A MODEL OF COALITION CAPACITY FOR EFFECTIVE PUBLIC HEALTH INTERVENTIONS

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A model of coalition capacity for effective public health interventions

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CERTIFICATE OF ORIGINALITY

I, Chan Hin Wang, Kevin, hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text.

Signed:

Name of student: Chan Hin Wang, Kevin

Dedications

This dissertation is dedicated to my supervisor, Dr. Charles C. Chan, who has inspired me in terms of academic aspirations and beyond. I would also like to dedicate this piece of work to my beloved parents, Ms. Deborah L. Y. Wan, JP and Mr. Dominic Chan Chun Kwong.

Abstract

Modern public health interventions often require mobilization beyond inter-institutional collaboration and extend into the community. Such movement calls for theories and empirical evidence that explain and illustrate the process of community mobilization. Arising from the conception that community is an active system that is not only involved in the maintenance of health interventions, but also in the planning and genesis of new public health interventions. The study of coalition in public health intervention provides an opportunity for examining how communities mobilize their resources into health promotion. The present study reviews an extensive list of theoretical and empirical research on health promoting coalitions and proposes an integrated framework that evaluates key domains of coalition capacity from a relational context. Capacity parameters are analyzed in terms of their structural coherence and their relationship with coalition outcomes (perceived coalition effectiveness) and members' collaboration (social networks) with the aid of qualitative structured focus group interviews, social network analysis, independent statistical model, and inter-dependent statistical models.

From the coalition parameters surveyed and qualitative data from the focus group interviews, the coalition featured in this study (KTSHC) showed a high level of coalition capacity, perceived effectiveness, and members' collaboration. The observed capacity parameters were interdependent, exhibiting statistically significant correlation among each other. Network densities reported from this study were low relative to other health promotion coalitions, but compatible when compared to similar efforts on safety promotion. The coalition was distinctly characterized by a core-periphery structure in which the core comprised various members from several key organizations (healthcare professionals, local government representatives, central government delegates, and education professionals) and the periphery reached out to a variety of organizations and community representatives. Regression analysis on individual-level capacity parameters and network measures revealed that coalition effectiveness was primarily attributed to how core members appraise the style of leadership, assess the level of development, and utilize peripheral members on referrals of services and professional placements.

Findings from this study shed lights on the structure and context of an internationally recognized mode of promoting community health in

the form of Safe Community and Healthy City. These findings also have implications for studying the process of community health intervention from a relational perspective and contributed to the unfolding of processes and implementation underlying inter-sector collaboration on health promotion in the form of community coalition.

Publications arising from the thesis

Part of the work presented in this thesis have been published or presented in the following forums:

PUBLISHED PAPER

CONFERENCE PRESENTATION

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OTHER PUBLICATIONS

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The Kwai Tsing Safe Community and Healthy City Association (KTSHC) was crucial to the development and implementation of the coalition capacity assessment survey featured in this study. Without the help of the KTSHC, particularly the advice and input from Dr. C. B. Chow, Ms. Adela Lai, and Mr. Chow Yick Hay, this study could never have been materialized.

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List of Abbreviations

Health promoting coalition	Coalition
Community Coalition Action Theory	CCAT
Internal Coalition Outcome Hierarchy	ICOH
Social Network Analysis	SNA
Quadratic Agreement Procedure	QAP
The Kwai Tsing Safe Community and Healthy City	KTSHC
World Health Organization	WHO
Analysis Of Variance	ANOVA
Network Administrative Organization	NAO

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Chapter 1

Introduction

A consensus emerged in the health promotion field proposes that health promoters maximize the impact of intervention on health by not only targeting behaviors at the individual level, but also other social and societal levels that influence health behavior as contexts (Butterfoss, 2007; Butterfoss, Goodman, & Wandersman, 1993; Goodman, Wandersman, Chinman, Imm, & Morrissey, 1996; K. R. McLeroy, Bibeau, Steckler, & Glanz, 1988; Minkler, 2005; D. Stokols, 1992). Such emphasis beyond individuals as the primary unit of intervention and analysis give rise to ascending recognition and application of community coalition as a major vehicle for promoting community health.

Worldwide, community coalitions are often formed to mobilize community resources and coordinate concerted activities towards the improvement of public health (W. R. Berkowitz & Wolff, 2000; Wolff, 2001). Coalition, as an approach to health promotion, has been widely evaluated (Alliance for Youth - Healthy Youth Coalition, 2001; Feinberg, Greenberg, & Osgood, 2004; Francisco, Paine, & Fawcett, 1993; Gomez, Greenberg, & Feinberg, 2005; Green & Kreuter, 2002; Greenberg, Feinberg, Meyer-Chilenski, Spoth, & Redmond, 2007; Michelle Crozier Kegler, Steckler, Mcleroy, & Malek, 1998; M. C. Kegler, Twiss, & Look, 2000; Lempa, Goodman, Rice, & Becker, 2008; McMillan, Florin, Stevenson, Kerman, & Mitchell, 1995; Riley, Taylor, & Elliott, 2001; Roberts-DeGennaro, 1986; Zakocs & Edwards, 2006; Zakocs & Guckenburg, 2007) and theorized (Alexander, et al., 2003; Butterfoss, Goodman, & Wandersman, 1996; Cramer, Atwood, & Stoner, 2006a; El Ansari & Weiss, 2006; Florin, Mitchell, & Stevenson, 1993; Foster-Fishman, Berkowitz, Lounsbury, Jacobson, & Allen, 2001; Goodman, et al., 1996; Roz D. Lasker & Weiss, 2003; O'Neill, Lemieux, Groleau, Frotin, & Lamarche, 1997; Schweigert, 2006). As reported in a recent review (Zakocs & Edwards, 2006), there are at least over 1,000 health promoting coalitions in the United States, and only approximately 15% of them are well documented, with details about the structure and functioning of their respective coalitions. The existing literature on health promoting

coalition is characterized by “a dearth of empirical information” (Granner & Sharpe, 2004, p. 514), “limited evidence of the effectiveness of partnerships in achieving desired outcomes” (El Ansari & Weiss, 2006, p. 175), and a large body of anecdotal evidence based on “conventional wisdom and lessons learned from individual case studies of a single coalition” (Zakocs & Edwards, 2006, p. 352). Moreover, there is a lack of consensus on what constitutes an effective coalition, in terms of major theoretical domains comprising the notion of coalition capacity (Zakocs & Edwards, 2006) as well as methodological techniques to assess these constructs encompassing the concept of coalition capacity (Granner & Sharpe, 2004).

The lack of a definitive theoretical framework for coalition capacity is substantiated with three critical issues in the understanding of the concept, they are: multiplicity of the unit of analysis, additivity and weight of each coalition capacity domain, overlapping and synergy between proposed domains, and addressing the capacity parameters observed under the developmental context of a particular coalition.

With regard to assessing different domains of coalition capacity, Butterfoss and colleagues (Butterfoss, et al., 1996, p.76) argue that some domains of coalition capacity may play a more significant role according to individual project mandates and context, thus differential weights should be assigned to each domain. Furthermore, coalition researchers must confront several methodological challenges, including the overlap and co-variation between key components of coalition capacity indicators, which make results hard to interpret; the choice of using coalition level or individual-member level data exclusively as the foundation for analysis (El Ansari & Weiss, 2006); the lack of test-retest reliability of coalition indicators over time when studies were mostly cross-sectional (Zakocs & Edwards, 2006, p.358), as well as construct validity and social desirability issues in measuring coalition indicators are often overlooked (El Ansari & Weiss, 2006). In relating coalition capacity with health outcomes, few studies actually evaluate the impact of coalition capacity on

intermediate and ultimate health program outcomes, in terms of actual changes in health behavior (Butterfoss, 2006, p.336; El Ansari & Weiss, 2006; Zakocs & Edwards, 2006, p.358)

Of all the issues and debates about the study and measurement of coalition capacity, the unit of analysis, whether it is the attributes and characteristics of individual coalition members, or organizational variables such as structure of coalition and members' collaboration, remains an unsolved conundrum for researchers studying community coalitions. While some health promotion researchers advocate qualitative inquiry, case study, and analyzing health promotion by coalitions with community as the unit of analysis (Gillies, 1998), the majority of coalition evaluations focus on individual level data and their aggregation though individual behavioral change tends to "atomize" health promotion (Swerissen & Crisp, 2004, p.124). The unit of analysis is particularly crucial in the study of community coalition for two primary reasons: The primary goal of community coalitions is to achieve a consensus goal towards the improvement of health and well-being in a particular community, and such empowerment process between individuals and organizations involves reciprocal development and exchanges among all parties (McMillan, et al., 1995). Specifically, community coalitions are "driven by relationships" (D. Chavis, 2001, p. 315) and flourish with sufficient relational (e.g. cohesiveness, shared vision) and organizational capacity (e.g. leadership, formalization) in addition to members' capacity (e.g. knowledge and motivation of individual members (Foster-Fishman, et al., 2001). Pooling the individual and organizational variables in a single empirical investigation, thus, has the potential to address the roles of these coalition capacity domains from different levels simultaneously, as well as teasing out the inter-relationship between individuals and their group in the context of working under a common coalition.

Rationale for the present study

Among the current major models on conceptualizing the capacity of community coalitions (Cramer, et al., 2006a; Florin, et al., 1993; Roz D. Lasker & Weiss, 2003), the Coalition Capacity Action Theory (CCAT) (Butterfoss, 2007; Butterfoss, et al., 1993; Butterfoss, et al., 1996; Butterfoss & Kegler, 2002) has aligned both individual-level and organizational-level variables in conceiving coalition capacity along a developmental continuum from formation, maintenance, to institutionalization. Nonetheless, the inclusion of variables from both levels in the Butterfoss framework has yet to address the cross-level interaction of coalition capacity. It is the purpose of this present study to fill this research gap by applying the CCAT model to illustrate the cross-level interaction on coalition capacity through an empirical investigation at a community coalition in Hong Kong.

The present study, focusing on the maintenance stage variables from the CCAT, examines coalition capacity domains from individual level (i.e. perceived cohesion, perceived leadership) as well as organizational level (i.e. formalization, developmental stage, members' collaboration) in the Kwai Tsing Safe Community and Healthy City (KTSHC), an established community coalition in Hong Kong. This study seeks to illuminate on how these individual level capacity domains, along with the organizational level domains, effect on the capacity of this coalition under study as a whole. Moreover, the simultaneous analysis of cross-level capacity domains could shed light on the process in which individuals and their organization interplay and contribute to the capacity building process.

The following chapter lays out an overview of community mobilization and coalition theories in general for understanding the context of studying community coalition capacity. The literature background is followed by a review of the four major models for community coalition by Butterfoss (2007; 1993; 1996; 2002), Florin (1993), Lasker (2003), Cramer (2006a) that delineate the choice of adopting the CCAT over competing models for the present study. A case illustration of the coalition under investigation, the KTSHC, sets the context for the present study. A

mixed method design is adopted to triangulate both quantitative and qualitative data on the proposed coalition domains for a synthesized measurement and illustration of coalition capacity from both individual and organizational perspectives.

Chapter summary

This chapter outlines the role of community coalitions in modern health promotion. With a discourse on promoting health in the community setting, the rise of community coalition has emerged as an all-encompassing mean to achieve health for all. Debates on the conceptualization and measurement of community coalitions have carved out room for this present research. Contemporary models on community coalitions adopt top-down or bottom-up approaches, and conceptualize capacity in terms of individual-level (e.g. members' participation, perceived leadership), and group-level (e.g. formalization, members' collaboration) domains. Nonetheless, the lack of conceptual binding between individual-level and group-level domains opened up a research gap. The interaction between individuals and group constitutes a dynamic interaction that calls for a more refined delineation than a summative view of aggregating capacity domains from both levels. The present study aims to address this research gap with reference to an established model of coalition, namely the Community Coalition Action Theory.

Chapter 2

Review of the literature

Health promotion and indeed all public health initiatives are communal in nature. Interventions “almost always require the cooperation and collaboration of organizations, such as local authorities, health authorities, and non-government organizations” (Stewart-Brown, 2000). In the past decade or two the public health sector has undergone a drastic transformation in terms of the approach to promoting health. With half of a century passed since the World Health Organization’s (WHO) definition of health (World Health Organization (WHO), 1948) was widely publicized, such conception of health eventually fuelled reform in public health practice. Progressing from health education to health promotion (Milio, 1976), public health practitioners and advocates now gravitate around an active, participant-oriented perspective and have departed from an orientation that is primarily concerned with health professionals disseminating health information in a didactic fashion. This movement transformed participants in public health initiatives from those at the receiving end of health services to active stakeholders in the planning, execution, and maintenance of health promotion activities. The wide spectrum of health promotion participants now comprises individuals, neighborhoods, local social groups, non-government organizations (NGO), small businesses and corporations, health authorities, and the government. Success of health promotion in the community therefore hinges on the collaboration and interplay between these different parties, also known as ecological spheres (Bronfenbrenner, 1979; Hanson, Vardon, & Lloyd, 2002; Stevenson & McClure, 2005; D. Stokols, 1996). This ecological orientation, most clearly advocated by Green & Kreuter in their seminal text on health promotion (Green & Kreuter, 1991), has reshaped the landscape of public health programs in terms of planning, implementation, and evaluation.

Modern public health interventions often require mobilization beyond inter-institutional collaboration and extend into the community. For examples, the Safe Community initiative led by the World Health Organization and head start programs in many developed countries (Head Start for Health in the United Kingdom,

HeadStart Health in Australia, and the Head Start in the United States) all involve community and institutional collaboration of varying depths (Bost, Vaughn, Boston, Kazura, & O'Neal, 2004) and scopes (Simpson, Morrison, Langley, & Memon, 2003).

Despite its wide and popular application, community health promotion and its process that brought forth changes in health outcomes through community mobilization has not received much attention in the academia not until recently. As Merzel & Afflitti (2003) concluded in their systematic review of community health promotion programs in the United States, there is an apparent void in the public health literature for “an integrated theory of ecological change that targeted social and policy influences through an intensive process of community mobilization”.

Nonetheless, several ecological models on the issue have been slowly but gradually developed to address the task at hand.

Eng and Parker eight dimensions of community competence

Eng and Parker (Eng & Parker, 1994) have revitalized the research literature in this area with their action research work on a nutrition and health campaign in Mississippi, USA. By interviewing coalition partners and community members throughout the course of the campaign, they formulated a model of community competence that entailed nine essential features of community competence, including characteristics of community members including i) community participation, ii) commitment, iii) self-other awareness and clarity of situational definitions, iv) articulateness, as well as characteristics of the community coalition including v) conflict containment and accommodation, vi) management of relations with wider society, vii) machinery for facilitating participant interaction and decision-making, and viii) social support.

Labonte and Laverack capacity building model for community programs

Building from a three-tier model on conditions that facilitate community-level public health programs (Hawe, Noort, King, & Jordens, 1997), Labonte and

colleagues proposed a model that differentiates factors influencing effectiveness of community health programs into relationships between the following parties: health agencies, health promoters, and community groups or members (Labonte & Laverack, 2001). The relational framework focuses on the quality of collaboration between all three parties that contributes to three types of capacity: health infrastructure capacity with regards to the structure and resource prerequisite to health promotion program, program sustainability capacity concerning the continuation of health promotional effort in the community, and community capacity building that refers to the process in which community members assess local health issues, derive and implement health promotion effort in collaboration with other parties such as health agencies, government, NGO, and develop a sense of involvement and ownership in these collaborative effort.

Nutbeam's measurement of outcomes in health promotion

Moving away from prerequisites to outcomes of public health interventions, Nutbeam (Nutbeam, 1998) offers a thorough checklist of outcomes to be evaluated in health promotion efforts. Parallel in structure to Labonte's notion of relationships between capacities, health promotion outcomes are organized into three classes: health literacy (e.g. health knowledge, participation in health promotion activities), social mobilization (e.g. community empowerment, community ownership), and policy / organizational practice (e.g. organizational structure, funding allocation). This outcome framework, like the Labonte model, identifies the three emerging domains in health promotion; however, the dynamic interaction between these domains remains unanswered.

Stokols' health promotive capacity

Stemming from an economic perspective, the notion of health-promotive capacity was again examined thoroughly under microscopic inspection by Stokols and colleagues (Daniel Stokols, Grzywacz, McMahan, & Phillips, 2003). By

differentiating the nature of capacity into material and human resources, the Stokols' framework was useful for describing both tangible and intangible resources necessary for the development and maintenance of community health initiatives. Like other community capacity models reviewed, Stokols' framework treasures intangible resources for community health promotion including the quality and commitment of leadership (human capital) as well as collaboration between members and resource persons outside the coalition (social capital). In addition, the role of tangible resources, such as financial assets for operation and physical resources (e.g. office and meeting space, equipment required for activities), is recognized as another essential factor for program feasibility and sustainability.

Critique of models on community competence / capacity

While the current state of the literature on capacity for community health intervention is insightful for conceptualizing the construct, it has little utility in modeling capacity in relation to program and process outcomes. The effects of organizational and community capacity interaction resulting in strength, which successful community health intervention relies on, appears to be a fruitful agenda for the problem stated above.

Despite acknowledging the importance of community members' perceptions on community capacity, Eng and Parker did not incorporate material assets in community health interventions under the organizational and institutional contexts (D. Stokols, 1992), such as management of the coalition, physical resources, financial support, and networking with external organizations. The model's orientation tends to assume these material assets as constants and undermine the variation of organizational capacity, another major influence on the implementation of community health interventions.

Comprehensive and relatively parsimonious, Labonte's model focuses primarily on the constitutive function of community capacity, a convenient concept to comprehend and assess how a community responds to and participates in public health interventions (Gibbon, Labonte, & Laverack, 2002; Goodman, et al., 1998; Labonte & Laverack, 2001; Glenn Laverack & Wallerstein, 2001). Furthermore, the model is designed to address capacity as an asset for the local residents rather as a mean leading to effective public health interventions. This orientation represents a view towards the liberal end of the public health governance spectrum. The role of policy and organizational capacity, nonetheless, is relatively downplayed in this delineation.

Having pointed out the need for both tangible and intangible types of capacity, the Stokols (Daniel Stokols, et al., 2003) framework has yet to be systematically delineated how these different types of capacity "sum" up.

Models on community mobilization reviewed have fallen into two pitfalls: the mutual exclusion of individual and organizational variables, as well as the mutual exclusion of tangible and intangible resources. With the Eng and Parker (Eng & Parker, 1994) and Labonte's (Labonte & Laverack, 2001) models leaning towards the individuals as the basic unit of analysis, the Nutbeam and Stokols models incorporated both individual and organizational level variables but did not explain the inter-relationships between variables from the two levels, whether they are summative, nested, hierarchical, or associated in other formats.

Community capacity in a program context – coalition capacity

Aside from the models above that describe the dynamics behind community intervention, a more fundamental debate has built a bridge to more sophisticated understanding of community as both agent and means of attaining community health. Synthesizing from an eclectic array of perspectives from public health, sociology,

psychology, and political science, health promotion researchers have developed a tiered definition of community (Hawe, 1994): community as a population, community as a setting, and community as an ecosystem with capacity to work towards solutions to its own community identified problems. Fashioned in the traditional medical research paradigm, community is viewed as a population of recipients who benefit from the prescribed health intervention, but its role is passive. The second conception of community as a setting views key advocates and organizations in the community as agent that assist health promoters in elaborating and sustaining the health intervention. The role of community in this context is active, but auxiliary. Recent research has revealed that community could become an active system not only involved in the maintenance of health interventions, but also in the planning and genesis of new public health interventions. Arising from such conception of community, a community incurs the sharing of experience and better suited with the description of “a group with a common interest and shared identity” rather than its geographic and demographic definition (Labonte, 2005, p.84).

Health promotion researchers are confronting a dilemma on the unit of analysis in evaluating public health interventions. On one hand, program evaluations targeting individual changes undermine “the social and environmental conditions that promote and maintain the behavioral risks that are the focus of intervention” (Swerissen & Crisp, 2004p.124). On the other hand, outcome and impact evaluations of individual level changes are as important as system change such as collaboration, total quality management, and process evaluation of the coalition (Abraham Wandersman & Florin, 2003).

With reference to the unit of analysis and unit of intervention in health promotion, the Ottawa Charter (World Health Organization (WHO), 1986) offered a fundamental paradigm shift from unilateral health education to more interactive health promotion. This shift is substantiated and actualized with the Jakarta Declaration (World Health Organization (WHO), 1997) which arrived at a decade

later. It was in this declaration that health promoters have given attention to the capacity of community and organization.

While the relationship between community capacity through aggregated individual-level data and subsequent health outcomes remains unclear, public health researchers attempted to solve this conundrum from an instrumental perspective. Stemming from Hawe's third definition of community (Hawe, 1994), researchers have started to evaluate communities as active systems in terms of the study of community coalitions. A coalition is generally formed by health professionals and community leaders at the initiative of a health organization. It is an alliance between people and organizations whose objectives typically differ, but who pool together their resources to effect changes, something they cannot achieve on their own (Pluye, Potvin, & Denis, 2004, p.122). Nonetheless, since community coalitions by their nature are not pertinent to the experimental paradigm and highly varying in terms of localities and formats, there is a dearth of structured and comprehensive theories on these organizations and how they lead to effective health promotion (Nutbeam & Harris, 2004, p. 34)

Researchers have evaluated the effectiveness of coalitions with proximal and ultimate outcomes. Most of these evaluations use proximal outcomes since the health effect of these large scale interventions usually takes years to manifest. Types of outcome, in an ascending order of scientific rigor, include the perceived coalition effectiveness (Allen, 2005; Feinberg, et al., 2004; Torrence, 2005; Weiss, Anderson, & Lasker, 2002), number of activities generated by the coalitions (Garland, et al., 2004; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998), and individual-level health outcomes of the participants such as substance use (Yin, Kaftarian, Yu, & Jansen, 1997).

The evaluation of health promoting coalitions in the community, parallel to the conception of community capacity, constitutes both group and individual level process and outcomes. Inputs and processes of individual members in the coalition

are embedded into the mosaic of the coalition as an organizational entity, which introduces collaboration, convolution, resolution, synergy, and evolution. It is with this study that we wish to examine these coalitions, renowned for its popularity, efficiency, and sustainability, in its parts and in its whole for a dynamic and holistic depiction of the underlying processes which relates to the effectiveness and maintenance of initiatives to promote health in the community.

Classic definition of a coalition

The term coalition has a long and established history in the disciplines of sociology (Kahan & Rapoport, 1984; Roberts-DeGennaro, 1986) and political science. Notably a classic definition of coalition is the one by William Gamson in the 1960s (Gamson, 1961) in which he defines coalition with a set of four parameters: the distribution of resources brought by each member; rewards to members from their participation; non-utilitarian preference, pertaining to each member's inclination to join with another member; and lastly, an effective decision point which the coalition uses formal or informal rules to reach consensus. Nevertheless, the classical definition of a coalition does not fit well with the coalitions in a health promotion context for two reasons. Health promotion coalitions, unlike their grassroot or political counterparts, are not primarily designed to resist external adversaries (O'Neill, et al., 1997, p.84).

Coalitions are characterized by an eclectic representation of individuals representing diverse organizations and community sectors, a formal working relationship, durability, a goal-oriented and structured approach to the issue in hand, and individual as well as organizational representation in terms of advocacy to the goal of any particular coalition. (Butterfoss, et al., 1993)

The composition of community coalitions varies with the availability of resources and community interest. Feighery and Rogers (1989) describe three types

of coalitions based on membership: Grassroots coalitions are short-term ensembles formed out of crisis to pressure policy makers to act. Controversial in nature, they can be very effective in achieving their goals and often disband when the crisis is over. Professional coalitions are formed by professional organizations either in a time of crisis or as a long-term approach to increasing their power and influence. Community-based coalitions of professional and grassroots leaders are formed to influence more long-term health and welfare practices for their communities.

These coalitions are usually initiated by one or more agencies in response to a funding proposal (Butterfoss, et al., 1993, p.317). In societies where community members were largely indifferent to address the health needs in the community with action, professional coalitions are the prevalent means to establish sustainable public health interventions.

Community coalition in a health promotion context

Worldwide, community coalitions are often formed to mobilize community resources and coordinate concerted activities towards the improvement of public health (W. R. Berkowitz & Wolff, 2000; Wolff, 2001). Coalition, as an approach to health promotion, has been widely evaluated (Alliance for Youth - Healthy Youth Coalition, 2001; Feinberg, et al., 2004; Francisco, et al., 1993; Gomez, et al., 2005; Green & Kreuter, 2002; Greenberg, et al., 2007; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998; M. C. Kegler, et al., 2000; Lempa, et al., 2008; McMillan, et al., 1995; Riley, et al., 2001; Roberts-DeGennaro, 1986; Zakocs & Edwards, 2006; Zakocs & Guckenburg, 2007) and theorized (Alexander, et al., 2003; Butterfoss, et al., 1996; Cramer, et al., 2006a; El Ansari & Weiss, 2006; Florin, et al., 1993; Foster-Fishman, et al., 2001; Goodman, et al., 1996; Roz D. Lasker & Weiss, 2003; O'Neill, et al., 1997; Schweigert, 2006). As reported in a recent review (Zakocs & Edwards, 2006), there are at least over 1,000 health promoting coalitions in the United States,

and only approximately 15% of them are well documented, with details about the structure and functioning of their respective coalitions. The existing literature on health promoting coalition is characterized by “a dearth of empirical information” (Granner & Sharpe, 2004, p. 514), “limited evidence of the effectiveness of partnerships in achieving desired outcomes” (El Ansari & Weiss, 2006, p. 175), and a large body of anecdotal evidence based on “conventional wisdom and lessons learned from individual case studies of a single coalition” (Zakocs & Edwards, 2006, p. 352). Moreover, there is a lack of consensus on what constitutes an effective coalition, in terms of major theoretical domains comprising the notion of coalition capacity (Zakocs & Edwards, 2006) as well as methodological techniques to assess these constructs encompassing the concept of coalition capacity (Granner & Sharpe, 2004).

Binding concepts from both organizational and community capacity, the study of coalition capacity focuses less on the phenomenon of empowerment and the constitutive function of health promoting coalition, while emphasizing the effectiveness, sustainability, and instrumental function of a coalition. With coalition gaining momentum in the field of public health intervention, researchers have begun to review systematically the quality of current research (Butterfoss, 2006; El Ansari & Weiss, 2006; Granner & Sharpe, 2004; Zakocs & Edwards, 2006) and reflect on critical issues in the research on coalition capacity over the past decades. Recent research on health oriented coalitions have supplied evidence for the association between coalition capacity and perceived effectiveness by coalition members (Allen, 2005), perceived effectiveness by participants and community members, output of coalition in terms of health promoting activities organized, as well as behavioral health outcomes. However, to date, major reviews of coalitions (Collins, Johnson, & Becker, 2007; Kreuter, Lezin, & Young, 2000; Zakocs & Edwards, 2006) suggest that these findings remain inconclusive. The case of safe communities’ evaluation illustrates this.

Current evidence from the health promotion literature suggests that cohesion in the community is the key to success of coalitional effort. From his review on 14 community-based injury prevention intervention studies, Nilsen concludes that much of the observed difference in program effectiveness could be attributed to the level of community cohesion, which is presumably high in the Swedish WHO Safe Communities sites including Lidköping, Falun, Motala, and Harstad (Nilsen, 2004, p.273). Nonetheless, how these results could be generalized beyond Sweden or northern European countries with similar population structures and lifestyles remain unclear. In a similar review of 35 safe communities worldwide, Spinks and colleagues arrived at the same conclusion on effectiveness about the Swedish safe communities, but found that such effectiveness in terms of injury reduction was not replicated in programs running in Australia and New Zealand (Spinks, Turner, Nixon, & McClure, 2005). Common in these observations is the fact that coalitions in large urban communities calls for a “different etiology” than their counterparts in small rural communities.

Theoretical frameworks of coalition capacity in health promotion: Current understanding about the lack of consensus and working models

The lack of a definitive theoretical framework for coalition capacity is substantiated with three critical issues in the understanding of the concept, they are: multiplicity of the unit of analysis, additivity and weight of each coalition capacity domain, overlapping and synergy between proposed domains, and addressing the capacity parameters observed under the developmental context of a particular coalition.

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Nonetheless, the emergence of several comprehensive frameworks of coalition capacity has partially solved some of these problematic issues and offered a systemic understanding of how health promoting coalitions formulate and effect health outcomes. Four notable working models, the Community Coalition Action Theory (Butterfoss, 2002; Butterfoss & Kegler, 2002), developmental framework for prevention coalition (Florin, Mitchell, Stevenson, & Klein, 2000), model of community governance (Roz D. Lasker & Weiss, 2003), and the Internal Coalition Outcome Hierarchy (ICOH) (Cramer, et al., 2006a, p.69-70; Cramer, Atwood, & Stoner, 2006b, p.75) have yielded varying degree of success in solving these issues. The following

is an overview of these models and how a synthesized framework could advance understanding of health promoting coalitions in action.

Community Coalition Action Theory

The Community Coalition Action Theory (CCAT) (Butterfoss, 2002; Butterfoss & Kegler, 2002) is a theoretical framework developed for health promoting coalitions to: address their health promotion issues, collect valid process data with reliable assessments, develop an action plan addressing their ecological contexts, implement effective solutions, attain community-level outcomes, and advocate social policy and community competence. The CCAT comprises fourteen constructs that center around its three developmental stages: formation, maintenance, and institutionalization.

Table 1 Community Coalition Action Theory (CCAT): Formation Stage

Domain	No.	Proposition
Stages of development	1	Coalitions develop in specific stages and recycle through these stages as new members are recruited, plans are renewed, and new issues are added.
	2	At each stage, specific factors enhance coalition function and progression to the next stage
Community context	3	Coalitions are heavily influenced by contextual factors in the community throughout all stages of development.
Lead agency/ convener group	4	Coalitions form when a lead agency or convening group responds to an opportunity, threat, or mandate.
	5	Coalition formation is more likely when the lead agency or convening organization provides technical assistance, financial or material support, credibility, and valuable networks and contacts.
	6	Coalition formation is likely to be more successful when the convener group enlists community gatekeepers who thoroughly understand the community to help develop credibility and trust with others in the community.
Coalition membership	7	Coalition formation usually begins by recruiting a core group of people who are committed to resolving the health or social issue.
	8	More effective coalitions result when the core group expands to include a broad constituency of participants who represent diverse interest groups, agencies, organizations, and institutions.

Table 2 Community Coalition Action Theory (CCAT): Maintenance Stage

Domain	No.	Proposition
Coalition operations and processes	9	Open and frequent communication among stakeholders and members help to create a positive organizational climate, ensures that benefits outweigh costs, and makes pooling of resources, member engagement, and effective assessment and planning more likely.
	10	Shared and formalized decision-making processes help create a positive organizational climate, ensure that benefits outweigh costs, and make pooling of resources, member engagement, and effective assessment and planning more likely.
	11	Conflict management helps to create a positive organizational climate, ensue that benefits outweigh cost, and achieves pooling of resources, member engagement, and effective assessment and planning more likely.
	12	The benefits of participation must outweigh the cost to make pooling of resources, member engagement, and effective assessment and planning more likely.
	13	Positive relationships among members are likely to create a positive coalition climate.
Leadership and staffing	14	Strong leadership from a team of staff and members improves coalition functioning and makes pooling of resources, member engagement, and effective assessment and planning more likely.
	15	Paid staff who have the interpersonal and organizational skills to facilitate the collaborative process improve coalition functioning and increase pooling of resources, member engagement, and effective assessment and planning.
Structures	16	Formalized rules, roles, structures, and procedures make pooling of resources, member engagement, and effective assessment and planning more likely.
Pooled member and external resources	17	The synergistic pooling of member and community resources prompts effective assessment, planning, and implementation of strategies.
Member engagement	18	Satisfied and committed members will participate more fully in the work of the coalition.
Assessment and planning	19	Successful implementation of strategies is more likely when comprehensive assessment and planning occur.

Table 3 Community Coalition Action Theory (CCAT): Institutionalization Stage

Domain	No.	Proposition
Implementation of strategies	20	Coalitions are more likely to create change in community policies, practices, and environment when they direct interventions at multiple levels.
Community change outcomes	21	Coalitions that are able to change community policies, practices, and environment are more likely to increase capacity and improve health and social outcomes.
Health and social outcomes	22	The ultimate indicator of coalition effectiveness is the improvement in health and social outcomes.
Community capacity	23	As a result of participating in successful coalitions, community members and organizations develop capacity and build social capital that can be applied to other health and social issues.

The formation stage features constructs related to the establishment of a coalition, including the community context, role of lead agency, and coalition membership in terms of members' diversity and professional / community representation. In the maintenance stage, the CCAT accentuates the roles of coalition operations and processes, leadership & staffing, organizational structures. These internal attributes of the coalition are hypothesized to give rise to coalition synergy, exhibited in the forms of pooled members and external resources/linkages, enhanced member engagement, and effective assessment and planning of coalition initiatives. The stage of maintenance is succeeded by the stage of institutionalization. This is when the coalition and its activities, upon successful and effective implementation, bring forth community change outcomes, health and social outcomes, and community capacity.

Developmental framework for prevention coalition

Building upon their previous studies (Florin, et al., 1993; Florin, et al., 2000; Florin & Wandersman, 1990), Florin and colleagues propose another framework for coalition effectiveness with a developmental perspective that examines key coalition developmental tasks including input (e.g. infrastructure, staffing, financial resource),

throughput (e.g. mobilization, establishing organizational structure, capacity building), and output (e.g. goals and plans met, projects implemented). To illustrate the framework empirically, the authors collected data on the above parameters from 35 substance abuse prevention coalitions and analyzed these data with a hierarchical multiple regression model. Findings from their study indicate that while member and organizational capacity building (i.e. membership knowledge and skills, and organizational linkages) increase the effectiveness of coalition implementation, the other two output stage parameters, including development and quality of the action plan being implemented, are not associated with input, mobilization, nor with the organizational stages in coalition development.

Model of community governance

The model of community health governance (Roz D. Lasker & Weiss, 2003) hypothesizes that to strengthen their capacity to solve problems that affect the health and well-being of their residents, communities need collaborative processes that achieve three proximal outcomes: individual empowerment, bridging social ties, and synergy.

Individual empowerment effects on the coalition by the way members perceive their efficacy in achieving changes and solving problems arose from organizing community health promotion activities through actions of the coalition. Bridging social ties reflects how members collaborate as a cohesive and effective unit, as well as the ability to reap resources outside the coalition. Synergy in the coalition refers to the dynamic interaction of social ties observed in a coalition, rather than the static link to information or resources as discussed in the role of bridging social ties. It is about how members collaborate, synthesize information and resources from multiple sources, negotiate, and resolve conflicts to achieve the consensus goal in a coalition.

The model hypothesizes that all three of these proximal outcomes are needed to strengthen community problem solving, and that these proximal outcomes improve community health directly as well as by enhancing the capacity of the collaborative process to solve health problems (Roz D. Lasker & Weiss, 2003, p.17).

Internal Coalition Outcome Hierarchy (ICOH)

The ICOH model incorporates group-process theory, which asserts that coalitions (such as groups) are microcosms of society that require effective organizational structures to support consensus for shared vision and goal achievement (Cramer, et al., 2006a, p.69-70; 2006b, p.75). The three-stage model comprises nine levels addressing different developmental goals of a coalition. In the initial process stage, capacity of the coalition is precipitated by the amount of resources injected, activities planned and delivered, as well as the degree of participation by members. In the following outcome stage, relationship between coalition members, training and program development, and effective practices in terms of program sustainability are the foci of capacity. Vision of the coalition on sustainable health promotion and replicability by others comprise the impact stage in the ICOH model.

Synthesizing frameworks for coalition capacity

Underpinning these various frameworks for coalition capacity lays the implicit dichotomy of approaches: top-down or bottom-up. The CCAT, Florin's developmental perspective, and the model of community health governance all indeed adopt a top-down approach, viewing the development of coalitions from the perspective of local health authorities. The ICOH, on other hand, adopts a bottom-up approach in which

the coalition is derived and evolved from the needs and actions of end-users, the community members. In the field of health promotion, tension between top-down and bottom-up approaches (G. Laverack & Labonte, 2000) remains a heated debate among researchers and health promoting professionals. While the bottom-up approach embraces empowerment and the constitutive function of the coalition, such qualities do not necessarily equate with the capitalization of program and health outcomes warranted in health promotion coalition. Analogous to the discussion on social capital by Maloney and colleagues (Maloney, Smith, & Stoker, 2000), a bottom-up only approach is handicapped with two major shortcomings: namely the role of organizational structures in shaping the context of associational activities, and the context where the coalition capacity is “capitalized”. For example, a heart health coalition in the neighborhood might have accumulated sufficient professional consultants and local community advocates to implement related projects, but failed to utilize such coalition capacity when they experienced difficulty in locating and reaching their target population.

On the other hand, the structural strength emphasized in the top-down approach undermines the motivation and participation from community and coalition members, which contribute significantly to the “participation chain” (Simmons & Birchall, 2005) for an effective coalition.

A mixed approach to examine health promoting coalitions that coalesces the advantages of top-down and bottom-up approaches offers a resolution to explore structural prerequisites underlying effective coalitions while considering the impact of empowerment and members’ participation. From this standpoint the present study is designed to research on coalition from these two distinct yet complementary perspectives.

Measurement of community coalition capacity – theoretical delineation and empirical evidence

Conceptualization of coalition capacity calls for measurements of capacity domains. Of the various measurements on community coalition capacity, two systematic reviews synthesizing empirical investigations in the literature have arrived at a set of common denominators. The review by Granner and Sharpe (2004) and Zakocs and Edwards (2006) both concluded with a converging set of capacity domains that includes formalization and members' participation, leadership, membership diversity and cohesion, stage of development, and members' collaboration.

Formalization

Formalization refers to the degree structures and processes of community coalition and its activities are organized and institutionalized, such as the presence of a clear organization structure, and the formal documentation of coalition activities (Delaney, 1994). The formalization of a community coalition fosters the legitimacy to share resources, enforces accountability, sets the blueprint for program planning, as well as provides the rationale and mandates for evaluation (Butterfoss, et al., 1996; Feinberg, et al., 2004; Garland, et al., 2004; Mitchell & Shortell, 2000).

Leadership

A wealth of literature documenting the relationship between leadership and coalition capacity has established a strong linkage between the two constructs. Empirical evidence gathered from Prestby & Wandersman (Prestby & Wandersman, 1985) suggested that leadership is associated with maintaining organizational control structure of community coalitions. In addition, the Prestby and Wandersman (1985) data suggested that an empowering style of leadership is inductive to more active

and successful coalitions. Successful and empowering leaders tend to be more visible and involved, promote cohesion and involvement, support members' planning and decision making, as well as provide opportunities for active contributions aside from regular meetings or other formal liaison. To refine the mechanism of how leadership effect on coalition capacity, Kumpfer and colleagues hypothesized that leadership style primarily impacts on coalition capacity and outcomes through mediating members' satisfaction (Kumpfer, Turner, Hopkins, & Librett, 1993, p. 362). Subsequently, this hypothesis has been substantiated with empirical evidence in the coalition research literature (Butterfoss, et al., 1996; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998; Metzger, Alexander, & Weiner, 2005; Zakocs & Edwards, 2006).

Membership diversity and cohesion

In the coalition or organizational context, cohesion among coalition members deviates from the traditional "sense of community" applied to neighborhood blocks or single-organization entity (D. M. Chavis & Wandersman, 1990), but rather resembles the construct of organizational climate (Allen, 2005; Butterfoss, et al., 1996; Florin, et al., 2000) and concerns with the sense of cohesion among members toward the coalition's goals. In terms of coalition capacity, cohesion was significantly correlated with the number of activities implemented as well as the complexity of the coalition in terms of types and frequencies of social exchanges (Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998, p. 348). The relationship between cohesion and coalition capacity, however, is likely not linear and uni-directional. Coalitions usually comprises individuals from diverse spheres of work disciplines, cultural or political backgrounds, or social groups, who will probably tend not to have strong personal, work, or social ties aside from coalition matters (Feinberg, Riggs, & Greenberg, 2005, p. 293).

Stage of development

Throughout its development, a community coalition is hypothesized to increase its capacity to achieve its goals. Regarding the effect of development on coalition capacity, there are at least three perspectives to comprehend the relationship between coalition development and its capacity:

Structural perspective – Butterfoss CCAT conception of coalition development: formation, maintenance, institutionalization (Butterfoss, 2004; Butterfoss, 2007; Butterfoss, et al., 1993)

Technical perspective – Florin developmental perspective on coalition capacity: input resources, initial mobilization, organizational structure, capacity building, output (Florin, et al., 1993; Florin, et al., 2000)

Outcome perspective – Cramer Internal Coalition Outcome Hierarchy: process (resource, activities, participation), outcome (relationship, knowledge, practice), impact (social vision) (Cramer, et al., 2006a, 2006b)

In sum, all three perspectives suggested that as the coalition develops, it is expected to attain its goals through the establishment of organizational structure, networks of tangible and intangible resources, and sustain through institutionalization or exertion of influence to the society.

Members' collaboration from self-reported measures

Coalition is a form of partnership by nature, so collaboration between members and other external partners constitutes an integral and inevitable function of its existence. In comparison with other capacity domains, the significance of members' collaboration in community coalition is endorsed unanimously by researchers in the coalition research literature (Allen, 2005; B. Berkowitz, 2001; Butterfoss, et al., 1993; Butterfoss & Kegler, 2002; D. Chavis, 2001; Cramer, et al., 2006a; Feinberg, et al., 2004; Florin, et al., 2000; Foster-Fishman, et al., 2001; Goodman, et al., 1998; R. D.

Lasker, Weiss, & Miller, 2001; Kenneth R. McLeroy, Kegler, Steckler, Burdine, & Wisotzky, 1994; Pluye, et al., 2004; Roberts-DeGennaro, 1986; Wells, Ford, McClure, Holt, & Ward, 2007; Zakocs & Edwards, 2006), yet its measurement has received less attention in terms of research and measurement development (Granner & Sharpe, 2004). Most of these available self-reported tools on measuring collaboration tend to focus on the nature and content about what was achieved through collaboration (Wolff, 2003), individuals' perception of coalition leaders about their reach into the community and related organizations (R. Cook, Roehl, Oros, & Trudeau, 1994; Wolff, 2003, p. 162), or the motivation and social environment conducive to collaboration (Taylor Powell, Rossing, & Geran, 1998, p. 91). Little has been research on the activities involved in collaboration in terms of social exchanges and liaison. An exception is the effort by Hays, Hays, Devile, and Mulhall (2000) in assessing substance abuse prevention coalitions in Illinois, USA. Their measurement incorporated self-reported questions about collaboration in coalition with six questions in a five-level Likert scale format. These questions on collaboration prompted respondents to report about the information exchanged about meetings and conferences, training opportunities, networking liaison towards jointly planned and implemented programs among coalition partners (Hays, et al., 2000, p. 376). Having addressed the overall organization climate towards collaboration, this type of questions on collaboration, nonetheless, cannot reveal the structure of existing collaboration, explain the dynamics between collaborations taking places among particular pairs or groups of members, nor illustrate the interplay of empowerment between individuals and their group in the form of coalition (McMillan, et al., 1995).

Members' collaboration as social network of community coalition members

Members' collaboration in community coalition constitutes an integral function of pooling resources and achieving synergy. Coalition, as a contextual social structure underlying collective health promotion initiatives, influences the interest of an actor (e.g. to maximize one's utility or to maximize the collective utility in a group) as well as the action of an actor (e.g. forming strategic alliances with other actors). Moreover, the social structures in such coalitions are modified by the actors' action reciprocally (Burt, 1980, pp. 3, 9-10). These underlying structures and resulting exchanges could be quantified and empirically analyzed with the aid of social network analysis (SNA), which offers "a conceptual toolbox for community scientist" (Luke, 2005, p. 196) to unfold the "black box" (Koepsell, et al., 1992, p. 33) in public health interventions, referring to the missing process sequence between program inputs and outputs documented in community health research and evaluations.

From the empirical literature on community health interventions, researchers, in recent years, have incorporated SNA into evaluations on a variety of health promotion and service interventions, from lead poisoning prevention (Singer & Kegler, 2004), substance abuse prevention (Valente, Chou, & Pentz, 2007), cancer screening (Wells, et al., 2007), chronic diseases management (Provan, Veazie, Teufel-Shone, & Huddleston, 2004), to community well-being (Lang, 2005). While some researchers simply enumerate the number of ties or use sociograms for case illustration (Ford, Wells, & Bailey, 2004), others have ventured into examining additional social network properties for modeling coalition capacity, including network density, centrality, and cliques (Lang, 2005; Singer & Kegler, 2004; Valente, et al., 2007; Wells, et al., 2007).

To date, most researchers have arrived at an inverted U-shape relationship between network density and coalition effectiveness, denoting that coalitions having moderate network density, rather than one that is too low or too high, are associated

with perceived program success by members in the inception stage (Lang, 2005) and program adoption (Valente, et al., 2007).

Measurement techniques employed in Social Network Analysis (SNA)

The types and methods of network properties varied widely in the empirical research reviewed. While some researchers simply enumerate the number of ties or use network graphs for case illustration (Friedman, et al., 2007; Krauss, Mueller, & Luke, 2004; S. Moore, Smith, Simpson, & Minke, 2006; Thomas, Isler, Carter, & Torrone, 2007), others have ventured into examining additional social network properties for modeling coalition capacity, including network density, centrality, and cliques (Lang, 2005; Singer & Kegler, 2004; Valente, et al., 2007; Wells, et al., 2007).

Data reliability issues

Though confirmed ties are preferred in SNA, unconfirmed ties should not simply be discounted because they may reflect network potential. They represent loose connections that can develop into stronger and more meaningful relationships. Thus, the gap between confirmed and unconfirmed ties represents an opportunity to strengthen community links (Provan, et al., 2004, p. 178). In a multi-mode design where and personal and organizational ties are both surveyed and collated, the distinction between these different natures of ties should be carefully defined to obtain reliable data (Singer & Kegler, 2004, p. 818). Snowballing, a.k.a. the reputational approach, relies on the recall by respondent and hence susceptible to recall bias. For instance, in a study of two safe communities in Australia, researchers adopted the reputational approach and yielded a tie confirmation rate of 30% (Hanson, Muller, & Durrheim, 2005). Position approach, in which only ties within a structure network are examined, improves ties confirmation and reliability at the risk

of overlooking external ties critical to the coalitions. Reliability in some network measure such as closeness and betweenness are bound by the sample size available. In a small network, degree centrality and betweenness are highly correlated as the number of possible ties and development of cliques are limited. Such covariation prohibits the differentiation of these obtained measures (Feinberg, et al., 2005, p. 293). Triangulation of multiple data sources including questionnaire, observation, and interviews tend to yield the most reliable data as well as empowering the working relationship between the research team and coalition involved (Provan, et al., 2004, p. 180).

Analytical techniques employed in SNA

Over the past decade, network analysts have ventured into the inferential statistics of network data from charting the growth of network (Friedman, et al., 2007; Hanson, et al., 2005), relating different modalities of network (e.g. information and resource sharing)(Wells, et al., 2007), to associating network properties with process (Singer & Kegler, 2004) and program (Feinberg, et al., 2005) outcomes. Nonetheless, the application of SNA in assessing coalition capacity has yet to receive due recognition among health promotion and service professionals. A possible reason for the dearth of SNA in studying coalition is the complexity of SNA techniques, involving specialized softwares (Borgatti, Everett, & Freeman, 2007; de Nooy, Mrvar, & Batagelj, 2005) and matrices manipulations (Carrington, Scott, & Wasserman, 2005; S. Wasserman & Galaskiewicz, 1994), which could be technologically challenging to health promoters in implementation. Subsequently, this technical challenge calls for technical transfer of innovation in university-community collaborations (Provan, et al., 2004, p. 180). To integrate knowledge generated from SNA with the current perspectives and understanding about coalition capacity, it is

imperative to explore the relationship between network properties in community coalitions and other capacity dimensions, such as leadership or sense of cohesion (Singer & Kegler, 2004, p. 819).

Network properties that envisage the capacity of an effective coalition

Density

Evidence from recent research has supplanted speculations about simple associations between intensity of ties in terms of frequency of contact (Krauss, et al., 2004, p. 9) with a more sophisticated explanation. To date, coalition researchers tend to hypothesize an inverted U-shape relationship (Friedman, et al., 2007; Provan, Nakama, Veazie, Teufel-Shone, & Huddleston, 2003; Singer & Kegler, 2004; Valente, et al., 2007) between network density and coalition effectiveness, denoting that coalitions having moderate network density, rather than one that is too low or too high, are associated with perceived program success by members in the inception stage (Lang, 2005) and program adoption (Valente, et al., 2007).

A developmental approach to understand the role of network density marries these divergent observations into a coherent hypothesis. Coalitions go through an "experimental" stage with expanding network (Singer & Kegler, 2004, p. 816) to arrive at a mature stage with fewer but stable, effective partners who form "more long-lasting, trust-based ties" (Provan, et al., 2003, p. 655) with coalition members. When the network is established and mature, high density within network could avert coalitions to explore new external information and resources and limit their growth and sustainability (Valente, et al., 2007, p. 881).

Centrality

Coalition researchers have proposed different pathways on how centrality effects on the optimization of coalition effectiveness. While centralized networks are more efficient in decision making and resource mobilization (Provan & Milward, 1995, p. 24), decentralized networks with low betweenness among members offer a more empowering environment to nurture the sense of cohesion, ownership, and higher level of perceived readiness in a coalition, which in turn fortifies program sustainability (Feinberg, et al., 2005, p. 293). Centrality of coalition decreases over time in terms of degree centrality and betweenness (Friedman, et al., 2007, p. 300). In terms of similarities between nodes of members, community coalitions seem to benefit from ties homophily, a phenomenon where networks are formed with relatively homogenous members (Feinberg, et al., 2005, p. 294; Singer & Kegler, 2004).

Multiplexity of social network

Multiplexity refers to the co-occurrences of two or more types of social exchanges observed in dyads embedded in a social network. In a positively connected network where exchanges between any two actors are positively correlated (K. S. Cook & Whitmeyer, 1992, pp. 122-123), cohesion processes, including tie homophily and density, will be prevalent. For instance, if the networks of information exchange and referrals between dyads of coalition members are positively correlated, such correlation should indicate a cohesive network of coalition members. In practice, a natural progression of network activities usually develops from information sharing to resource sharing. As illustrated in the developmental approach of network density, multiplexity in social networks of coalitions follows a similar progression from testing strength of relationship through information sharing

to consolidating relationship with reliable partners through resource sharing (Provan, et al., 2003, p. 658). When networks approach maturity, ties multiplexity appears to be facilitating for network growth and effectiveness (Provan & Milward, 1995, 2001; Provan, et al., 2003; Provan, et al., 2004), while higher level of information exchange infer higher level of inter-organizational cooperation (Wells, et al., 2007).

Inclusion of network properties that envisage the capacity of an effective coalition: Density, centrality, and multiplexity

The SNA reviewed surveyed a wide range of different network properties. Integral to the study of health promoting coalitions, density, centrality, and multiplexity of ties emerge as the core properties in these SNA relevant to not only the explanation of organizational climate in these coalitions, but also the maturation of these coalitions in terms of structural stability and collaboration patterns. Based on the reviewed studies, a framework of optimal network properties along a continuum of coalition development are charted as reference for evaluation.

Table 4 Working framework of optimal network properties toward effective coalition

	Establishment	Consolidation	Maintenance
Network size	↗	↘	↔
Density	↗	↘	↔
Centrality	↔	↘	↘
Betweenness / Closeness	↔	↗	↗
Network strength	↔	↗	↗
Multiplexity	↔	↗	↗
Notation:	↗: Increase	↘: Decrease	↔: Stabilized

Network size and density of a coalition should increase in its initial development stage to accommodate the “trial and error” exploration of partners who could develop trust with the coalition members. The sprout should be followed with a gradual decrease of density, reflecting the pruning of ties that are not fruitful for unearthing new resources (Valente, et al., 2007, p. 881) or ineffective for coalition activities and development (Provan, et al., 2003, p. 655). At the same time, the nature of ties should go beyond information sharing, an exchange that commands less trust and commitment relatively (Thomas, et al., 2007), towards other more concrete exchanges including referral and resource sharing.

A centralized network is favored for its efficiency in decision making (Provan & Milward, 1995; Valente, et al., 2007, p. 884) in the establishment stage of a coalition, when integration and coordination of members with a vast variety of interest is the priority. However, when the coalition is established and stabilized, the decentralization of network in a coalition over time and increase of closeness among

members (Friedman, et al., 2007) diffuses the brokerage of information and resource sharing from a few key players to more members in the coalition, which in turn improves the perceived readiness of a coalition to implement activities (Feinberg, et al., 2005; Wells, et al., 2007, p. 136).

It is with this working framework that we wish to explicate the different effect of social network properties on coalition effectiveness with a parsimonious and comprehensive tenet of hypotheses.

Direction towards analyzing network data using inferential statistical analyses

While Luke and Harris (2007) suggested that few SNA studies in the field of public health moved beyond descriptive statistics (Luke & Harris, 2007, p. 87), statistics reported from the studies in this review suggested otherwise. Indeed, inferential statistics were reported in more than half of the studies reviewed. Nonetheless, researchers in the field have yet to optimize the level of sophistication in deploying statistical techniques compliant with the interdependent nature of tie matrices data. Instead of comparing central tendency data over time or across setting, more research is needed on comparing multiplex of ties observed in the same group, aid by advance techniques designed to cope with interdependence data such as the quadratic agreement procedure (QAP) (Wells, et al., 2007) and spatial autocorrelation (Leenders, 2002; S. Moore, et al., 2006).

Application of SNA in studying health coalitions – Challenges and context for consideration

Social network analysis serves well as a tool for examining health coalition in terms of working relationships and organization structure. The relationship between structural properties of ties observed in a health coalition and coalition effectiveness,

however, cannot be summed up in a simple linear equation of network density. Rather, we believe that coalition effectiveness correlates with a peculiar pattern of structural and dynamic features embedded in the social networks of health coalitions. Moving beyond single indicator calls for the reporting of a wider range of network properties in future SNA on health coalitions. Though the challenge of moving into this direction has been partially solved by the advent of user-friendly graphical-interface software for SNA, the role of university-community partnership to tease out the technicality should not be overlooked.

Reporting social networks by the means of self-report is a demanding and daunting task for respondents, particularly when the network survey is administered in the paper-and-pencil format. Fortunately, we often focus on collaborations within the coalition. The in-group focus allows a close-network orientation to assess ties of different natures and utilities. In a computer-assisted survey, the burden of recalling the list of coalition members is alleviated by prompting respondents to choose from a complete network members list designed in tabular form. Software designed for collecting egocentric network data (McCarty), and web-based network data collection service (Tanglewood Research Incorporated, 2008) has minimized demands on the respondents as well as demands on inputting complex matrix of network data.

Ultimately, the utility of incorporating SNA in studying health coalitions is contingent upon the successful integration of network data and other individual and group level effectiveness data collected from the coalitions. Again, hindered by the interdependent nature of network data, such integrated modeling calls for application of stochastic techniques recently developed in the field of SNA.

To a varying extent and depth, researchers have used SNA to address the role of networks and ties in contributing to the success of health promoting coalitions. Nonetheless, coalition researchers can optimize the contribution of social network data to capture the intricate dynamics of coalition development by advocating the use of a wider array of network descriptors beyond network density for more vivid

description of network properties and dynamics, and adopting statistical tests sensitive to interdependent data derived from network data matrices for unfolding causal relationships beneath observed network ties and structures. For the present study, the application of SNA is applied not only confined to single network measure of density, but also expanded to an array of network measures including degree centrality, closeness centrality, betweenness centrality, ties multiplexity, and core-periphery structure classification. A web-based survey is introduced to minimize respondent burden by presenting a full list of the close network members in the coalition. To elaborate on the relationships between network measures and other individual-level measures, inferential statistics tailored for interdependent data, including the Quadratic Assignment Procedure (QAP) Correlation and spatial autocorrelation, are employed in the present study.

Bridging the literature review to the present study

Binding the frameworks of coalition capacity in the health promotion literature with advances and applications of SNA in this field, the present study will examine the notion of coalition capacity from an individual-level, conventional, perspective as well as a coalition-level, network perspective. From a micro perspective, the mixed approach is operationalized by examining coalition in terms of individual-level reported capacity parameters including perceived leadership, group cohesion, the level of formalization, and stage of coalition development. From a meso perspective, organizational and contextual variables, namely the structure and exchanges within the coalition, are collected with the aid of SNA. Capacity parameters from both perspectives are then combined and compared with further analyses explicating the independent and interdependent contribution of these variables to coalition capacity. Given the dearth of empirical evidence on coalition capacity in the context of health

promotion (El Ansari & Weiss, 2006; Granner & Sharpe, 2004; Zakocs & Edwards, 2006), the present study begins with quantitative data collected from the participating coalition and supplement with qualitative data from focus group interviews that offers a discourse of coalition capacity and its effectiveness with precision and generalizability.

Chapter summary

This chapter reviewed the theoretical delineation from community mobilization, community capacity, to the concept of coalition capacity, which is the focus of the present research. This delineation was followed by an overview of contemporary models and frameworks for conceiving community coalitions and their capacities toward health promotion. Among the current major models on conceptualizing the capacity of community coalitions (Cramer, et al., 2006a; Florin, et al., 1993; Roz D. Lasker & Weiss, 2003), the Coalition Capacity Action Theory (CCAT) (Butterfoss, 2007; Butterfoss, et al., 1993; Butterfoss, et al., 1996; Butterfoss & Kegler, 2002) has encompassed a comprehensive framework group individual and group level variables related to coalition capacity, and aligned both individual-level and organizational-level variables in conceiving coalition capacity along a developmental continuum from formation, maintenance, to institutionalization. Common capacity domains of community coalitions, including formalization, leadership, cohesion, developmental stage, and members' collaboration were described in terms of their significance to coalition capacity and the development of measurement on these domains. Social network analysis, a technique for explicating the intricate inter-dependent social relationships, was introduced to explore members' collaboration in community coalition instead of individual-level measurement. Substantiating from the most comprehensive coalition model in the Community Coalition Action Theory (CCAT), the literature review sets a direction for conducting this present research.

Chapter 3

The Kwai Tsing Safe Community and Healthy City (KTSHC)

The Safe Community movement

Since its inception in Sweden in 1975 (Svanstrom, Ekman, Schelp, & Lindstrom, 1995), the Safe Community model to health promotion has received accolades of acclaims worldwide as a comprehensive and effective approach to the promotion of safety in community (Bjerre & Schelp, 2000; Laraque, Barlow, & Durkin, 1999; Lindqvist & Lindholm, 2001; Nilsen, Ekman, Ekman, Ryen, & Lindqvist, 2006; Spinks, et al., 2005; Svanstrom, et al., 1995; Timpka, Nilsen, & Lindqvist, 2006). Safe Community refers to a local community or municipality hosting a series of concerted programs to prevent injury. These programs, under the umbrella of Safe Community, target population from all ages, environments and situations. The governing and operating bodies of safe community often involve a mix of public authorities, health services, non-government organizations (NGO), businesses and enterprises, as well as interested individuals from the community (Welander, Svanström, & Ekman, 2004, p. 49). In fact, the World Health Organization (WHO) has defined six major criteria for accrediting a safe community (Welander, et al., 2004, p. 101), including: an infrastructure featuring partnership and collaborations and governed by a cross-sectional group responsible for safety promotion in their community; planning and operation of long-term, sustainable programs covering populations from all genders, ages, environments, and situations; targeted programs for high-risk groups promoting safety; documentation about the local frequency and causes of injuries; evaluation measures to assess their programs, processes and the effects of change; and ongoing participation in Safe Communities networks at national and international levels. Globally, there are 159 safe communities designated by the WHO at 2009. Nonetheless, as the Safe Community approach emphasizes the value of process, designation of a Safe Community pledges a commitment to the ongoing process of safety promotion in the community rather than demonstrates what the community has achieved at the time of designation (Hanson, et al., 2002, p. 29).

Currently, there are six designated safe communities in Hong Kong, with two of them, namely Tuen Mun and Kwai Tsing, being accredited twice (WHO Collaborating Centre on Community Safety Promotion, 2009).

Table 5 Designated Safe Communities in Hong Kong

Order of designation	Name of Safe Community	Year(s) of designation	Population
72	Tuen Mun	2003, 2009	490,000
73	Kwai Tsing	2003, 2008	480,000
90	Tai Po	2005	320,000
101	Tsuen Wan	2006	290,500
109	Sham Shui Po	2006	372,000
110	Tung Chung	2006	100,000

The Healthy City movement

Led by the World Health Organization, the Healthy City initiative was established in Europe in 1987. Since then it has become a worldwide movement, involving thousands of municipalities and local authorities globally (de Leeuw, 2001). Healthy Cities embrace an all-round approach to the promotion of health: not only focusing on physical health, but also the person's well-being and community health from physical, mental and social perspectives.

The Healthy City movement is guided by the six principles declared in the WHO Alma Ata conference (World Health Organization (WHO), 1981), namely the reduction of inequalities in health, emphasis on disease prevention, inter-sectoral cooperation including reducing environmental risks, community participation, emphasis on primary health care in health care systems, and international cooperation. Nonetheless, the definition of a Healthy City, ranging from three to eleven core values and implementation strategies, calls for an eclectic interpretation

(de Leeuw, 2001). In terms of formal evaluation, the growth of literature documenting quantitative and qualitative findings of Healthy City has been slow (de Leeuw & Skovgaard, 2005), yet “compensated by enormous enthusiasm” (de Leeuw, 2001, p. 38).

The Kwai Tsing Safe Community and Healthy City (KTSHC)

The Kwai Tsing Safe Community and Healthy City (KTSHC), was the first ever safe community to be launched in Hong Kong. In its eighth year of operation, the KTSHC has provided a model for other safe communities in Hong Kong and demonstrated how community resources could be pooled, efficiently allocated, and sustained. It is of the interest of academics, the community, as well as other local safe communities to explore what constitutes such longevity and efficiency in promoting safety and health to the community.

The Kwai Tsing Safe Community & Healthy City (KTHSC) was launched in March 2000 by an extensive organizing body comprising related government agencies, non-governmental organizations, and private enterprise advocating to the minimization and prevention of injuries. Management of the KTHSC is monitored by a 2-tier system, comprising a steering committee & several working committees (Kwai Tsing Safe Community and Healthy City Association, 2003).

The KTHSC has expanded to Kwai Tsing Healthy and Safe School program based on the Hong Kong Healthy School Award Scheme (HKHAS) guidelines established by the Centre for Health Education and Health Promotion of the Chinese University of Hong Kong (Lee, 2002, 2003) taking reference from WHO (World Health Organization (WHO), 1995). The whole concept of HPS emphasize on capacity building, equity, empowerment and action competence, school ethos and safety, relevant curriculum to the students’ needs, teacher training, and co-responsibility through inter-sector collaboration (Levin, 1997). The HKHSA enables

the participating schools to create ‘learning perspective’, ‘community perspective’, and ‘capacity building’ environment (Lee, 2002). The effect can further strengthen the KTHSC in community capacity building.

At the time of the research, the KTSHC hosted a wide array of on-going programs that included injury surveillance, the Safe & Healthy Elderly Homes scheme, the Safe & Healthy Estate Accreditation Scheme, a Safe Home demonstration centre, as well as spontaneous events on safety and health promotion such as themed fairs / carnivals, exhibitions, and lectures (Kwai Tsing Healthy City & Safe Community, 2002). Table 6 features a summary of major programs and corresponding outputs by the KTSHC since 2003.

Table 6 Programs and outputs of the KTSHC since 2003

Program	Major output
Safe & Healthy Estate	10 sessions, 8 health checks for 2,000 residents 16 site visits, 7 estates
Safe & Healthy School	9 health education sessions for 1,600 participants 14 CPR sessions for 600 participants 18 infection control sessions for 3,000 participants 16 inspection visits for 16 schools Over 12,185 students and teachers involved
Safe & Healthy Elderly Homes	19 homes participated in 2004 31 homes participated in 2005 46 homes participated in 2006 34 OSH Ambassadors recruited 32 training sessions for 300 care workers 22 elderly homes accredited
Safety & Health Charter	45 display boards were set up23 health galas for 2,000 residents 36 blood pressure monitors on loan to organizations 37 organizations pledged for the Safety and Health Charter
Road Safety Programs	33 programs for 18,800 participants
Fire Safety Programs	90 programs for 40,000 participants
Food Safety & Environmental Hygiene Programs	137 projects for 46,570 participants
Home Safety Program	23 programs for 22,300 residents
Elderly Fall Prevention Program	58 programs for 6,330 elders
Building Management Program	9 projects for 23,000 residents 90 buildings participated
Clean Hong Kong Program	217 programs for 165,370 participants
Community Fall Prevention Program	31 Tai Chi Classes for 446 elderly participants 11 NGOs involved in Tai Chi Program 4 NGOs involved in Home Screening Program
Participation in International Conferences	18 conferences attendances with 25 oral or poster presentations

In accordance with the criteria for Safe Community laid out by the WHO (Welander, et al., 2004, p. 101), the KTSHC has demonstrated its efficacy in terms of injury reduction as well as other process and intermediate variables. Having set the target of reducing 30% of injuries in 5 years in 2002, the Kwai Tsing Safe Community & Healthy City has observed a significant reduction of 36% in terms of medically attended injuries in 2007 as compared with the 2002 baseline data. With an influx of new initiatives including responsive reactions to communicable diseases (e.g. Severe Atypical Respiratory Syndrome (SARS), Avian flu, H1N1 influenza), injury surveillance map, as well as extension of existing effort such as the “Safe & Healthy Estate” and “Safe & Healthy Elderly Homes” (Kwai Tsing Healthy City & Safe Community, 2008), the KTSHC is expected to grow as a vibrant community coalition that promote safety and health through various social and professional strata.

Chapter summary

This chapter outlines the Safe Community and Healthy City movements as a context of the community coalition featured in this study, the Kwai Tsing Safe Community & Healthy City (KTSHC). Structure of the KTSHC, its major achievements, and strength demonstrated constitute the backdrop for understanding coalition capacity in the present investigation. With its accomplishment in terms of output and injury reduction, the KTSHC has demonstrated its efficacy in promoting health and safety in the community. Turning the research focus from its efficacy to its effectiveness, process, leadership, and structure leading to coalition capacity in the KTSHC are featured and explored in the present study.

Chapter 4

Research hypotheses and methods

Research Methodology*:*

Design

Triangulation of data collection has been suggested to address the complexity of community coalitions and the coalition-building process by consolidating data collection measurements, enriching the interpretation of data, enhancing validity, and minimizing bias in any one type of methodology (Butterfoss, 2006; El Ansari & Weiss, 2006; A. Wandersman, Goodman, & Butterfoss, 1997; A. Wandersman, et al., 1996).

The present study adopts an embedded mixed method design that integrates quantitative data for the primary source to address the research hypotheses, and qualitative data to supplement the refinement of quantitative measurements as well as entailing the mechanisms and process substantiated from the quantitative results (Creswell, Piano-Clark, Gutmann, & Hanson, 2003; Creswell & Plano-Clark, 2007, pp. 67-70).

Both types of data were collected with a sequential approach (Creswell & Clark, 2007). The data collection process started with a qualitative focus group for background information of the coalition studied and research measurement refinement. This was followed by the commencement of quantitative data collection through the web survey. Additional qualitative data was gathered from another focus group upon the completion of quantitative data for interpretation and elaboration of results and findings substantiated from the quantitative data. While quantitative analysis of coalition capacity is the dominant methodology, the qualitative data and respective analyses complement the understanding of the coalition capacity by exploring respondents' views on the obtained quantitative data in greater depth and scope. In the present study, quantitative data in this study were collected with a web-based, self-reported survey administered to members of the community coalition

under investigation. Qualitative data in this study were collected with two focus group interviews administered to key members of the community coalition under investigation.

Research hypotheses

Integrating the Community Coalition Action Theory (CCAT) (Butterfoss, 2004; Butterfoss, et al., 1996; Butterfoss & Kegler, 2002) with a social network perspective, this study is designed to test the following hypotheses for explaining the maintenance of an effective community coalition (i.e. Propositions 9-19). Specifically, the constructs of formalization and participation (proposition 16), leadership (proposition 14, 15, 19), cohesion (proposition 9-13), and collaboration (proposition 17), along with the developmental stage as laid out the CCAT, will be modeled with perceived effectiveness of the coalition.

Hypothesis 1: Coalition capacity comprises the proposed domains (i.e. formalization, leadership, cohesion, developmental stage, perceived effectiveness) that vary independently.

Hypothesis 2: Perceived effectiveness of the health coalition is associated with the independent variables about coalition capacity, namely the formalization of rules/ or procedures (i.e. availability of organizational structure, documentation, regulation), leadership (i.e. clear direction, collaborated decision making, members' facilitation), developmental stage (i.e. attendance, time devoted to coalition), and group cohesion (i.e. shared vision, commitment to coalition).

Hypothesis 3: Network measures observed in the health coalition are associated with the independent variables about coalition capacity, namely the

formalization of rules/ or procedures, leadership, developmental stage, and group cohesion.

Hypothesis 3a: Degree centrality (number of observed ties) is associated with the frequency of collaborators among coalition members and positively correlated with the self-reported coalition functioning (i.e. formalization, leadership, cohesion, developmental stage, perceived effectiveness)

Hypothesis 3b: Position in the coalition network is associated with the self-reported coalition functioning (i.e. formalization, leadership, cohesion, developmental stage, perceived effectiveness)

Hypothesis 3b(i): Closeness centrality (geodesic distance to any given member) is associated with the frequency of collaborators among coalition members and positively correlated with the self-reported coalition functioning (i.e. formalization, leadership, cohesion, developmental stage, perceived effectiveness)

Hypothesis 3b(ii): Betweenness (location in the network including direct and indirect ties to members)is associated with the frequency of bridging among coalition members and positively correlated with the self-reported coalition functioning (i.e. formalization, leadership, cohesion, developmental stage, perceived effectiveness)

Hypothesis 3c: On a dyadic level, ties multiplexity (types of observed ties with any given member) is associated among different types of networks (information exchange, referrals, and resource sharing).

Hypothesis 3d: Ties multiplexity (types of observed ties with any given member) is associated with the quality of collaboration among coalition members and positively correlated with the self-reported coalition functioning (i.e. formalization, leadership, cohesion, developmental stage, perceived effectiveness)

Hypothesis 4: Adjacency between any given pair of members in the coalition was associated with reported coalition functioning and effectiveness.

Participants

Members of the Kwai Tsing Safe Community and Healthy City were the participants in this study. The Kwai Tsing Safe Community and Healthy City (KTSHC) initiative, pioneering the first ever safe community to be launched in Hong Kong, is marching on into its 8th year of successful run. Accredited by the World Health Organization (WHO) in 2003, the KTSHC is one of the 150 safe communities in the world that advocates to the promotion of safety in a community context. Since its inception in 2000, the KTSHC has organized over 50 campaigns related to the promotion of safety for the residents and workers in the Kwai Tsing district, achieved the 30% injury reduction recommended by the WHO, as well as hosted delegates for exchanges and published results at international conferences (Kwai Tsing Safe Community and Healthy City Association, 2008). Being a model for other safe communities in Hong Kong to follow, the KTSHC has demonstrated how community resources could be pooled, efficiently allocated, and sustained. It is of the interest of academics, the community, as well as other local safe communities to explore what constitutes such longevity and efficiency in promoting safety and health to the community. In year 2009, the KTSHC is managed by 12 managing directors and registered as a limited company (the Kwai Tsing Safe Community and Healthy City Association Limited) under the Business Registration Ordinance stipulated by the

Hong Kong SAR Government. This network administrative organization is financially independent from the participating organizations and entitled to hold and appropriate funding of its own.

Procedures

The online survey was adopted over traditional paper-and-pencil survey with several methodological and practical considerations. With the web-based survey that yields data with quality comparable to those collected through traditional modes (e.g. paper-and-pencil, telephone) (Coromina & Coenders, 2006, p. 228), participants were presented with a scrollable closed list of all the coalition's members. This format allowed participants to recall their liaisons with other members through recognition (recognition data collection technique), which is associated with reports of more ties and weaker ties (Hlebec & Ferligoj, 2002, p. 300), rather than generation of names by recollection (free-recall technique). The web-based format, with the aid of pull-down menu for valued responses, also reduced the physical length of the survey substantially to minimize response burden on the participants.

A web-based survey on the coalition's capacity was disseminated to 84 members of the KTSHC as recommended by its Chairman and Honorary Secretary, including 12 directors of the management board and 72 members deemed actively involved in the planning and operation of KTSHC over the fiscal year between April 1, 2007 and March 31, 2008. Nominations of members to be included in the study were verified with three managing directors of the coalition. The web survey was hosted at a commercial online survey service, Survey Monkey (http://www.surveymonkey.com) between December 30, 2008 and February 13, 2009.

Participant invitation procedure

An invitation to all participants endorsed by the directors of the KTSHC was sent to all eligible participants via email. The invitation is followed by a message

linked to the survey website. Reminders to participate in the survey were sent on the 1st, 2nd, 3rd and 5th week after the initial invitation was sent.

The full web survey is entailed in Appendix III.

Qualitative data analysis

To refine the development of the quantitative survey and enrich the interpretation of data collected from the survey, two focus group interviews with key informants from the KTSHC were held before and after the quantitative data collection process. Interview protocols for the pre-survey focus group and post-survey focus group are documented in Appendix IV and Appendix V respectively.

Data from the transcriptions of both interviews were selected, focused and abstracted for manageable coding and generation into key themes for discussion (Creswell & Plano-Clark, 2007).

Instrumentation

Individual-level independent variables

Formalization

The measurement of the level of formalization in the observed coalition is assessed with a 17-item checklist on organizational structures and engagement. Consolidating indicators of accountability, formalization, and institutionalization from the literature (Florin, et al., 2000; Garland, et al., 2004; Goldstein, 1997; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998), the following structures and procedures in the coalition were surveyed: presence of a mission statement, establishment of a constitution / memorandum / by-law, documentation of coalition activities including annual plan and report, meeting agenda, and minutes, training for staffs and collaborators, and mechanism for succession of leaders and office-bearing

positions. Engagement of the coalition members revealed the formality and legitimacy of participation in coalition activities and operations. Engagement in this study refers to the endorsement of participation in coalition by the working organization a member is representing, support from the management on coalition participation, recognition of coalition activities as routines, as well as the level of involvement in coalition project operation and technical / academic exchanges related to coalition activities and development. Formalization data was captured with Yes / No responses.

Leadership

The leadership style instrument is an adapted and modified version of questionnaires described and developed by Metzger, Alexander, & Weiner (Metzger, et al., 2005). Assessing with 25 items, leadership style is conceptualized into four domains, namely vision consensus, leadership, collaborative decision making, and open and explicit decision making. Vision consensus (4-item) concerns the values in which members hold for participating in coalition activities and how a member's values towards the coalition concur with the group's values. Leadership (14-item) focuses on the skills and qualities of the leaders in coalition in terms of charisma, conflict resolution, and the ability to mobilize members. Collaborative decision making (4-item) summarizes how members come to terms with each other in making decisions on the administration and policies of the coalition. Open and explicit decision making (3-item) reflects on the openness and transparency of governance in the coalition. Leadership data was captured with a five-point Likert scale.

Group cohesion

Group cohesion is measured with a modified version of the Moo's Group Environment Scale (Moos, 1986). Originally designed for support group intervention participants, the Wilson's intervention group environment scale (Wilson, et al., 2008) was adopted and adapted for localization. Though it was not specifically designed for members of health coalitions, this scale was targeted to a community-based setting and the nature of the group is task-oriented, which allowed a seamless translation for the current study population. The 25-item scale examines group cohesion with three subscales: Cohesiveness, implementation and preparedness, and counter-productive activity. The cohesiveness subscale explores the sense of belonging as well as the expressiveness of support and fondness among coalition members. The second subscale, implementation and preparedness, reveals how members are prepared for the issues and challenges arising from daily operations of the coalition. Counter-productive activity captures the conflicts and disputes among members. Like a well-oiled machine that runs fluidly, a cohesive coalition functions smoothly only when members "agree to disagree". Cohesion data was captured with a five-point Likert scale.

Developmental stages

Developmental stage of coalition is assessed with a 15-item instrument elaborated on previous studies (Butterfoss, et al., 1996; Goldstein, 1997; Torrence, 2005). According to the construct proposed in the Community Coalition Action Theory (Butterfoss & Kegler, 2002), the instrument appraises the development of a coalition in terms of its formation, implementation, and maintenance. Formation refers to the availability of staffing, physical space for operation, structure, and members' diversity required for establishing a coalition. Developmental stage data was captured with a five-point Likert scale.

Group-level independent variables

Members' collaboration – measured with social network analysis

Members' collaboration is measured with a social network analysis surveying exchanges among members including information, referrals, and shared resources. In order to assess the social networks in KTSHC we developed an online survey that comprised 3 distinct networks questions. Network questions were generated from previous network research and original items (Provan, Huang, & Milward, 2009; Provan, et al., 2003; Thomas, et al., 2007). Collaboration among coalition members was assessed with three network generators in the coalition survey on three types of social exchanges, namely information exchange, referrals, and resource sharing. Information exchange among coalition members refers to the dissemination and receipt of information related to the planning, implementation, and evaluation of coalition activities and operations. Referrals concern the recommendation of advice, information, or services pertinent to the plans and mission of the coalition from one member of the coalition to another. Resource sharing refers to the allocation and transfer or tangible and intangible resources including personnel, financial resources, and physical resources pertinent to the plans and mission of the coalition from one member of the coalition to another.

Respondents were asked to assess their relationships with each of the other 83 coalition members quantitatively on a 5-point scale ranging from 0 (never), 1 (yearly), 2 (monthly), 3 (weekly), to 4 (daily). The value of inter-organizational partnership ties within the KTSHC network was ascertained by asking organizational representatives the following question for each of the other KTSHC members: " Over the past year, who did you contact (e.g. through meeting, telephone, or email) for information, referral, or resource sharing related to Safe Community matters? If so, on a scale of 1–5 where 5 is daily and 1 is never, how often would you liaise with (name of other

KTSHC member) on matters and issues pertinent to the operation of your work in the KTSHC?"

Dependent variables

Perceived coalition effectiveness is captured through a five-point Likert scale. The 7-item instrument integrates internal perspectives of effectiveness on members' satisfaction, appraisal of plans implementation (Feinberg, et al., 2004; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998), and external perspectives including impact on service delivery and policy (Hays, et al., 2000; McMillan, et al., 1995). Perceived effectiveness data was captured with a five-point Likert scale.

Data Analysis

Descriptive statistics

Univariate analyses on self-reported data

Independence of coalition capacity domains was ascertained by univariate tests on the ordinal data (leadership, cohesion, developmental stage, perceived effectiveness) and cluster analysis on the nominal data (formalization).

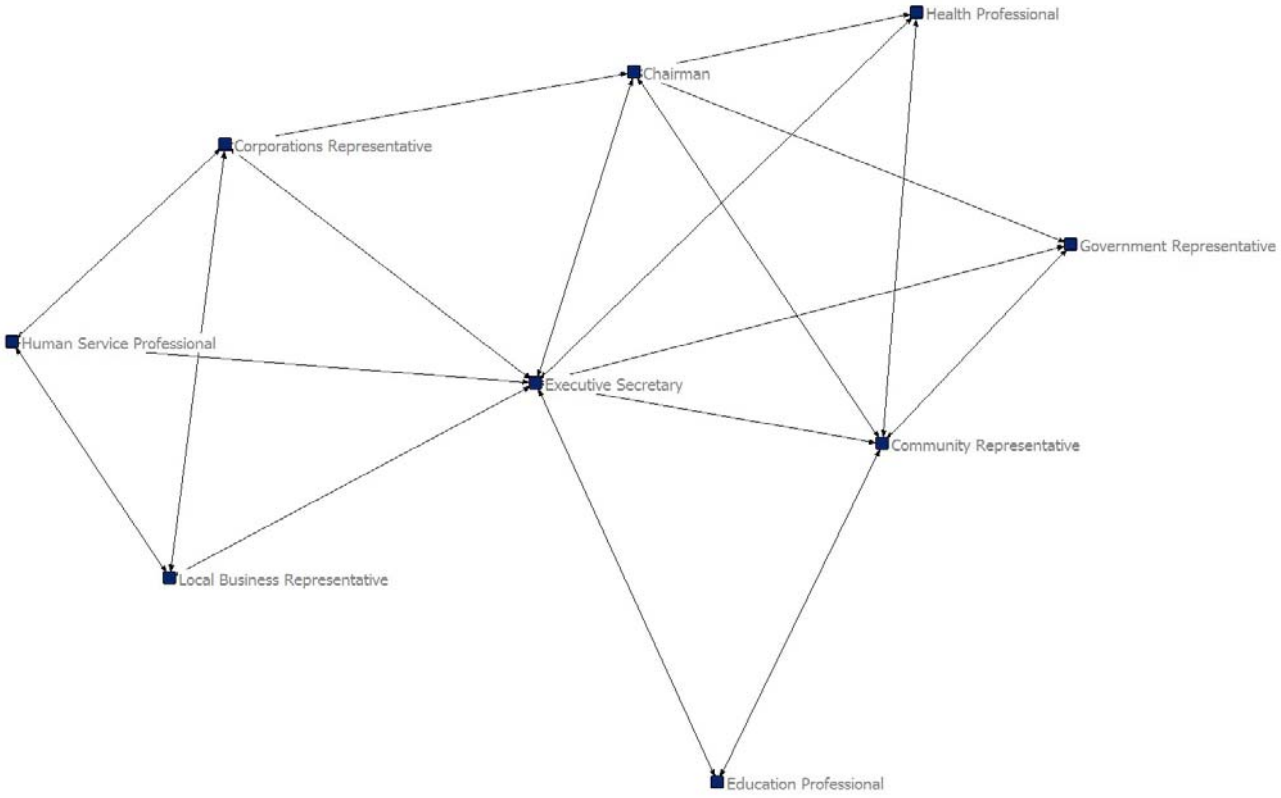
Social network analysis

Visual analysis

Social networks in the observed coalition will be visually analyzed with four network graphs depicting ties on information exchange, referrals, resource sharing, and the aggregates of these social relations. Network graphs of the obtained coalition networks were generated using Netdraw 2.081 (Borgatti, 2007).

Network measures

Figure 1 *Illustrating degree centrality and closeness centrality*



Degree centrality

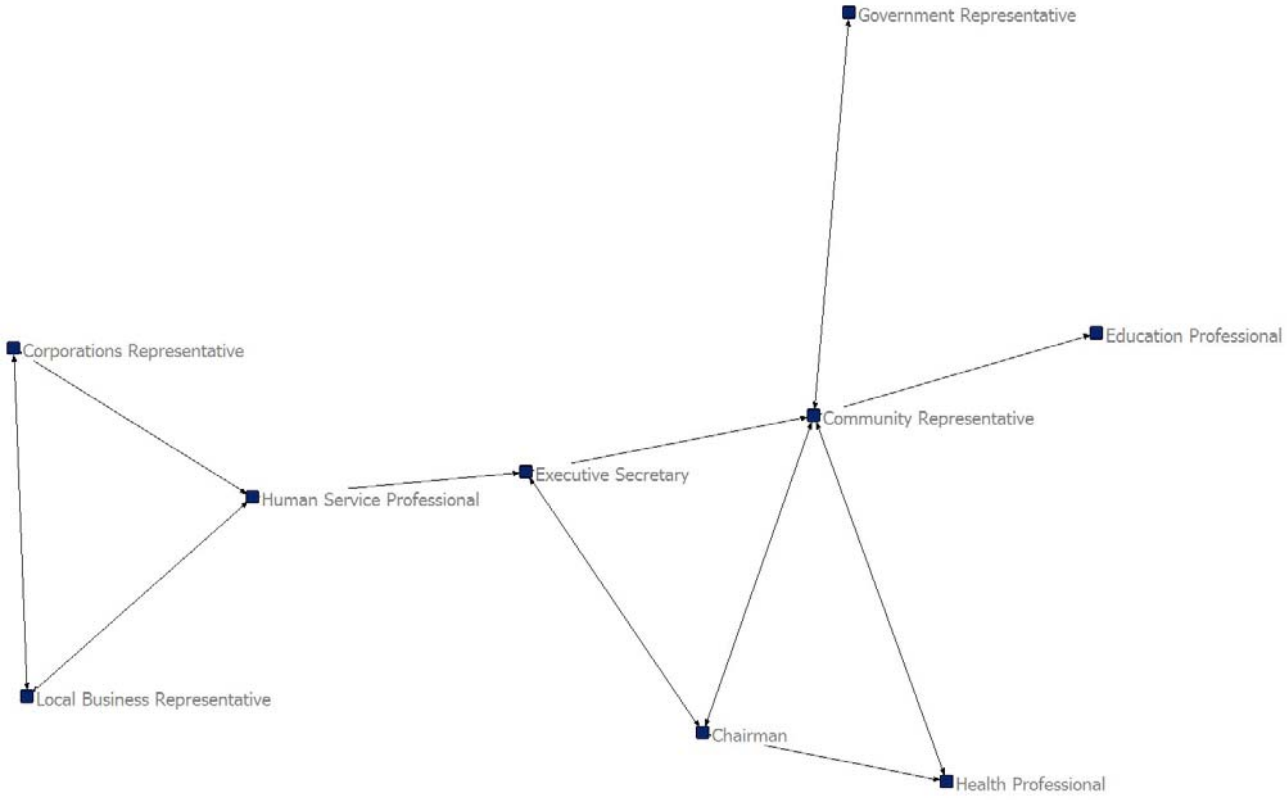
Members' centrality was first quantified with the Freeman degree centrality measure, an index about the number of ties that each member establishes to other members in the network (Freeman, 1978). In directed networks, senders and receivers of social exchanges are distinguished between outgoing ties that represent influence, i.e., the social exchange that a particular member reports having with others, and receiving ties that represent prestige, i.e., the social exchange that other members report having with a particular member. Out-degree scores capture a member's influence; while in-degree scores measure a member's popularity and prestige in a network (Stanley Wasserman & Faust, 1994). The distinction is important since a contrast can exist between how a particular member values its

relationships with other KTSHC members and how other members value their relationships with that particular member. In the illustrative example in which the executive secretary is tied with all other seven nodes in the network, the executive secretary obtained a degree centrality of 100 as he is directly connected to 100 % of all other nodes in the network. On the other hand, the education professional who is directly tied with two other members only out of a maximum possible number of relations at eight obtained a degree centrality of 25.

Closeness centrality

An alternative measure of centrality to the Freeman degree is the closeness centrality, defined as an index about the how close any particular member in a network is in relation to any other member in the network (Borgatti, 2005; Stanley Wasserman & Faust, 1994, pp. 183-185). By calculating the geodesic distance between members, also known as the minimum steps for a network member *i* to reach all other members in the network (i.e. *j*, *k*, … (n-1)), the obtained closeness centrality reflects how central a member is located in the network. In the illustrative example in which the executive secretary is directly tied with all other seven nodes in the network, the executive secretary obtained a closeness centrality of 100 as the geodesic distances between all other nodes and him is the shortest at 1.

Figure 2 *Illustrating betweenness centrality*



Betweenness centrality

Apart from assessing individual member's direct ties in the network, between centrality provides an index of leverage from the member's position in the network. Betweenness centrality reflects the extent any particular member serves as a broker or linkage between two other members in the network not otherwise directly connected (Stanley Wasserman & Faust, 1994, pp. 189-191). For example, the executive secretary of the coalition might not reported the highest number of direct ties in the network, but if she lies in a position between two key stakeholders with high degree centrality which represent two sets of members with little interactions (i.e. in terms of direct ties), she is situated at an advantageous position in the network, as reflected with her high betweenness centrality.

In addition to measuring organizational positions in the network, we also examined the percentage of tie homophily among traditional and non-traditional organizations. Tie homophily refers in this instance to the idea that traditional organizations may maintain a higher percentage of their network ties with other traditional organizations, and non-traditional organizations may maintain a higher percentage with other non-traditional organizations. Higher percentage ties homophily thus indicates less inter-organizational type diversity in an organization's network ties.

Freeman degree centrality, closeness centrality, and betweenness centrality were calculated using UCINET 6.204 (Borgatti, et al., 2007).

Ties multiplexity score

Another network measure reflecting the strength of ties in terms of the variety of exchange among members was captured with the ties multiplexity score. Using the ‘‘Transform – Matrix Operations – Within Dataset – Aggregations’’ function in the UCINET program, the multigraph dataset denoting valued relations from the three networks were dichotomized (1 = any valued relations, 0 = no relation) and aggregated by summing the dichotomized networks across matrices. The resulting aggregate matrix of coalition network comprises four possible values for each *ij* pair in the network, namely, no relation (0), single relation (1), two types of relations (2), and three types of relations (3). Column averages of non-zero relations were calculated for all respondents as an index of multiplexity. The multiplexity score has a maximum of 3 because three types of links were measured.

Inferential statistics

Two sets of modeling deploying standard parametric statistics for independent data and network statistical models for interdependent data were adopted for the present study. All alpha levels were set at $p < .05$.

Independent data modeling

A multiple linear regression model regressing perceived coalition effectiveness on individual-level independent variables on coalition functioning measures (i.e. formalization, leadership, cohesion, and developmental stage) and network measures (degree centrality, closeness centrality, betweenness centrality, and ties multiplexity score) was performed with SPSS 16 (SPSS, 2008). Variables in the regression model were selected with the backward stepwise strategy for a comprehensive and stable solution.

Interdependent data modeling

Correlation with the Quadratic Assignment Procedure (QAP Correlation)

To assess the association among different types of social exchanges on coalition matters, the correlation between matrices of the coalition networks on information exchange, referrals, and resource sharing was examined with a correlation technique accommodating interdependences.

Pearson correlations between pairs of social exchange matrices (e.g., information exchange versus resource sharing) were calculated using the Quadratic Assignment Procedure (QAP) to test for statistical significance. The QAP accommodates interdependence in data when standard parametric tests of significance are not appropriate (David Krackhardt, 1988). For instance, responses

from each member about ties with other members on sharing information and resources came from a common source, and thus violated the independence assumption of parametric tests.

After calculating the Pearson correlation coefficient of association between any two matrices, the QAP compares the obtained correlation to a randomly large number of correlations (5,000 samples for the present study) between one of the original matrices and rearranged versions of the other matrix by shifting rows and columns, which is also known as the bootstrapping technique (Snijders & Borgatti, 1999). The proportion of those bootstrapped trials that yielded correlations as high as those found in the observed data (for instance, 0.6 for the correlation of information and resource sharing ties) was then compared to the usual thresholds for describing statistical significance at an alpha level of $p < .05$.

Spatial autocorrelation

To examine the correlation between the observed types of networks and coalition functioning, members' networks on information exchange, referrals, and resource sharing were aggregated with an aggregate transformation. The aggregate algorithm determines how many valued relations link any pair of nodes and sums the numeric values from all relations to each of these pairs. The arcs in the output multiplex graph are then labeled with these values summation. For example, if any given pair of members reported a configuration of valued ties (e.g. 4 on information exchange, 4 on referrals, and 3 on resource sharing), the identifying number for this specific dyad would be 11.

To assess members' reported perceived capacity in the context of a network, a network effect model of the aggregate network of KTSHC members on self-reported coalition functioning was examined with the spatial autocorrelation procedure

(Carrington, et al., 2005, pp. 100-101). Also known as the interval autocorrelation procedure, the model correlates dyadic data in the effect of network relations with monadic data in members' perception of the coalition functioning, with consideration to the interdependencies among members. Widely applied in the study of geography as well as the spread of epidemic in public health research (D. A. Moore & Carpenter, 1999), spatial autocorrelation tests whether the observed value of a variable at one locality is independent of values of the variable at neighboring or adjacent localities. Adopted for social network analysis, spatial autocorrelation explores how attributes reported at the individual level are influenced by the ties and relations among respondents. For example, the spatial autocorrelation reaches statistical significance when the variance of individual-level variables co-varies interdependently within a cohesive set of ties, such as a group of closely related coalition executives who communicate on a daily basis.

Chapter summary

This chapter describes the mixed method design of the present study, the research hypotheses, and the methods adopted for measuring coalition capacity. Details on the survey and qualitative interview procedures, participants from the case of study (KTSHC), instrumentation, as well as data analytic strategies are unfolded to delineate findings supporting the deliberation of coalition capacity constructs and their relationships.

Chapter 5

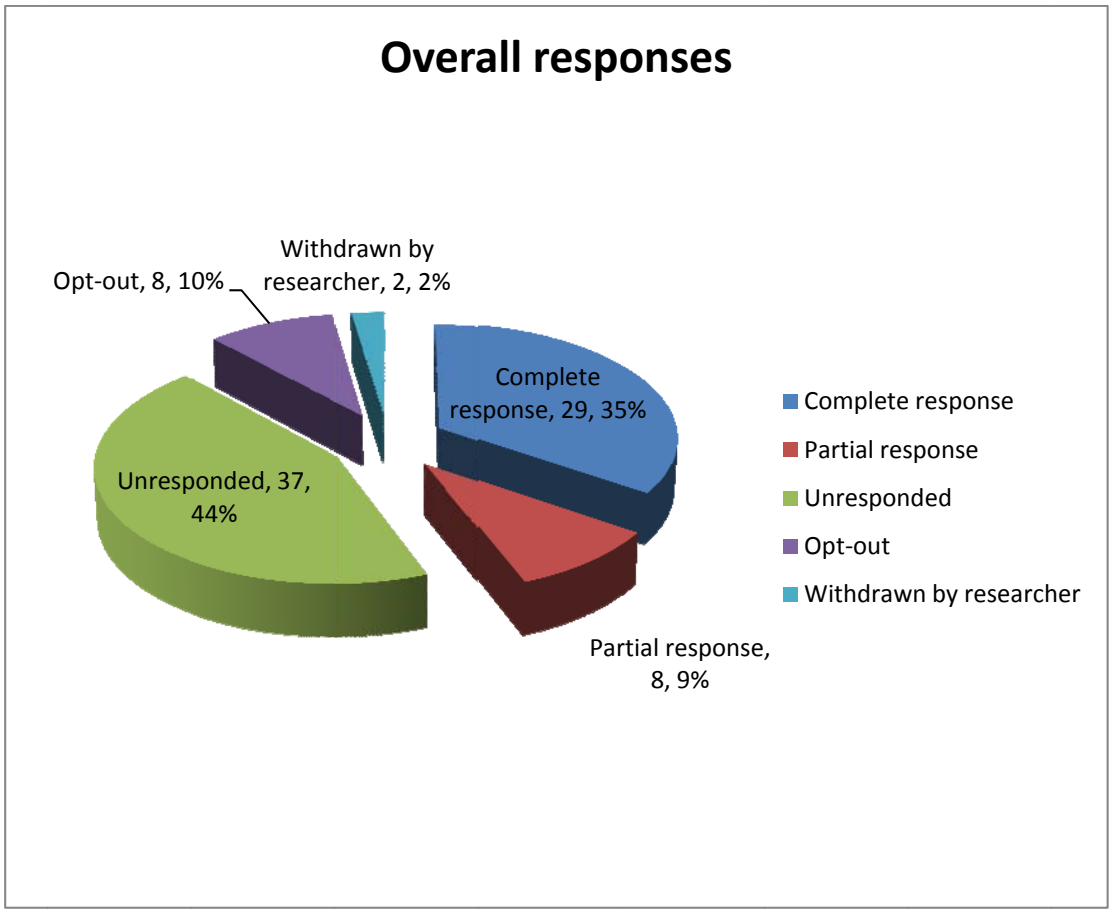
Results

Results – Respondents characteristics, descriptive statistics, and reliability of survey instruments

Response rate

The overall response rate of the study was 44%. Of the 84 members invited to participate in the study, eight members accessed the survey web site but declined to participate while thirty-seven did not respond. Two invited members were withdrawn by the researcher for they have lost contact with the coalition since their retirement from the respective government positions (one from the Fire Services Department and another from the Hong Kong Police Force). Out of the thirty-seven respondents, twenty-nine completed the entire survey.

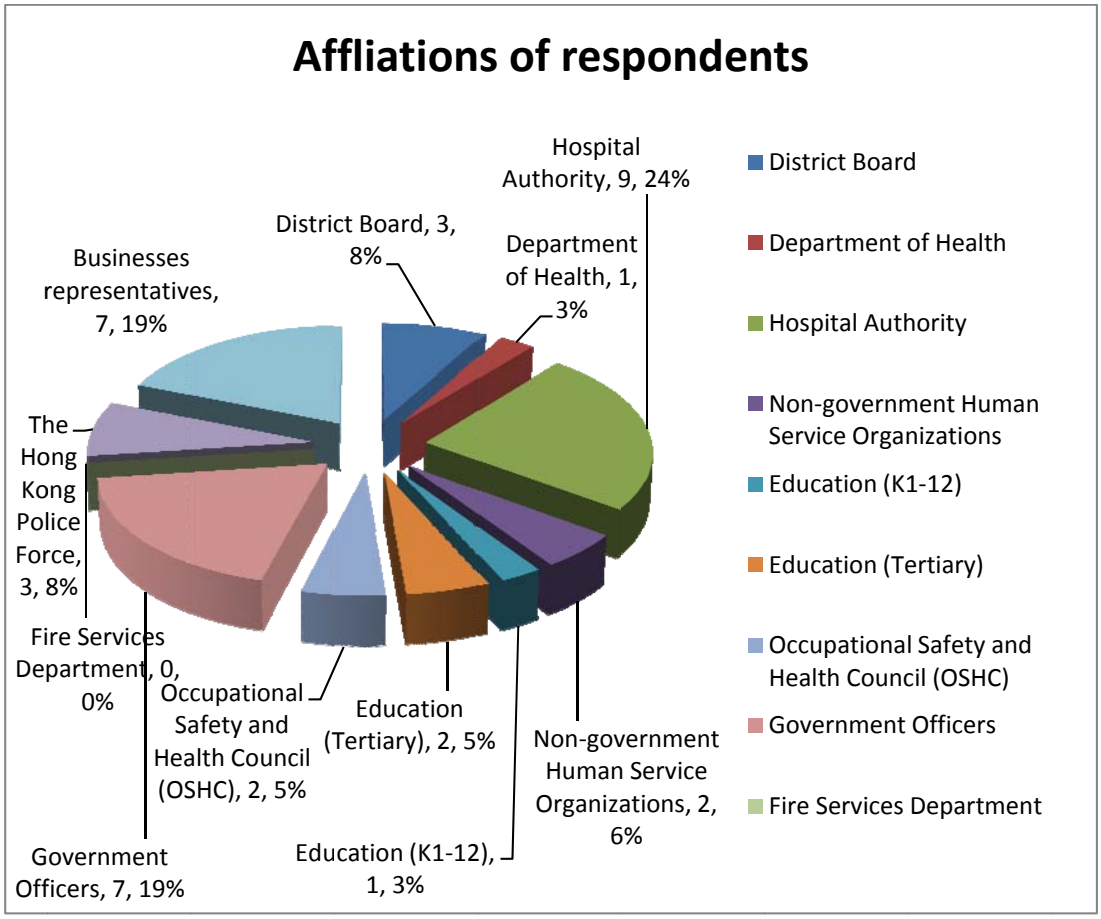
Figure 3 *Overall response rate of the survey*



Respondents' characteristics

The 37 complete and partial respondents were members from 11 types of organizational affiliations. Members from the leading organization, the Hospital Authority, accounted for about a quarter of all surveys reported with 9 respondents. The business sector and government bureaus and departments yielded the second highest numbers of respondents with 7 responses apiece, followed by the district board (3 responses), the Hong Kong Police Force (3 responses), the Occupational Safety and Health Council (2 responses), non-government human service organizations (2 responses), tertiary education sector (2 responses), primary, secondary, and preschool education sector (1 response), and the Department of Health (1 response).

Figure 4 *Organizational affiliations of respondents*



Descriptive statistics

Formalization and members' engagement

The seven structural questions on formalization and ten questions on the engagement of KTSHC members were summed up respectively to form two summative indicators, structure and engagement. Members' reports on the structure of formalization yielded quite homogenous responses, while the level and type of engagement reported varied among members.

Table 7 Means, standard deviations, and cronbach's alpha statistics of formalization and engagement score

Summary indicators	Mean (S.D.)	Range (Out of a max. of)
Formalization - Structure of coalition	6.41 (0.95)	3 (7)
Formalization - Engagement of coalition member	5.69 (2.13)	7 (10)
Formalization	12.09 (2.72)	10 (17)

A consensus from the majority of respondents revealed that members agreed on the structural formality of the coalition in terms of having a mission statement (100%), having a constitution (91%), having a clear hierarchy of management (97%), producing reports on work and projects (100%), keeping meeting documentation (100%), providing training for staffs and volunteers (78%), and having a mechanism for succession (75%).

Regarding the formality of members engagement with the coalition, about two-third (66%) of the respondents were officially appointed by their respective organization to engage in coalition activities while the remaining one-third (34%) joined the coalition from personal involvement. Most respondents viewed their participation in the coalition as endorsed by their working organization (94%) and supported by their immediate superior (91%). Consistent with the ratio of members who were officially appointed to join the coalition, more than two-third (69%) of the

respondents reported that their coalition engagement was recognized as routine duties in their daily work.

Respondents reported their roles in coalition activities from endorsing projects (44%), supervising projects (38%), running ongoing projects (47%), hosting delegates visiting the coalition (50%), and presenting on behalf of the coalition (38%).

Table 8 Means and standard deviations of formalization and engagement items

Item	Yes
Structure	
My coalition has a mission statement.	32 (100%)
My coalition has a constitution / by-law.	29 (90.63%)
My coalition has a clear hierarchy of committees, subcommittees, & executive committee.	31 (96.88%)
My coalition produces annual / other periodic work or project plans.	32 (100%)
My coalition keeps agendas and minutes.	32 (100%)
My coalition provides training and orientation for staffs and volunteers.	25 (78.13%)
My coalition has formal mechanism(s) for leader succession and recruitment of new office-bearing members.	24 (75%)
Engagement	
Is your engagement in the KTSHC appointed by your organization?	21 (65.63%)
Is your engagement in the KTSHC started out of	11 (34.38%)
Do you have organizational endorsement for	30 (93.75%)
Is your immediate superior supportive of your engagement in the KTSHC?	29 (90.63%)
Is your engagement with the KTSHC recognized as one of your routine duties in your organization?	22 (68.75%)
Are you currently involved in endorsing KTSHC projects?	14 (43.75%)
Are you currently involved in supervising KTSHC projects?	12 (37.5%)
Are you currently involved in running KTSHC projects?	15 (46.88%)
Have you host delegates visiting the KTSHC for professional or academic exchange?	16 (50%)
Have you represent the KTSHC as a delegate / speaker at professional gathering(s) or academic conference(s)?	12 (37.5%)

Leadership

The latent independent construct of leadership consisted of a 25-item scale. Respondents endorsed their views on the statements on leadership with a 5-point Likert scale ranging from “Very disagreed” to “Very agreed”. The overall leadership scale was high on internal consistency, yielding a Cronbach’s Alpha statistics of $\alpha = 0.970$. Such reliability was replicated in internal consistency analysis of the four subscales: Vision ($\alpha = 0.904$), Collective Leadership ($\alpha = 0.941$), Collaborative Decision Making ($\alpha = 0.905$), and Open and Explicit Decision Making ($\alpha = 0.903$).

Table 9 Means, standard deviations, and cronbach’s alpha statistics of leadership score

Scale	Mean (S.D.)	Cronbach's Alpha (α)
Leadership - Overall	3.952 (0.197)	0.970
Vision	4.033 (0.187)	0.904
Collective Leadership	3.929 (0.234)	0.941
Collaborative Decision Making	3.917 (0.104)	0.905
Open and Explicit Decision Making	3.889 (0.117)	0.903

Overall, aggregate participants score index for Leadership was 98.79 out of a total of 125 (79%) possible points. Overall mean indices reported from the leadership scale items are shown in table 10.

Table 10 Means and standard deviations of leadership items

Item	Mean (S.D.)
Vision	
My organization has a clear and shared vision of health in our community	4.276 (0.649)
My organization is in agreement on mission and role	4.138 (0.581)
My organization is in agreement on its priorities	3.897 (0.618)
My organization is in agreement on the best strategies to pursue and achieve our priorities	3.931 (0.704)
Collective Leadership	
The leadership of our coalition has a clear vision for the coalition	4.241 (0.872)
The leadership of our coalition is respected in the community	4.276 (0.649)
The leadership of our coalition makes members feel welcome	4.034 (0.731)
The leadership of our coalition gives praise and recognition to others	4 (0.655)
The leadership of our coalition intentionally seeks out others' views	3.759 (0.739)
The leadership of our coalition utilizes the skills and talents of many, not just a few	3.793 (0.819)
The leadership of our coalition creates an appropriate balance of responsibility between officers and members	3.724 (0.702)
The leadership of our coalition works collaboratively with coalition members	3.862 (0.833)
The leadership of our coalition is accessible to members	3.897 (0.724)
The leadership of our coalition builds consensus on key decisions	3.966 (0.823)
The leadership of our coalition is not effective at keeping the coalition focused on tasks and objectives (reverse coded)	3.483 (1.022)
The leadership of our coalition is skillful in resolving conflict	3.69 (0.712)
The leadership of our coalition gets things done	4 (0.463)
The leadership of our coalition is ethical	4.276 (0.591)
Collaborative Decision Making	
Coalition decision makers willingly collaborate and cooperate with each other	3.931 (0.651)
There is a high level of respect and trust among coalition decision makers	4.103 (0.86)
In both formal and informal discussions, coalition decision makers say what they mean and mean what they say	3.897 (0.817)
Coalition decision makers share ideas and information freely	3.862 (0.743)
Open and Explicit Decision Making	
The coalition has clear and explicit procedures for making important decisions	3.793 (0.726)
The coalition follows standard procedures for making decisions	3.931 (0.651)
The decision-making process used by the coalition is open and clear to all partnering organizations	4.034 (0.626)

Cohesion

The latent independent construct of cohesion consisted of a 25-item scale. Respondents endorsed their views on the statements on cohesion with a 5-point Likert scale ranging from “Very disagreed” to “Very agreed”. The overall cohesion scale was high on internal consistency, yielding a Cronbach’s Alpha statistics of $\alpha = 0.957$. Such reliability was replicated in internal consistency analysis of the three subscales: Cohesiveness ($\alpha = 0.944$), Implementation and Preparedness ($\alpha = 0.919$), and Counterproductive Activity ($\alpha = 0.942$).

Table 11 Means, standard deviations, and cronbach’s alpha statistics of cohesion score

Scale	Mean (S.D.)	Cronbach's Alpha (α)
Cohesion - Overall	3.919 (0.278)	0.957
Cohesiveness	3.759 (0.29)	0.944
Implementation and Preparedness	3.883 (0.181)	0.919
Counterproductive Activity	4.126 (0.283)	0.942

Overall, aggregate participants score index for cohesion was 97.98 out of a total of 125 (78%) possible points. Overall mean indices reported from the cohesion scale items are shown in table 12.

Table 12 Means and standard deviations of cohesion items

Item	Mean (S.D.)
Cohesiveness	
Group members feel a sense of belongingness to the group.	4.071 (0.813)
Group member feel close to each other.	3.786 (0.917)
The group is a good place to make friends.	3.607 (0.832)
Group members show that they care for one another.	3.536 (0.793)
Group members are committed to the group.	3.679 (0.723)
Group members can understand what others in the group are going through.	3.357 (0.826)
Group members are supportive of one another.	3.929 (0.663)
The atmosphere of the group is a friendly one.	4.25 (0.585)
Implementation and Preparedness	
The leaders provide direction for the group.	4.036 (0.637)
The leaders are prepared for each group session.	3.857 (0.651)
Group members come prepared for each session.	3.714 (0.763)
The rules of the group are clearly understood by the members.	3.857 (0.756)
The activities of the group are carefully planned.	3.929 (0.604)
The group has an agenda for each meeting.	4.321 (0.612)
Group activities are easy to follow.	3.893 (0.685)
Group members are encouraged to act independently.	3.929 (0.716)
The group concentrates on dealing with every day problems.	3.679 (0.67)
Group members learn new ways of solving problems.	3.786 (0.568)
Group members encourage each other in reaching their goals.	3.714 (0.81)
Counterproductive Activity	
The atmosphere of the group is often hostile. (reverse coded)	4.25 (0.928)
Group members sometimes yell at each other. (reverse coded)	4.464 (0.962)
Group members are engaged in petty quarrels with one another.	4.321 (0.983)
Sometimes it is hard to tell what is going on in the group. (reverse coded)	3.857 (1.208)
A lot of members just seem to be passing time in group. (reverse coded)	3.821 (1.09)
There seems to be a lot of tension between group members.	4.321 (1.056)

Developmental stage

The latent independent construct of developmental stage consisted of a 15-item scale. Respondents endorsed their views on the statements on the developmental stage of the coalition with a 5-point Likert scale ranging from “Very disagreed” to “Very agreed”. The overall developmental stage scale was high on internal consistency, yielding a Cronbach’s Alpha statistics of $\alpha = 0.926$. Such reliability, however, was not replicated in internal consistency analysis on all four subscales: Formation ($\alpha = 0.761$), Implementation ($\alpha = 0.888$), Maintenance ($\alpha = 0.86$), and Institutionalization ($\alpha = 0.449$).

Table 13 Means, standard deviations, and cronbach’s alpha statistics of developmental stage score

Scale	Mean (S.D.)	Cronbach's Alpha (α)
Developmental stage - Overall	4.092 (0.188)	0.926
Formation	4.256 (0.155)	0.761
Implementation	4.231 (0.054)	0.888
Maintenance	4.01 (0.177)	0.860
Institutionalization	4.038 (0.218)	0.449

Overall, aggregate participants score index for developmental stage was 61.38 out of a total of 75 (82%) possible points. Overall mean indices reported from the developmental stage scale items are shown in table 14.

Table 14 Means and standard deviations of developmental stage items

Item	Mean (S.D.)
Formation	
Permanent staff is designated.	4.115 (0.952)
Membership is broad-based.	4.231 (0.765)
There is a designated office & meeting space.	4.423 (0.643)
Implementation	
Strategic plan is developed based on community need.	4.269 (0.667)
Strategies are implemented as planned.	4.192 (0.567)
Maintenance	
Strategies are revisited as necessary.	4.077 (0.56)
Financial & material resources are secured.	3.615 (0.852)
Community prevention providers recognize our coalition as an authority on prevention of community health behaviors.	4.115 (0.588)
Numbers of members are maintained or increased.	3.962 (0.599)
Membership benefits outweigh costs.	4 (1.02)
Members agree to disagree.	4 (0.566)
Coalition is accessible to the community.	4.192 (0.634)
Accomplishments are shared with members & our community.	4.115 (0.653)
Institutionalization	
Coalition is included in other collaborative efforts.	4.192 (0.634)
Mission is refined or changed to encompass other populations & issues as appropriate.	3.885 (0.766)

Perceived effectiveness

The latent dependent construct of perceived effectiveness consisted of a 7-item scale. Respondents endorsed their views on the statements on perceived effectiveness of the coalition with a 5-point Likert scale ranging from “Very disagreed” to “Very agreed”. The perceived effectiveness scale was high on internal consistency, yielding a Cronbach’s Alpha statistics of $\alpha = 0.912$.

Table 15 Means, standard deviations, and cronbach’s alpha statistics of perceived effectiveness score

Scale	Mean (S.D.)	Cronbach's Alpha (α)
Effectiveness	4.066 (0.153)	0.912

Overall, aggregate participants score index for perceived effectiveness was 28.46 out of a total of 35 (81%) possible points. Overall mean indices reported from the perceived effectiveness scale items are shown in table 16.

Table 16 Means and standard deviations of perceived effectiveness items

Item	Mean (S.D.)
I am satisfied with what the coalition has achieved so far.	4.192 (0.634)
Our coalition has the ability to design and implement action plans.	4.077 (0.688)
Our coalition has the capacity to evaluate its progress and results.	4.154 (0.613)
Our coalition has the ability to write funding proposals and generate resources.	4.115 (0.653)
Our coalition has raised health awareness in the community setting.	4.192 (0.567)
Our coalition has helped solving community health problems.	3.769 (0.652)
Our coalition has influenced local community policies.	3.962 (0.599)

Hypothesis 1 & 2 Independence of self-reported coalition functioning and correlation between coalition functioning and perceived effectiveness

In general, the self-reported coalition functioning scores were moderately to highly correlated. Despite the small sample size (n= 26-32), all correlations were significant. The Pearson correlation coefficients, in descending order of magnitude, were the correlation between leadership and cohesion score (.907), leadership and effectiveness (.868), developmental stage and effectiveness (.840), cohesion and effectiveness (.746), leadership and developmental stage (.745), cohesion and developmental stage (.636), formalization and developmental stage (.558), formalization and leadership (.525), formalization and cohesion (.518), and lastly formalization and effectiveness (.437).

Table 17 Correlation matrix of coalition functioning scores and perceived effectiveness score

	Formalization	Average Leadership Score	Average Cohesion Score	Average Development Score	Average Effectiveness Score
Formalization		.525**	.518**	.558**	.437*
Average Leadership Score			.907**	.745**	.868**
Average Cohesion Score				.636**	.746**
Average Development Score					.840**
Average Effectiveness Score					

** $p < 0.01$

* $p < 0.05$

Social network analysis (SNA)

Social network measures

Table 18 Density and centrality measures – Freeman Degree centrality of the information exchange, referrals, and resource sharing networks

Type of network	Density (S.D.)	Out-Degree (Sent) Mean (S.D.)	Range	In-Degree (Received) Mean (S.D.)	Range	Network Centralization
Information Exchange	8.06% (0.355)	6.69 (13.974)	60	6.69 (8.307)	40	16%
Referrals	4.02% (0.258)	3.333 (8.733)	54	3.333 (5.062)	27	15%
Resource Sharing	6.17% (0.33)	5.119 (14.188)	102	5.119 (6.585)	30	29%

Table 18 reports the number of links, and out-degree and in- degree scores for the three networks. All three networks surveyed were sparse in density scores, which denote the ratio between the numbers of observed ties divided by the number of all possible ties. The information exchange network was the largest in terms of size and density, reflected in a density score of 8.06% in which 77 of the 84 members being connected by a total of 419 links. It was followed by the resource sharing network with a density score of 6.17% in which 77 members reporting 296 links. The referrals network was the smallest with a density score of 4.02% in which 66 members nominating other ones by a total of 199 links. Percentage of network centralization was the highest in the resource sharing network (29%), followed by the information exchange network (16%), and referrals network (15%).

Comparing with the other networks observed, the density of referrals network, as shown in table 19, was significantly lower than the two other collaboration networks, particularly in contrast to the information exchange network.

Table 19 Compare densities of different networks in KTSHC

Information	Referral	Resource Sharing
Information Exchange	4.084*	1.576
Referral		1.999*
Resource Sharing		

*$p < 0.05$ when $t > 1.65$ (One-tailed)

Assembling the pattern observed in network density, degree centralization was highest in the information exchange network with a mean of 6.69 links; second highest in the resource sharing network with a mean of 5.119 links; and lowest in the referrals network with a mean of 3.333 links. These networks are directed (asymmetric) and bounded. They are represented as square matrices of ties and so out- and in- degree averages are the same since all out going ties are also incoming ties. This indicates that information exchange and resource sharing reported among a few central nodes whereas reports of referrals network were distributed among a variety of members, not just a few.

Visual analysis

All ties network

Centrally located in this all ties network presented in figure 5 were the core group of this coalition comprising the chairman (node 1), the vice-chairman (node 3), the executive secretary (node 14), a director who was also an outgoing chairman of the coalition (node 16), and a member who is responsible for the daily liaison and operation affairs concerning the coalition (node 15).

Information exchange network

The information exchange network yielded the highest density among all three networks at 0.081. Its shape and dispersion matches much of the all ties network with the exception of 7 isolates shown in the graph, who were not connected with any other nodes in this network. Apart from centralization of nodes around the core, this network featured two brokers of information outside the core, namely node 3, being the vice-chairman of the coalition, and node 78, a member representing a local transportation corporation.

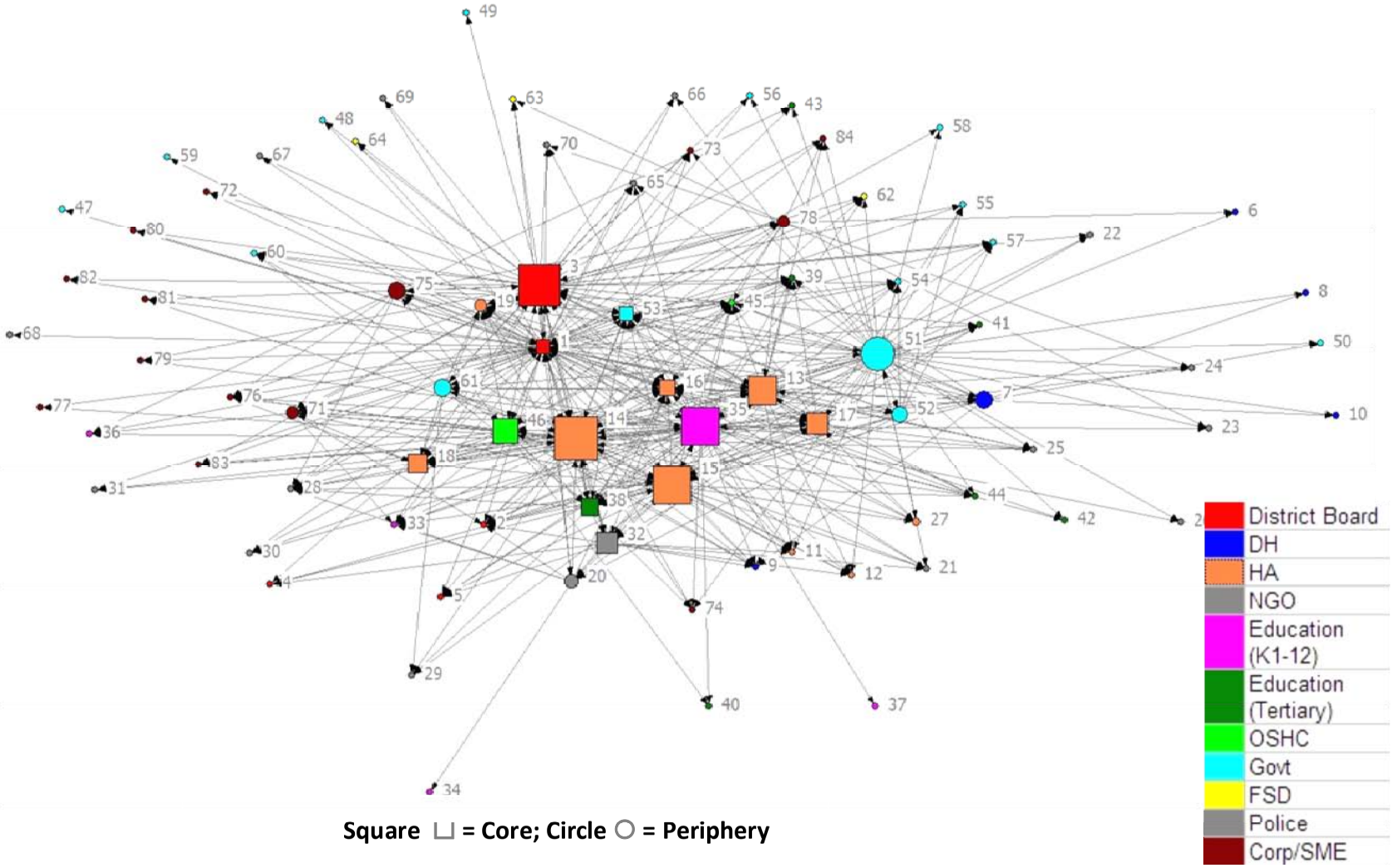
Referrals network

More distributed and sparse in shape, the referrals network graph revealed that apart from the chairman and the executive secretary, there are two distinct clusters of ties severed from the core but link through two brokerage nodes. This network revealed 18 isolates, nine more than the observed number in the information exchange network.

Resource sharing network

The resource sharing network, featuring the chairman (node 1), vice-chairman (node 3), and the core group as the main facilitator of tangible and intangible resources, is much more centralized than the other two networks. This network also revealed 7 isolates. It is noted that unlike the other two networks, most ties radiated from the core and few between-peripheral ties were observed.

Figure 5 **All 3 types of ties among coalition members**



Square ⊔ = Core; Circle ○ = Periphery

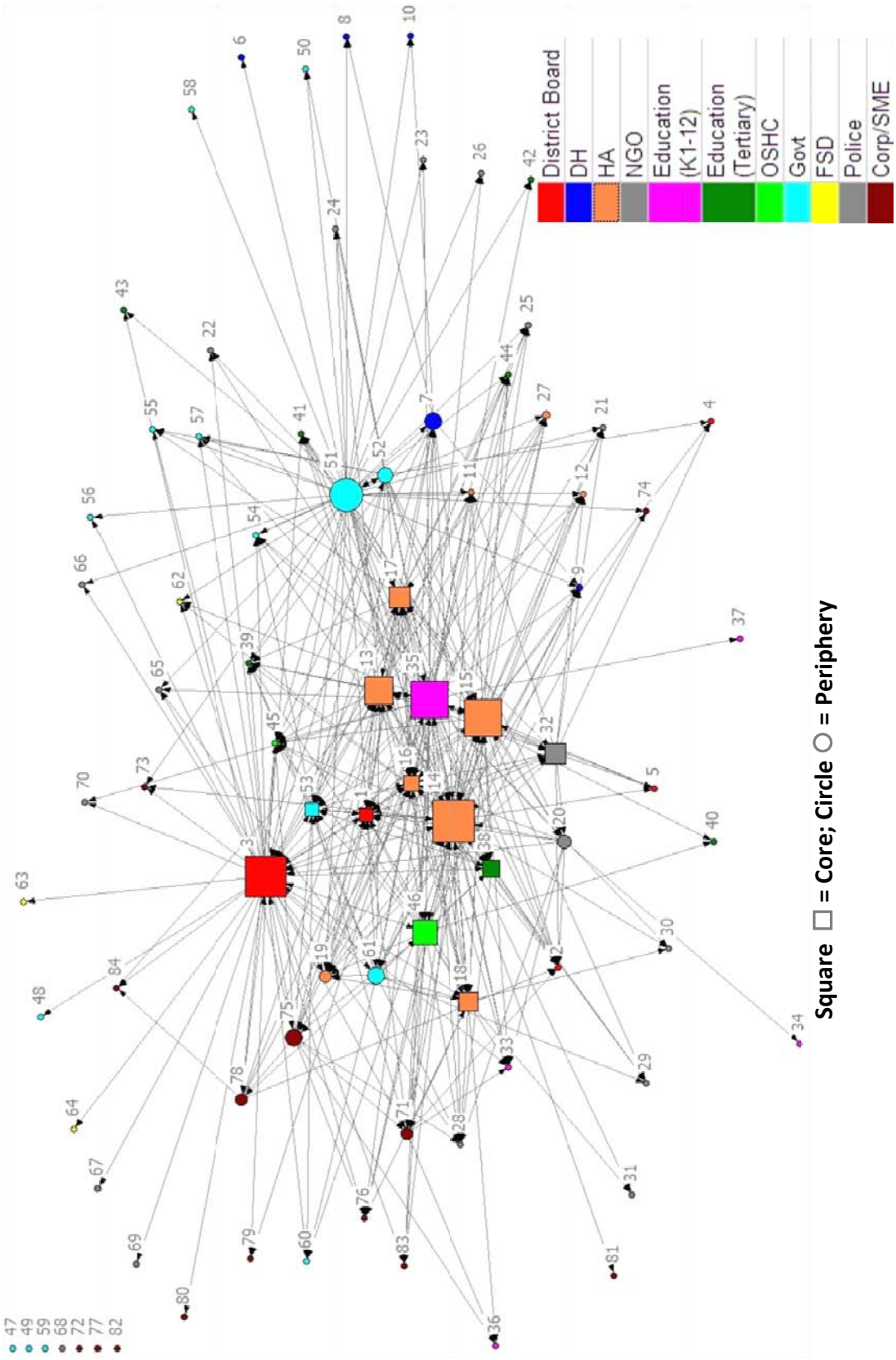
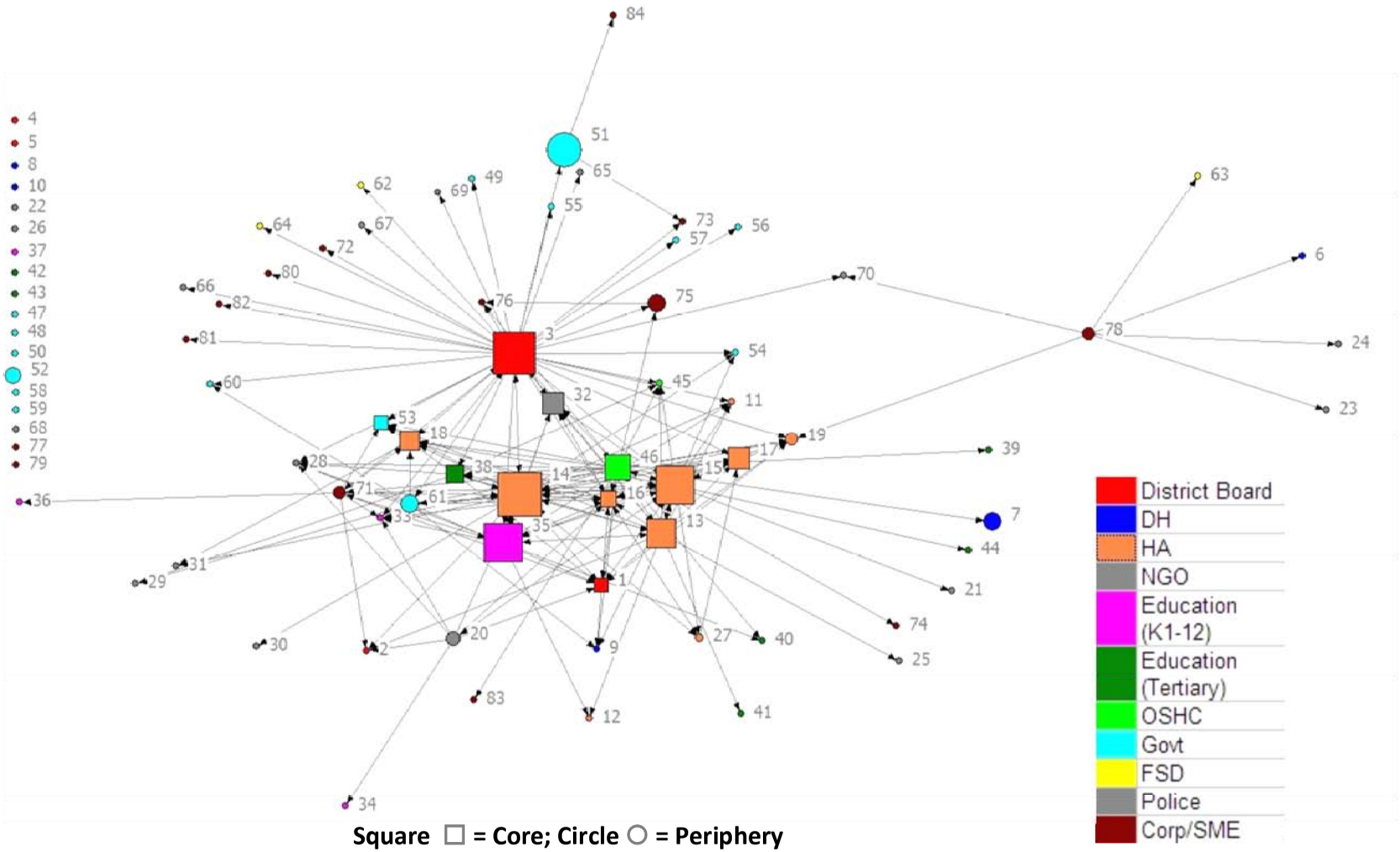


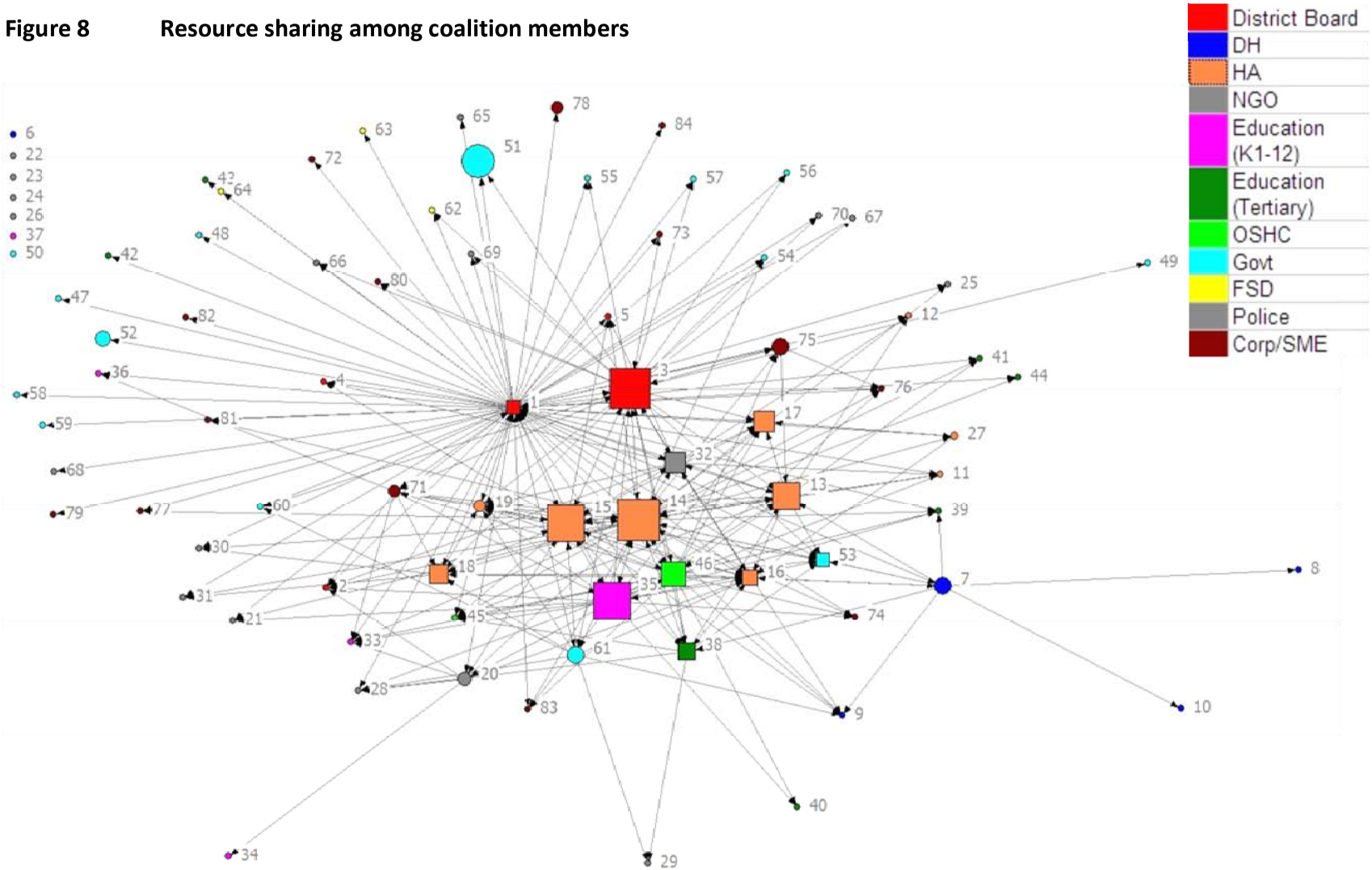
Figure 6 **Information exchanges among coalition members**

Figure 7 Referrals among coalition members



Square □ = Core; Circle ○ = Periphery

Figure 8 **Resource sharing among coalition members**



Square ☐ = Core; Circle ○ = Periphery

Core-Periphery structure analysis

Considering that networks observed in the studied coalition were highly centralized, network data were fit into a core-periphery structure for classifying key members in the coalition empirically by fitting a core–periphery model to the data (Borgatti &Everett,1999). Core–periphery status was determined by fitting a core–periphery model to the data (Borgatti & Everett, 1999). The model is fit by permuting the data matrix repeatedly so that nodes are alternatively designated to the core or the periphery. Through this permutation, the various empirically generated core–periphery structures are correlated with an idealized core–periphery structure, which features connections bridging core nodes and with peripheral nodes while peripheral nodes are not connected. The best model obtained from this procedure is the permutation in which node assignments yield the maximum correlation with the idealized core–periphery structure. Represented with the fit index, this correlation indicates the degree that data conform to a core–periphery structure.

The core–periphery results showed 13 members in the core and the remaining 71 on the periphery. The resulting core–periphery model is presented in Fig. 1. Final fit index for the core–periphery structure, which is the correlation coefficient between the observed data matrix and the hypothetical ideal core–periphery matrix (Borgatti & Everett, 1999), was 0. 671. The fit index indicates that these data conform to a core–periphery structure.

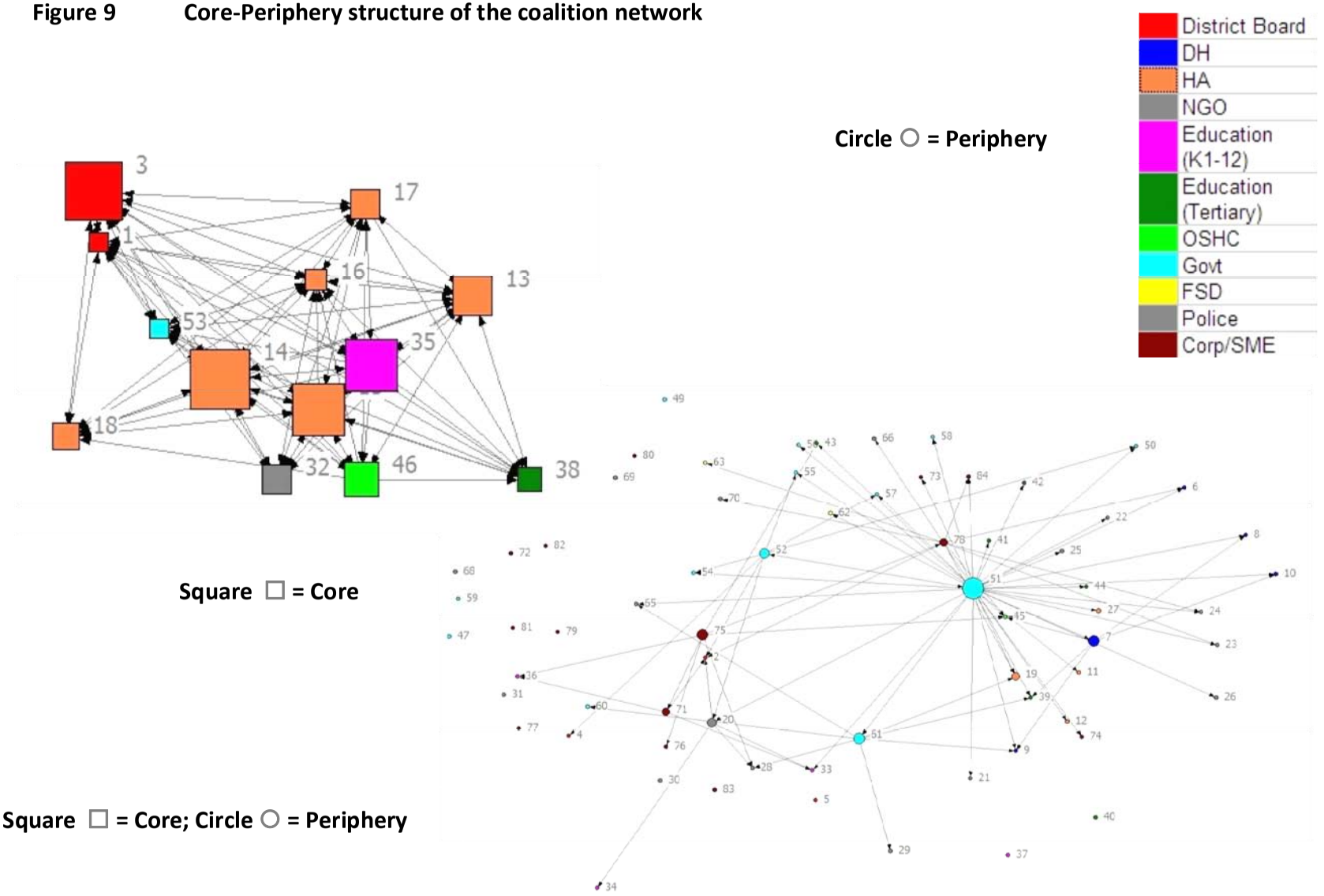
Nodes are positioned using a spring embedding algorithm (Borgatti, et al., 2007), which is suited for presenting the overall network structure visually (Brandes & Wagner, 2004). Core members (n = 13) are depicted as white squares and peripheral ones (n = 71) as grey circles.

The data showed a diverse set of organizational affiliations (District Board, Hospital Authority, education, government, etc) sharing the core of the coalition network. Thus, rather than being dominated by one or a few organizations or

organization types, core collaboration the coalition is shared by a variety of organizational representation. The observed shared core demonstrated diversity of the coalition and perhaps constituted a key component to its success and sustainability.

Of the 13 core members, 10 were managing directors while the remaining three included the coalition's executive secretary, a community nurse representative, and a representative of the OSHC, a major source of financial and personnel resources to the coalition. Two further analyses on the core-periphery structure revealed the relationship between core status and reported coalition functioning, as well as the difference between within-core and core-periphery linkages.

Figure 9 **Core-Periphery structure of the coalition network**



To explore the correlation of core status among members and scores on coalition functioning and effectiveness, core-periphery status was coded as a dummy variable where 1 denotes core status and 0 denotes a peripheral member. The resulting correlations, shown in table 20, revealed that core membership was positively associated with the ratings on coalition cohesion and formalization. Such results, however, were not generalized to other coalition functioning variables including leadership, developmental stages, and perceived effectiveness.

Table 20 ***Correlation between core-periphery status and coalition functioning and effectiveness***

	Core-Periphery Index	Average Leadership Score	Average Cohesion Score	Average Development Score	Average Effectiveness Score	Formalization
Core-Periphery Index		.335	.402*	.315	.242	.529**
Average Leadership Score			.907**	.745**	.868**	.525**
Average Cohesion Score				.636**	.746**	.518**
Average Development Score					.840**	.558**
Average Effectiveness Score						.437*
Formalization						

* $p < 0.05$
** $p < 0.01$

Another analysis of the core-periphery status examines the extent of homophily and segregation between core and periphery members, with the aid of a variable homophily categorical autocorrelation model, which allows each group (core or periphery) to have a different tendency toward homophily (establishing relations with in-group members). Similar to the analysis of variance (ANOVA), the test is based upon the densities within each core-periphery block. The model's fit, indicated by the r^2 coefficient, indicates the tendency to which in-group ties outnumber out-group ties.

Table 21 gives the unstandardized regression coefficients estimated for the network aggregating the three relations surveyed (information exchange, referrals, and resource sharing). The model reached statistical significance with an r^2

coefficient of 2.93 ($p < 0.01$). Coefficients for both the core ($\beta = 1.581$, $p < 0.01$) and periphery ($\beta = -0.256$, $p < 0.01$) dummy variables attained statistical significance. Core group membership was associated with in-group ties while periphery group membership was inversely associated with in-group ties. Results from the variable homophily categorical autocorrelation model suggested that core members were homophilous while peripheral members exhibited an increased tendency to relate to core members rather than other peripheral counterparts.

Table 21 Variable homophily categorical autocorrelation model on core-periphery structure and network relations

Variable	Unstandardized Coefficient
Intercept	0.278**
Periphery	-0.256**
Core	1.581**
Model Statistics	Value
R^2	0.293**
Adjusted R^2	0.293**

** $p < 0.01$

Independent data analysis

Hypothesis 3a & 3b: Correlation between network measures and coalition functioning and effectiveness scores

Table 22 gives the correlation matrix between network measures and coalition functioning and effectiveness scores. With this focus, the correlations between coalition functioning scores, including formalization, leadership, cohesion, developmental stage, and perceived effectiveness score, which were reported in an earlier section, were omitted in this section.

Perceived effectiveness score was not correlated significantly with any of the network measures. Level of formalization and engagement, however, were strongly correlated with network measures including information exchange (out-degree centrality = .524, in-degree centrality =.579, closeness centrality =.659), referrals (out-degree centrality = .439, in-degree centrality =.556, closeness centrality =.604), and resource sharing (out-degree centrality = .45, in-degree centrality =.571, closeness centrality =.511), and in-degree ties multiplexity score (.425). Leadership score was significantly correlated with and in-degree ties multiplexity score (.362), while developmental stage score was significantly correlated with in-degree centrality scores on information exchange (.406), referrals (.432) and resource sharing (.389), as well as the in-degree ties multiplexity score (.46).

Table 22 Pearson Correlation Coefficient matrix of coalition functioning variables and network measures

	Information Exchange - Out-Degree Centrality	Information Exchange - In-Degree Centrality	Information Exchange - Closeness Centrality	Information Exchange - Betweenness Centrality	Referrals - Out-Degree Centrality	Referrals - In-Degree Centrality	Referrals - Closeness Centrality	Referrals - Betweenness Centrality	Resource Sharing - Out-Degree Centrality	Resource Sharing - In-Degree Centrality	Resource Sharing - Closeness Centrality	Resource Sharing - Betweenness Centrality	In-Degree Ties Multiplexity Score
Average Effectiveness Score	-.117	.240	.069	-.173	-.018	.239	.213	-.028	.199	.191	.257	.181	.333
Formalization	.524**	.579**	.659**	.342	.439*	.556**	.604**	.307	.450**	.571**	.511**	.256	.425*
Average Leadership Score	.107	.252	.259	.016	-.065	.300	.276	-.113	.125	.215	.206	.046	.362*
Average Cohesion Score	.162	.212	.335	.102	-.008	.210	.233	-.100	.193	.180	.268	.120	.257
Average Development Score	-.025	.406*	.217	-.100	-.022	.432*	.237	-.092	.252	.389*	.340	.251	.460*
Information Exchange - Out-Degree Centrality		.502**	.879**	.810**	.738**	.487**	.701**	.572**	.504**	.542**	.515**	.109	.425**
Information Exchange - In-Degree Centrality			.612**	.225	.567**	.962**	.683**	.303	.744**	.981**	.785**	.527**	.698**
Information Exchange - Closeness Centrality				.727**	.660**	.563**	.718**	.480**	.524**	.620**	.591**	.222	.482**
Information Exchange - Betweenness Centrality					.576**	.200	.434*	.638**	.305	.260	.312	.076	.076
Referrals - Out-Degree Centrality						.470**	.795**	.848**	.552**	.586**	.543**	.171	.361*
Referrals - In-Degree Centrality							.664**	.196	.661**	.961**	.694**	.429**	.757**
Referrals - Closeness Centrality								.590**	.494**	.705**	.543**	.128	.650**
Referrals - Betweenness Centrality									.341*	.317	.341*	.078	.089
Resource Sharing - Out-Degree Centrality										.725**	.896**	.863**	.461**
Resource Sharing - In-Degree Centrality											.759**	.497**	.716**
Resource Sharing - Closeness Centrality												.753**	.442**
Resource Sharing - Betweenness Centrality													.203
In-Degree Ties Multiplexity Score													

Hypothesis 3c: Tie multiplexity

QAP correlation of ties multiplexity and tie homophily

Organizational affiliations of the respondents identified in the survey were collapsed into an 11-category taxonomy, as shown in table 23. First imported into UCINET, the affiliation attribute data were transformed into square matrices measuring homophily in organizational affiliation using the ‘‘Attribute – Exact Match’’ function in the program. For instance, the number ‘‘1’’ was assigned to a cell C*ij* of the affiliation homophily matrix if node *i* and *j* were from the same type of organization, such as the district board. The square affiliation homophily network matrix was adopted for the QAP correlation, which requires the matrices being correlated with the same size in terms of the number of rows and columns.

Table 23 List of organizational affiliation in the homophily network matrix

	Organizational affiliation
1	District Board
2	Department of Health
3	Hospital Authority
4	Non-Government Organization
5	Education Sector (K1-12)
6	Education Sector (Tertiary)
7	Occupational Safety and Health Council
8	Fire Services Department
9	The Hong Kong Police Force
10	Government bureaux and departments
11	Local corporations and Small-To-Medium Enterprises (SME)

The quadratic assignment procedure, QAP, was devised to account for network non-independence (David Krackhardt, 1988). Coefficients from the QAP correlations among the four networks were calculated in UCINET 6 (Borgatti, et al., 2007). All of the obtained correlation coefficients reached statistical significance at $p < 0.01$.

Table 24 reports correlations among the three networks, as well as the affiliation network. The surveyed social networks were highly intercorrelated with the highest correlation observed between information exchange and referrals (0.721) and the lowest between referrals and resource sharing (0.694). Affiliation network, however, did not reveal such strong association with the social networks. Members' affiliation was, in descending order of strength, was associated with information exchange (0.105), referrals (0.071), and resource sharing (0.068). These results indicated that different types of social exchanges among members were inter-correlated. A member dyad who shares information with member j is also likely to make referrals or share resources. Ties homophily, which is organizational affiliation in this case, exhibited moderate association with the exchange of information among members but not so with referrals and resource sharing. This indicates, perhaps, that members sought referrals and resources from those in other disciplines for a synergetic solution towards the challenges they faced in running the coalition.

Table 24 ***QAP Correlation between networks and members' affiliation – Ties multiplexity and tie homophily based on organizational affiliation***

	Information Exchange	Referrals	Resource Sharing	Members' affiliation
Information Exchange		0.721*	0.717*	0.105*
Referrals			0.694*	0.071*
Resource Sharing				0.068*
Members' affiliation				

*$p < 0.01$

Hypothesis 3d: Ties multiplexity and coalition effectiveness

Multiple linear regression of perceived coalition effectiveness

A multiple linear regression model of perceived coalition effectiveness regressed on in- and out- degree centrality measures of the three networks (information exchange, referrals, resource sharing), ties multiplexity score, and coalition functioning variables (formalization, leadership, cohesion, and developmental stage) was performed using SPSS 16 (SPSS, 2008). Variables inclusion was based on the backward selection method. As shown in table 25, the final model, including two coalition functioning variables and two network measures, explained 89% of the variance in perceived coalition effectiveness scores. Leadership score, the strongest predictor in the model, was positively associated with perceived coalition effectiveness (b = 0.608, p < 0.01). Developmental stage score was also positively associated with perceived coalition effectiveness (b = 0.339, p = 0.005). Out-degree centrality in the information exchange network, denoting the number of links members reached out for information, was negatively associated with perceived coalition effectiveness (b = -0.01, p = 0.001) while Out-degree centrality in the referrals network, denoting the number of links members make referrals to other members in the network, was positively associated with perceived coalition effectiveness (b = 0.012, p = 0.004).

Table 25 Predictors of perceived coalition effectiveness using backward multiple regression model

Variable	β	S.E.	*p* value
Self-reported coalition functioning			
Average Leadership Score	.608	.096	.000
Average Development Score	.339	.107	.005
Network measures			
Information Exchange - Out-Degree Centrality	-.010	.003	.001
Referrals - Out-Degree Centrality	.012	.004	.004
Model Adjusted R^2	.887		

Hypothesis 4: Interrelatedness of reported coalition functioning, and perceived effectiveness scores

Spatial autocorrelation of networks, coalition functioning, and perceived effectiveness

Table 26 reports the spatial autocorrelation examining the association between coalition functioning scores (formalization, leadership, cohesion, and developmental stage), perceived effectiveness, and the aggregate matrix summing the three networks in information exchange, referrals, and resource sharing. For coalition functioning, the aggregate network was positively associated with formalization (0.982), leadership (0.681), cohesion (0.686), and developmental stage (0.767). The aggregate network was also associated with perceived effectiveness (0.734). This indicates that members who closely collaborate with each other were more likely to report similar views on coalition functioning and the perceived effectiveness of the coalition.

Table 26 Network relations and perception of coalition functioning and performance

Coalition functioning and performance	Interval autocorrelation coefficient	Sig.	S.E.
Formalization	0.982	0.001	0.058
Leadership	0.681	0.001	0.055
Cohesion	0.686	0.001	0.055
Developmental stage	0.767	0.001	0.054
Perceived effectiveness	0.734	0.001	0.057

Qualitative data

Pre-Survey Key Informant Interview

To explore how members of the KTSHC concur to or supplement the conception of coalition capacity as defined in the present research, interview data were obtained from thirteen KTSHC members. Inclusion of key informants serves the purpose to recruit a sample of the population with substantial knowledge and experience with the coalition, and having spent sufficient and quantifiable time being active and committed to coalition operations and decision making processes.

Interview findings from the Pre-Survey Key Informant Interview

In general, key informants agreed with the proposed conception of coalition capacity and corresponding measurements for capacity constructs. However, the research instruments were modified in response to the following observations and viewpoints:

Two areas overlooked from the current conception of formalization and members' engagement from the literature were the legitimacy of coalition engagement from the members' affiliated organizations and the types of engagement in coalition activities. A recurring theme from informants (informant number 1, 3, 5, 6, 11) suggested that organizational endorsement of individuals for their participation and time spent on the KTSHC, either obtained from their immediate superiors or higher authorities in their organizations, constitutes a more reliable indicator of engagement formalization than the organization-level pledge to the support of KTSHC. The type of coalition activities engaged, from operation matters, supervision, to professional and academic exchange, was reported to reflect the different levels of participation with increased accuracy and relevance (informant number 3, 6, 7, 9,

11). The section on formalization and members' participation was revised and modified accordingly.

With reference to the measurement of members' collaboration through social network analysis (SNA), informants revealed that the initial pilot instrument for SNA was too vague for members to generate the social networks on handling coalition matters and development accurately (informant number 5, 6). The name generators and eliciting questions on information exchange, referrals, and resource sharing were modified accordingly by supplementing the questions with concrete examples of these social exchanges. The final name list included for the SNA was also augmented from suggestions by the informants who were deemed active partners to the KTSHC.

Post-Survey Key Informant Interview

This is a purposeful sampling where particular members with sufficient time and experience in working with the KTSHC are critical for expanding upon significant quantitative findings in this study.

Interview findings from the Pre-Survey Key Informant Interview

In light of the quantitative results and findings, the key informants views and experiences for corroborating the present findings could be organized into three major themes, namely the convergence or overlap of the leadership and cohesion constructs, the strong knit within the core group and its role in reaching out to members in the periphery, and the benefits of running coalition operations with an independent structure.

Indicated from the quantitative results, all self-reported individual level measurements of coalition capacity were highly correlated, with correlation coefficients ranging from 0.525 to 0.907. All key informants attributed such high

correlations, particularly those between leadership and cohesion items, to the overlap of items inherent from the validated instruments on these constructs as well as a manifestation of cultural difference in conceiving leadership from a pure individualistic perspective aligning the Western culture to a collectivistic orientation that treasures harmony and cooperation (Ho, Chan, & Zhang, 2001).

Confirming the quantitative data from SNA, key informants stressed the importance of sustaining at least a weekly to bi-weekly liaison pattern within the core group, which coincided with the core group as identified from the quantitative analyses. Reports from key informants also elucidated the dominance of out-group exchanges initiated from the core members to their peripheral counterparts. Corroborating with results from the SNA, key informant clarified that members identified as located in the periphery were usually nodes with resources and professional expertise for referrals, but not very active in the on-going governance of the KTSHC. It was the role of the core members to extend to these members in the periphery for their resources and expertise, and pool them with other core members for concerted effort towards a particular KTSHC project.

Aside from the emergence of a core group from the quantitative analyses, key informants unanimously stressed the importance of the independent governing body for daily and routine operation of the KTSHC. Having set up a corporation license with limited financial liability, the KTSHC governing body gained financial flexibility from the legitimacy to hold funds from external funding sources, such as the Community Investment and Inclusion Fund (CIIF) in Hong Kong, as well as administrative flexibility by having permanent staffs on its payroll and mandated to keep proper and detailed documentations on coalition operations. This governing body, bounded by the company legislations in Hong Kong, also facilitates a transparent and sustainable system for successions of board directors and other officials in the KTSHC.

Chapter summary

Results from the study refuted hypothesis 1 about the independence of coalition capacity parameters reported at the individual level. Such findings support the pursuit of further analyses employing inter-dependent variables and techniques over their independent and conventional counterparts. Significant inclusion of individual-level variables and network variables in the regression model in support of hypothesis 2 justified such adjustment of analytic strategy. Further inter-dependent analyses on network measures of the observed coalition, as illustrated with hypotheses 3a, 3b, 3c, and 3d, partially substantiated the dynamic nature of capacity in this context. The present findings also support hypothesis 4 about the inter-dependence between coalition members about their perception of coalition functioning and effectiveness. Qualitative data from pre-survey interview offered suggestions to the refinement of survey instruments, particularly on the formalization constructs and SNA probing technique. Findings from the post-survey data confirms the issue of overlap in the conception of leadership and cohesion in the present study, the role and function of core group, as well as the pivotal role of the financially-independent governing body arose from the KTSHC.

Chapter 6

Discussion and conclusion

Discussion

Research hypotheses

Hypothesis 1 predicted that the coalition capacity domains varied independently. Results did not support this hypothesis. In fact the capacity domains co-varied significantly with each other. The Community Coalition Action Theory (CCAT) posited that leadership, coalition membership, formalization and organizational structure, and members' cohesiveness constitute the major domains of capacity in a community coalition (Butterfoss & Kegler, 2002). In the meantime, coalition researchers have attempted to reduce parameters for assessing coalition capacity to a finite numbers of domains (Granner & Sharpe, 2004; Zakocs & Edwards, 2006) similar to those proposed by Butterfoss and colleagues (Butterfoss & Kegler, 2002). Results from the present study suggest that these domains, rather than contributing to coalition capacity independently, operate in an intertwined fabric dynamically. Levels of formalization, such as the availability of a structure for administration and succession, determine the style of leadership by empowering the leaders to stipulate coalition actions with their members. Likely, leadership style influences perceived cohesion when shared and democratic leaders breed a strong sense of cohesion and the lack thereof with opposing leadership style. The level of development about a coalition is often a combination of the level of formalization, as well as the transitions in leadership style changes and cohesion. The interdependence of coalition capacity domains reported in the literature (Feinberg, et al., 2004; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998; Kumpfer, et al., 1993; Torrence, 2005; Weiss, et al., 2002) suggested that perhaps coalition functioning, while conceived as a multidimensional construct in terms of input (Butterfoss & Kegler, 2002), should be assessed in a single survey (Lempa, et al., 2008, p. 314).

Hypothesis 2 predicted that perceived effectiveness of the coalition is associated with the independent variables about coalition capacity, namely the formalization of rules/ or procedures (i.e. availability of organizational structure, documentation, regulation) , member engagement (i.e. attendance, time devoted to coalition), leadership style (i.e. clear direction, collaborated decision making, members' facilitation), group cohesion (i.e. shared vision, commitment to coalition), developmental stage (i.e. staffing and office space, plans implementation, maintenance of membership, fine-tuning of goals and strategies), and members' collaboration (i.e. information exchange, referrals, and resources sharing). The multiple-regression model provides a fit model for explaining the variance in perceived effectiveness with 88% of the variance explained. The model includes only leadership, developmental stage, out-degree centrality of information exchange, and out-degree centrality of referrals as salient predictors of perceived coalition effectiveness. The notable omission of formalization and engagement, cohesion, and other network measures including centralization indices of resource sharing and ties multiplexity indicate that coalition effectiveness, at least in this context, evolve around how core members appraise the style of leadership, assess the level of development, and utilize peripheral members on referrals of services and professional placements.

Hypothesis 3a, 3b(i), and 3b(ii) predicted that various centrality measures were associated with coalition functioning and effectiveness scores. Out-degree centrality on information exchange was inversely correlated with coalition effectiveness. But In-(negative) and Out-degree (positive) centrality on referrals were correlated with coalition effectiveness. Results indicated that members who were busy disseminating information and burdened with referral requests were more likely to report a negative evaluation of the coalition. On the other hand, those requesting referrals from other members were enjoying the synergy and convenience as a member of the coalition.

Closeness centrality on referrals, denoting the geodesic distance to any given member, was inversely correlated with coalition effectiveness. Analogous to the

observation from degree centrality measures, members who were in the most "convenient location" of the network for referral requests were more likely to report a negative evaluation of the coalition.

The reported association between centrality measures and coalition effectiveness echoes the findings on the contrast between coalition core and peripheral members. Empirical evidence from Lempa and colleagues (Lempa, et al., 2008) suggested that core members, being the leaders in the coalition, focus on designating the personnel and resources for coalition activities implementation while peripheral members focus on intra-coalition networking. Perceived effectiveness, in this case, becomes a function of those leveraging networking rather than those burdened with networking.

Betweenness centrality in all three networks, refers to a member's location in the network including direct and indirect ties to members, did not correlate with perceived effectiveness. With such low densities across the three networks, the high overall centrality explains why there were few members in between while most of the collaboration transactions were handled through direct ties.

In a dyadic level, ties multiplexity (types of observed ties with any given member) is associated among different types of networks (information exchange, referrals, and resource sharing). All three networks were inter-correlated at the dyadic level. Any given pair of coalition members who share information, is also likely to send referrals and share resources within the dyad. In addition, ties multiplexity score was positively correlated with perceived effectiveness.

Ties multiplexity covariates with the core-peripheral structure. Those who network on multiple collaborative partnerships with other members were mostly members of the core group.

Although the correlation coefficients between perceived effectiveness score and none of the network measures reached statistical significance in the test for hypothesis 3b, the regression analysis on individual-level capacity parameters and

network measures for testing hypothesis 3d revealed that coalition effectiveness was primarily attributed to how core members appraise the style of leadership, assess the level of development, and utilize peripheral members on referrals of services and professional placements. Given the strong inter-correlation between network measures and other capacity indicators as well as the inclusion of two network measures in the regression model for perceived effectiveness, the present results suggested that network measures maybe operating as dominant contextual variables that embed and covariate with the individual-level measures reported.

Apart from the significant linear model reported on the association between perceived effectiveness and coalition functioning, coalition members tended to report similar rating between those who collaborated closely. Hypothesis 4 predicted that adjacency between any given pair of members in the coalition was associated with reported coalition functioning and effectiveness. Revealed in the spatial autocorrelation analysis, adjacency between any given pair of members in the coalition, represented by the overall adjacency matrix, was associated with reported coalition functioning and effectiveness in terms of all reported coalition functioning and performance scores.

General discussion

Among the self-reported measures by coalition members, the leadership score was second behind cohesion in terms of score variability. But it was highly correlated with all other self-reported measures. Evidence from the coalition research literature has suggested that leadership, in terms of variance explained among other coalition capacity parameters (Allen, 2005; Feinberg, et al., 2004; Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998; Lempa, et al., 2008), and in terms of the number of empirical studies featuring it as the dominant measure of coalition capacity (Zakocs &

Edwards, 2006), constitutes as the major influence to the appraisal and evaluation of coalition capacity on an individual level. Results from this study suggest that the quality of leadership constitutes an encompassing, if not overshadowing, indicator for coalition members to appraise effectiveness individually.

The basic functions of a coalition include collaboration among members through communication, conflict resolution, and decision making (Butterfoss & Kegler, 2002). While the coalition research literature suggested the association between productive communication among members with coalition satisfaction, commitment, and implementation of strategies (Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998; Kumpfer, et al., 1993), the collaboration networks presented in this study have confirmed such findings.

Converging from quantitative and qualitative data, the observed KTSHC networks resembled a pattern that network analysts refer to a distributed-coordinated team leadership (Mehra, Smith, Dixon, & Robertson, 2006, p. 235). In this case, leadership was shared between a number of core members from diverse backgrounds, whose roles were to brokerage and allocate resources among the different affiliations and disciplines they represented.

Network centralization

Though the evidence spilt on the association between centrality and coalition effectiveness, both camps have presented solid arguments, depending on the context, for the role of centrality on coalitions. In a coalition which is highly centralized, core actors are more powerful and influential than the more peripheral actors under a hierarchical network.

A centralized coalition enhances the efficiency and effectiveness by facilitating the control and decision-making processes of the core leaders who coordinates collective actions within the coalition (Feinberg, et al., 2005), but diffuses information

and innovations slower than its decentralized counterparts (Michelle Crozier Kegler, Steckler, Mcleroy, et al., 1998). A decentralized coalition, which allows more horizontal exchange of information and innovations, could incur a high transaction cost in terms of time and decision efficiency (Michelle Crozier Kegler, Steckler, Malek, & McLeroy, 1998). Tested in a simulation trial, network analysts have discovered that an indirect path in valued network may sometimes be preferable to the direct link as the optimal linkage between a given pair of actors (Yang & Knoke, 2001).

With network centralization ranging from 15% to 29% and a clear-cut core-periphery structure, the KTSHC would be classified as a centralized network. In the context of an established and mature coalition, the observed centralization should expedite the decision making process, as well as implementation of policies through efficient appointment of resourceful members (Valente, et al., 2007, p. 880).

Network density

The density of the KTSHC is much lower than density measures reported in other health coalitions targeting chronic disease service provision (0.17 to 0.47) (Provan, et al., 2003) and substance abuse prevention (0.12 to 0.15) (Valente, et al., 2007). However, the density reported in the KTSHC is higher than the observed densities from a comparable counterpart. Hanson (Hanson, et al., 2005) reported a density score of 0.036 for the Mackay Whitsunday Safe Communities Project (MWSCP) in Queensland, Australia.

Indeed, the observed low density confirms findings suggesting that the optimal density in a coalition network should not be too high. Krackhardt (1994) proposed a curvilinear relationship between network density and group efficiency. He posited that an organizational network performs below the optimum when density is too low where information, innovations, and decisions could not be diffused efficiently. On the

contrary, group efficiency falls below the optimum when density is too high, while members were preoccupied with intra coalition communication at the price of forging collaboration with outside parties (D. Krackhardt, 1994, p. 102). Following empirical evidence (Oh, Chung, & Labianca, 2004; Valente, et al., 2007) has confirmed this hypothesis.

Reaping the fruits of weak ties – Coalition core members are reaching out to peripheral members extensively for information, referrals, and resources. This is supported by the observed significant ratio of External – Internal Ties Index (E-I Index) which indicates that core members are more likely to liaise with those out of the core than those in the core. Conforming to the weak ties hypothesis by Granovetter (M. Granovetter, 1983; M. S. Granovetter, 1973; Scott & Hofmeyer, 2007), the observed outreach of core members into the periphery would likely introduce or facilitate the flow of new information and resources in the network observed. Synergy of the KTSHC coalition - Tie homophily and the development of ties across different breeds of participating organization: Lower affiliation- resource sharing QAP correlation coefficient suggest that though members prefer to exchange information and make referrals with their own kind, they are more likely to seek resources from outsider organizations for resources, tangible or intangible.

Network structure of the KTSHC – Advantages of governance with a network administrative organization (NAO)

In terms of governance, the managing board of the studied coalition, KTSHC association, could be classified as a network administrative organization (NAO). Proposed by Provan and Kennis (2008), coalitions usually conform to either one of the three governance structure: shared governance, lead organization, and network administrative organization (NAO). In a shared governance mode, there is no clear cut leader in the coalition while decision making, information, and resources are evenly distributed. The network is decentralized and requires commitment and

consensus from almost all members in the coalition. In the lead organization mode, the lead organization in the coalition, usually one that centrally broker information and resources, dominates transactions between members. The NAO mode is somewhere between these two modes in which the NAO itself does not represent any lead organizations nor rely on the unanimous consensus of all members. The NAO strikes a balance between organizational efficiency featured in lead organization governance while preserve the horizontal collaboration and cohesion of a shared governance model.

The NAO governance in KTSHC is marked by the shared governance between several organization stakeholders, as illustrated in the dense core and sparse periphery observed in the SNA of this study, which correlates positively with ties multiplexity, which indicates the strength of relationships. The NAO, represented as the core in this study, features dense relationships within and draws inbound ties from the periphery. Such network configuration facilitates efficient decision-making processes as directors are closely knitted in a dense network while its grip to the periphery maintains even distribution and flow of information and resources between coalition members. Concurrent to the qualitative data, the NAO structure, along with the establishment of a governing body with limited financial liability, facilitates sustainability of community coalition through effective governance, financial flexibility, and administrative independence.

Limitations

Although the present research adopted a triangulation strategy to corroborate quantitative and qualitative data, this study is constrained by several limitations. While comparable to other large scale coalition studies (54% in Wells study on the Communities That Cares (2008), 55% in Kegler study on the ASSIST coalitions (1998)), the 35% complete response rate is still fairly low, and predominated with

directors of the coalition. Completion of the survey was strongly associated with core membership status in the coalition ($X^2 = 19.6$, $p < 0.01$) with all 13 core members completing the survey (100%), in comparison with 24 (34%) among members categorized as periphery members from the SNA. The significance difference observed in response rates among core and peripheral members fortified the reported core-periphery structure and illustrated the different level of involvement with the KTSHC among the working group and other affiliation members who were involved with coalition matters at a much lower magnitude. Evidence from empirical research on coalition network has hinted that one's position and centrality in the coalition network may lead to bias responses with more central members feeling more positively than those on the periphery (Valente, Coronges, Stevens, & Cousineau, 2008, p. 399). Given the small sample size and low response rate, the present findings on coalition capacity and network should be interpreted with cautions.

Health outcome data, in terms of injury statistics in the Kwai Tsing area, was proposed as an outcome measure in the original proposal of this research. Due to the revision of polices on patient data privacy reinforced by the Hong Kong Hospital Authority, access to such data was hindered and the release of such information was prohibited. Upon the availability of such data, research findings from this study should be integrated with the pending health outcome data to examine the ultimate effect of coalition capacity on population health.

Conclusions

This study hypothesized about the nature of coalition capacity in terms of the independence of capacity parameters, roles of members' relations to coalition engagement and effectiveness, and the predictive model of coalition effectiveness by combining individual-level and network data. From the coalition parameters surveyed, the KTSHC showed a high level of coalition capacity, perceived effectiveness, and members' collaboration. The observed capacity parameters were interdependent, exhibiting statistically significant correlation among each other. Network densities reported from this study were low relative to other health promotion coalitions, but compatible when compared to similar efforts on safety promotion. The coalition was distinctly characterized by a core-periphery structure in which the core comprised various members from several key organizations (healthcare professionals, local government representatives, central government delegates, and education professionals) and the periphery reached out to a variety of organizations and community representatives. Regression analysis on individual-level capacity parameters and network measures revealed that coalition effectiveness was primarily attributed to how core members appraise the style of leadership, assess the level of development, and utilize peripheral members on referrals of services and professional placements.

Though the capacity of health promoting coalitions has been well documented in the literature, the present study offers an alternative perspective to elucidate such construct. This study illustrated a methodological breakthrough for the understanding of coalition functioning and effectiveness from a network perspective (Feinberg, et al., 2005; Murty, 1998; Provan, Veazie, Staten, & Teufel-Shone, 2005; Wells, et al., 2007), which explicates the impact of collaboration within coalition and highlighted the interdependency between coalition members.

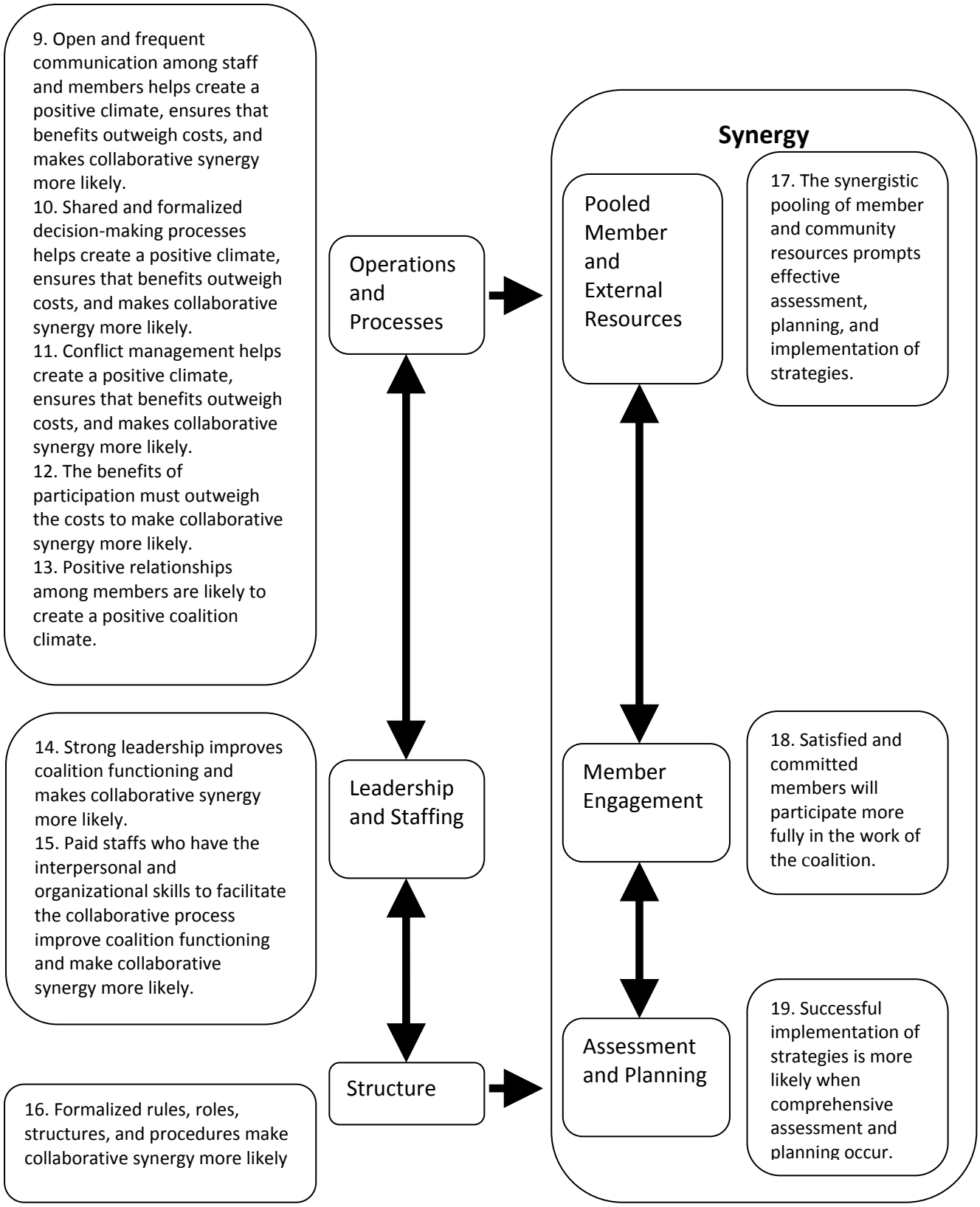
Considering this study's findings regarding interdependent nature of capacity parameters in understanding a health promoting coalition, this work offers a new perspective to conceive coalitions as intersecting groups of members, who are steered by their leadership and bound by a sense of cohesion, evolve dynamically as the coalition develops and formalizes towards the form of an institution.

Though most of the prior coalition research has examined several key variables featured in this study from an individual-level and independent perspective (Butterfoss, et al., 1996; Cramer, et al., 2006a; Florin, et al., 2000; Roz D. Lasker & Weiss, 2003), results from this study suggested otherwise that these variables should be examined from a group context for more fruitful deliberations. The coalition as an organizational entity, by itself, comprises the dynamics between its members and commands substantial influence on its effectiveness and efficiency.

Implication of findings from this study

The implication for future research from the findings in this study is fourfold, namely the refinement and deliberation of the CCAT model, the conception of the notion of coalition capacity, the type of data to be collected from coalitions, and the analytic strategies to explore these data.

Figure 10 Maintenance stage model in Community Coalition Action Theory (CCAT)



While the maintenance stage and synergy domains were clearly defined in the CCAT, the inter-relationship between the domains (operations and processes, leadership and staffing, structure) was hypothesized as an interdependent one. With leadership and staffing effect on the coalition capacity through operations and process as well as structure, capacity in this stage is transformed into synergy subsequently.

Findings from the present study support this model with significant associations between perceived effectiveness, referring to synergy in the CCAT, and maintenance stage domains including cohesion (operation and processes in CCAT), leadership (leadership and staffing in CCAT), and formalization (structure in CCAT).

In addition, findings on members' collaboration from the SNA contributed to the dynamics within and between the maintenance stage domains, with particular reference to propositions 9, 10, 13, 14, and 15. Observing from the core-periphery structure in the present study, open and frequent communication and the shared decision making process (proposition 9, 10) among members in the coalition were manifested in two types of communication patterns: i) bilateral exchanges among the core members, and ii) unilateral communication extending from the core to periphery members. With reference to hypotheses 3a and 3b, the style and degree of members' collaboration, in terms of ties multiplexity and degree centrality, was highly correlated to leadership (proposition 13, 14) and formalization (proposition 15). The cohesive core exhibited from the present study corresponded to the "strong leadership" put forward in proposition 14, in which leadership refers to the collective governance by the core, rather than a single leader or program champion. The formalized structure, apart from being mapped out in organization charts and report, were verified with the members' collaboration. In this case, the roles of coalition members diverged in accordance with the structure observed with the core focusing on shared decision making while the periphery participate in the capacity of resource bearer and deposit, to be pooled and appropriated by the core.

In theorizing coalition capacity, evidence from the present study suggests that such notion is more than merely the summation of individual level inputs and perception, rather this very notion of capacity is best described in a relational context. The relational conception of coalition capacity demonstrated in this study occupies a bridging role between “small theory of treatment” and “large theory of dissemination” in health promotion. While the former type of theory features a micro-level investigation focusing on the mechanism between input and output within individual health promotion programs, the latter type of theory focuses on large scale diffusion of health promotion campaigns and effect on population health in a global sense. Nonetheless, neither ends in this continuum provide facilitating evidence and tools for health promotion practitioners and researchers to guide evaluations, particularly the implementation processes and contextual considerations in modeling effective community health promotion (Koepsell, et al., 1992, p. 33). The context for effective community health promotion, illustrated in this study in terms of a cohesive core network that outreaches to members connected with weak ties throughout its entire coalition membership, was clearly outlined with empirical observations to fill the aforementioned gap in the meso-level.

Consequential to this perspective of understanding coalition capacity, researchers should make room for relational data observed in health promoting coalitions in addition to individual-level parameters that have been frequently surveyed. Analyses of data of inter-dependent nature call for corresponding analytic strategies and tools. Social network analysis and subsequent matrix modeling techniques evolved around SNA have provided the avenues for researchers to attain results from this type of data.

Converging data from quantitative and qualitative results suggested a key theme from the successful case of KTSHC in the significance of: i) maintaining a closely-knit nucleus core group for leverage and brokerage of tangible and intangible resources from a wider member-base and; ii) the establishment of a financially

independent body to hold funds and engage permanent staffing to the development and sustainability of community coalitions in Hong Kong, as well as laying the structures for formal successions of coalition leaders. Further data from local coalitions is required to confirm this working framework.

Through this assessment exercise, the KTSHC, as an established model to other similar initiatives in Hong Kong, has ventured a new framework for the planning and evaluation of other local coalitions working towards community health. In the near future, findings from the present study will be consolidated and expanded when the analytic framework here is replicated in other local coalitions, allowing further theoretical and technical advances about how different stages in coalition develop and local context contribute to the understanding of coalition functioning and effectiveness.

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Appendix I Invitation letter

Mr. XXX

Chairman, XXX
Primary School Heads Association

Dear Mr. X,
Since its inception in Sweden in 1975, the Safe Community model to health promotion has received accolades of acclaims worldwide as a comprehensive and effective approach to the promotion of safety in community. The Kwai Tsing Safe Community and Healthy City (KTSHC) initiative, pioneering the first ever safe community to be launched in Hong Kong, is marching on into its 8th year of successful run. Being a model for other safe communities in Hong Kong to follow, the KTSHC has demonstrated how community resources could be pooled, efficiently allocated, and sustained. It is of the interest of academics, the community, as well as other local safe communities to explore what constitutes such longevity and efficiency in promoting safety and health to the community.

The Hong Kong Polytechnic University is conducting a research project on the capacity of Safe & Healthy Communities in Hong Kong. This proposed coalition capacity assessment took, which takes about 25 minutes to complete, will help us better understand your Safe & Healthy Community's organizational strengths and capacities in an effort to highlight those organizations traits which can maximize and enhance similar future efforts.

Soon you will receive an email from the researcher to access the survey site. The invitation email will be sent to <e-mail@syh.edu.hk> and contain the following subject:

Re: Kwai Tsing Safe & Healthy Community Coalition Capacity Assessment Survey

Should you prefer to receive the invitation email through an alternative email address, please contact the researcher at the contact attached at the bottom of this letter.

To protect your privacy, this survey is password protected. You can access the survey with this password:

XXXXXXXX

The most significant benefit of your participation will be the synergistic enhancement of the level of communications, resource sharing, and technical assistance provided between WHO and your individual Safe & Healthy Communities, as well as among local Safe & Healthy Communities with similar goals, initiatives, and geographical locations.

Thank you for your attention. It would be most appreciated if you could complete the survey by January 16, 2009. For further inquiry concerning this study, please feel free to contact **Mr. Kevin Chan** of the **Department of Applied Social Sciences, Hong Kong Polytechnic University**:

Email	ssxxxxx@inet.polyu.edu.hk
Phone	2766-XXXX

XXX 校長
XX 區小學校長會主席

XXX 校長 台安:

安全社區模式自 1975 年於瑞典成立以來，在世界各地促進安全和健康的成果上屢獲好評，並日趨成熟。作為在香港第一個與世界衛生組織 (WHO) 建立的安全社區，葵青安全社區及健康城市 (KTSHC) 現已成功踏入了第 8 年，並成為一個倡導香港各區開發安全社區的先驅和典範。此成功的範例誘發學者與社區人士作進一步研究當中達致成效及持續發展的因素。

香港理工大學應用社會科學系正進行一個關於安全社區及健康城市(以下簡稱為安健社區) 如何匯聚社區資源的問卷調查研究。現懇請您抽出約 2 5 分鐘的時間，完成整份問卷。為了令是次研究成果能有效地回饋所參與之安健社區為加強安健社區計劃和你的本地安健社區之間的關係，敬請提供準確的資料，並依照指示回答所有問題。

不久，您會收到一封從研究人員網站發送的訪查邀請電子郵件。此邀請電郵將被發送到您的電郵地址<e-mail@syh.edu.hk> 和包含以下主題:

Re: Kwai Tsing Safe & Healthy Community Coalition Capacity Assessment Survey

為保障您的私隱，這項調查設有密碼保護。請您輸入以下密碼進入問卷調查：

XXXXXXXX

是次研究乃自願參與。調查完成後，閣下所提供的資料將以匿名保密處理，並不會以任何方式作為閣下以會員身份參與安健社區計劃的檢核。此項研究成果將有利我們有系統地了解及提升安健社區計劃內的資訊流通，資源共享，與及成員之間的技術援助。及後，此項研究中之發現更能裨益在本港其他開發中的安健社區，以及鄰近地區的同類組織。

多謝您的參與，並請於 2009 年 1 月 16 日之前完成調查。如果您需要進一步了解這項研究或索取有關資訊，請隨時與香港理工大學應用社會科學系的陳顯宏先生聯絡：

電郵地址 ssxxxxx@inet.polyu.edu.hk
電話 2766-xxxx

敬祝 順安

葵青安全社區及健康城市協會主席	葵青安全促進及傷害預防中心總監	葵青安全社區及健康城市協會董事
周奕希 BBS 太平紳士	周鎮邦醫生 BBS	黎雪芬女士

Appendix II Invitation message and consent form

Re: Kwai Tsing Safe & Healthy Community Coalition Capacity Assessment Survey

Dear [CustomValue] [LastName],

We are conducting a Community Coalition Assessment Tool survey with the Kwai Tsing Safe & Healthy Community, and your response would be appreciated.

Here is a link to the survey:
http://www.surveymonkey.com/s.aspx

The site is password-protected. Please access with the following password:

xxxxxxxx

This link is uniquely tied to this survey and your email address <[Email]>. Please do not forward this message.

Thanks for your participation!

Kevin Chan
Research Associate
Network for Health & Welfare Studies
Department of Applied Social Sciences
Hong Kong Polytechnic University

To opt out of this survey, please use this link: http://www.surveymonkey.com/optout.aspx

Reminder message
Re: Reminder - Kwai Tsing Safe & Healthy Community Coalition Capacity Assessment Survey
Dear [CustomValue] [LastName],

Earlier we sent you an invitation to a Community Coalition Assessment Tool survey with the Kwai Tsing Safe & Healthy Community. We have yet to hear from you, and your response would be appreciated. If you are aware of our previous messages, please note that the deadline has been postponed to February 6, 2009.

Here is a link to the survey:
http://www.surveymonkey.com/s.aspx

The site is password-protected. Please access with the following password:

xxxxxxxx

This link is uniquely tied to this survey and your email address <[Email]>. Please do not forward this message.

Thanks for your participation!

Kevin Chan
Research Associate
Network for Health & Welfare Studies
Department of Applied Social Sciences
Hong Kong Polytechnic University

To opt out of this survey, please use this link: http://www.surveymonkey.com/optout.aspx

Appendix III Web survey – The Community Coalition Assessment Tool

Coalition Capacity Assessment Tool - V2.0

1. Introduction 研究背景

The Hong Kong Polytechnic University is conducting a research project on the capacity of Safe & Healthy Communities in Hong Kong. In an effort to explore the synergy in your Safe & Healthy Community program, we ask for your participation, and completion of this Safe & Healthy Community Program Assessment.
This assessment, which takes about 25 minutes to complete, will help us better understand your Safe & Healthy Community's organizational strengths and capacities in an effort to highlight those organizations traits which can maximize and enhance similar future efforts.
Completion of the anonymous survey is not mandatory and will in no way affect member status within the Safe & Healthy Community program, nor will individual information be highlighted.
The most significant benefit of your participation will be the synergistic enhancement of the level of communications, resource sharing, and technical assistance provided between WHO and your individual Safe & Healthy Communities, as well as among local Safe & Healthy Communities with similar goals, initiatives, and geographical locations.

你好！香港理工大學應用社會科學系正進行一個關於安全社區及健康城市(以下簡稱為安健社區) 如何匯聚社區資源的問卷調查研究。現懇請您抽出約２５分鐘的時間，完成整份問卷。為了令是次研究成果能有效地回饋所參與之安健社區為加強安健社區計劃和你的本地安健社區之間的關係，敬請提供準確的資料，並依照指示回答所有問題。
是次研究乃自願參與。調查完成後，閣下所提供的資料將以匿名保密處理，並不會以任何方式作為閣下以會員身份參與安健社區計劃的檢核。此項研究成果將有利我們有系統地了解及提升安健社區計劃內的資訊流通，資源共享，與及成員之間的技術援助。及後，此項研究中之發現更能裨益在本港其他開發中的安健社區，以及鄰近地區的同類組織。

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2. Basic Information 基本資訊

Basic Information
Safe & Healthy Communities are represented by members of business, community and governmental organizations that are interested in the quality of safety & health promotion activities within their respective communities. This section will help us understand the membership make-up of your Safe & Healthy Community by providing us with your demographic information, as well as your association with the Safe & Healthy Community.

基本資訊
安健社區匯聚了區內有志投身對安全和健康推廣工作的熱心人士。他們來自不同界別及地區組織。在此部份，請您提供一些關於個人及所屬機構的資料，以便我們核實安健社區成員建構之用。

*** 1. Demographics**

Name 名字:

Company 機構:

Address 地址:

Address 2 地址:

City/Town 地區:

Email Address 電郵:

Phone Number 聯絡電話:

Coalition Capacity Assessment Tool - V2.0

3. Formalization, Leadership, & Group Cohesion 安健社區的規範化, 領導, 及團隊凝聚力

1. Formalization / 規範化

Formalization in the Safe & Healthy Communities fosters sustainability of the SHC effort. This next section will help us understand how this formalized is your Safe & Healthy Community. Is there a transparent organizational structure with well-defined roles in your SHC? Is your SHC archiving documentation such as meeting minutes and annual report for reference and follow-up?
We want to learn more about how different SHCs are organized, so we can help people work together more effectively, and accomplish more in their communities.
Read each statement below. If you think that the statement is NOT a good description of the level of formalization in your Safe Community, you may check the "No" button. If you think that, the statement IS a good description of the level of formalization in your Safe Community - you may check the "Yes" button. This is your opinion, and that may be different from someone else's opinion.
規範化對於安健社區的持續發展有穩定的作用。在這部分，我們希望了解你的安健社區作為一個系統在體制和紀錄方面的規範。安健社區有沒有清晰的建構和完善的機制？安健社區的會議記錄和工作報告是否被妥善保存？
我們想更深入了解你對安健社區的建構，作為優化安健社區持續發展之參考。
試想想你參與的安健社區，並閱讀以下每一句。如果你認為這一句不符合你所參與的安健社區的規範和機制，你可以選擇「無」或「否」 。如果你認為，這一句符合你所參與的安健社區的規範和機制，你可以選擇「有」或「是」。

	Yes 有/是	No 無/否
My coalition has a mission statement. 我參與的安健社區對組織使命有詳細的陳述。	○	○
My coalition has a constitution / by-law. 我參與的安健社區有詳細的公司章程。	○	○
My coalition has a clear hierarchy of committees, subcommittees, & executive committee. 我參與的安健社區具有委員會，附屬委員會，及執行委員會的建構。	○	○
My coalition produces annual / other periodic work or project plans. 我參與的安健社區有發佈年度報告。	○	○
My coalition keeps agendas and minutes. 我參與的安健社區有保存詳細的會議議程和會議記錄。	○	○
My coalition provides training and orientation for staffs and volunteers. 我參與的安健社區為職員和義工提供培訓和導引。	○	○
My coalition has formal mechanism(s) for leader succession and recruitment of new office-bearing members. 我參與的安健社區對領導的繼任和招募有正式的機制。	○	○
Is your engagement in the KTSHC appointed by your organization? 您是透過你在職的機構委任而參與安健社區嗎?	○	○
Is your engagement in the KTSHC started out of your personal involvement? 您是以個人的名義參與安健社區嗎?	○	○
Do you have organizational endorsement for your engagement in the KTSHC? 你在職的機構認可您參與安健社區嗎?	○	○
Is your immediate superior supportive of your engagement in the KTSHC?你的直屬上司支持你的參與安健社區嗎?	○	○
Is your engagement with the KTSHC recognized as one of your routine duties in your organization?你在職的機構確認你在安健社區的參與為常規業務嗎?	○	○
Are you currently involved in endorsing KTSHC projects? 你現時有否參與安健社區項目的評審?	○	○
Are you currently involved in supervising KTSHC projects? 你現時有否參與安健社區項目的監督?	○	○
Are you currently involved in running KTSHC projects? 你現時有否參與安健社區項目日常業務的運作?	○	○
Have you host delegates visiting the KTSHC for professional or academic exchange? 在過去的一年內，您曾否接待安健社區的代表作專業或學術交流?	○	○

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Have you represent the KTSHC as a delegate / speaker at professional gathering(s) or academic conference(s)? 在過去的一年內，您曾否代表安健社區在專業交流或學術會議出席或發言?	○	○

2. Leadership 領導

The voluntary nature of the Safe Community Program ensures that many of its participants are truly passionate and committed to enhancing the health of their local communities. Although the work of your Safe Community can be intense at times, the rewards are countless. Recognizing that the leadership of each Safe Community varies according attributes desired among local Safe Communities, we would like to learn about the various qualities that you feel your Safe Community Chair and Co-chairs posses. What is the level of their commitment? Do they exhibit proficient qualities and skills? We want to learn more about the qualities of your Safe Community leadership, so we can help build and transfer the skills that will maximize the effectiveness of your Safe Community leadership.

Read each statement below. If you think that the statement is NOT a good description of the leadership in your Safe Community, you may completely disagree and check the "Very Disagree" button. If you think that, the statement IS a good description of the leadership in your Safe Community - you may completely agree and check the "Very agree" button. You can check the "Agree", "Neutral", or "Disagree" buttons if you are somewhere in between. This is your opinion, and that may be different from someone else's opinion.

安健社區計劃有賴於地區人士和機構的義務參與得以運作和維持。每個安健社區在領導上有不同的屬性和風格。我們想多了解一些有關你所屬的安健社區在領導上各種素質，你認為你的安健社區主席和領導層專注於既定的工作和目標及他們的承諾嗎？他們有排解紛爭的能力嗎？我們想透過了解你的看法，去探討關於你所屬的安健社區的領導素質，作為優化安健社區管理之參考。

試想想你所屬安健社區的領導風格，並閱讀以下每一句。如果你認為這一句完全不符合你感受的安健社區領導風格，你完全可以不同意，並圈選「十分不同意」 。如果你認為，這一句完全符合你感受的安健社區領導風格-你可以完全同意並圈選「十分同意」 。如果您的看法界乎兩者之間，您可以圈選「同意」，「無意見」，或「不同意」。

	Very agreed 十分同意	Agreed 同意	Neutral 無意見	Disagreed 不同意	Very disagreed 十分不同意
My coalition has a clear and shared vision of health in our community 我參與的安健社區具有清晰和共同的願景。	○	○	○	○	○
My coalition is in agreement on mission and role 我參與的安健社區對其宗旨及角色有一致的理解。	○	○	○	○	○
My coalition is in agreement on its priorities 我參與的安健社區對優先專案有一致的理解。	○	○	○	○	○
My coalition is in agreement on the best strategies to pursue and achieve our priorities 我參與的安健社區對推動和達成優先專案的最佳策略方面有共識。	○	○	○	○	○
The leadership of our coalition has a clear vision for the coalition 安健社區內領導們對籌辦安健社區有清晰的願景。	○	○	○	○	○
The leadership of our coalition is respected in the community 安健社區的領導們備受社區尊崇。	○	○	○	○	○
The leadership of our coalition makes members feel welcome 安健社區的領導們令各成員感到受歡迎。	○	○	○	○	○
The leadership of our coalition gives praise and recognition to others 安健社區的領導們給予各成員讚揚和肯定。	○	○	○	○	○
The leadership of our coalition intentionally seeks out others' views 安健社區的領導們積極地搜集成員之間不同的意見。	○	○	○	○	○
The leadership of our coalition utilizes the skills and talents of many, not just a few 安健社區的領導們會充分發揮大部分而非少數成員的能力和專長。	○	○	○	○	○
The leadership of our coalition creates an appropriate balance of	○	○	○	○	○

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responsibility between officers and members 安健社區的領導們在職員和成員的責任方面建立適當的平衡。					
The leadership of our coalition works collaboratively with coalition members 在我參與的安健社區內，領導們與成員群策群力。	○	○	○	○	○
The leadership of our coalition is accessible to members 在我參與的安健社區內，領導們與成員有足夠的溝通橋樑。	○	○	○	○	○
The leadership of our coalition builds consensus on key decisions 在我參與的安健社區內，領導們在重要決策上建立共識。	○	○	○	○	○
The leadership of our coalition is not effective at keeping the coalition focused on tasks and objectives在我參與的安健社區內，領導們未能有效地使安健社區專注於既定的工作和目標。	○	○	○	○	○
The leadership of our coalition is skillful in resolving conflict 在我參與的安健社區內，領導們能有技巧地解決衝突。	○	○	○	○	○
The leadership of our coalition gets things done 在我參與的安健社區內，領導們對定下的目標付諸實行。	○	○	○	○	○
The leadership of our coalition is ethical 在我參與的安健社區內，領導們對籌辦安健社區符合倫理規範。	○	○	○	○	○
Coalition decision makers willingly collaborate and cooperate with each other 在我參與的安健社區內，決策者之間衷誠合作。	○	○	○	○	○
There is a high level of respect and trust among coalition decision makers 在我參與的安健社區內，領導人之間互信互敬。	○	○	○	○	○
In both formal and informal discussions, coalition decision makers say what they mean and mean what they say 在我參與的安健社區內，領導人在正式及非正式的討論中言行一致。	○	○	○	○	○
Coalition decision makers share ideas and information freely 在我參與的安健社區內，決策者之間共享資訊與創意。	○	○	○	○	○
The coalition has clear and explicit procedures for making important decisions 在我參與的安健社區內，領導層在協商重要的決策時有清晰和明確的程序。	○	○	○	○	○
The coalition follows standard procedures for making decisions 安健社區的領導層在做決定時會依從標準的程序。	○	○	○	○	○
The decision-making process used by the coalition is open and clear to all partnering organizations 對伙伴機構，安健社區的決策程序是清晰和公開的。	○	○	○	○	○

Coalition Capacity Assessment Tool - V2.0

3. Group Cohesion團隊凝聚力

We recognize that YOUR local Safe Community represents a diverse section of grassroots organizations committed to the health of your local community. Not every Safe Community has the same exact community representation through its membership, yet the diverse views, perspectives, and resources individual members' exhibit are priceless. This section will help us understand how your Safe Community membership as a whole interacts. Is there a sense of belongingness in your SHC? Are members supportive on reaching the goals set by the SHC?
We want to learn more about YOUR view of how engaged the collective membership of your Safe Community is, so we can help members work together more effectively, and accomplish more in their communities.
Read each statement below. If you think that the statement is NOT a good description of the perceived cohesion in your Safe Community, you may completely disagree and check the "Very Disagree" button. If you think that, the statement IS a good description of the perceived cohesion in your Safe Community - you may completely agree and check the "Very agree" button. You can check the "Agree", "Neutral", or "Disagree" buttons if you are somewhere in between. This is your opinion, and that may be different from someone else's opinion.
你的安健社區包羅了多個致力於社區安全及健康的團體，以建立一個多元化的組織。這些團體各有不同的意見，觀點，和固有資源，但安健社區發揮的作用正是凝聚這些不同的聲音和力量。在這部分，我們希望了解你的安健社區作為一個整體如何互動。你的安健社區有沒有給予你們一份歸屬感？成員之間有否互勉互勉？
我們想更深入了解你對安健社區成員之間凝聚力量的看法，作為優化安健社區成員相互相成與及提高團隊效能之參考。試想想你所屬安健社區的團隊凝聚，並閱讀以下每一句。如果你認為這一句完全不符合你感受的安健社區團隊凝聚力，你完全可以不同意，並圈選「十分不同意」 。如果你認為，這一句完全符合你感受的安健社區團隊凝聚力-你可以完全同意並圈選「十分同意」 。如果您的看法界乎兩者之間，您可以圈選「同意」，「無意見」，或「不同意」。

	Very agreed 十分同意	Agreed 同意	Neutral 無意見	Disagreed 不同意	Very disagreed 十分不同意
Group members feel a sense of belongingness to the group. 安健社區成員對安健社區有一份歸屬感。	○	○	○	○	○
Group member feel close to each other. 成員之間感覺親密。	○	○	○	○	○
The group is a good place to make friends. 安健社區是一個交朋結友的好地方。	○	○	○	○	○
Group members show that they care for one another. 安健社區成員彼此關懷。	○	○	○	○	○
Group members are committed to the group. 安健社區成員對群體非常投入。	○	○	○	○	○
Group members can understand what others in the group are going through. 安健社區成員了解團體內其他成員面對的挑戰。	○	○	○	○	○
Group members are supportive of one another. 安健社區成員之間互相支持。	○	○	○	○	○
The atmosphere of the group is a friendly one. 安健社區氣氛友善。	○	○	○	○	○
The leaders provide direction for the group. 領導者為安健社區提供清晰的發展方針。	○	○	○	○	○
The leaders are prepared for each group session. 領導者在規劃活動時有充分和周詳的準備。	○	○	○	○	○
Group members come prepared for each session. 安健社區成員在規劃活動時有充分和周詳的準備。	○	○	○	○	○
The rules of the group are clearly understood by the members. 安健社區成員對團體的規則有清晰和明確的理解。	○	○	○	○	○
The activities of the group are carefully planned. 安健社區籌辦的活動均有周詳的規劃。	○	○	○	○	○
The group has an agenda for each meeting. 安健社區團體在每次會議都有定立議程及記錄。	○	○	○	○	○

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Group activities are easy to follow. 安健社區舉辦的活動有清晰和明確的指引。					
Group members are encouraged to act independently. 安健社區成員們有主見及獨立地發表意見和執行事務是得到鼓勵的。					
The group concentrates on dealing with everyday problems. 安健社區專注地面對日常運作上的困難和挑戰。					
Group members learn new ways of solving problems. 安健社區成員們會發掘有創意的方法去解決面對日常運作上的困難和挑戰。					
Group members encourage each other in reaching their goals. 安健社區成員之間互勉互勉去達成目標。					
The atmosphere of the group is often hostile. 安健社區內洋溢着一片敵意的氣氛。					
Group members sometimes yell at each other.安健社區成員們有時會互相漫罵呼喝。					
Group members are engaged in petty quarrels with one another. 安健社區成員們有時會為一些雞毛蒜皮的小事發生爭執。					
Sometimes it is hard to tell what is going on in the group. 有些時候，安健社區成員們會覺得迷失了方向，無所適從。					
A lot of members just seem to be passing time in group. 安健社區內有很多成員敷衍了事。					
There seems to be a lot of tension between group members. 安健社區成員之間充滿磨擦和張力。					

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4. Network Survey of your Safe Community 社會網路分析

Social network analysis (SNA) offers a effective measure to examine the exchanges among coalition members toward a cooperative and productive partnership. To explore how your coalition members share information, exchange referrals, and share resources on coalition matters, we would like you to report the type of specified liaisons over the past year among the coalition members. An exhaustive list of members from your Safe & Healthy Community is revealed in the section below.
For each of the three types of exchange specified, if you have liaised with a particular individual on coalition matters, please select ONE of the FIVE contact frequencies (i.e. Daily, Weekly, Monthly, Yearly, Never) from the pull-down menus. Please select the contact frequency that fit best with your liaison with this particular person.
To recreate an accurate map of cooperation and synergy in your Safe & Healthy Community, please take your time and try to recall as many exchanges as possible.

社會網路分析
社會網絡分析（ SNA ）提供了一個有效探討安健社區成員之間的交流，合作，和夥伴關係的工具。我們想您盡可能準確的報道在過去一年的時間當中您與某一個安全社區成員對安全社區的事宜有這三種類型（信息，轉介服務，和資源共享）的交流。在下面的安健社區委員名單一節，請從下拉式方塊的五個接觸頻率中（「每天」，「每週」，「每月」，「每年」，「永不」）選擇最符合您與該位安健社區成員聯繫的頻率。

1. Over the past year, who did you contact (e.g. through meeting, telephone, or email) for information, referral, or resource sharing related to Safe Community matters?
在過去一年內，您曾接觸以下哪一位安全社區成員，透過任何方式(包括面談,電話,電子郵件等)，就有關您的安全社區事宜交換資訊，作轉介服務，或作資源共享的安排?

	Information 交換資訊 (e.g. Getting content information for a fire safety talk at an elderly home 例: 索取在老人院舉行消防安全講座的相關內容資訊)	Referrals 轉介服務 (e.g. referring a preventive medicine nurse to consult on a school healthy diet menu 例: 為區內學校轉介一名預防醫學護士作為編訂健康餐單的顧問)	Resource sharing 資源共享 (e.g. allocating human or financial resources for on-going projects under the KTSHC 例: 為安健社區執行中的計劃撥出人力或財務資源)
Mr. Chow Yick Hay BBS, JP 周奕希 太平紳士 District Board			
Ms. Lo Wai Lan 盧慧蘭 女士 District Board			
Mr. Lee Chi Keung, Alan 李志強 先生 District Board			
Mr. Leung Wing Kuen 梁永權 先生 District Board			
Mr. Chui Chi Yan 崔志仁 先生 District Board			
Mr. Ma Hing Sum 馬慶森 先生 DH			
Dr. Mok Chiu Yau 莫昭友 醫生 DH			
Dr. Li Yu Chi 李育奇 醫生 DH			
Ms. Ma So Ling, Andrea 馬素玲 護士長 DH			
Dr. Tsang Sam Fung 曾三峰 醫生 DH			
Dr. Hung Se Fong 熊思方 醫生 KCH			
Mr. Mak Michael, Kwok Fung 麥國風 先生 KCH			

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Dr. Chiu Lee Lee, Lily 趙莉莉 醫生 PMH			
Ms. Lai Suet Fun, Adela 黎雪芬 女士 PMH			
Ms. Chan Wai Mei, May 陳慧媚 女士 PMH			
Dr. Chow Chun Bong BBS 周鎮邦 醫生 PMH			
Dr. Lau Suet Ting 劉雪婷 醫生 PMH			
Ms. Lam Yin Ming 林燕鳴 女士 PMH			
Mr. Leung Ming 梁明 先生 PMH			
Mr. Chan Kwok Pong 陳國邦 先生 BGCA			
Ms. Kwan Ho Siu Fong, Cecilia 關何少芳 女士 HKFWS			
Ms. Yip Suk Yee, Cherie 葉淑儀 女士 RedCross			
Mr. Lau Chi Cheong, Rex 劉志昌 先生 RedCross			
Ms. Chan Wai Fun, Helen 陳惠芬 女士 RedCross			
Ms. Chan Yin Ping, Iris 陳燕萍 女士 RedCross			
Mr. Chan Kam Chuen, Percy 陳錦全 先生 RedCross			
Dr. Lam Cho Yee 林祖怡 醫生 SJAA			
Mrs. Yuk Yin King, Helina 沃鴻娥琼 女士 SKHMacLehose			
Mr. Tam Kwok Lung 譚國龍 先生 SKHMacLehose			
Ms. Yau Wai Man, Connie 丘慧敏 女士 TYCHC			
Ms. Chan Ka Fung 陳嘉鳳 女士 TYCHC			
Mr. Lo Tak Ming 盧德明 先生 YOT			
Ms. Chan Ka Mun, Carmen JP 陳嘉敏 太平紳士 Kindergarten			
Mr. Hui Kai Cheung 許繼祥 校長 KCDPSHA			
Mr. Tsang Kee Kung GBS 曾其鞏 校長 SecondarySchool			
Mr. Wong Chi Kwan MH 黃志坤 校長 SecondarySchool			
Ms. Yan Yuen Yee 甄婉儀 校長 TYDPSHA			
Prof. Lee Shiu Hung 李紹鴻 教授 CUHK			
Prof. Lee T. B., Albert 李大拔 教授 CUHK			
Ms. Yuen Suk Kwan, Hilda 阮淑君 女士 CUHK			
Prof. Wong Kwok Shing, Thomas JP 汪國成 教授 IED			

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Ms. Chan Sau Ching, Susanna 陳秀青 校長 IVE			
Ms. Lo Sau Ling, Donna 盧秀玲 女士 IVE			
Prof. Woo George, C. S. 胡志誠 教授 PolyU			
Mr. Tang Wah Shing 鄧華勝 先生 OSHC			
Ms. Ma Mo Bing, Cecilia 馬慕冰 女士 OSHC			
Ms. Lau Lee Mei Wah 劉李美華 女士 EDB			
Mr. Liu Chun Fung 廖峻峰 先生 EDB			
Mr. Ho Shu Kai 何樹階 先生 EDB			
Mr. Chu Chi Ming, Arthur 朱志明 先生 EPD			
Mr. So Tak Wing 蘇德榮 先生 EPD			
Ms. Leung Chui Man, Vera 梁翠雯 女士 FEHD			
Mr. Chow Shou Shun, Allan JP 周守信 太平紳士 HAB			
Ms. Chu Bik Wan, Janny 朱碧雲 女士 HAB			
Ms. Yiu Tang Kwai Sin 姚鄧季先 女士 HD			
Mr. Ho Ho Leung 何皓良 先生 LBD			
Mr. Ngan Siu Ming, George 顏紹明 先生 LCSD			
Ms. Lam Ka Fun, Anita 林嘉芬 女士 LD			
Ms. Chan Yuet Mei, Heidi 陳月媚 女士 PD			
Mr. Ng Ka Him, Peter 吳家謙 先生 SWD			
Mr. Lee Chan Yeung 李燦楊 先生 SWD			
Mr. Lau Mun Ming 劉敏明 先生 FSD			
Mr. Szeto Yat San 司徒日新 先生 FSD			
Mr. Chan Kam Cheung 陳錦翔 先生 FSD			
Mr. Yip Liu Chuen 葉流全 警司 Police			
Mr. Siu Chak Yee 蕭澤頤 警司 Police			
Mr. Chau Chung Mun, Teddy 鄒頌滿 高級督察 Police			
Mr. Lam Yiu Wing, Anthony 林耀榮 警司 Police			
Ms. Chiu Chi Ping 招志萍 高級督察 Police			
Mr. Shum Kam Tim 沈錦添 高級督察 Police			
Mr. Yan Sum Fu 甄森富 先生 CLP			
Mr. Zhang Mun Hang 張孟康 先生 CMCS			
Mr. Wong Sheung Chi, Andrew 黃尚志 先生 Dow			
Mr. Ho Tung Chuen, Paul 何東全 先生 HIT			
Mr. Lam Ho Ling 林可寧 先生 HKChinaGas			
Mr. Lee Kin Fai 李健輝 先生 HKChinaGas			

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Mr. Leung Kwok Wai 梁國威 先生 HLC			
Mr. Ho Andrew , K. L. 何傑康 先生 KMB			
Mr. Chan Lam San 陳霖生 先生 MTR			
Ms. Tang Doris Doris Tang 女士 OCISHE			
Mr. Chui Hing Cheung 徐興祥 先生 Shell			
Mr. Lee Kam Chung JP 李金忠 太平紳士 SHK			
Mr. Wong Andrew, K. L. 黃國良 先生 Business			
Mr. Lee H. C., Henry 李鴻鑑 先生 HKCTOA			

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5. Coalition Development & Perceived Effectiveness 發展現狀與認知成效

From formulation to consolidation, coalitions undergo different developmental stages over time and present different strengths and needs. The developmental stage of a coalition shows not only the maturity as an organization, but also how members adapt to the coalition environment and structures emerge and consolidate.

Perceived effectiveness of the coalition reflects how members agree on the fruit of their involvement and input. It also provides an overview of the health of a coalition.

Read each statement below. If you think that the statement is NOT a good description of your Safe Community, you may completely disagree and check the "Very Disagree" button. If you think that, the statement IS a good description of your your Safe Community - you may completely agree and check the "Very agree" button. You can check the "Neutral" button if you are somewhere in between. This is your opinion, and that may be different from someone else's opinion.

安健社區經歷了從開發到鞏固的不同發展階段，當中凝聚了不同的力量並衍生了不同的需要。安健社區的發展歷程不但反映了組織日趨成熟，亦記錄了規範和鞏固組織的過程及成員之間的磨合。

認知成效反映安健社區成員如何達成共識的成果，亦反映了組織的全面健康。

試想想你所屬安健社區，並閱讀如下每一句。如果你認為這一句完全不符合你感受的安健社區，你完全可以不同意，並圈選「十分不同意」 。如果你認為，這一句完全符合你感受的安健社區-你可以完全同意並圈選「十分同意」 。如果您的看法界乎兩者之間，您可以圈選「同意」，「無意見」，或「不同意」。

1. Developmental stage 發展現狀

	Very agreed 十分同意	Agreed 同意	Neutral 無意見	Disagreed 不同意	Very disagreed 十分不同意
Permanent staff is designated 我參與的安健社區有聘用合約職員。	○	○	○	○	○
Membership is broad-based 我參與的安健社區裏。成員具有廣泛基礎。	○	○	○	○	○
There is a designated office & meeting space 我參與的安健社區有固定的辦公室和會議空間。	○	○	○	○	○
Strategic plan is developed based on community need 我參與的安健社區針對社區的需要去訂立策略計劃。	○	○	○	○	○
Strategies are implemented as planned 安健社區按照規劃而實施策略。	○	○	○	○	○
Strategies are revisited as necessary 安健社區的規劃根據實際情況而修訂。	○	○	○	○	○
Financial & material resources are secured 我參與的安健社區有穩定的財政及物質資源。	○	○	○	○	○
Community prevention providers recognize our coalition as an authority on prevention of community health behaviors 我參與的安健社區在健康行為預防工作上得到社區內提供相關預防工作的團體認同。	○	○	○	○	○
Numbers of members are maintained or increased 我參與的安健社區成員人數能為持或有增長。	○	○	○	○	○
Membership benefits outweigh costs 成員認為參與安健社區利多於弊。	○	○	○	○	○
Members agree to disagree 安健社區成員能接納不同意見。	○	○	○	○	○
Coalition is accessible to the community 社區人士有多個途徑接觸安健社區。	○	○	○	○	○

Appendix IV Kwai Tsing Safe Community & Healthy City Pre-Survey Key Informant Protocol (Qualitative)

Interview Protocol
Project: Assessment of coalition capacity in the Kwai Tsing Safe Community & Healthy City
Date: December 23, 2008
Place: Education Room, G/F, Block M, Community Health Resource Centre, Princess Margaret Hospital, Hong Kong
Interviewer: Kevin Chan
Interviewee:

No	Name	Position	Affiliation
1	Chan	Senior Nursing Officer	Princess Margaret Hospital
2	Chiu	Cluster Chief Executive, Kowloon West Hospitals	Hospital Authority
3	Chow	Cluster Clinical Coordinator (Service Development)	Princess Margaret Hospital
4	Chow	District Officer	Kwai Tsing District Office
5	Chow	Councilor	Kwai Tsing District Council
6	Lai	General Manager of Nursing	Princess Margaret Hospital
7	Lee	Councilor	Kwai Tsing District Council
8	Lee	Honorary Professor	Department of Community Medicine, The Chinese University of HK
9	Leung	Deputy Director	PMH Injury Prevention Centre
10	Lo	CEO	Yan Oi Tong
11	Ma	Publicity Officer	Occupational Safety & Health Council
12	Tang	Executive Director	Occupational Safety & Health Council
13	Tsang	Principal	Kiangsu-Chekiang College (Kwai Chung)

Introduction to the key informants' interview
"Regarding your on-going participation with the KTSHC, I'm going to raise questions about the coalition's functioning and sustainability. From your experience as a member of the KTSHC, please try your best to answer and elaborate. The interview should take about 30 minutes. It is with your consent that your responses will be processed as part of the qualitative data analysis, to be included as part of a PhD dissertation."

Questions:

Regarding participation
1. Considering the benefits to you or your or your affiliated organization, what sustains your (or your predecessors') participation in the KTSHC?
2. Considering the on-going level of satisfaction (or the lack-thereof) about KTSHC, what sustains your (or your predecessors') participation in the KTSHC?

Regarding formalization
3. Apart from the organizational structure and documentation of coalition formal activities, what do you think would best represent the formalization of engagement in the KTSHC?

Regarding leadership
4. To what extent the leadership in KTSHC affects participation, commitment, and satisfaction?
5. How does coalition leadership facilitate the discovery and exchange of resources in the community (e.g., community assets, opportunities for collaboration, funding or other financial resources, training, data, professional expertise, technical support)?
6. To what extent the identification and utilization of these community resources affect participation?

Regarding decision making
7. How does the decision-making process (i.e. consensus of decision, efficiency in making decisions) affect the following: coalition effectiveness, member participation, and member satisfaction?

Regarding communication
8. To what extent communication (i.e. meetings, formal and informal liaison) within the coalition (among members) affects your participation and perceived effectiveness about the KTSHC?
9. How do you communicate with other members in the coalition? What do you communicate on with regards to matters arising from the coalition?

Regarding members' satisfaction
10. How do you think member satisfaction affects participation? To what degree do you think it would affect your commitment to the coalition?

Regarding sustainability
11. Overall, what would you regard as the critical factors for the 8-year run of KTSHC, while so many other efforts have faded away at an earlier stage?

Closing remarks:

Well, thank you for your time on this interview. Is there anything else that you think is important about the coalition effectiveness and capacity?

Appendix V Kwai Tsing Safe Community & Healthy City Post-Survey Key Informant Protocol (Qualitative)

Interview Protocol
Project: Assessment of coalition capacity in the Kwai Tsing Safe Community & Healthy City
Date: February 5, 2009
Place: Room D0003, G/F, Main Block, Princess Margaret Hospital, Hong Kong
Interviewer: Kevin Chan
Interviewee:

No	Name	Position	Affiliation
1	Chan	Senior Nursing Officer	Princess Margaret Hospital
2	Chow	Cluster Clinical Coordinator (Service Development)	Princess Margaret Hospital
3	Chow	Councilor	Kwai Tsing District Council
4	Lai	General Manager of Nursing	Princess Margaret Hospital

(Introduction of interview) "Following up on your participation with the KTSHC Coalition Capacity Assessment Tool, I'm going to raise further questions about the coalition's functioning and sustainability. From your experience as a member of the KTSHC, please try your best to answer and elaborate. The interview should take about 30 minutes or so. It is with your consent that your responses will be processed as part of the qualitative data analysis, to be included as part of a PhD dissertation."

Questions:

Regarding participation
1. Considering the benefits to you or your or your affiliated organization, what sustains your (or your predecessors') participation in the KTSHC?
2. Considering the on-going level of satisfaction (or the lack-thereof) about KTSHC, what sustains your (or your predecessors') participation in the KTSHC?

Regarding formalization
3. Apart from the organizational structure and documentation of coalition formal activities, what do you think would best represent the formalization of engagement in the KTSHC?

Regarding leadership
4. To what extent the leadership in KTSHC affects participation, commitment, and satisfaction?
5. How does coalition leadership facilitate the discovery and exchange of resources in the community (e.g., community assets, opportunities for collaboration, funding or other financial resources, training, data, professional expertise, technical support)?
6. To what extent the identification and utilization of these community resources affect participation?

Regarding decision making
7. How does the decision-making process (i.e. consensus of decision, efficiency in making decisions) affect the following: coalition effectiveness, member participation, and member satisfaction?

Regarding communication

8. To what extent communication (i.e. meetings, formal and informal liaison) within the coalition (among members) affects your participation and perceived effectiveness about the KTSHC?
9. How do you communicate with other members in the coalition? What do you communicate on with regards to matters arising from the coalition?

Regarding members' satisfaction
10. How do you think member satisfaction affects participation? To what degree do you think it would affect your commitment to the coalition?

Regarding sustainability
11. Overall, what would you regard as the critical factors for the 8-year run of KTSHC, while so many other efforts have faded away at an earlier stage?

Closing remarks:

Well, thank you for your time on this interview. Is there anything else that you think is important about the coalition effectiveness and capacity?