developed by William Stephenson in 1935 (Stephenson, 1935) and reinvigorated by Brown (2009 & 2002) to empirically investigate human subjectivity in response to the limitations of R methodology, a sign used for correlation coefficients and to examine the positivist assumptions. It is argued that Q-methodology provides valuable information regarding field studies and real-world applications given its provision of richer information and deeper meaning obtained from participants (McKeown & Thomas, 2013). Participants' constructions can be effective based on an analysis of Q-methodology (Ramlo & Newman, 2011). However, the intricacies of a field study using Q-sorting have drawn little attention in the literature. Accordingly, with using an empirical study as an example for illustration and elaboration, this paper discusses and argues the use of Q-methodology in a community study with older residents.

In its first section, this paper outlines the contextual background and highlights the theoretical position of adopting Q-methodology. It subsequently illustrates the method the study used to collect data from real life experiences. Finally, the key arguments for using such meaningful and practical ways to engage people in mixed methods as a source of triangulation and as a way to ensure the relevance of these methods to social science research are presented (Creswell & Plano Clark, 2011). The WHO (2016) formulated goals that respond to the global strategy and plan of action on aging and health, one of which is to "make cities and human settlements inclusive, safe, resilient and sustainable by providing universal access to safe, inclusive and accessible green and public spaces, in particular for older persons" (p.4). In addition, the WHO (2017) highlighted that "The current metrics and methods used in the field of aging are limited, preventing a comprehensive understanding of the health issues experienced by older people and the usefulness of interventions to address them" (p.22). For such, one of its strategic objectives for global strategy and action plan on aging and health is to improve measurement and research on healthy aging.

2. Contextual background

A study was conducted under the background of the largest urban redevelopment project in Hong Kong, that of the Kwun Tong Town Center Project. The term "town center" is commonly used in the United Kingdom, the Republic of Ireland, continental Europe and Hong Kong to refer to the core area of a town or a geographical or commercial center (Ratcliffe, 2009). Among 18 districts in Hong Kong, Kwun Tong, built in the early 1960s, has remained one of the most densely populated districts. Based on the Census and Statistics Department (C&SD) (2018, 2013), it has averaged 57,530 persons per square kilometer and has the third largest proportion of older adults in Hong Kong.

The town center, however, has become obsolete, a situation that has led to a range of concerns regarding the living environment including inadequate and dilapidated facilities and problems with respect to hygiene, safety and transportation. Additionally, the design of the town center no longer accommodates rapid population growth, changes in population structure, and alterations in expectations and preferences of community dwellers and users.

Based on the information provided by the Urban Renewal Authority (URA) (URA, 2018), the project involves a 53,500 square-meter area. With the intention to elevate the status of the Kwun Tong Town Center, making it an important hub and a landmark in Hong Kong, the cost of the project is estimated at HKD30 billion (equivalent to USD 3.85 billion or GBP 3.01 billion). Finally, it is tentatively anticipated that the project will be completed in 2026 and that the completion will entail close cooperation and coordination with relevant government departments.

Ensuring that appropriate and careful planning and coordination of all stakeholders involved, particularly the residents, while essential, is also challenging. Furthermore, it is also imperative to understand the perceptions and needs of all sectors concerned, including the older community dwellers, corresponding to the WHO (2017) that urges a comprehensive response to facilitate healthy aging and search for more age-friendly environment. In addition to a policy that promotes and supports aging in place, older adults want to stay in their homes and remain in their community for as long as possible and their perceptions regarding their surrounding environment are valuable as references for developing an age-friendly, sustainable city.

Hence, the study responded to trends in aging and urbanization, two historically significant demographic changes stressed by the WHO (2015) and the European Commission (van Staalduinen, Bond, Dantas, & Jegundo, 2018).

Urban areas and their residents grow and develop together. As no one is value-free, residents living in the town develop their perceptions toward, for example, the urban redevelopment project based on their specific experiences. Because the older community dwellers have lived in the town for many years with deep understanding and attachment with the town, their experiences and perceptions on the project are rich and intricate.

3. Theoretical ground and nature of Q-methodology

This study, which is grounded on a phenomenological stance that espouses the theoretical framework of social constructionism, explores the varied perceptions toward urban redevelopment, thus providing a channel for focusing on the lived, experienced world. Epistemologically, it is assumed that the same phenomena may be perceived differently in accordance with social constructionist epistemology (Burr, 2015). Knowledge is viewed as context-bound whereas meaning stems from a socially constructed process rather than from the intrinsic properties of objects. A community, or more specifically, residential locality, according to this context, cannot merely be viewed as a physical place as it also involves human psychological processes, activities, experiences and histories as well as the connectedness of these characteristics (Brandenburg & Carroll, 1995), while social life is viewed as multifarious (Constance & Barry, 2007)

Q-methodology, with its capacity to investigate systematically the subjective nature of perceptions, is associated with the phenomenological perspective (Shinebourne & Adams, 2007). The application of Q-methodology promotes the understanding of thoughts and concepts that are socially produced rather than naturally granted, and particular combinations and configurations of themes preferred by the study group can then be identified and discovered (Watts & Stenner, 2005).

Shemmings (2006) emphasized that Q-methodology is increasingly adopted as an innovative approach to qualitative analysis through the quantification of patterned subjectivities, even though it has been misconstrued, and not surprisingly, Stainton Rogers (1995) earlier noted its obvious absence from most textbooks on research methods used in psychology. Taylor, Delprato, Knapp

(1994) mentioned that psychology has not well identified the fundamental categories of individual experience. Nonetheless, the methodology has recently been applied in many disciplines, such as psychology (Ramsay, Cowell, & Gersch, 2018), education (Killam, Timmermans, & Raymond, 2013; Woods, 2012), nursing (Hensel, 2016), occupational therapy (Evans et al., 2017), risk training and quality management (McKeown, Hinks, Stowell-Smith, Mercer, & Forster, 1999). Moreover, it constitutes a useful platform for stakeholders with respect to their understanding of a project as part of consultative practices and project managements (Cuppen, Bosch-Rekvelde, Pikaara, & Mehos, 2016). That being said, the approach is considered novel in the field of gerontology.

4. Methodological and procedural considerations

This study examines subjective experiences, opinions and preferences to extend the knowledge base and inform policy at the policy making level by following a semi-structural focus group practice in an effort to gain epistemological understanding and develop a new theoretical framework, which additionally, is a response to the WHO's global research priorities in the twenty-first century that advance understanding of population aging and health (WHO, 2017).

To accomplish this objective, Q-methodology was adopted based on several considerations.

First, older adults possess rich lived experiences and subjective realities. However, these experiences and realities give rise to several questions. For example, two fundamental questions to be answered in the research are “What are older peoples’ needs and preferences?” and “What is the degree of diversity with respect to these needs and preferences?” (WHO, 2016). On the research side, the quantitative method of research alone limits the opportunities to collect deeper and richer information, whereas Q-methodology, with combination of qualitative analysis and quantification of patterned subjectivities (Shemmings, 2006), exhibits the capacity for statistically aided taxonomic strategies to classify adults’ phenomenal descriptions (Taylor, Delprato, & Knapp, 1994). It was used in a mixed methods research (Creswell & Plano Clark, 2011).

Second, a comprehensive understanding of aged-related issues experienced by older adults are currently constrained due to the limited metrics and methods (WHO, 2017 & 2016). Because of its practicality and its ease of use, in practice and application, Q-methodology is not only convenient for older adults, but it also extracts more valuable information from older participants than do more highly structured approaches.

Third, as the WHO (2007) emphasizes, “population aging and urbanization are the culmination of successful human development during the last century. They are also major challenges for this century”. Urban redevelopment involves a number of issues related to older adults’ daily living experiences and activities, especially in the unprecedented scale of this project, which corresponds to Amin (2000)’s findings in which the methodology can be applied in various settings and to diverse complex issues. As a field study, given that Q-methodology gathers perceptions and views from a broader scope, it functions as a platform to convey intricate thoughts and attitudes in a systematic way.

Fourth, with respect to urban redevelopment, it is important that, to ensure sustainability, the community has a data-driven understanding of the planning and design (Center for Home Care Policy and Research, 2012). No sector, by itself, can enhance the well-being of older adults, including those living in the community (WHO, 2016) and to this end, Q-methodology facilitates the accurate identification of the issues and the selection of priorities. Given the complex issues involved, it is difficult to use current scales and measurements as they likely omit critical information.

Sequential steps are used in Q-methodology, namely, preparing the Q-sample, developing a set of statements to be used in the study, and administering the Q-sorts (Ho, 2017). In the first phase, Q-statements contain relevant domains of subjectivity such as a communication concourse

(Stephenson, 1953). Regarding types, McKeown and Thomas (2013) differentiated between naturalistic and ready-made Q-samples. The former stem from real-world communication contexts, while the latter are developed from existing literature, such as scales. In the study, 36 Q-statements were formulated from these types of Q-samples using diverse sources, such as a field study that included discussions with a representative population about their needs, perceptions, attitudes toward the projects; field observations including daily living of population and environment; government literature such as press releases; reviews of academic journals; non-governmental sources that included organizations, individuals, reports, written narratives and case notes; and media coverages. For instance, “To construct a large park”; “To improve air quality by reducing vehicular traffic”; “To increase the number of covered places, such as pavilions, rain shelters”; “To widen existing pavements”; “To build handrails in the parks to assist walkers”; “To establish a city hall/community hall in the region”; “To organize cultural folk art performances”; “To preserve traditional architectures in the district (e.g., temple)”; “To generate more job opportunities for older residents”; and “To create more large department stores”.

These stimulus items represent the breadth and diversity of the perceptions associated with the study subject. They also address a recommendation by the WHO (2016) that older adults be involved in every stage of multidisciplinary research if equity-oriented analyses are required as doing so strengthens the capacities of the research and the incentives for innovation.

In the next phase, to rank order the important aspects of urban redevelopment, three identical paper boards were created to serve as the operational mediums of the Q-sorts (McKeown & Thomas, 2013). These boards consisted of a 36-box grid in the form of a 9-point quasi-normative distribution. Specifically, piles 1 and 9: one card; piles 2 and 8: three cards; piles 3 and 7: four cards; piles 4 and 6: six cards; pile 5: eight cards, thus indicating subjective neutrality. Pile 1 is the most agreeable, and pile 9 is the least agreeable with respect to their attitudes toward urban redevelopment. Accordingly, each statement was numbered randomly and written onto a part of the card, resulting in a set of 36 statements being prepared for each board.

In contrast to a quantitative study, smaller sample sizes are required for the Q-methodology approach (Shemmings, 2006) as it focuses predominantly on attitudinal patterns of the particular targets under various research orientations and its purposes differ from those of mainstream research. With purposive sampling determining the setting where the research is most likely to occur and identifying the appropriate subjects and areas to be studied for an in-depth data search, such as personal meaning and experiences (Patton, 1990), 16 older community dwellers, 12 females and 4 males, with age range between 55 and 81 (M: 68.44; SD: 7.49), who were recruited from a center for older residents participated in the study. Furthermore, the study was conducted in a center with which older participants were affiliated, therefore allowing them to participate in familiar and relaxed atmosphere.

As emphasized by May (2002), understanding the participants’ perspectives and experiences is critical. In agreement with the theoretical position and the administration requirements; and combined with instructions regarding the level description of each stimulus (McKeown & Thomas, 2013), two research assistants participated in the Q-sorting process alongside each older participant. With its capability to contribute rich data, the participants were free to rank order a set of 36 palm-size statement cards that described urban redevelopment and renewal from their perspective with minimal researcher-imposed constraints, on a forced-free quasi-normal grid.

In both analysis and interpretation, the patterns of subjectivity in a group of Q-sort participants were subsequently quantified (Akhtar-Danesh, Baumann, Cordingley, 2008) through a process that involved taxonomic work. The positioning of the statements constituted a distinctive configuration of each target toward the subject matter studied, and the commonalities and differences among of viewpoints were identified without conforming to a priori conceptualizations (Shinebourne & Adams, 2007).

5. Results

Generally, to generate clusters of participants who perform similar sorts from client-centered data (Watts & Stenner, 2012), principal component analyses followed by varimax rotation were conducted. Owing to mixed methods of study design adopted in this study (Creswell & Plano Clark, 2011), Q-sorts were exercised as part of the research activities. Through the convergence of data from different sources as well as the triangulation of the data (Jonsen & Jehn, 2009), Q-statements were assigned to the relevant themes through analysis of the thematic approach. Themes containing relevant Q-statements represent the shared forms of understanding among participants, whereas the weight of the theme is obtained by computing cluster scores contingent upon the accumulation of transformed Q-statement scores within each theme.

The theme carrying the highest cluster mean was “vocational engagement”, followed by “green environment”, “accessibility”, “health”, “security”, “urbanization”, “community engagement”, “conservation, preservation & reminiscence”. These eight themes not only constructed a knowledge base for subsequent studies such as focus group interviews, the findings also provided existential understanding of older adults facing urban redevelopment; and can be further characterized into epistemological understanding on time, space, person aspects for assisting in construction of age-friendly environment and social and environmental sustainability. Specifically, for time aspect, through alignment of themes including “vocational engagement”, “community engagement”, and “conservation, preservation & reminiscence”, presence of both vertical timeline (whole-day-long daily living) and horizontal timeline (from the past to the future) is emerged, which reveals the dynamics of human activities, including those of older adults, and urban development and their close relationships. However, these dynamics may easily be ignore in the physical construction work. Space aspect characterized by themes of “urbanization”, “accessibility”, and “green environment”, implies that these three as potential determinants of healthy aging should be taken into consideration in planning and (re)developing the town to address the needs and concerns of residents. Person aspect resulted from themes of “health” and “security” highlights the importance of well-being and welfare of community dwelling older adults.

6. Overall discussion

To the best of the author’s understanding, this methodology paper discussed the procedural decisions of the first study using Q-methodology to examine perceptions and attitudinal patterns of community dwelling older adults facing the largest urban redevelopment and renewal project in Hong Kong.

As illustrated above, it is argued that Q-methodology can be used individually or complementarily. To take this empirical study as an example, it was adopted as part of research activities for studying and addressing the complexity of the urban redevelopment project and the intricate experiences of older community dwellers. The measure offers greater access to the intricacies between thought and issue and makes them more easily and readily understood. It is compatible with social constructionist epistemology (Burr, 2015) and with quantification. By using Q-methodology, this study generated context-bound knowledge. Eight themes consisting of “vocational engagement”, “green environment”, “accessibility”, “health”, “security”, “urbanization”, “community engagement” and “conservation, preservation and reminiscence” were induced, classified into aspects of time, space and person. The findings provided evidence-based information about age-friendly environment and social and environmental sustainability for the research areas; and substantiated the WHO (2017)’s recommendations to make a comprehensive response to enable healthy aging with the aim of better understanding of gerontological issues.

Though views of the participants cannot be generalized and may not represent the viewpoints of other stakeholders or of the general population, the information as reference material is of use with respect to informing policymaking. Understanding these contextual themes and their priorities facilitate the authority and the non-government organizations to plan and construct communities to be age-friendly and environmental sustainable and in turn, enable well-being of the

community dwelling older adults. Nonetheless, there are procedural challenges associated with conducting a Q-study. For example, time spent and scholastic input when using the Q-methodological approach are no less than the traditional quantitative one. While the Q-sorting practice is an intensive exercise, when compared with other surveys, it is determined to be a less common albeit an efficient method of data collection (Ho, 2017).

For further studies, Q-methodology not only provides valuable information about the various worlds of older adults, but its appropriateness and its contributions to a community study are revealed. In addition, corresponding to the WHO (2016)'s evidence-based policy on aging and health, it is anticipated that by using Q-methodology, the key research findings can inform empirical policy making. Given that, urbanization and aging are two of this century's more significant shifts in the world according to the WHO (2015), it is not difficult to imagine that this study and this paper provide relevant information on future urban projects and on future related studies. This study has several limitations. First, the study was conducted on a single district, population may be somewhat unique. Second, despite acceptance of fewer participants, sample size in the study was limited. Third, as the Q-methodology was employed as part of a series of research, quantification of Q-statement may not be as typical as those of other studies with different applications. Future studies are recommended to advance applicability of Q-methodology.

In conclusion, this methodology paper demonstrates the distinguishing characteristics of the Q-methodology approach by providing a contextual background and discussing the methodological considerations of a study. Despite the growing literature regarding the use of Q-methodology, its application in an urban redevelopment and renewal project has been scant, and hence, this study addresses this area and the eight key themes covering time, space, person aspects were scrutinized, a context-bound knowledge that enhances the understanding of the complexity between environment and human beings.

Funding

The author received no direct funding for this research.

Author details

Daniel D.M. Leung^{1,2,3,4}

E-mail: dleung@cuhk.edu.hk

¹ Research Associate, The Chinese University of Hong Kong, Hong Kong.

² Honorary Research Fellow, The University of Hong Kong, Hong Kong.

³ Chartered Psychologist, British Psychological Society, United Kingdom.

⁴ Associate Fellow, Hong Kong Psychological Society, Hong Kong, Hong Kong.

Citation information

Cite this article as: Use of Q-methodology in a study of older community dwellers facing the largest urban redevelopment and renewal project in Hong Kong, Daniel D.M. Leung, *Cogent Psychology* (2018), 5: 1552641.

References

- Akhtar-Danesh, N., Baumann, A., & Cordingley, L. (2008). Q-methodology in nursing research: A promise method for the study of subjectivity. *Western Journal of Nursing Research*, 30(6), 759–773. doi:10.1177/0193945907312979
- Amin, Z. (2000). Q methodology – A journey into the subjectivity of human mind. *Singapore Medical Journal*, 41(8), 410–414.
- Brandenburg, A.M. & Carroll, M.S. (1995). Your place or mine? The effect of place creation on environmental values and landscape meanings. *Society and Natural Resources*, 8(5), 381–398.
- Brown, S. R. (2002). Q technique and questionnaires. *Operant Subjectivity*, 25(2), 117–126.
- Brown, S. R. (2009). Q technique, method, and methodology: Comments on Stenor Danielson's article. *Field Methods*, 21(3), 238–241. doi:10.1177/1525822X0932080
- Burr, V. (2015). *Social constructionism* (3rd ed.). London, UK: Routledge.
- Census and Statistics Department. (2013). *Hong Kong 2011 population census thematic report: Older persons*. The Government of Hong Kong Special Administrative Region, Hong Kong.
- Census and Statistics Department. (2018). *Hong Kong in figures (latest figures) – population density by area*. The Government of Hong Kong Special Administrative Region Retrieved March 22 2018 from www.statistics.gov.hk/hk_in_figures/popu/popu5e.xls.
- Center for Home Care Policy and Research. (2012). *The AdvantAge initiative: Helping communities develop strategies for aging in place*. Visiting Nurse Service of New York (VNSNY), NY, US.
- Constance, B., & Barry, L. H. (2007). 'What about feelings?': A study of emotion and tension in social work field education. *Social Work Education*, 26(4), 399–413. doi:10.1080/02615470601081712
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). London: Sage Publications.
- Cuppen, E., Bosch-Rekveltdt, M. G. C., Pikaara, E., & Mehos, D. C. (2016). Stakeholder engagement in large-scale energy infrastructure projects: Revealing perspectives using Q methodology. *International Journal of Project Management*, 34(7), 1347–1359. doi:10.1016/j.ijproman.2016.01.003

- Evans, K. L., Girdler, S. J., Falkmer, T., Richmond, J. E., Wagman, P., Millsteed, J., & Falkmer, M. (2017). Viewpoints of working sandwich generation women and occupational therapists on role balance strategies. *Scandinavian Journal of Occupational Therapy*, 24(5), 366–382. doi:10.1080/11038128.2016.1250814
- Hensel, D. (2016). Q-methodology: An alternative design for undergraduate nursing honors research. *Journal of Nursing Education*, 55(11), 659–662. doi:10.3928/01484834-20161011-10
- Ho, G. W. K. (2017). Examining perceptions and attitudes: A review of Likert-type scales versus Q-methodology. *Western Journal of Nursing Research*, 39(5), 674–689. doi:10.1177/0193945916661302
- Jonsen, K., & Jehn, K. A. (2009). Using triangulation to validate themes in qualitative studies. *Qualitative Research in Organizations and Management: an International Journal*, 4(2), 123–150. doi:10.1108/17465640910978391
- Killam, L., Timmermans, K. E., & Raymond, J. M. (2013). The barriers to and benefits of conducting Q-sorts in the classroom. *Nurse Researcher*, 21(2), 24–29. doi:10.7748/nr2013.11.21.2.24.e1210
- May, T. (2002). *Social research: Issues, methods and process* (3rd ed.). Buckingham: Open University Press.
- McKeown, B., & Thomas, D. (2013). *Q methodology* (2nd ed.). Newbury Park, CA: Sage.
- McKeown, M., Hinks, M., Stowell-Smith, M., Mercer, D., & Forster, J. M. (1999). Q methodology, risk training and quality management. *International Journal of Health Care Quality Assurance*, 12(6), 254–266. doi:10.1108/09526869910291823
- Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage.
- Ramlo, S. E., & Newman, I. (2011). Q methodology and its position in the mixed-methods continuum. *Operant Subjectivity*, 34(4), 172–191.
- Ramsay, J., Cowell, N., & Gersch, I. (2018). How school staff understand the relationship between problem behaviours and language difficulties. *Educational Psychology in Practice*, 34(1), 1–25. doi:10.1080/02667363.2017.1367647
- Ratcliffe, J. (2009). *Urban planning and real estate development*. Abingdon. New York: Routledge.
- Shemmings, D. (2006). 'Quantifying' qualitative data: An illustrative example of the use of Q methodology in psychosocial research. *Qualitative Research in Psychology*, 2006(3), 147–165. doi:10.1191/1478088706qp0600a
- Shinebourne, P., & Adams, M. (2007). Q-Methodology as a phenomenological research method. *Existential Analysis*, 18(1), 103–116.
- Stainton Rogers, R. (1995). Q-methodology. In J. A. Smith, R. Harre', & L. van Langenhove (Eds.), *Rethinking methods in psychology* (pp. 179–195). London: Sage Publication.
- Stephenson, W. (1935). Technique of factor analysis. *Nature*, 136, 297. doi:10.1038/136297b0
- Stephenson, W. (1953). *The study of behavior: Q Technique and its methodology*. Chicago, IL: University of Chicago Press.
- Taylor, P., Delprato, D. J., & Knapp, J. R. (1994). Q-methodology in the study of child phenomenology. *The Psychological Record*, 44(2), 171–183. doi:10.1007/BF03395126
- Urban Renewal Authority. (2018). *Webpage of the urban renewal authority*. Hong Kong. Retrieved from <https://www.ura.org.hk/en>
- van Staalduinen, W., Bond, R., Dantas, C., & Jegundo, A. L. (2018). Smart age-friendly cities | age-friendly smart cities! Retrieved in European Commission webpage Retrieved from https://ec.europa.eu/eip/ageing/library/smart-age-friendly-cities-age-friendly-smart-cities_en
- Watts, S., & Stenner, P. (2005). Doing Q methodology: Theory, method and interpretation. *Qualitative Research in Psychology*, 2, 67–91. doi:10.1191/1478088705qp022oa
- Watts, S., & Stenner, P. (2012). *Doing Q methodological research: Theory, method and interpretation*. London, England: Sage.
- Woods, C. (2012). Exploring emotion in the higher education workplace. *Higher Education*, 64, 891–909. doi:10.1007/s10734-012-9535-2
- World Health Organization. (2007). *Global age-friendly cities: a guide*. Geneva, Switzerland. ISBN 9789241547307.
- World Health Organization. (2015). *Measuring the age-friendliness of cities: A guide to using core indicators*. Kobe, Japan: WHO Centre for Health Development. ISBN 9789241509695
- World Health Organization. (2016). *Multisectoral action for a life course approach to healthy ageing: Draft global strategy and plan of action on ageing and health. Sixty-ninth World Health Assembly A69/17-Provisional agenda item 13.4*.
- World Health Organization. (2017). *Global strategy and action plan on ageing and health*. Geneva, Switzerland. ISBN 978-92-4-151350-0.



© 2018 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format. Adapt — remix, transform, and build upon the material for any purpose, even commercially.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.

You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.

***Cogent Psychology* (ISSN: 2331-1908) is published by Cogent OA, part of Taylor & Francis Group.**

Publishing with Cogent OA ensures:

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

Submit your manuscript to a Cogent OA journal at www.CogentOA.com

