
An examination of the sources of complexity on housing affordability (HA) as a concept and concerns in Housing Studies

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Abstract:

In Housing Studies, housing affordability (HA) is a key concept. This is especially relevant to Housing Studies in Hong Kong as the city has long been reported to have the worst housing affordability status in the world. This paper examines the sources of complexity of the housing affordability notion and concerns based on literature review, newspaper articles study and a Facebook questionnaire survey. It argues for the methodological relevance of using the systems-based Housing Imagination evaluation framework of Ho (2014a) to examine complex Housing Studies topics such as housing affordability. Indeed, housing affordability is conceptually complex and housing affordability concerns in the real world are very often also intricate.

Key words: The systems-based Housing Imagination evaluation framework; Housing affordability; Facebook-based questionnaire survey; Newspaper articles study; The System Complexity model

Introduction

In Housing Studies, housing affordability (HA) is a key topic of study, see, for example, Balchin and Rhoden (Ch. 11, 2002). Typically, the HA topic examines (i) effects of house price/earnings ratios and house price/income ratios, (ii)

affordability among people of different profiles and (iii) ways of increasing affordability (Balchin and Rhoden, 2002) and (iv) the reasons for high housing prices (Lau and Li, 2006). Two concepts appear fundamental, i.e., *housing affordability* and *affordable housing*. The former is about people's housing concerns while the latter is more on housing solutions and products. Both concepts deal with the core attribute of *affordability*. For Stone, Burke and Ralston (2011), there are three main questions in housing affordability study: (i) affordable to whom?, (ii) on what standard of affordability?, and (iii) for how long? In Hong Kong, where the writer lives, it has long been reported to have the least housing affordability status in the world, e.g., Liu (2014) and Holliday (2014). Thus housing affordability is described as a big issue (Lam, 2012) or the Number 1 priority (*South China Morning Post*, 2014) in the city. Out of both teaching and research interest, the writer makes an attempt to uncover the complexity sources of the housing affordability notion and concerns via literature review, newspaper articles study and a Facebook-based questionnaire survey. It then argues for the relevance of using the systems-based Housing Imagination evaluation framework of Ho (2014a) to study housing affordability concerns.

Three main sources of complexity of the housing affordability notion and concerns

To start with, a common definition of *affordable housing* (AH) is: "housing units that are affordable by that section of society whose income is below the median household income" (The Economic Times, 2014), also see Wikipedia (2014a). From this definition, it is clear that *affordable* is not "an inherent characteristic of a housing unit – it is a relationship between housing and people. For some people, all housing is affordable, no matter how expensive; for others, no housing is affordable unless it is free" (Stone, Burke and Ralston, 2011). There are

thus both measurement and multiple perception considerations in the AH notion and related concerns. *Housing affordability (HA)*, a closely related term, has also been defined in a number of ways:

Definition 1: “Affordability is conventionally measured by the ratio of housing costs to income. For renters...the conventional indicator of affordability is the rent-to-income ratio...” (Thalman, 2003). [The focus is on measurement.]

Definition 2: There are three ways to perceive housing affordability, namely: (i) purchase affordability (i.e., whether a household is able to borrow enough funds to purchase a house), (ii) repayment affordability (i.e., whether the burden on a household to repay the mortgage is too heavy), and (iii) income affordability (i.e., a measure on the ratio of house price to income) (Gan and Hill, 2009). [The focus is on perceptions and measurements.]

Definition 3: “Affordability is ...about a balance of expenditure between housing and non-housing items, and high housing expenditure burdens may be of policy concern even if residual incomes remain above the poverty line” (Chen *et al.*, 2010). [The focus is on policy concern.]

Definition 4: “Housing affordability is commonly defined, particularly for public policy purpose, as a relationship between housing costs and income. If housing costs are perceived to be too high relative to household income, then a housing affordability problem is perceived to exist.” (Chrisholm, 2003). [The focus is on policy concern and perceptions.]

Definition 5: “Affordability is concerned with securing some given standard of housing (or different standards) at a price or a rent which does not impose, in the eyes of some third party (usually government) an unreasonable burden on household income.” (Freeman *et al.*, 2000). [The focus is on policy concern and perceptions.]

In addition, that there are diverse and incompatible approaches to define housing affordability, i.e., categorical,

relative, subjective, family budget, ratio and residual, as has been pointed out by Stone, Burke and Ralston (2011). These definitions from various writers bring in a number of housing affordability (HA) considerations, e.g., HA problems, public and private HA concerns, HA measurements and HA definition approaches. Such diversity of ideas and approaches on housing affordability reflects the complexity of housing affordability as an intellectual notion as well as real-world concerns in Housing Studies. The writer opines that HA complexity can be traced to three primary sources from the academic and real-world domains. They are as follows:

Source 1: From the diversity of Research Philosophies involved: With regard to the five HA definitions mentioned above, four Research Philosophies can be related to the discussion of them, namely, Positivism, Interpretivism, Realism and Pragmatism (Saunders *et al.*, 2012). First of all, Positivism¹ is reflected in definitions 1, 2 and 3 which are concerned with measuring housing affordability as an independent object. This is especially exemplified in measures such as Housing Affordability Index (Wikipedia, 2014b) and by the measurement approach on housing affordability (Lau and Leung, 2001). Interpretivism², the second Research Philosophy, is echoed in definitions 3, 4 and 5, as housing affordability is considered more as a perceived and concerned object. The third Research Philosophy, Realism³, could also be relevant to study definitions 3, 4 and 5, if certain deep structures (being objective

¹ *Positivism research philosophy* favors data collection about an “objective reality” and discovery of regularities from collected data (Saunders *et al.*, 2012).

² *Interpretivism research philosophy* emphasizes learning “the differences between humans... as social actors” with “own set of meanings” (Saunders *et al.*, 2012).

³ *Realism* can be classified into 2 types: *Direct Realism* (type 1) maintains that “what we experience through our senses portrays the world accurately” while *Critical Realism* (type 2) equates experience as “images of the things in the world, not the things directly” (Saunders *et al.*, 2012). It is type 2 that is considered in the discussion here.

but not directly observable), are considered to be the mechanisms that generate perceptions, e.g., perceived housing affordability. The fourth Research Philosophy, Pragmatism⁴, is applicable to study all the definitions on housing affordability, as it is prepared to consider any definition that is shown to support actions to address HI concerns with practical consequences. Nevertheless, the diversity of Research Philosophies that can be and have been involved in the study of housing affordability could create cognitive confusion and overload to people who want to understand the housing affordability concept and HA concerns in the real world.

Source 2: From the diversity of research interests and research problems involved: It arises from research on HA concerns in the real-world settings. More often than not, in the conduct of empirical research, researchers, with personal research interests, sweep in various related considerations in their investigations, resulting in the formation of an overall sizable composite knowledge structure comprising various concepts and issues making up an inter-related network of notions on HA. Six examples from the academic and journal literatures are provided as follows:

Example 1: “Grayson Perry: London needs affordable housing because ‘rich people don’t create culture’...” (Moodley, 2014).

Example 2: Affordable housing programs can create “unintended consequences” such as low building quality, poor design, inferior locations and lack of fairness in affordable housing units location, etc.. (Dang, Liu and Zhang, 2014).

⁴ *Pragmatism research philosophy* states that (i) there are multiple ways to interpreting and conducting research and (ii) it is important to consider concepts and ideas that are relevant for supporting actions and shown to have practical consequences (Saunders *et al.*, 2012).

Example 3: Sustainability is associated with affordable housing practices by means of a holistic framework that “promotes environmentally responsible practices” (Attia, 2013).

Example 4: The worldviews of agents in social housing provision can work against the effective implementation of existing housing affordability policy (Hoggart and Henderson, 2005).

Example 5: Unaffordable housing does not only create general financial hardship, but also contributes to poor mental health to home purchasers and private renters (Mason *et al.*, 2013).

Example 6: Ong (2000) states that housing affordability and upward mobility from public to private housing are “closely related issues”: “Typically young families purchase lower-end houses with the intention of moving up to better quality housing or better locations as their incomes increase over time” (Ong, 2000).

In this respect, from the literature review of the writer, four main clusters of interacting issues and notions can be discerned in the composite knowledge structure of housing affordability as a notional theme in Housing Studies. [It is quite complicated to construct a cognitive map for such a composite HA knowledge structure on computer; nevertheless, interested readers can try to do so on a piece of paper by handwriting for a literature review exercise.]:

Cluster 1: General environmental drivers: (i) macro-economic factors and policies, e.g., interest rate, income distribution, poverty rate, movement of financial capital (ii) social policies, e.g., housing policy and immigration policy, (iii) micro-economic factors, e.g., housing construction industry structure and supply/ demand of housing.

Cluster 2: Intermediate variables: (i) house prices, (ii) access to mortgage credit facilities and (iii) environmentally responsible practices in housing construction.

Cluster 3: Direct housing affordability factors: (i) specific housing affordability-related problematic situation under consideration, (ii) building quality, housing policy implementation challenges (iii) perceived housing affordability status, (iv) housing affordability measurement values.

Cluster 4: Consequence variables: (i) cultural impacts, (ii) environmental impacts, (iii) social stress and harmony, (iv) social injustice, (v) economic impacts and (vi) political impacts.

Source 3: From the system complexity of the HA-related problematic situations involved: It occurs as different individuals and stakeholder groups in a specific problem context inevitably “frame” housing affordability concerns with their respective worldviews (including their own self-interests and values) (Nguyen, Basolo and Tiwari, 2013). The following writings are indicative: (1) Gan and Hill (2009) remind us that “Part of the problem with the concept of affordability is that different sectors of society may be affected in very different ways by events such as a house price boom”, and (2) Rakodi and Withers (1995) make clear that “In the private sector, the choices exercised by consumers are expected to give the providers of housing guidance as the what types of accommodation urban households are willing and able to pay for. However, the basis of housing policy and project design decisions by the public sector is more problematic...”. Besides, the writer’s research on newspaper articles study also reveals this source 3 of complexity related directly to HA concerns in the real world. The following three local newspaper articles in Hong Kong are illustrative in this respect:

- *Newspaper article 1:* “In crowded Hong Kong, with its skyrocketing property prices, developers are building ever-more miniscule flats with relatively small price tags. The question is: can we live in them? Hongkongers got a hint at the answer yesterday when developers Cheung Kong showcased some of the city’s smallest new

flats at hts Mont Vert II estate in Tai Po. Of the 22 homes for sale, nine were 180 sq ft....” (Nip, 2014)

Interpretation: for developers, affordable housing is a product concept that addresses the marketing concern of how to sell products (tiny flats) that are affordable to property buyers.

- *Newspaper article 2:* “Generations are different in the way they think, but their aspirations have always been the same: to own a place that they can call their own. I’m more than half a century old and I still don’t have that. Circumstances got in the way, among them raising two children and some poor investments, but that doesn’t mean that I can’t afford a flat. If I quit my job, I could turn my 25 years of pension into a 600 sq ft box in Tseung Kwan O or Kornhill. If I did that, my dilemma would be: what now?.....” (Kammerer, 2014) [The writer is a senior writer at the South China Morning Post].

Interpretation: this is a personal notion and concern of housing affordability on Kammerer’s part.

- *Newspaper article 3:* “The youth protest movement that started on September 26 is demanding political freedom, but there is also an obvious socioeconomic cause behind the action: the divergence in fortunes between the city’s rich and the general public. Hong Kong today is more prosperous than a generation ago. Landlords and homeowners have benefits, but many middle-class residents feel squeezed. Property prices are at a record high, up from a third from the peak in 1997.... Young people have readily embraced the radical view that tycoons dominate the economy and property developers are hegemonic. They trace these injustices ultimately to Hong Kong’s political arrangements, with Beijing as the master behind the curtains....” (Wong, 2014).

Interpretation: this portrays a radical view on the nature of housing affordability problem from certain young people in Hong Kong.

In short, the complexity of the HA notion and HA concerns originates from the variety of academic and practical interests of researchers and stakeholders on specific HA concerns in real-life situations. [Conceptually, the nature of HA complexity can be further clarified by means of the System Complexity model of Ho (2014a). Such an intellectual exercise is not pursued here.] Complexity of the HA notion and concerns arising from source 3 has also been revealed in the Facebook-based survey on HA carried out by the writer in December this year. The survey captures the diversity of housing affordability concerns from people with different profiles. The survey exercise is reported in the next section.

Findings from a Facebook-based questionnaire survey on housing affordability in Hong Kong

A questionnaire survey was conducted by the writer from December 17 to 21, 2014 with the writer's Facebook friends. The questionnaire survey tool used, which is free of charge, comes from Kwiksurveys.com. At the time of the survey, there were 1,561 Facebook friends on the writer's account, most of whom have been or are the writer's students. Their education background ranges from business studies, e.g., accounting and business administration, to non-business studies, e.g., mechanical engineering, computing and housing studies. Via Facebook messaging to encourage participation in the survey, the writer was able to enroll 173 respondents to actually participate in the survey. Admittedly, there are certain limitations, e.g., external validity weakness, as well as strengths, e.g., free-of-charge and speed of survey exercise, of the Facebook-based questionnaire survey method. They are not

further discussed here as such an evaluation on this research method has been carried out by Ho (2014b). There are altogether 13 questions in the questionnaire, see Appendix 1. The questions cover (i) certain attributes of the respondents' personal profiles, e.g., marital status, apartment ownership, age group and social class, etc., which could affect housing affordability perceptions and (ii) both perceived personal housing affordability and societal housing affordability status and concerns of the respondents. The following are the main findings from the questionnaire survey, grouped into (i) basic survey statistics and (ii) additional findings via interactive querying (see also Appendix 1, 2a and 2b):

(i) Findings from basic survey statistics (Findings 1 to 6)

Finding 1: 91 respondents (53.5% of the total respondents) do not feel that the government is capable of improving housing affordability in Hong Kong with appropriate housing policy and that 16 respondents (9.4% of total) have no idea whether the government is capable of doing so. At the same time, 116 respondents (67.4%) expect that housing price movement is likely to go north in 2 years' time. Bearing in mind also that Hong Kong has the least housing affordability status (Liu, 2014; Holliday, 2014), the housing affordability status for those who rent their apartments probably will get worse if their perceptions are correct. This could be avoided though if their salary increase in the near future exceeds increase in housing prices.

Finding 2: Only 4 respondents (2.3%) consider themselves to belong to the upper social class and 22 respondents (12.9%) have no idea what social class they belong to. The rest, in total 84.8%, belong either to the lower class or the middle class. The figures appear normal but also indicate that it is sometimes not easy to tell which social class a person

belongs to, as the criteria for social class classification are not clear-cut and vary over time (Wikipedia, 2014c).

Finding 3: 151 respondents (87.8%) feel the need to improve living environment in 2 years' time. This reflects the general dissatisfaction with their current living environment and also indicates on a broad base the increased demand for better quality housing in the near future.

Finding 4: 62 respondents (36%) feel that their personal housing affordability status has major favourable impacts on their quality of life vs. 37 respondents (21.5%) who feel that theirs has major unfavourable impacts. This suggests that there are two quite different groups of respondents in terms of personal housing affordability status. The message is clear: not everybody is unhappy with their personal housing affordability status; understandably, those who own their flats or own more than one apartment for quite some years benefit tremendously from the increase in housing prices over the last 10 years or more.

Finding 5: 63 respondents (36.6%) own their apartments and 52 respondents (30.2%) rent their apartments. Finally, 57 respondents (33.1%) do not own apartments but also do not need to pay rent. Overall, the respondents are largely evenly distributed among these three categories of housing situation.

Finding 6: 146 respondents (85.4%) live with their families and 25 respondents (14.6%) live alone. This indicates that for housing affordability study, family is an important unit of analysis.

(ii) Additional findings based on interactive querying on survey statistics using MS Excel (re: Appendix 2b) (Findings 7 to 13)

Finding 7: For those who own their apartments (total 63 respondents), 41 feel that either their personal housing affordability status has minor or major favourable impacts on

their quality of life now. That makes up 65% (41/63) of these respondents. The corresponding figure for all the 173 respondents is 53.4% (i.e., 17.4% plus 36%). This indicates that house ownership has favourable impacts (both minor and major) on the respondents' quality of life now.

Finding 8: For those who live alone (i.e., total 25 respondents), 8 (32%) feel that their personal housing affordability status has either minor or major unfavourable impacts on their quality of life now. This figure of 32% is the same for all the 173 respondents. This indicates that whether the respondent lives alone or not does not cause extra unfavourable impacts on their quality of life arising from their personal housing affordability status.

Finding 9: For the 4 respondents who perceive themselves to belong to the upper social class, 3 (75%) own their apartments. This figure is higher than the overall figure of 36.6% for all the 173 respondents. Again, 3 of them out of 4 (75%) foresee their personal housing affordability status to improve in 5 years' time, as contrasted to the overall figure of 26.9% in this survey. This indicates that the self-perceived upper social class respondents have a more rosy view on their future personal housing affordability status than others.

Finding 10: For all the self-perceived lower social class respondents (64 in total), 29 (45.3%) feel that their personal housing affordability status has either minor or major unfavourable impacts on their quality of life now. This is higher than the overall figure of 32% (10.5% plus 21.5%) for all the respondents. This indicates that the self-perceived lower social class respondents are more dissatisfied than others on their personal housing affordability status now.

Finding 11: For the self-perceived lower social class respondents (64 in total), 8 of them (12.5%) feel that the government is quite capable of improving housing affordability in Hong Kong, which is slightly less than the overall figure of 14.1% for all the 173 respondents. The self-perceived lower

class respondents have slightly less confidence on the government's ability to improve housing affordability in Hong Kong than others.

Finding 12: For the self-perceived lower social class respondents (64 in total), 25 (39%) strongly feel the need to improve living environment in 2 years' time. This figure is higher than the overall figure of 31.4%. This indicates that the lower social class respondents are also more dissatisfied with their living environment than others.

Finding 13: 1 young respondent (with age from 18 to 27) (5.5%) out of 18 feels that the government is quite capable of improving housing affordability in Hong Kong. This is substantially lower than the overall figure of 14.1% that share the same feeling in this survey. This indicates that the young generation has much less confidence in the government's ability to improve housing affordability in Hong Kong than others. However, as the figure is just 1 respondent, the finding's external validity is very low in this case.

The 13 survey findings give a snapshot view of how people with different profiles perceive various aspects on housing affordability in Hong Kong in December this year. The findings in general support the inter-subjective complexity view of housing affordability concerns. It can be argued that, to cope with the inevitably complex nature of housing affordability at the community/ society level, any attempt to address housing affordability in a specific problem context at as specific moment in time at this level can benefit substantially by adopting a Critical Systems perspective and approach (Jackson, 2000), such as the systems-based Housing Imagination evaluation framework of Ho (2014a). On the other hand, it is not always appropriate to employ this evaluation framework to examine HA concerns at the personal level, as some people have made a big fortune by owning and investing properties in Hong Kong. It would be quite unnecessary to consider their housing affordability status as problematic (e.g., sympathetic) in this

case. The evaluation framework as proposed by Ho (2014a) is further discussed in the next section.

A systems-based Housing Imagination evaluation framework for housing affordability study

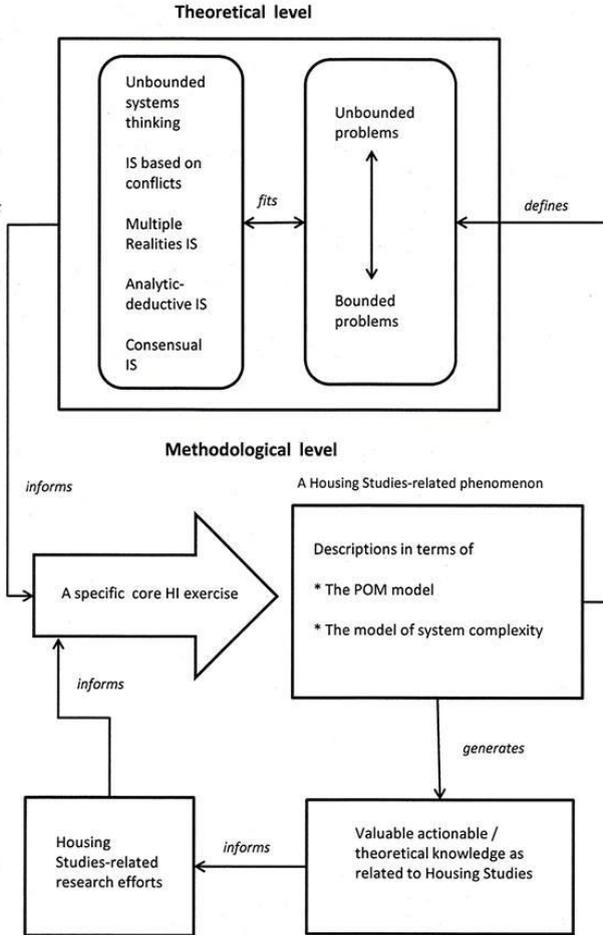
Thus far, the literature review, the newspaper articles study and the questionnaire survey by the writer all point to the following three views about HA:

- *View 1: Housing affordability, as an intellectual notion, is conceptually complex,*
- *View 2: Housing affordability concerns at the society level are very often complex and problematic,*
- *View 3: Housing affordability concerns at the personal level vary, with some people very upset while others quite satisfied with their personal HA status.*

To address the intricacy of HA concerns, especially at the society/ community level, Ho (2014a) proposes a systems-based Housing Imagination (HI)⁵ evaluation framework, which is highly relevant for empirical housing affordability study. The systems-based HI evaluation framework covers the following two cyclical phases, see also Figure 1:

⁵ *Housing Imagination* “is an intellectual field of study in Social Sciences that makes use of the Geographical Imagination lenses to examine topics in Housing Studies” (Ho, 2014c).

Figure 1: A systems-based HI evaluation framework



Phase 1 works at the theoretical level: The evaluative step involves choosing an appropriate inquiry system (i.e., a set of activities to produce valid knowledge) (Mitroff and Linstone, 1993), based on its relative strengths and weaknesses in addressing topics possessing a certain extent of complexity, to study a particular topic. This is an exercise of fitness between inquiry systems and the level of system complexity, as noted by the word “fits” in Figure 1. In this case, the topic investigated on can be housing affordability in a particular problem context

at a particular moment in time, perceived to possess a specific level of system complexity (Ho, 2014a) by the HA investigator and the stakeholders involved. This consideration on system complexity is covered in the box of “Unbounded problems <-> Bounded problems” in Figure 1. Phase 1 does not require primary and secondary data gathering efforts.

Phase 2 operates at the methodological level: The investigative step involves formulating an appropriate Housing Imagination approach, as informed by Phase 1, to examine a selected Housing Studies phenomenon, e.g., housing affordability in a specific problem context. The phenomenon can be comprehended in terms of the Processes for Meanings (POM) model (Ho, 2014d) and the model of System Complexity (Ho, 2014a), which inform the evaluation task at the theoretical level (Phase 1). These two models are located in the box of “A Housing-Studies-related phenomenon” in Figure 1. Phase 2 is also informed by other related research and literature review efforts on the Housing Studies phenomenon carried out by the HA investigator. These efforts are identified in the box of “Housing Studies-related research efforts” in Figure 1. Phase 2 demands primary and secondary data gathering efforts.

Overall, the systems-based HI evaluation framework is a Critical Systems Methodology (Jackson, 2000) specifically formulated for practice-oriented research projects in Housing Studies. Due to the exceeding complexity of housing affordability concerns, notably at the community and housing policy levels, the systems-based HI evaluation framework would suggest that (i) the Unbound Systems Thinking (Mitroff and Linstone, 1993) be employed to study HA at these levels and (ii) any Housing Imagination methodology used to examine HA concerns in the real world needs to be theoretically anchored in Unbound Systems Thinking and Critical Systems Thinking. This is justified by the rationale of the fitness exercise at the theoretical level of the HI evaluation framework. Other than that, using this evaluation framework should

reduce cognitive confusion of its users due to effects from source-1 factor of HA complexity (i.e., the application of multiple Research Philosophies case) mentioned at the beginning of the paper.

Some summary observations and concluding remarks

The housing affordability notion and concerns need some theoretical and empirical investigation to expose and clarify their complexity nature. Such an intellectual endeavor has been made in this paper, which is informed by the literature review on Housing Studies, the newspaper articles study and a Facebook-based questionnaire survey. The main intellectual exercise here is to trace and make explicit the three sources of HA complexity. As a summary, five observations can be made from the research findings in this paper:

Observation 1: Housing affordability comprises a number of incompatible definitions. [re: sources of complexity 1 and 2]

Observation 2: Housing affordability encompasses diverse and incompatible Research Philosophy perspectives. [re: source of complexity 1]

Observation 3: Housing affordability, as a notional theme, makes up a complex knowledge structure that incorporates various related issues as swept in by various researchers with different research interests and research questions. [re: source of complexity 2]

Observation 4: There are diverse housing affordability concerns from different stakeholders who uphold a variety of worldviews. These worldviews could have been generated by some deep structures that are not directly observable in the society. For a specific HA-related situation, such inter-subjectivity on HA concerns very often results in a messy problematic situation. [re: source of complexity 3]

Observation 5: Very often, due to the complexity of housing affordability concerns in a specific problematic situation, it is very useful to tackle the housing affordability issue in this situation with the systems-based Housing Imagination evaluation framework, or a similar approach, that is grounded on Critical Systems Thinking and Unbound Systems Thinking. [re: *source of complexity 3 and the systems-based HI evaluation framework, especially its fitness exercise*]

The discussion on HA in this paper is useful to those in Hong Kong who are interested in Housing Studies with local-context study materials since local newspaper article have been used here. Thus, this article has pedagogical value for Hong Kong teachers and students in Housing Studies. At the same time, more research works on housing affordability based on contemporary systems thinking should be done for systems thinking has much experience in investigating complex phenomena such as housing affordability. Finally, this paper also contributes to the theoretical development of the Multi-perspective, Systems-based (MPSB) Research (Ho, 2013; 2014e) by studying HA from this perspective using the MPSB Research literature, e.g., Ho (2014a; 2014c).

BIBLIOGRAPHY:

- Attia, M.K.M. 2013. "LEED as a tool for enhancing affordable housing sustainability in Saudi Arabia" *Smart and Sustainable Built Environment* 2(3). Emerald: 224-250.
- Balchin, P. and M. Rhoden. 2002. *Housing Policy: an introduction*. London. Routledge.
- Chen, J., Q. Hao and M. Stephens. 2010. "Assessing Housing Affordability in Post-reform China: A case study of Shanghai" *Housing Studies* 25(6): 577-901.

- Chrisholm, S. 2003. "Affordability Housing in Canada's Urban Communities: A Literature Review" *Research Report*. Canada Mortgage and Housing Corporation.
- Dang, Y.X., Z. Liu and W.Z. Zhang. 2014. "Land-based interests and the spatial distribution affordable housing development: The case of Beijing, china" *Habitat International* 44. Elsevier: 137-145.
- Freeman, A., C. Kiddle and C. Whitehead. 2000. "Defining affordability" in Monk, S. and C. Whitehead (eds). *Restructuring Housing systems: From Social to Affordable Housing?*. York Publishing Services. York: 44-92.
- Gan, G. and R.J. Hill. 2009. "Measuring housing affordability: Looking beyond the median" *Journal of Housing Economics* 18. Elsevier: 115-125.
- Ho, J.K.K. 2013. "An endeavor to render an impressionistic image of Enlightening Management Education in Multi-perspective, Systems-based Research" *European Academic Research* 1(6), September: 1013-1034.
- Ho, J.K.K. 2014a. "An Elaboration of a Systems-based Housing Imagination Evaluation Framework for Research and Pedagogical Practices" *European Academic Research* 2(4), July: 5099-5121.
- Ho, JKK. 2014b. "A Research Note on Facebook-based questionnaire survey for academic research in business studies" *European Academic Research* 2(7), October: 9243-9257.
- Ho, J.K.K. 2014c. "An Endeavor to Establish the subject of Housing Imagination based on Critical Systems Thinking" *European Academic Research* 2(2), May: 2048-2066.
- Ho, J.K.K. 2014d. "A Research Note on Home Study in Housing Imagination using Soft Systems Methodology" *European Academic Research* 2(3), June: 3659-3675.

- Ho, J.K.K. 2014e. "A Review of the Multi-perspective, Systems-based (MPSB) Research with an MPSB Knowledge Supply Chain Framework" *European Academic Research* 2(1), April: 705-729.
- Hoggart, K. and S. Henderson. 2005. "Excluding exceptions: Housing non-affordability and the oppression of environmental sustainability?" *Journal of Rural Studies* 21. Elsevier: 181-196.
- Holliday, K. 2014. "Real Estate: Hong Kong's housing market is 'least affordable': survey" CNBC.com. (url address: <http://www.cnbc.com/id/101349774#>.) [visited at December 21, 2014].
- Jackson, M.C. 2000. *Systems Approaches to Management*. Kluwer Academic/ Plenum Publishers. New York.
- Kammerer, P. 2014. "Insight: Whose who dare" *South China Morning Post* November 25: A13.
- KwikSurvey. 2014. A free to use online survey builder (url address: <http://kwiksurveys.com/>) [visited at December 22, 2014].
- Lam, T. 2012. "Housing affordability ratio alarming for Hong Kong, Guangzhou, and Shanghai" *South China Morning Post*, August 22.
- Lau, K.Y. and B. Leung. 2001. "A Comparison of Indicators Used In Measuring Housing Affordability in Hong Kong and Their Validity" Working Paper Series 2001/No. 2, Department of Public and Social Administration, City University of Hong Kong. (url address: <http://www6.cityu.edu.hk/pol/staff/KY Lau/wp0102.pdf>) [visited at December 21, 2014].
- Lau, K.M. and S.M. Li 2006. "Commercial housing affordability in Beijing, 1992-2002" *Habitat International* 30. Elsevier: 614-627.
- Liu, Y. 2014. "Hong Kong ranks world's No 1 for 'most unaffordable' housing" *South China Morning Post* January 22.

- Mason, K.E., E. Baker, T. Blakely and R.J. Bentley. 2013. "Housing affordability and mental health: Does the relationship differ for renters and home purchasers?" *Social Science & Medicine* 94. Elsevier: 91-97.
- Mitroff, I.I. and H.A. Linstone. 1993. *The Unbounded Mind: Breaking the Chains of Traditional Business Thinking*. Oxford University Press. New York.
- Moodley, K. 2014. "Grayson Perry: London needs affordable housing because 'rich people don't create culture'." *The Independent*, December 5. (<http://www.independent.co.uk/news/people/grayson-perry-london-needs-affordable-housing-because-rich-people-dont-create-culture-9875422.html>) [visited at December 5, 2014].
- Nguyen, M.T., V. Basolo and A. Tiwari. 2013. "Opposition to Affordable Housing in the USA: Debate Framing and the Responses of Local Actors" *Housing, Theory and Society* 30(2). Routledge: 107-130.
- Nip, A. 2014. "Modest reception for tiny new flats" *South China Morning Post*, December 14: 7.
- Ong, S.W. 2000. "Housing Affordability and Upward Mobility from Public to Private Housing in Singapore" *International Real Estate Review* 3(1): 49-64.
- Rakodi, C. and P. Withers. 1995. "Housing apiriations and affordability in Harare and Gweru" *Cities* 12(3). Elsevier: 185-201.
- Saunders, M., P. Lewis and A. Thornhill. 2012. *Research Methods for Business Students*. Pearson, Harlow, England.
- Stone, M., T. Burke and L. Ralston. 2011. "Residual income approach to housing affordability: the theory and practice" *AHURI Positioning Paper* No. 139, May, Australian Housing and Urban Research Institute. Australia. (url address: file:///D:/Download/Others/AHURI_Positioning_Paper_N

- o139_The_residual_income_approach_to_housing_affordability_the_theory_and_the_practice.pdf) [visited at December 23, 2014].
- South China Morning Post. 2014. "Opinion: Housing must be the No. 1 priority" *South China Morning Post*, December 22: A10.
- Thalmann, P. 2003. "House poor' or simply 'poor'?" *Journal of Housing Economics* 12. Elsevier: 291-317.
- The Economic Times. 2014 . "Definition of 'Affordable Housing'." The Economic Times. (url address: <http://economictimes.indiatimes.com/definition/affordable-housing>) [visited at December 21, 2014].
- Wikipedia. 2014a. "Affordable housing" Wikipedia.org. (url address: http://en.wikipedia.org/wiki/Affordable_housing) [visited at December 21, 2014].
- Wikipedia. 2014b. "Housing Affordability Index" Wikipedia.org. (url address: http://en.wikipedia.org/wiki/Housing_Affordability_Index) [visited at December 21, 2014].
- Wikipedia. 2014c. "Social class" Wikipedia.org. (url address: http://en.wikipedia.org/wiki/Social_class) [visited at December 24].
- Wong, R. 2014. "The view: Housing the unrest" *South China Morning Post*, October 22: B10.

Appendix

Appendix 1: The Facebook-based survey questions (13 questions) and responses statistics

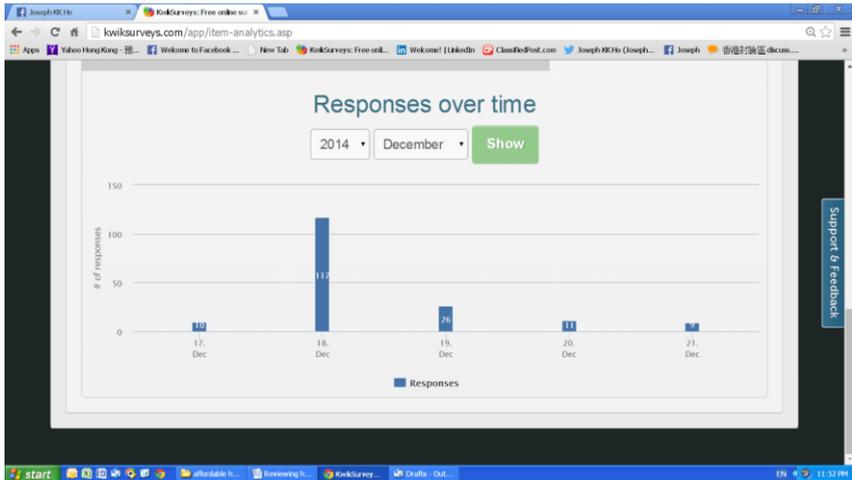
<i>Survey questions</i>	<i>Survey statistics</i>
Question 1: What is your gender?	Male: 73 (42.4%) Female: 99 (57.6%)
Question 2: What is your marital status?	Single: 90 (52.3%) Married: 82 (47.7%)
Question 3: What is your age?	18 to 27: 18 (10.5%) 28 to 37: 79 (45.9%) 38 to 47: 62 (36.0%) 48 to 57: 13 (7.6%) 58 to 67: 0 (0.0%) 68 or above: 0 (0.0%)
Question 4: What is your education background?	Not yet a degree-holder: 31 (18.0%) Finished University Undergraduate Degree study: 115 (66.9%) Finished Master Degree study: 24 (14.0%) Finished Ph.D. Degree study (or equivalent): 2 (1.2%)
Question 5: What is your employment status?	I have a full-time permanent job: 147 (86.0%) I am a freelancer: 11 (6.4%) I am an active-job seeker, currently unemployed: 6 (3.5%) I am not an active-job seeker, e.g., retired, a housewife, a full-time student: 7 (4.1%)
Question 6: Are you living with your family or not?	Live alone: 25 (14.6%) Live with my family: 146 (85.4%)
Question 7: How would you perceive your social class?	Lower class: 64 (37.4%) Middle class: 81 (47.4%) Upper class: 4 (2.3%) No idea: 22 (12.9%)
Question 8: Do you own your apartment or not?	Yes, I own my apartment: 63 (36.6%) No, I rent my apartment: 52 (30.2%) I do not own my apartment and do not need to pay rent: 57 (33.1%)
Question 9: Do you consider that your personal housing affordability status affects your quality of life now?	Not at all: 25 (14.5%) It has minor favourable impacts: 29 (17.4%) It has major favourable impacts: 62 (36.0%) It has minor unfavourable impacts: 18 (10.5%) It has major unfavourable impacts 37 (21.5%)
Question 10: What will you foresee your personal housing affordability status in 5 years' time from now?	Get worse: 41 (24.0%) No change: 66 (38.6%) Get improved: 46 (26.9%) No idea: 18 (10.5%)
Question 11: Do you feel that the	Not at all: 91 (53.5%)

Joseph Kim-Keung Ho- **An examination of the sources of complexity on housing affordability (HA) as a concept and concerns in Housing Studies**

government is capable of improving housing affordability in Hong Kong with appropriate housing policy?	Some power to do so: 39 (22.9%) Quite capable of doing so: 24 (14.1%) No idea: 16 (9.4%)
Question 12: Do you feel that you need to improve your living environment, in terms of more apartment space, convenient location, and access to desirable community services, etc., in 2 years' time?	Not at all: 21 (12.2%) Nice to have: 97 (56.4%) Strongly feel the need: 53 (31.4%)
Question 13: What is your view on housing price movement in Hong Kong in general in 2 years' time?	No idea: 8 (4.7%) Get lower: 17 (9.9%) Get higher: 116 (67.4%) About the same: 31 (18.0%)

Appendix 2:

Appendix 2a: Response statistics over time, from December 17 to 21, 2014



Appendix 2b: Using Excel to conduct interactive querying on survey data

