Willingness to Participate in Collective Action: The Case of Multi-owner Housing Management

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Paper presented at the

European Real Estate Conference 2011, Eindhoven, 15-17 June 2011

ABSTRACT

Management of multi-owner housing is never straightforward because of the need for collective homeowner action. Mancur Olson suggests that a rational individual will not participate in collective action which provides no positive net benefit for him or her. Based on this premise, it would seem that rationality drives homeowners to free-ride on others' efforts and that, as a result, no collective action will take place. However, some homeowners do actively participate in housing management, and it is worthwhile to examine why some participate and others do not. Building on the wide-ranging applications of the collective interest model (CIM) in explaining political participation and environmental activism, this paper expands its relevance to the arena of housing management. The explanatory analysis which is based on the findings of a structured questionnaire survey in Hong Kong corroborates the central propositions of the CIM and provides a theoretical account of homeowners' willingness to participate (WTP) in housing management. In brief, the WTP is a function of beliefs about personal and group efficacy, the value of the collective good, and the selective benefits and costs of participation. These findings have far-reaching implications for the formulation of government policies promoting homeowners' active involvement in housing management in Hong Kong and other megacities.

KEYWORDS

Collective interest model, residential participation, rational choice, housing management

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INTRODUCTION

To many people, housing is one of the most valuable assets in their lives. The proper upkeep of housing does not only preserve asset value for the owners, but also safeguard health and safety of the occupants. There has been plenteous literature evidencing the epidemiological relationship between quality of living environment and occupants' physical and mental health (e.g. Evans *et al.*, 2001a; 2001b; Cohen *et al.*, 2003; Gifford and Lacombe, 2006). From a wider perspective, proper management of the housing stock is essential to the sustainable long-term management of the built environment in a city (Yau, 2010). Yau *et al.* (2008) found the close relationship between housing management and safety performance of apartment buildings in Hong Kong. Besides, economic life of housing can be lengthened given that timely maintenance and repairs are in place. In this case, the need for redevelopment which creates a lot of demolition and construction wastes and inevitably disturbs the existing social fabrics can be delayed (Itard and Klunder, 2007). From the viewpoint of economic sustainability, proper housing upkeep can retard the depreciation of the overall value of housing asset in an economy. As evidenced by Wilhelmsson (2008), the price difference between a well-maintained 40-year-old property and an unmaintained property of the same age amounted 13%. Yiu (2007) estimated that price depreciation of housing cost HK$479 billion, which is equivalent to US$63.7 billion or 34% of the gross domestic product, in Hong Kong in 2005.

Nonetheless, literature on housing management is skewed. Nearly all Australian and British studies on housing management focus on social or public housing. In spite of the advocacy for resident participation, housing management in social housing is still dictated by the social landlords. Conversely, management responsibilities in private housing in most jurisdictions rest on private property owners. The quality of housing management depends very much on the efforts devoted by the owners. However, mismanagement and disrepair of private housing are commonly seen problems throughout the world (e.g. Reschovsky and Newman, 1991; Rauh *et al.*, 2002; Yau, 2010). The problems are particularly serious in multi-owner housing (MOH) in which owners are jointly responsible for the management of communal parts of the properties (Bailey and Robertson, 1997; Lujanen, 2010). For the purpose of this study, MOH refers to residential properties with co-owned elements, including but not limited to apartments, condominiums, cooperative housing and common interest developments. For proper upkeep of MOH, active participation of co-owners is always necessary but managing communal parts of housing is a typical kind of collective action in nature. In other words, management of MOH is prone to free-rider problem. While economic theories suggest that rational individuals will try to shirk contributing to the provision of collective good, not all property owners are non-participative in housing management in reality.

Resident participation in housing management abounds in the literature (e.g. Monti, 1989; Somerville and Steele, 1995; Peterman, 1996; Leung, 2005) but most of the previous studies focus on the justifications for or benefits of engaging residents in housing management. Only few have attempted to address residents' decision making regarding participation. Besides, in the literature, it is not unusual to find studies that examine participation in collective action through a single measurement during or after the event (e.g. Koopmans, 1993; Burstein and Sausner, 2005). As pinpointed by Klandermans (1992), it is the least favourable to have a 'participants only' design for research (e.g. interviewing a sample of participants, and then assessing a smaller or larger set of their characteristics, opinions and beliefs). While this kind of research design can let us know how the participants become involved in a collective action, it is still very difficult to

know how many other people in similar circumstances decided not to participate. Therefore, a better approach to the study on participation in collective actions is looking into both participants and non-participants. Through this means, the reasons why individuals do not participate in a collective action can be found out.

Against this background, it is interesting to study the decision calculus of the owners of private MOH in participating in housing management affairs. This study aims to identify determinants of homeowners' willingness to participate (WTP) in the management of communal parts of MOH. Hong Kong serves as a good laboratory for this study because of the popularity of apartments in the city. Moreover, there is no legislation requiring the compulsory formation of homeowners association or forcing homeowners to participate in housing management. While the use, management and upkeep of the common areas of MOH are usually governed by a deed of mutual covenant (DMC), a homeowner's involvement in housing management is highly, if not absolutely, voluntary in Hong Kong. Although only one city is investigated in this study, implications can be drawn from the research findings onto homeowner participation in other places with a growing number of co-owned or common interest housing developments (e.g. the United States, Australia, Japan and China).

This paper first reviews the collective-action dilemma in MOH management and the solutions. It is then followed by an overview of private housing management in Hong Kong. Next is the development of analytical framework of this study, followed by the research methodology. A description of the data and the analysis results follow. The implications of the research findings will then be discussed. Lastly, the paper is concluded, together with an agenda for further research.

COLLECTIVE ACTION IN MOH MANAGEMENT: DILEMMA AND SOLUTIONS

The management of MOH has attracted much scholarly attention because of the coexistence of both private and public spheres in MOH. In the private sphere, dwelling units in a condominium are owned by different individuals. In case of cooperative housing or co-owned apartment, homeowners do not actually 'own' their units exclusively (Nield, 1990). What they own is either the membership of the cooperative which owns the whole housing development or an undivided share in the development. In other words, these individual owners can be regarded co-owners of the entire housing structure and the ground on which it is built. Yet, they still have an exclusive right to occupy and use their respective dwelling units. No matter which type of ownership arrangement is adopted, on the other hand, the common parts of MOH, such as entrance lobbies, access corridors, staircases, lifts, lighting, service ducts and water pumps, were virtually co-owned by all individual homeowners in the housing development. The responsibility for managing these common parts is jointly or collectively shouldered by all the co-owners. In this regard, the co-ownership nature of MOH has created social and financial connections between co-owners in respect of the use, management and upkeep of a development's common areas and facilities (Bailey and Robertson, 1997). Although the management business in MOH can be left up to the professional property managers in most cases, participation of residents is necessary (Kajiura, 1994). It is particularly true when management by an external agent is often prone to strong-agent-weak-principal problem (e.g. Walters and Kent, 2000; Wang, 2010; Yip, 2010). With an eye to the creation and maintenance of desirable living conditions, for the present and for the future, homeowners in MOH must actively and directly involve themselves in their residential communities.

Dilemma of Collectivism in Housing Management

As we can see from above, management of MOH requires participation of and cooperation among homeowners. Take environmental cleanliness in an apartment as an example. If the residents suffer from filthy communal areas, they are motivated to rectify their bad habits (e.g. deliberate littering) or take actions to clean the communal areas. In principle, the apartment will become cleaner if every resident is dedicated to keeping the communal areas hygienic. That is why housing management requires collective action which is characterized as the voluntary provision of public goods (Chamberlin, 1976). While proper housing management and timely maintenance can offer homeowners a broad range of tangible and intangible benefits (e.g. cleaner and safer living environment, lower crime rate and higher asset value), time and financial constraints and a lack of skills and knowledge are common restraints on a homeowner's participation in building care initiatives (Kangwa and Olubodun, 2003). Apart from the constraint perspective, homeowners' non-participation is also explainable by the rational choice theory (Homans, 1961; Olson, 1965). The theory posits that the benefit to the participating homeowners from the marginal effect of his or her participative effort for producing a public good can be greatly outweighed by the cost of participation. Since participation in housing management affairs is rather labour-intensive, collective action often requires the mobilization of time (Oliver and Marwell, 1992). Given that time is finite and that time contribution can never be physically removed from each individual homeowner, there is a true limit to how much time a person can spend on collective action. Therefore, it is reasonable to take time as the ultimate resource for collective action. If the homeowners perceive that the benefits derived from their participation cannot cover the associated costs, it would be irrational for them to waste time participating in housing management affairs. In other words, non-action or non-participation is a rational choice if the personal total benefit derived from taking action is perceived to be less valuable than the personal total cost of making the effort.

On account of the characteristics of 'non-excludability', 'non-rivalry' and 'jointness of supply' of public goods, collective action is always confronted by the free-rider problem (Buchanan and Tullock, 1962; Head, 1962; Olson, 1965; Brunner, 1998). A rational homeowner seeking to maximize utility or wealth can free-ride his or her neighbours' efforts while still gaining the benefits of the latter's participation (Olson, 1965). Therefore, he or she will not pay any effort in the provision of public goods, and others will act in the same way. As a result, there will be no cooperation and no public good is realized. In the example above, environmental cleanliness is a public good in housing management, and it is very costly, if not totally impossible, for one homeowner to exclude his or her neighbours in the apartment from enjoying that kind of public good. If some homeowners make some effort or hire a maid to clean the communal areas in the building, the others can benefit from the environmental improvements without making a contribution themselves. In this sense, MOH management exhibits the characteristics of a public good and is vulnerable to the free-rider problem. Rational homeowners, from a game-theory perspective, will be better off not to participate in housing management if they aim to maximise their own pay-offs (Bengtsson, 2000). When homeowners must decide unilaterally whether or not to contribute to the provision of a public good, the dilemma of collection action predicts that most owners will behave opportunistically and free-ride on others' contributions (Hovi and Foss, 1995; Walters and Kent, 2000; Lai and Chan, 2004).

Solutions to the Olsonian Paradox of Participation in Collective Action

Although Alterman (2009) suggested that a solution to solve free-rider conundrum in MOH is difficult to find, two major solutions are proposed in the literature. The first one is the introduction of selective incentives which are essentially benefits that participants can only derive from their participation irrespective of whether they manage to provide the public good or not (Olson, 1965). To motivate homeowners to participate in housing management affairs, selective incentives can take various forms such as rewards and punishments. Yet, selective incentives only lead to marginal or short-term solutions that are far from stable (Oliver, 1980; Bengtsson, 1998). As for the second solution, it deals with the prevailing assumption in the Olsonian collective-action theory that rational individuals tend to regard the contribution of their own participation to the provision of a public good as negligible. Upon the relaxation of this assumption, participative behaviour can be explained in terms of collective interest which is a combination of individual demands for the public good and perceptions of self and group efficacy in the collective provision of the good. That means, other than personal costs and benefits, the perception about how a group of individuals influences the outcomes also matters in decision making in a collective action. In general, collective action is likely to occur when members of the group are geographically close, have low turnover of membership, share a common interest and believe that they can succeed (Elster, 1978; Bicchieri, 1990; Chwe, 1999). By the same logic, if homeowners in MOH deem that their participation offers genuine opportunities to influence collective outcomes and make gains, they are more willing to participate in housing management affairs. As a result, collective action is more likely to occur.

WTP IN HOUSING MANAGEMENT: A CASE STUDY IN HONG KONG

Although Olson (1965) has a pessimistic view of homeowner participation in collective housing management, not all buildings appear unmanaged. This leads to the famous collective-action paradox: why do as many people participate in housing management as they do when, according to the assumption of individual rationality, they should not? This study attempts to solve the paradox by investigating homeowners' WTP in housing management in Hong Kong from the perspectives of selective incentives and collective interests. An empirical study is carried out in Hong Kong's private apartments using the CIM, which was developed based on Olson's (1965) logic of collective action.

Private Housing in Hong Kong: Management and Mismanagement

In spite of the extensive public housing programme, the number of people living in private permanent housing in Hong Kong still amounted over half of the population (52.1%) or 3.6 million at the end of 2009 (Census and Statistics Department, 2010; Hong Kong Housing Authority, 2010). As of 2010, there were around 32,000 private residential and composite buildings in the city (Home Affairs Department, 2010a). As far as the management of private housing is concerned, there are three major regimes. The homeowners can manage the housing by themselves. As a facilitation of housing management, different types of resident associations (e.g. owners' corporations, owners' committees and mutual aid committees) can be formed. These associations help homeowners manage the common parts of their buildings, safeguard their interests and resolve disputes among owners. Irrespective of the existence of any resident association in

a residential development, homeowners can jointly appoint an external property management agent to manage the development on their behalf. In short, the agent is hired to help homeowners supervise the cleaners, security guards and contractors, handle correspondence, manage financial accounts, convene meetings, and coordinate repair and maintenance works. The last mode of management is the combination of the above two systems, i.e. co-existence of a resident association and a property management agent for a development. At the same time, however, there were still around 7,000 buildings in Hong Kong do not have any form of resident association, and do not have a property management agent as at December 2010 (Home Affairs Department, 2010b).

Generally speaking, these agencies are thought to bring positive impacts to housing management. For example, regular meetings held by resident associations provide an arena for the airing of grievances by residents and the facilitating of the decision-making process on housing management issues (Yip and Forrest, 2002). From the perspective of institutional economics, formation of resident association is one of the strategies related to property rights governance in MOH (Yiu *et al.*, 2006). The resident association serves to protect the rights of the co-owners against outsiders (including a property management agent) and resolve the internal conflicts among co-owners. Property management agents have better expertise in using legal means to manage the common parts of buildings (Lai and Ho, 2001). Yet, Ho *et al.* (2008a) evidenced that neither resident association nor property management agent could ease the proliferation of unauthorized building works in apartment buildings in Hong Kong. As mentioned before, the presence of these agencies may induce strong-agent-weak-principal problem. As implied by the empirical findings by Wong *et al.* (2006) and Ho *et al.* (2008b), many apartment buildings in Hong Kong are poorly managed. In fact, residents in Hong Kong are reluctant to participate in housing management actively. The survey findings by Yau (2010) concluded that the approach of homeowners to building care was predominantly reactive. That means they were not active in housing management affairs unless they could no longer tolerate the problems occurring in their buildings. The natural consequence of this building neglect is the deteriorating building condition in the city. Perhaps, this outcome is most vividly evidenced by the sudden collapse of a 55-years-old apartment building in Tokwawan, Hong Kong on 29 January 2010 (Buildings Department, 2010). That accident resulted in four deaths, and was attributed to several causes including poor building management. From above, it is crystal clear that active participation of homeowners in housing management is the key to the problem of housing mismanagement.

The Analytical Framework for Studying Homeowners' WTP

With an eye to public-good nature of housing management outcomes, homeowners' WTP in housing management should be analysed with the considerations of public-good provision and free-rider problem. In this light, the CIM, which is useful for investigating stakeholders' expectations regarding participation in collective action, is a suitable candidate to explain homeowners' choices. What makes the model fit the purpose is its incorporation of "the demand for the public good into an individual's utility calculus without violating the logic of free-riding" (Finkel *et al.*, 1989: 886) and high empirical testability. Built upon the principle of rationality, the CIM posits that people choose to participate in a collective venture when the expected value of their participation exceeds the expected value of their non-participation (Lubell *et al.*, 2007). The calculation of the expected value by an individual depends on five factors:

(1) the perceived value of the public good provided by a successful collective action;

(2) the increase in the probability of success if the individual participates;

(3) the extent to which the action of the group as a whole is likely to be successful;

(4) the individual's selective costs of participation; and

(5) the individual's selective benefits of participation.

The CIM conjectures that a rational individual's decision regarding participation in a collective action hinges on his or her selective incentives (i.e., selective benefits minus selective costs) and a set of collective interest variables (Finkel and Muller, 1998). The collective interest variables include the perceived value of the public or collective good and self efficacy of the individual and collective efficacy of the group in the collective-good provision. Self efficacy refers to the belief that one is competent to understand and participate effectively and influence the collective outcomes. Collective efficacy denotes the belief that the group can successfully achieve the desired collective outcomes. The incorporation of these collective interest variables into the CIM is a reflection of the 'unity principle' which plays a key theoretical role by linking individual and group actions (Finkel *et al.*, 1989; Lubell *et al.*, 2007). The unity principle spells that the successful provision of a collective good depends on the efforts of the majority, if not all individuals, in the group. In other words, the contribution of a single individual can only marginally increase the chance of realizing a collective good, and group unity is necessary for success. This premise forms the basis for the logic of free-riding in the CIM such that the individual expected value of collective action is conditional on the behaviour of the other group members. That explains why the CIM has been considered a good candidate for a general theory of collective action behaviour (Lubell, 2002; Lubell and Vedlitz, 2006; Lubell *et al.*, 2007). In this regard, its applications in empirical studies to explain participative behaviour in collective actions such as mass political activities (Finkel and Muller, 1998; Finkel *et al.*, 1989; Bäck *et al.*, 2004), environmental activism (Lubell, 2002; Lubell and Vedlitz, 2006; Lubell *et al.*, 2007) and institutional collaboration (Weible, 2008) are abundant in the literature.

When the model is applied to homeowners' WTP in housing management affairs, the individual's expected value of participation is judged based on the assessment of the total value of the collective good (e.g. cleaner environment, safer building structure and more reliable building services), the perceived influence of his or her participation on the collective outcomes, the expected chance of success of the group, and the selective benefits and costs of participation. Mathematically, the expected value of participation, EV(Participation), can be expressed as

$$\text{EV(Participation)} = (V \times p_g \times p_i) - C + B \qquad (1)$$

where V is the perceived value of the collective good, p_g is the probability that the group will be successful in providing the collective good (i.e., group efficacy), p_i is the perceived marginal influence of the individual's contribution on the probability of success (i.e., self efficacy), C is the overall selective cost of participation, and B is the overall selective benefit obtainable from participation.

Model Specification and Variable Definitions for the Empirical Study

In this study, the classical CIM in Equation (1) is tested using ordinary least squares (OLS)

analysis. In view of the multiplicative structure posited in the theoretical CIM, Finkel *et al.* (1989) and Whiteley (1995) excluded the linear additive function from model specification. Instead, they proposed the use of a log-log specification or multiplicative scale for the model estimation. Nonetheless, Lubell *et al.* (2007) challenged these alternatives because they could not offer empirical qualities superior to those of linear additive specification. Another fatal downside of the log-log specification and multiplicative scale is their sensitivity to measurement scales and rescaling. Therefore, this study follows Lubell *et al.* (2007) in employing a simple linear additive specification. Accordingly, Equation (1) is adapted as follows:

$$\text{EV(Participation)} = V + p_g + p_i - C + B + M. \quad (2)$$

A contextual vector, *M*, which represents the management regime in a residential building is incorporated in the adapted model. The inclusion of this contextual vector enables the study of influence of housing management regime (e.g. formation of a resident association and appointment of a property management agent) on an individual's WTP. As suggested by Conway and Hachen (2005), the existence of a resident association may affect resident participation in management affairs. To aid data collection, the variables in Equation (2) are broken down or transformed into the empirical variables, as listed in Table 1, which operationalize the concepts of the CIM.

Table 1: Variables hypothesised to influence participation in housing management

CI model variable	Operationalised model variable(s)
Expected value of participation (EV)	Willingness to participate ($WILL_i$)
Group efficacy (p_g)	Expected reciprocity (*EXRE*)
	Group cohesion (*COHE*)
Personal efficacy (p_i)	Outcome influence (*INFL*)
Perceived value of collective good (*V*)	Discontent level (*DIST*)
Selective costs (*C*)	Gender (*MALE*)
	Age (*AGE*)
	Education level (*EDU*)
	Household income (*HINC*)
Selective benefits (*B*)	Management value (*MVAL*)
	Life enjoyment (*LIFE*)
Management context (*M*)	Property management agent (*PMA*)
	Owners' corporation (*IO*)

Dependent variables

The rational choice theory infers that a rational individual will choose to participate in housing management if the expected value of his or her participation is positive. The WTP increases with the expected value. In this regard, the expected value in Equation (2) *per se* determines the individual's WTP, which is used as the dependent variable for analysis in this study. A five-point scale (5=very willing; 4=willing; 3=neutral; 2=unwilling; 1=very unwilling) is used to gauge a homeowner's WTP in five different activities of housing management: namely, a) attending resident association meetings ($WILL_1$); b) expressing views at resident association meetings ($WILL_2$); c) organising resident activities for the resident association ($WILL_3$); d) making comments and suggestions to improve the

management standard ($WILL_4$); and e) participating in the activities organised by the resident association or property management agent ($WILL_5$). The overall level of WTP, $WILL_0$, is taken as the arithmetic mean of the points received in these five aspects.

Collective interest variables

The direct and precise valuation of a public or collective good is difficult, if not impossible (Eagles, 2004; Graves, 2009). The subject matter of this study, i.e. the favourable outcomes of proper housing management, is of no exception to this challenge. Therefore, this study adopts an indirect approach to measure the perceived value of the collective good, V. The value of the collective good is thought associated with how the individuals perceive their neighbourhood as a place to live. Given that better condition and management standard of housing are collective goods in housing management, homeowners who are more aggrieved about the situation in which they live in will hold a greater perceived value of the collective outcomes of housing management. Thus, in this sense, V represents the individual's level of grievance against or dissatisfaction with the existing management of the building. Discontent with six aspects of housing management (namely environmental hygiene, fire safety, upkeep of services, structural safety, security, and control of neighbourhood or quality-of-life problems) are assessed in the questionnaire using a five-point scale (with 1=very satisfied and 5=very dissatisfied). *DISC* is calculated as the average of the six discontent scores. In line with other studies (e.g. Oliver and Marwell, 1992; Conway and Hachen, 2005), a positive relationship between the WTP and discontent is hypothesised.

Group efficacy, P_g, measures the probability that a group of homeowners will succeed in providing the collective good of housing management. Two factors, namely expected reciprocity and perceived group cohesion, come under this vector. Expected reciprocity, *EXRE*, indicates the extent to which an individual believes that other homeowners in his or her building will participate in housing management as he or she does. This belief is evaluated using a five-point Likert scale (with 1=strongly disagree and 5=strongly agree). As for perceived group cohesion, *COHE*, its measurement also relies on a five-point Likert scale (with 1=strongly disagree and 5=strongly agree), gauging the extent to which the individual believes that all co-owners in his or her building share the same values and can cooperate amicably and effectively to provide the collective good. In practice, these two factors play significant roles in shaping participative behaviour in housing management. As aforementioned, homeowner participation is essential for many different activities in housing management. For example, in order to form an owners' corporation, terminate the service contract of a property management agent or execute an improvement project for a building, the assent of the majority of the building co-owners is required to kick off the exercises. The participation of an individual homeowner alone can never succeed so the WTP of other homeowners in housing management is thus perceived as an important consideration for one's WTP. Furthermore, if the homeowners are not united or do not form a cohesive unit, it is difficult for them to act collectively and work toward the same goal. In such a case, an individual may feel that no collective good will be produced in the absence of consonant views and actions by all (or the majority of) the homeowners. It is hence hypothesised that both *EXRE* and *COHE* increase an individual's WTP in housing management.

Self efficacy, P_i, refers to an individual homeowner's belief that his or her participation in housing management will increase the probability that the group will achieve the

collective good. In many previous empirical studies (e.g., Mohai, 1985; Finkel *et al.*, 1989; Knootz, 2005), self-perceived personal efficacy has been identified as a strong determinant of political participation and environmental activism. van Ryzin (1995) also evidenced that residents of a self-managed mutual housing association for older people in the United States were more participative in housing management when they had a stronger sense of control over their living environment. In this study, information on self efficacy comes from a question: do you agree that your participation in housing management is likely to make a difference in the quality of your living place? The respondents are asked to indicate their level of agreement using a five-point Likert scale (with 1=strongly disagree and 5=strongly agree). Homeowners with greater perceived personal influence on the management outcome, *INFL*, are predicted to be more willing to participate in housing management affairs.

Selective cost variables

Although Oliver and Marwell (1992) regarded time as the ultimate costs for one to participate in a collective action, an individual's ability to pay the selective costs of participation, *C*, is also determined by the availability of the money, knowledge and skills necessary for his or her effective participation (Brady *et al.*, 1995). Based on this concept and the work of Lubell (2002) and Lubell *et al.* (2007), *C* is reflected by four demographic variables in the operationalised model. *MALE* is the dummy variable, which equals 1 for males and zero if otherwise. *AGE* is a six-category scale for homeowner age (1=18-24 years old; 2=25-34 years old; 3=35-44 years old; 4=45-54 years old; 5=55-64 years old; 6=65 years old or above). *EDU* is a six-category scale for the homeowner's highest education level attained (1=primary school or below; 2=lower secondary school; 3=upper secondary school; 4=matriculation; 5=sub-degree post-secondary education; 6=degree or above). *HINC* is a six-category measure of average monthly homeowner household income (1=below HK$10,000; 2=HK$10,000-14,999; 3=HK$15,000-19,999; 4=HK$20,000-24,999; 5=HK$25,000-29,999; 6=HK$30,000 or above).

Selective benefit variables

Two variables are used to estimate selective benefits, *B*. The first variable is the value of housing management, *MVAL*, which indicates the perceived importance of the collective good to the individual's quality of life. Each individual homeowner is asked to answer the question using a five-point Likert scale (with 1=strongly disagree and 5=strongly agree): do you agree that better housing management can improve your quality of life? The idea is that if one perceives housing management as being more important or valuable, a higher level of WTP will be the outcome. The second variable is the individual's enjoyment of life as a resident in the building, *LIFE*, which constitutes a kind of expressive incentive according to the categorisation by Bäck *et al.* (2004). Expressive incentives are rewards that an individual can receive only when he or she participates. The variable is assessed using a five-point scale (with 1=dislike very much and 5=like very much).

Contextual variables

While there are different forms of resident association in Hong Kong, only owners' corporations or incorporated owners (IOs) are investigated in this study. It is because this

association type is the only one with statutory backup in Hong Kong. Provisions in the *Building Management Ordinance* guide its formation and operation. The dummy variable, *IO,* equals one if an owners' corporation has been formed in the housing development in which the subject homeowner is living in, and zero if otherwise. Another contextual factor incorporated in the model is the dummy variable, *PMA*, equals one if the housing development in which the subject homeowner is living in is managed by an external property management agent, and zero if otherwise.

After operationalisation, the model becomes

$$WILL = \alpha_0 + \alpha_{14}DISC + \alpha_2\, EXRE + \alpha_3 COHE + \alpha_4\, INFL + \alpha_5 MALE + \alpha_6 AGE + \alpha_7 EDU + \alpha_8 HINC + \alpha_9 MVAL + \alpha_{10} LIFE + \beta_1 IO + \beta_2 PMA + \varepsilon \quad (3)$$

where α_m (for m=0,1,2,…,10) and β_n (for n=1,2) are coefficients to be estimated and where ε is the stochastic term. To facilitate the interpretation of the results, all attitude measures, including the dependant variables, are linearly rescaled to the continuous [0,1] range before model estimation.

DATA FOR ANALYSES: SOURCE AND DESCRIPTIONS

The data used for analyses come from a self-administered face-to-face structured questionnaire survey conducted in Hong Kong between May and August 2009. The questionnaire was designed to collect the information necessary for the empirical study. The questionnaire was pretested and fine-tuned according to the testers' feedbacks before the survey. Despite the higher costs incurred in the data collection process, the adoption of self-administered face-to-face interview using a preset written questionnaire can maximise the number of respondents in the survey. Besides, the interviewers are able to explain the terms or concepts embedded in the questionnaire in case when clarification is sought by an interviewee, entailing more consistent understanding in the questions being asked among the respondents. A total of 53 private multi-owned residential buildings in the Western District of Hong Kong were randomly sampled. The reasons for choosing this district as the study area are twofold. First, it is one of the oldest residential districts in Hong Kong since the British colonial reign in 1842. Secondly, there exists a wide variety of MOH ranging from old low-rise tenement blocks to high-rise apartment towers. This wide range of housing stock creates a high degree of variation in MOH in terms of age, settings, and management regimes, which is essential to obtaining a diversified sample for analysis.

In the sample, the building age ranges from five to 56 years, with a mean of 34. The tallest building has 33 storeys while the shortest has four, and each building has 63 dwelling units on average. As for the management regime, 44 buildings (83.0%) have owner corporations. Among the nine buildings without owner corporations, two have mutual aid committees formed by the owners and tenants. External property management agents are appointed to manage 15 buildings (28.3%). In these 53 buildings, there were a total of 3,340 dwelling units. 450 units (13.5%) were randomly sampled for the structured questionnaire survey. Eventually, 346 homeowners were successfully interviewed. Tables 2 and 3 summarize the demographic characteristics of the respondents and the mean responses for these variables before rescaling, respectively. Generally speaking, the respondents were most willing to attend resident association meetings (mean=3.63) and express their views in the meetings (mean=3.57). On the other hand, the respondents were least willing to organize resident activities on behalf of the resident association (mean=2.47).

Table 2: Demographic characteristics of the respondents

Characteristic		Count (n = 346)	Percentage (%)*
Gender	Male	201	58.1
	Female	145	41.9
Age	18-24 years old	21	6.1
	25-34 years old	47	13.6
	35-44 years old	96	27.7
	45-54 years old	108	31.2
	55-64 years old	56	16.2
	65 years old or above	18	5.2
Education level	Primary school or below	41	11.8
	Lower secondary school	8	2.3
	Upper secondary school	73	21.1
	Matriculation	37	10.7
	Sub-degree post-secondary education	78	22.5
	Bachelor degree or above	109	31.5
Household income	HK$9,999 or below	43	12.4
	HK$10,000 – 14,999	82	23.7
	HK$15,000 – 19,999	99	28.6
	HK$20,000 – 24,999	73	21.1
	HK$25,000 – 29,999	25	7.2
	HK$30,000 or above	24	7.0

*Note: * The percentages for each characteristic may not sum to unity because of rounding.*

RESULTS OF EXPLANATORY ANYLSES AND DISCUSSION

The results of OLS analyses are summarized in Table 4. The adjusted *R*-squared varies quite significantly among the models, ranging from 0.189 to 0.613. The analysis results of the models on $WILL_0$, $WILL_1$ and $WILL_3$ generally confirm the classical CIM. In these models, all collective interest and selective benefit variables are found to be positive and statistically significant at the 10% level. These findings indicate that expected reciprocity, perceived levels of group cohesion and personal influence on collective outcome, discontent level, perceived value of housing management and life enjoyment all affect the overall WTP in housing management affairs, willingness to attend resident association meetings and willingness to organize resident activities on behalf of the resident association. Among the four collective interest variables, only *COHE* and *INFL* have estimated coefficients significant at the 5% level in across the models. These results imply that homeowners who perceive stronger cohesion among the co-owners in their buildings are more willing to participate in housing management affairs. Besides, the homeowners are reluctant to participate if they see themselves as incapable of changing the collective outcomes even when the potential collective benefits of housing management are perceived high.

Table 3: Mean responses by the surveyed homeowners before rescaling

Variable	Range	Mean	σ
$WILL_0$	1=very unwilling <> 5= very willing	3.15	0.78
$WILL_1$	1=very unwilling <> 5= very willing	3.57	0.92
$WILL_2$	1=very unwilling <> 5= very willing	3.63	1.06
$WILL_3$	1=very unwilling <> 5= very willing	3.32	0.82
$WILL_4$	1=very unwilling <> 5= very willing	2.75	0.89
$WILL_5$	1=very unwilling <> 5= very willing	2.47	1.02
EXRE	1=strongly disagree <> 5=strongly agree	3.12	0.99
COHE	1=strongly disagree <> 5=strongly agree	2.86	1.17
INFL	1=strongly disagree <> 5=strongly agree	3.24	1.01
DISC	1=very satisfied <> 5= very dissatisfied	3.11	0.74
MALE	0=female; 1=male	0.58	0.49
AGE	1=18-24 years old <> 6=55 years old or above	3.53	1.23
EDU	1=primary school or below <> 6=degree or above	4.24	1.67
HINC	1=HK$9,999 or below <> 6=HK$30,000 or above	3.08	1.36
MVAL	1=strongly disagree <> 5=strongly agree	3.34	1.10
LIFE	1=dislike very much <> 5=like very much	3.23	1.03
PMA	0=no; 1=yes	0.37	0.48
IO	0=no; 1=yes	0.92	0.27

Discontent level (*DISC*) has significant, positive impacts on $WILL_0$, $WILL_1$, $WILL_3$ and $WILL_4$. In particular, it is the strongest predictor of the homeowners' willingness to attend resident association meetings and to organize resident activities on behalf of the resident association amongst those collective interest variables. These results seemly confirm Yau's (2010) findings that homeowners in Hong Kong generally take part in building care initiatives reactively. Since important decisions regarding housing management such as execution of improvement works and termination of the service contract of the existing property management agent are generally resolved in resident meetings, homeowners with a higher level of discontent with the current housing management outcome are more willing to attend the meetings. Similarly, if the homeowners can no longer tolerate certain problems (e.g. crimes and environmental uncleanness) in their housing developments, it is very likely that they will organize some activities or campaigns (e.g. self-patrols and cleaning days) and ask their neighbours to join. The dominant effects of discontent in these two activities mean that homeowners are willing to participate in them only if they are dissatisfied with housing management outcomes. As long as they can tolerate existing housing management outcomes, they continue letting others do the work for them. This free-riding dogma essentially creates a deadlock in building care in Hong Kong.

As for the coefficient of *EXRE*, the estimation results are rather mixed. A positive and significant coefficient is returned for the models on $WILL_0$, $WILL_1$, $WILL_2$ and $WILL_3$, suggesting that homeowners who believe that their neighbours will reciprocate expect more benefits than costs from their participation in housing management in these aspects. On the other hand, when making comments and suggestions to improve the management standard and participating in the activities organised by the management bodies are concerned, the estimated coefficient is negative but insignificant at the 10% level.

Table 4: Estimation results of the OLS analyses

Variable	$WILL_0$ (n=346)		$WILL_1$ (n=346)		$WILL_2$ (n=346)		$WILL_3$ (n=346)		$WILL_4$ (n=346)		$WILL_5$ (n=346)	
	β	*t*-statistic	β	*t*-statistic	β	*t*-statistic	β	*t*-statistic	β	*t*-statistic	β	*t*-statistic
Constant	-0.043	-1.035	-0.021	-0.412	0.045	0.692	-0.059	-1.283	-0.116	-2.374	-0.065	-1.103
Collective Interest Variables												
DISC	0.148	2.629 ***	0.218	3.562 ***	0.105	1.404	0.212	3.766 ***	0.154	2.063 **	0.054	0.597
EXRE	0.063	1.671 *	0.108	2.415 **	0.120	2.418 **	0.100	2.635 ***	-0.009	-0.160	-0.003	-0.050
COHE	0.096	3.742 ***	0.076	2.452 **	0.083	2.202 **	0.073	2.842 ***	0.110	3.250 ***	0.140	3.097 ***
INFL	0.189	3.458 ***	0.153	2.303 **	0.245	3.200 ***	0.144	2.520 **	0.165	2.103 **	0.238	2.610 ***
Selective Cost Variables												
MALE	0.016	1.176	-0.007	-0.376	-0.006	-0.257	0.022	1.579	0.030	1.557	0.039	1.510
AGE	0.188	4.875 ***	0.224	4.737 ***	0.170	2.845 ***	0.212	5.588 ***	0.225	4.244 ***	0.110	1.641
EDU	0.114	4.003 ***	0.152	4.675 ***	0.134	3.588 ***	0.114	4.032 ***	0.085	2.246 **	0.084	1.780 *
HINC	-0.038	-1.305	-0.019	-0.500	-0.008	-0.174	-0.055	-1.788 *	-0.041	-0.982	-0.081	-1.520
Selective Benefit Variables												
MVAL	0.118	3.385 ***	0.107	2.583 **	0.103	2.115 **	0.122	3.419 ***	0.137	3.095 ***	0.122	2.104 **
LIFE	0.101	1.883 *	0.134	2.072 **	0.173	2.362 **	0.142	2.473 **	0.048	0.644	0.008	0.093
Contextual Variables												
IO	0.025	0.996	0.036	1.008	-0.028	-0.641	0.035	1.097	0.062	1.979 **	0.022	0.565
PMA	0.017	1.149	-0.005	-0.273	0.038	1.617	0.010	0.668	0.004	0.190	0.037	1.392
Adjusted R^2	0.578		0.516		0.436		0.613		0.356		0.189	
F-statistic	40.454 ***		31.642 ***		23.241 ***		46.626 ***		16.915 ***		7.722 ***	

Notes: (***), (**) and (*) denote the estimated coefficients of the variables and test statistics to be significant at the 1% level, 5% level and 10% level, respectively.

As for the impacts of demographic characteristics, better-educated and older homeowners have stronger WTP except that *AGE* shows no significant impact on $WILL_5$. Although the estimated coefficient of *HINC* is negative in all models, it is consistently insignificant even at the 10% level except for the model on $WILL_3$. Willingness to organize resident activities decreases with the household income. Given that a lot of time and efforts have to be dedicated into the organization of resident activities, these research findings suggest that the higher opportunity costs of participation for the richer offset the benefits. That explains why income shows no or negative effect on homeowners' WTP. At the same time, gender is proved to have no influence on WTP in housing management.

The analysis results indicate that both selective benefit variables are positively correlated with homeowners' WTP in all models. In all cases, the estimated coefficients of the variable *MVAL* are statistically significant at the 5% level at least. As one can infer from these results, homeowners who are more active in housing management affairs tend to value the collective good of better housing management higher. Similar to the case of *EXRE*, the estimated coefficients of the variable *LIFE* are only significant in the models on $WILL_0$, $WILL_1$, $WILL_2$ and $WILL_3$. That means expressive benefit is a strong motivator for housing management participation in the respective activities.

In all models, the existence of a property management agent does not show any significant impact on WTP. Homeowners are more willing to make comments and suggestions in buildings with a resident association but the impact of resident association on WTP is negligible in other housing management activities.

The analysis results generally support the expectations of the CIM but there are several important points that emerge from these results. First, while the CIM can offer a good explanation of the overall WTP in housing management, the estimation results are also varying with the management activities concerned. As inferred from the adjusted R^2 of the estimation, the CIM can model homeowners' willingness to organize resident activities better than WTP in other activities. Besides, self-efficacy is much more influential in the models regarding willingness to express views in resident meetings and to participate in activities organized by the management body. On the other hand, discontent plays a more significant role in determining willingness to attend resident meetings and to organize resident activities.

Second, the empirical findings of this study suggest that self-perceived personal influence affects one's WTP in housing management. The more efficacious an individual feels, the more likely he or she is to report willingness to take action in housing management. However, at the same time, participation decisions also depend very much on the individual's perceptions of his or her neighbours. A homeowner will not be keen on participating in housing management if he or she regards other homeowners as free-riders. More importantly, participation will be unlikely if the homeowner thinks that the group cannot work effectively to achieve better management for his or her MOH. These deductions suggest that even when a homeowner thinks that he or she is capable of making a change, his or her WTP will diminish if other homeowners are not willing to participate or cannot work well with each other. Participation in a collective housing management is thus contingent on predictions regarding others' behaviour. This resident dynamic in housing management is actually a reflection of the ideas by Bengtsson (1998; 2000).

As inspired by Silverman and Barton (1994), what makes cooperation among homeowners in MOH so difficult is that MOH involves a sphere where unchosen others must interact and where the behaviour of one party influences others. In this light, WTP in housing

management can be promoted by enhancing collective or group efficacy through the reinforcement of social bonding among homeowners. Once a sense of community and cohesion is fostered among homeowners in a residential development, it is more likely for them to hold very similar values about housing management. As a result, each of them will expect a greater degree of reciprocity from the other and a close working relationship will be built up to keep their building a pleasant place to live. Therefore, the development of to long-term partnerships among homeowners is crucial for the promotion of homeowner participation in housing management. To this end, more supports or subsidies should be offered by the local governments, resident associations or other organizations to organize social gatherings and activities which can bring homeowners together. Besides, mechanisms like mediation should also be put in place to resolve disputes or conflicts between homeowners in an amicable and non-destructive manner.

Third, the analysis results imply that the expected value of participation depends not only on the perceived value of the collective good to be produced and the chances of success in providing the good, but also on the selective benefits and costs of participation. Given that the selective costs of participation are relatively fixed, the expected value of participation will be boosted with the increase in the selective benefits of participation. This can be achieved by means of rewards and punishments. For example, economic disincentives can be institutionalized for those uncooperative homeowners. In Hong Kong, even if an improvement work to the communal parts of a development is approved at a homeowners' meeting, some people attempt to evade contributing to the works. The owners' corporation can only file a civil lawsuit to bring the uncooperative owners in line. Since this method is costly and time-consuming, it is not used very often. The resolution of homeowners' meeting in question will then be discarded or simply put on hold. This frequently occurs and is a major reason why plans for improving building conditions or management are suspended. If there is legislation which can punish uncooperative owners or those who do not participate even if the majority of homeowners in a building collectively agreed in a quicker and cheaper manner, the costs of free-riding will definitely increase. This, in turns, increases the selective benefits for those who participate in housing management. On the other hand, homeowners can be encouraged to participate more in housing management with some rewards. For instance, if honorariums are paid to the committee members of a resident association, their time costs can be covered or remunerated. As a result, more people are willing to engage in the management of their housing.

Moreover, homeowners are not willing to participate because they underestimate the values of collective goods derived from proper housing management. While better management of housing can generate economic benefits for homeowners (e.g. higher property rental values and shorter downtime for services) and reduce economic losses associated with building problems (e.g. medical costs and huge damages payable to the victims of building-related accidents and property losses due to theft), it is sometimes difficult for an average homeowner to precisely value these benefits and costs. Therefore, local governments and academics may need to provide more information to or educate the homeowners about the economic outcomes of housing management and mismanagement. Once the homeowners visualise the true values of housing management outcomes, they will be more motivated to devote their efforts to the management of their residential developments.

CONCLUSION AND AGENDA FOR FURTHER RESEARCH

Sharing or co-ownership arrangement MOH creates a need for collective action among homeowners in order to achieve effective housing management. Nonetheless, the outcomes of housing management in MOH are public goods in nature so free-riding problem prevails. In investigating the dilemma of collective action in housing management, this study uses the CIM to investigate homeowners' WTP in the management of apartment buildings in Hong Kong. The analysis results confirm the relevance of the CIM as an explanatory framework for homeowner participation in housing management. Key elements of the CIM – the perceived value of housing management outcomes, self efficacy, group efficacy, selective costs and selective benefits – are found to be directly related to the overall WTP in housing management. Yet, the impacts of these elements are also found sensitive to the management activities concerned. Although the findings of this research paint a complex picture for policy-makers who desire to involve the homeowners in housing management, they do offer insights into the sustainable management of the housing stock in other megacities. In general, homeowner participation can be readily promoted by increasing the selective benefits of participation or collective interests.

In this study, formation of an owners' corporation and appointment of an external property management agent in a building are taken as contextual factors, and no relationship is found between the WTP and them. However, these results do not mean that these agencies play no role in the collective action framework constructed upon the conventional rational choice theory or CIM. In point of fact, an individual's trust in agencies is likely to have important effects in a collective-action decision (Oliver and Marwell, 1992). For example, since the external property management agents are profit-making enterprises, they do not necessarily act for the co-owners' benefit. As one can see in the news archive, confrontations between the management agents and homeowners are very common in Hong Kong and mainland China. To balance the power between homeowners and management agents, resident associations may be formed. Homeowners' reliance on a property management agent or resident association in housing management is, in effect, a form of proxy control defined by Bray *et al.* (2001: 426) as a "socially mediated form of perceived control that involves the relinquishing of some or all personal control to an intermediary party to help achieve specific desired outcomes". Bandura (1997) put forward a number of reasons why people opt for proxy control. First, the individuals have not developed adequate means to reach their desired outcomes. Second, the proxy or agent can better help them achieve the desired outcomes. Third, they want to escape from the responsibility of direct control. In the presence of proxy control, people may participate less because they lack the skills or motivation to achieve the desired outcomes by themselves. Some transfer partial control to an agent who can facilitate the attainment of desired outcomes through action and advice (Bray *et al.*, 2001).

The effect of proxy control on behavioural adaption has been widely researched in different areas of applied psychology (e.g. Bray *et al.*, 2001; Shields and Brawley, 2006; Elias and MacDonald, 2007). For example, Bray *et al.* (2001) evidenced that perceived proxy efficacy (i.e. efficacy of the fitness instructor) was a strong predictor of exercise behaviour. However, all these previous studies focussed on private actions rather than collective actions. So what will be the effects of proxy control on collective-action behaviour? While management of MOH necessitates collective action, homeowners can give up some direct control over housing management affairs to the association, and thus implement a form of proxy control. The same also applies to the case of a property

management agent. Along this line of thought, in addition to the elements in the classical CIM, a homeowner's decision to participate in housing management may also depend on how he or she perceives the efficacy of the proxies or agencies in providing the desired collective outcomes. To test this premise, the contextual variables in the empirical model of this study can be replaced by two variables representing the efficacies of the management proxies. In addition, further studies can be drawn on how government policies or schemes adjust the decision calculus of homeowners with respect of housing management participation. Moreover, given the rise of urban activism in many Asian cities in recent years, it is also interesting to study the homeowners' WTP in the collective actions in their wider neighbourhoods (e.g. fights for public open spaces or heritage conservation and protests against locally-unwanted land uses).

ACKNOWLEDGEMENTS

The work described in this paper was supported by the Start-up Grant for New Staff from City University of Hong Kong (Project No. 7200123). The author would also like to express gratitude to the student assistants at City University of Hong Kong for their assistance with the data collection process.

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