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**PREDICTING AND ENHANCING PERFORMANCE: COLLECTIVE  
EFFICACY IN COMPREHENSIVE COMMUNITY INITIATIVES**

by

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in

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### **Abstract**

This study examined the role of Bandura's collective efficacy construct (a group's belief in its collective ability to attain a shared goal) in explaining perceived group performance within the context of comprehensive community initiatives (CCIs). Perceived group performance, perceptions of collective efficacy, and sources of collective efficacy belief (enactive mastery experience, vicarious experience, verbal persuasion and group affect) and guidance received were reported by 131 individuals involved in CCIs. The strength of a group's perceived collective efficacy was positively associated with perceived group performance and three of the four theorized sources of efficacy belief (enactive mastery experience, verbal persuasion and group affect) were positively related to perceived collective efficacy. Effective guidance did not moderate the relationship between collective efficacy and the proposed sources of efficacy belief. The refinement of our understanding of the theoretical framework and construct and its extension within the CCI context are discussed.

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## Table of Contents

Abstract.....	ii
Acknowledgements.....	iv
Table of Contents.....	v
List of Tables .....	vii
List of Figures .....	viii
List of Appendices .....	ix
Background: What are Comprehensive Community Initiatives (CCIIs)? .....	1
Comprehensive and Integrated Efforts .....	1
Multi-sectoral and Community-focused Initiatives .....	2
Active Learning and Collaborative Approach .....	3
CCI Challenges: Maintaining Momentum, Overcoming Obstacles and Limited Resources .....	4
Characteristics of Potential Solution: Internal and Group-focused .....	5
What is Collective Efficacy? .....	6
Collective Efficacy: Interdependence.....	7
SCT Framework: Social Learning/Modeling.....	7
Collective Efficacy: Toward Maintaining Momentum, Overcoming Obstacles and Maximizing Limited Resources.....	8
Collective Efficacy as a Predictor of Perceived Group Performance.....	9
Sources of Collective Efficacy Perceptions and Links with CCI Learning Strategy ...	10
Enactive mastery experience.....	12
Vicarious experience.....	12
Verbal persuasion.....	14
Group Affective state.....	14
Collective Efficacy Belief Formation: The Role of Guidance.....	15
Contextual Influences on Collective Efficacy Perceptions.....	17
Hypotheses and Research Summary .....	18
Methods.....	20
Pilot-testing and Measure Development.....	20
Measures .....	21
Perceived group performance scale. ....	21
Perceived collective efficacy scale. ....	22
Sources of collective efficacy belief information. ....	23

Contextual information.....	25
Procedure.....	27
Sampling Strategy and Participant Recruitment.....	28
Group-level concepts measured at the individual level of analysis.....	29
Results.....	30
Participants.....	30
Preliminary Data Analyses.....	31
Data Screening.....	31
Basic Descriptive Statistics.....	31
Screening for Covariates.....	33
Main Data Analyses.....	35
Discussion.....	40
Collective Efficacy Predicts Perceived CCI Performance.....	42
Enhancing Collective Efficacy and Perceived Group Performance Through Group Affective State and Verbal Persuasion.....	42
Inconsistent Roles of Enactive Mastery Experience and Vicarious Experience in Predicting Collective Efficacy and Perceived Group Performance.....	44
Role of Guidance in Interpreting Efficacy Belief Information.....	45
Implications and Limitations.....	47
Sample representativeness.....	47
Group vs. individual-level analysis.....	49
Correlational vs. causal.....	50
References.....	52
Appendix A - Survey Invitation.....	63
Appendix B - Informed Consent Form.....	64
Appendix C - Survey.....	65
Appendix D - Debriefing.....	70
Want to Learn More?.....	71
Appendix E – Data Screening.....	72

**List of Tables**

Table 1. Means, Standard Deviations and Inter-Scale Correlations.....32

Table 2. Descriptive Statistics for Contextual Variables.....33

Table 3. Summary of Regression Analysis for Perceived Collective Efficacy Belief....38

Table 4. Summary of Regression Analysis for Perceived Group Performance.....39

**List of Figures**

Figure 1 Model Based on Social Cognitive Theory and Hypotheses.....9

Figure 2 Mean Reported CCI Performance (+/- 1 SE) as a Function of Level of  
Perceived Collective Efficacy.....36

**List of Appendices**

Appendix A: Survey Invitation.....63

Appendix B: Informed Consent Form.....64

Appendix C: Survey Questions.....65

Appendix D: Debriefing .....70

Appendix E: Data Screening.....72

Over the last two decades, in recognition of the inherent challenges associated with tackling social problems, communities, social service agencies and governments have been looking to comprehensive, place-based efforts involving partnerships and collaborations as a means of resolving (or at least minimizing) the effects of the social problems confronting individuals and their communities (Kubisch, Auspos, Brown, Chaskin, Fullbright-Anderson & Hamilton, 2002; Torjman & Leviten-Reid, 2003). This type of initiative stems from a movement that began in the late 1980s and is identified as growing out of the field of mental health by some and out of community-based anti-poverty efforts by others (Chapin Hall, 2008; Kubisch et al., 2002; Wellesley Institute, 2010). Since then, comprehensive community initiatives (CCIs) have been adopted increasingly by social service organizations and governments to address an array of issues across the U.S. and Canada. This approach has also been formally supported through government strategies and departments in Australia, the UK and other European countries. Implementation of CCIs in the 1990s in the UK borrowed heavily from U.S. models and effectively bridged the goals of economic efficiency with traditional social concerns of equity and social cohesion (Crawshaw & Simpson, 2002).

### **Background: What are Comprehensive Community Initiatives (CCIs)?**

#### **Comprehensive and Integrated Efforts**

Across issues and countries, CCIs have been defined as multi-year, neighbourhood-based efforts that seek to build community capacity and resolve fragmented service delivery toward improving community conditions and creating systems change (Kubisch, 2005; Lafferty & Mahoney, 2003). Led by coalitions of representatives from partner organizations and individual residents, CCIs spearhead interconnected projects that are administered by a wide range of community partners and

are designed to address social, economic and physical issues simultaneously (Government of New Zealand, 2011; Kubisch et al. 2002; Torjman et al., 2003; Wellesley Institute, 2010). The assumption underlying this comprehensive approach is that coordinated services and resources will help people in crisis, regardless of whether the crisis relates primary to poverty, mental health, or other social issues (Perkins, 2002). Indeed, the issues facing vulnerable populations are not singular; they involve many different, yet related problems (Stagner & Duran, 1997). Given this, CCIs generally focus on building community capacity and assets through integrated or complementary projects. An example of this is the approach taken by *Success by 6* in British Columbia, where the Credit Unions of BC, United Ways, the BC Government and communities have partnered to engage “citizens in early childhood development, and funding programs that strengthen services for young children and their families” *Success by 6 BC, About Us, para.2*). This includes programs that enhance the parenting skills of single mothers, while also building their social supports and increasing community engagement (Success by 6 BC, 2009).

### **Multi-sectoral and Community-focused Initiatives**

Further, to ensure a comprehensive approach, CCIs ideally involve multiple sectors representing the various players in a given community, including civil society (not-for-profit/voluntary organizations and residents), and the public and private sectors. Connecting with all community players helps ensure that CCIs maintain a community focus by involving local interests in the development of a strategic plan to guide activities, and through community-based governance structures or collaborative partnerships (Kubisch et al., 2002). An example of this is Vibrant Communities Saint

John (VCSJ), which began in 2004 and is managed by three organizations (the Business Community Anti-Poverty Initiative, the Human Development Council, and the Urban Core Support Network). Central to its activities is a coalition of community representatives (a leadership roundtable) “from each of the five priority neighbourhoods, community organizations, the business community, and government departments [that] champion Vibrant Communities Saint John’s poverty reduction strategy” (Saint John Poverty Reduction Strategy, 2009, Vibrant Communities Saint John, para. 2). For instance, to address skill shortages in Saint John, VCSJ partnered with the Saint John Learning Exchange, employers, educational institutions and the provincial government to provide unemployed individuals with essential skills training that meets the specific needs of employers (Saint John Poverty Reduction Strategy, 2009, Workforce Participation, para. 4).

Purported benefits of this multi-sectoral community-grounded approach include increasing the likelihood of efforts being focused on community priority areas, enabling the leveraging and pooling of resources, coordinating existing and new community services and assets, reducing the potential for duplication of work, and facilitating collaborative learning through the sharing of best practices (McHargue, 2003).

### **Active Learning and Collaborative Approach**

The structure of most CCIs facilitates collaborative learning and in some instances explicitly follows the principles of an active learning strategy (Torjman & Leviten-Reid, 2004). The collaborative approach is intended in and of itself to improve effectiveness and active learning as a group is thought to provide a mechanism for amplifying this. For instance, the Alliance to End Homelessness in Ottawa includes

**Characteristics of Potential Solution: Internal and Group-focused**

There is a need to develop capacity within the field to improve collaborative initiatives and to advance understanding of successes and routes to community change (Auspos & Kubisch, 2004). However, to be useful across CCIs, a solution needs to be applicable to aspects over which CCIs have control. This is due to the fact that CCIs are located in communities with varying financial resources and other assets and cannot rely equally or consistently on having access to these to improve their performance.

To this end, recent research suggests that the success of collaborative initiatives is broadly related to the following internal aspects of (a) formation and planning, (b) organizational structure and governance, and (c) implementation (Bradford & Andrew, 2010; Wellesley Institute, 2010). Formation and planning includes activities such as developing a unifying vision; basing action on an understanding of the community; developing effective evaluation strategies; and, building trust and a sense of shared ownership among participants. Organizational structure and governance on the other hand, focuses on involving participants with the appropriate level of knowledge, skills and decision-making authority; managing cross-sectoral working relationships; and, having skilled leaders who can communicate a compelling vision. Implementation addresses how participants contribute to and benefit from CCI involvement, including contributing resources to the collaboration and having a stake in the collaboration's success.

A thread running through each of these three aspects is the importance of the group in terms of attributes and processes, such as having a shared vision, trust, a stake in success, and mechanisms for managing relationships among participants. Countless studies within the organizational psychology literature have pointed to the importance of

**Collective Efficacy: Interdependence**

Central to SCT is the concept of perceived efficacy, which regulates the degree of perceived control an individual (in the case of self-efficacy) or group (in the case of collective efficacy) has over their thoughts and actions. While most research on SCT has emphasized the individual-level mechanisms of learning and motivation, the theory can also be applied to learning and motivation in teams and other social groups (Lent, Schmidt & Schmidt, 2006).

For collective efficacy beliefs to be a better predictor of group performance than self-efficacy, a minimum degree of interdependent effort is required (Katz-Navon & Erez, 2005). Gully and his colleagues provide evidence that interdependence moderates the relationship between collective efficacy and performance (2002). Even if goals are shared, the predictive power of collective efficacy over self-efficacy will depend on the level of interdependence needed to accomplish the task (Bandura, 1997). This requirement parallels the key characteristics of CCIs, as outlined earlier. CCIs strive to attain a certain level of interdependence among all community actors toward providing “join-up” services. Hence the emphasis on comprehensive, integrated efforts and multi-sectoral collaborations.

**SCT Framework: Social Learning/Modeling**

SCT outlines “the prominent role of social modelling in human motivation, thought and action” (Luszczynska & Schwarzer, 2005, p.127). According to the Theory, beyond simple mimicry, individuals can develop new patterns of behaviour that expand on behaviour that is observed or heard. Outside of providing a more efficient means of developing new capabilities, social modelling creates outcome expectations associated

with learned behaviour and thereby affects motivation. Essentially, social modelling fosters expectations that one's behaviour can produce the desired positive outcomes.

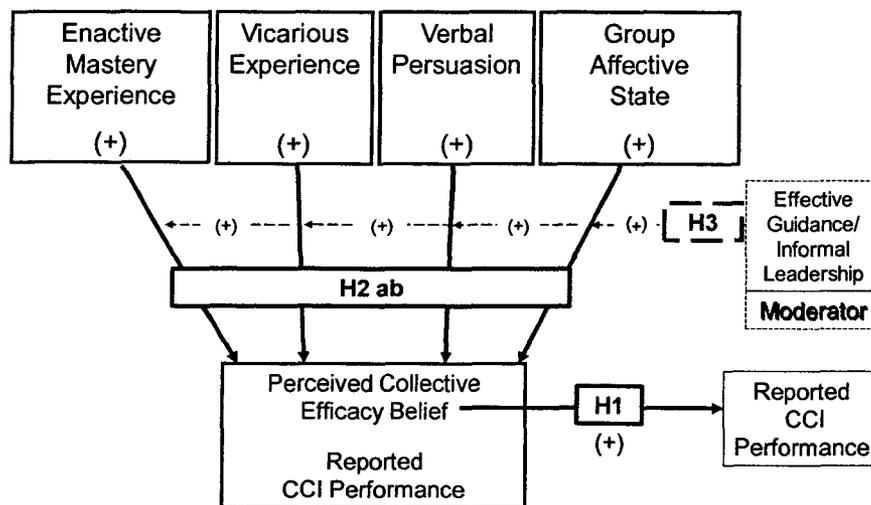
### **Collective Efficacy: Toward Maintaining Momentum, Overcoming Obstacles and Maximizing Limited Resources**

In harmony with the aims of comprehensive community initiatives (CCIs), the collective efficacy construct is situated within a desire to effect change, specifically social change for the collective good (Bandura, 1986; 1997). Collective efficacy is defined as a group's shared belief in its collective capacity to organize and execute the actions necessary to achieve common goals (Bandura, 1997). Collective efficacy is, at its core, a sense of "can do" (Bohn & Grafton, 2002). The stronger a group's belief in its capacity to attain the defined goal, the more likely the group is to maintain momentum by persisting even if their collective efforts fall short or do not produce quick results; to overcome obstacles through reduced susceptibility to discouragement when faced with problems; and to use their resources well (Carroll, Rosson & Zhou, 2005; Goddard, LoGerfo, Hoy, 2004; Taggar & Seijts, 2003). In essence, the group's belief influences its behaviour.

Outlined in Figure 1 is a model of the proposed relationships as presented in SCT with additional relationships as hypothesized in this study, namely a relationship between the four sources of collective efficacy belief information (enactive mastery experience, vicarious experience, verbal persuasion and group affective state) and perceived group performance, as well as a moderating relationship. Each element will be addressed in turn below. The potentially critical role played by a group's perceived collective efficacy in perceived group performance will be defined, along with how efficacy beliefs are formed, and the potential role of guidance in moderating the strength of the relationship. How

these proposed relationships may function in the CCI context and collective efficacy's conceptual relevance will be outlined. Since many communities and organizations are confronting interconnected, deeply entrenched social issues, CCIs, perhaps more than other groups, need to believe in their collective capacity to succeed despite challenging circumstances.

*Figure 1. Model Based on Social Cognitive Theory and Hypotheses*



### **Collective Efficacy as a Predictor of Perceived Group Performance**

Collective efficacy has been positioned as a better predictor of group performance than traditional individual or group cognitive factors, such as cohesion, perceived self-control, or cognitive competence (Carroll et al., 2005; Carroll & Reese, 2003; Cohen & Bailey, 1997; Gibson, Randel & Earley, 2000). Many studies have shown this group-level attribute to predict the attainment of group goals across diverse domains within organized groups, including sports teams (Watson, Chemers & Preiser, 2001); schools (Gibson et al., 2000; Goddard 2001; Goddard 2002; Goddard, Hoy & Hoy, 2004; Goddard, LoGerfo

& Hoy, 2004), working groups (Katz-Naron & Erez, 2005; Lent et al., 2006; Pescosolido, 2003); community networks (Carroll et al., 2003), neighbourhoods (Browning & Cagney, 2002), software learning teams (Hsu, Chen, Chiu & Ju, 2007), military units (Chen & Bliese, 2002) and medical teams (Gibson, 2003). Meta-analytic evidence also points to a consistent positive relationship between collective efficacy beliefs and group performance (Gully, Joshi, Incalcaterra, & Beaubien, 2002; Stajkovic, Lee & Nyberg, 2009). In fact, among several other work group characteristics (e.g., workload sharing, communication and cooperation) belief by a group in its capacity to perform was the strongest predictor of productivity, employee satisfaction, and judgments of effectiveness by management (Campion, Medsker, & Higgs, 1993).

Beyond the construct's demonstrated value as a predictor of group performance in a wide range of social systems, strong collective efficacy beliefs are associated with an increased commitment to group goals (Bandura, 1997; 2001), higher goal setting (Bandura, 2001; Prussia & Kinicki, 1996), improved group functioning and outcomes (Bandura, 1997; 2001) and increased motivation and persistence of the group when confronted with challenges (Bandura, 1997; 2001; Prussia et al., 1996). This seemingly enhanced group resilience to stressors suggests that collective efficacy could be especially important in the context of collaborations working to resolve complex and persistent social issues, such as poverty, that involve shifting and wide-ranging outcomes (Leviten-Reid, 2009).

### **Sources of Collective Efficacy Perceptions and Links with CCI Learning Strategy**

While the benefits of strong efficacy beliefs have been consistently proven, limited research has been conducted on the antecedents of collective efficacy (Tasa,

Taggar and Seijts, 2007). As defined in Social Cognitive Theory (SCT), group members develop beliefs in the capacity of the group over time by way of four primary sources of information. These sources of information are defined as a group's previous experience (enactive mastery experience), the observed performance of other similar groups (vicarious experience), verbal feedback about performance and capabilities (verbal persuasion), and the mood or atmosphere of the group (group affective state) (Bandura, 1998). While originally defined in relation to self-efficacy, Bandura has noted that the sources of efficacy beliefs at the personal and collective level are similar (Bandura, 1997; 1998; 2000). As observed by Gibson and Earley (2007), most collective efficacy research has focused on its relationship with performance, almost to the exclusion of investigative work on how the construct is formed. While limited, research supports the application of these sources for efficacy belief information at the group level with the lion's share of the research focusing on enactive mastery experience (Goncalo, Polman & Maslach, 2010). For the most part, research supports enactive mastery experience as the most effective source of efficacy beliefs in groups (Bandura, 1997; Gibson, 2003; Goddard, Hoy & Hoy, 2004; Goddard, LoGerfo & Hoy 2004; Hsu et al., 2007; Jung & Sosik, 2003, Nesbit and Ang, n.d.; Prussia et al., 1996).

In line with the four proposed sources of efficacy belief information, the active learning strategy employed in some CCIIs, touches upon reinforcing successes, learning about the successes of others, receiving feedback on capabilities and building supportive relationships. Just as efficacy beliefs are believed to be shaped through the interpretation of performance feedback information, so too a key tenet of the CCI learning strategy is "active engagement with the information through a mediating process that entails (...)

exploration, discussion and implementation” (Torjman et al., 2004, p.2). Given this complementarity, the proposed SCT sources of efficacy belief were seen as a natural fit within the CCI environment and, therefore, the present study addresses a gap in the literature by examining all sources of collective efficacy beliefs as outlined in SCT.

**Enactive mastery experience.** Previous success, labelled enactive mastery experience by Bandura, builds strong beliefs within a group regarding their capacity to achieve their goals, as it provides authentic evidence of their abilities (Bandura, 1997). The logic behind this is that if a group has already demonstrated their ability to accomplish a particular task, it holds that the group will be able to achieve an equal or greater level of success subsequently. Each subsequent success reinforces and provides further evidence of the capabilities of the group to members. Of Bandura’s four sources, most of the group-level research related to the antecedents of efficacy belief has examined enactive mastery experience (Hsu et al., 2007; Nesbit et al., n.d.; Jung et al., 2003; Goddard, LoGerfo and Hoy, 2004). This is likely tied to the fact that it is acknowledged as the most effective of the four sources of information that influence efficacy judgements, a consequence no doubt of it being based on direct experience (Bandura, 1986, 1997, 1998; Goddard, 2001). However, collaborative ventures to tackle entrenched problems rarely achieve near-immediate measurable results (Torjman, 2007), and often have difficulty measuring results. Therefore, it cannot be assumed that enactive mastery experience will provide the same level of efficacy belief information in the CCI context as it has provided in other contexts.

**Vicarious experience.** While a group has the opportunity to develop common beliefs and goals over time, it is also likely that over time its composition will change,

with some members leaving and new ones joining. In this way, some members have the benefit of direct experience, the enactive mastery experience mentioned, while others must rely on second-hand information about the group's performance history and other sources of information about other similar groups until such time as they have direct experience within the group. This illustrates how group experience may function across sources simultaneously to enhance a group's sense of collective efficacy in social systems in which there is high turnover, as is the case with the not-for-profit sector, in relation to both staff and volunteers (McHargue, 2003). The documentation of activities and experiences through case studies common among CCIs and their funders provides a means of preserving and sharing group history within CCIs. This in turn serves as an aid-memoire of previous enactive mastery experience for some CCI participants and as indirect evidence of successful performance (vicarious experience) for others.

While generally considered to be a weaker source of efficacy belief information than enactive mastery experience (Bandura, 1997), the value of vicarious experience may be its ability to impact group performance over the long-term (Prussia et al., 1996). Much of our understanding of reality is shaped by this indirect, observed experience. Through observation or knowledge of the successful accomplishments of one or more similar groups, the efficacy beliefs of an inexperienced group can be raised. The advantage of vicarious experience is that it is more expedient than direct experience as it provides a model for success without requiring the investment of time and resources associated with first-hand experience (Bandura, 1986). In the context of comprehensive community initiatives (CCIs) with limited time and resources, vicarious experience could enable a

more efficient learning process for determining what works, and highlights the benefits of examining models that have demonstrated success.

**Verbal persuasion.** Similar to vicarious experience, verbal persuasion, though acknowledged as having an influence on collective efficacy beliefs, is not seen as having the same degree of influence as enactive mastery experience (Prussia et al., 1996). Key components of this source of performance feedback are that (1) the feedback be realistic; (2) that it come from someone whose opinions are valued and respected; and (3) that it come at a time when the group is facing particularly challenging circumstances (Bandura, 1997). Despite being seen as a weaker source for strengthening efficacy belief, verbal persuasion can be useful in retaining engagement in an activity long enough for a group to experience vicarious or enactive success (Pescosolido, 2001). Although the impact of verbal feedback is dependent on the assessed value of the source and on the assessed validity of the feedback, given the slow-changing nature of social issues, the importance of a mechanism that encourages persistence cannot be underestimated. Hence, the role of verbal persuasion in explaining collective efficacy and performance perceptions in CCIIs was also explored.

**Group Affective state.** Affective state, the last of the identified sources of efficacy belief information, relates to emotional arousal, tension and physical states (Bandura, 1997). As a source of efficacy belief, affect has been operationalized at the group level as the observed atmosphere and mood within the group (Gibson, 2003; Goddard, Hoy and Hoy, 2004). The mood or atmosphere of the group may influence how people within the group interpret and react to environmental conditions, with a positive atmosphere more likely to lead to greater tolerance and better functioning in situations of

stress (Goddard et al., 2004; Gibson et al., 2007). Positive affective states are also associated with increased memory for similarly positive information (Gibson, 2003). In essence, if a group coalesces to form a positive environment, they are more likely to remember positive group aspects and experiences, thereby filtering out negative ones that might decrease the group's sense of its capabilities.

Within the existing psychological literature, there are studies that both support the impact of affect on efficacy belief at the group level (Gibson, 2003), as well as those that do not (Prussia et al., 1996). While it has been suggested that affective state may not be as relevant at the collective level as at the personal level, with the limited amount of research available on the influence of group affective state on perceived collective efficacy (Goddard, Hoy & Hoy, 2004), it was determined that further exploration was needed.

This is especially true in the context of CCI engaged in collaborative learning processes, with opportunities for regular exchanges among participants, potentially leading to a more supportive environment. For this reason, in the context of CCI, group affective state may prove to carry more weight than has been proposed in the literature. Hence, the role of group affective state on collective efficacy perceptions in CCI was examined in this study.

### **Collective Efficacy Belief Formation: The Role of Guidance**

According to Bandura's theory, perceptions of collective efficacy are informed by enactive mastery experience, vicarious experience, verbal persuasion and group affective state. But, these sources do not, in and of themselves, build beliefs in collective capabilities. The information conveyed through social influences and other environmental

factors must be selected, weighted, and integrated into efficacy judgements (Bandura, 1986). In this way, the formation of efficacy belief is dependent on more than the information derived from the various sources and relies on how this information is *interpreted* (Goddard, LoGerfo & Hoy, 2004).

Specifically, whether a performance will be construed as confirmation of enactive or vicarious success, whether verbal feedback will be understood as evidence of faith in the group's capabilities, or whether the atmosphere within the group will be seen as supportive or uncooperative, depends on how information is filtered, positively or negatively. In addition to positive filters, experiences, whether direct or observed, must be decoded into behavioural models in order to inform perceptions of efficacy. To increase a group's belief in its collective capacity, it is necessary to clearly define and reinforce the steps that led to the successful performance and use this achievement as evidence that the group has mastered the strategy or model used to reach the desired goal(s) (Bandura, 1997).

To facilitate this interpretation or filtering process, Social Cognitive Theory (SCT) implies a role for a "guide" (Bandura, 1997, 1998). Presumably, the better the guidance or interpretation process, the stronger the link between the information source (enactive mastery experience, vicarious experience, verbal persuasion and group affective state) and collective efficacy perceptions. In other words, the theory suggests a potential role for guidance as a moderator variable. Several studies in other domains demonstrate that leadership or guidance is important in developing perceptions of collective efficacy because leaders play a role in interpreting events and information for the group, setting goals and providing feedback (Chen et al., 2002; Gibson, 2003; Gully et al., 2002;

Pescosolido, 2001; Taggar et al., 2003; Watson et al., 2001). The importance of guidance has also been noted as a factor for success in the context of community initiatives (Bradford et al., 2010; Kreuter, Lezin & Young, 2000; Mattessich, 2003). Bandura's model, research in organizational settings, and observations from the CCI literature all seem to suggest an important role for an external "guide". None of this literature, however, has examined guidance effectiveness as a moderator. This question was taken up in the present study. Specifically, the role of effective guidance in strengthening the link between sources of efficacy beliefs (enactive mastery experience, vicarious experience, verbal persuasion and group affective state) and perceptions of collective efficacy was explored.

### **Contextual Influences on Collective Efficacy Perceptions**

There are important differences between the characteristics of groups traditionally examined under the umbrella of collective efficacy and the characteristics of comprehensive community initiatives (CCIs). For example, the majority of the collective efficacy studies reviewed tended to examine small teams of less than 10 individuals, generally all with similar backgrounds (e.g. soldiers, nurses) and from the same organization (e.g. from a given school or university). In contrast, the membership of CCIs, which are intended to be more diverse, includes representatives from multiple organizations, if not multiple sectors. It cannot, therefore, be assumed that the collective efficacy-performance relationship will operate similarly with CCIs.

To better understand contextual variables that might influence the results of this study, proxies were sought for potentially relevant group characteristics in terms of perceived group performance, collective efficacy perceptions, or both. These included the

diversity and complexity of the CCI (type of organization represented by the participant and sectors represented); degree to which the CCI is established (number of years the respondent has been involved, number of years the CCI has existed, and CCI's stage of development); and extent of cohesion (primary method of collaboration and number of CCI participants). Additional information was gathered for descriptive purposes including the role of respondents or the organizations they represent in the CCI, primary focus of the CCI (e.g. poverty reduction and homelessness), the position of the respondent within their organization and whether they were paid or volunteer. The role of contextual variables was also examined in this study.

### **Hypotheses and Research Summary**

*Hypothesis 1: Collective efficacy belief will predict perceived group performance in comprehensive community initiatives (CCIs), such that respondents who perceive higher levels of collective efficacy will tend to rate group performance highly as well.*

This study first examined whether Bandura's collective efficacy construct could be successfully applied to explain the performance of CCIs working to resolve social problems. Based on collective efficacy's demonstrated strength as a predictor of performance in a range of fields, and the compatibility of this social psychological construct with the needs of collaborative approaches, it was expected that CCIs with strong beliefs in their collective capacity to achieve their goals would also exhibit high levels of perceived group performance.

*Hypothesis 2a: The sources of efficacy belief information (enactive mastery experience, vicarious experience, verbal persuasion, and group affective state) will each explain a unique source of variance in collective efficacy perceptions.*

The learning process defined in connection with CCI relies on many of the same sources as those outlined within Social Cognitive Theory (SCT) as informing efficacy beliefs. Through CCI, organizations have opportunities to share their stories of success (reinforcing enactive mastery experience); to benefit vicariously from the success stories shared by other organizations (vicarious experience); and, to receive feedback on their efforts (verbal persuasion); and, to be supported by other group members (group affective state). Indeed, built into the structure of CCI are the foundational elements required to enhance perceptions of collective efficacy. A second question addressed in this study, then, was the extent to which collective efficacy belief sources are useful predictors of collective efficacy in the context of CCI.

*Hypothesis 2b: The sources of efficacy belief information (enactive mastery experience, vicarious experience, verbal persuasion, and group affective state) will each explain a unique source of variance in perceived group performance.*

The literature indicates that one or more of the sources of efficacy belief information may influence performance directly (Prussia et al., 1996). As mentioned above, CCI often incorporate a learning strategy into their structure and processes. While this might serve to activate or reinforce the sources of efficacy belief information towards strengthening collective efficacy, as outlined in Bandura's theory, it may also serve to influence performance directly. Therefore, this secondary research question was proposed to promote a clearer understanding of the functioning of these sources within CCI.

*Hypothesis 3: Perceived quality of guidance will moderate the effect that the proposed sources have on collective efficacy belief in CCI. Specifically, the strength of*

*the relationship between collective efficacy belief and information sources will be enhanced under effective, as compared to ineffective, guidance.*

The final question addressed in the present study focused on the role of effective guidance in shaping and filtering the interpretation of efficacy belief information. Specifically, it was proposed that the extent to which information from the four sources (enactive mastery experience, vicarious experience, verbal persuasion and group affective state) influences perceived collective efficacy depends on the perceived quality of guidance received within CCIs.

## **Methods**

### **Pilot-testing and Measure Development**

To ensure applicability and relevance in the CCI context, measures used in this study were either adaptations of existing instruments or developed following Bandura's guide to efficacy scale construction (Bandura, 2006) and other literature on efficacy scale development (Goddard, 2002). Although the pilot phase provided an insufficient number of cases to conduct *formal* psychometric analysis of the measures, verbal and written feedback was used to improve the clarity, flow and relevance of the measures to the target population. Of particular concern in the present study was the issue of overall measure length and participant burden. With these concerns in mind, pilot participants were asked for feedback on item content, wording, relevance, and overall perceived burden.

Each measure was refined in an iterative process that incorporated input and feedback from a small working group composed of individuals (N=5) with expertise in CCIs from the not-for-profit and/or the public sector perspective. Separate from the working group, three representatives from not-for-profit organizations also reviewed the

third iteration of the scales. Based on pilot group feedback following each iteration, items were added, deleted, or re-worded to improve the face validity and relevance of measures. Input from the working group also led to a reduction in the total number of survey questions. The final measure was judged by pilot participants as adequately addressing the constructs of interest while not placing too great a time burden on potential survey respondents. The measures used in the present study are described in more detail below.

### **Measures**

**Perceived group performance scale.** A primary outcome variable of interest was the self-reported performance of the collective. In other domains, such as school settings and work groups, group performance is readily measured using academic assessments and performance on specific assignments. Within the context of CCIs, however, no established, objective measure of performance was identified, as evaluation challenges in this domain are readily acknowledged (Petersen, 2002). However, the United Way of Canada's *Collaboration Assessment Guide and Tool* was designed "to assess the effectiveness of the collaboration's internal structures and processes" (Kellerman, 2007, p. 3).

Based on a review of the CCI evaluation literature (Bradford et al., 2010; Kreuter, et al., 2000; Mattessich, 2003) together with the pilot-study results, a 9-item adaptation of the 20-item *United Way* scale, was developed to measure perceived group performance in three categories (formation and planning; organizational structure and governance; and implementation). Using a seven-point scale ranging from "1" (strongly disagree) to "7" (strongly agree), respondents indicated their agreement with statements such as "We have

taken time to build trust and a sense of shared ownership among participating organizations and individuals” and “The collaboration has developed a plan to evaluate its work” (see Appendix C). Ratings were averaged to produce one score, with higher scale scores indicating better assessments of group performance. High levels of internal consistency reliability were found for this measure ( $\alpha = .85$ ).

**Perceived collective efficacy scale.** In this study, perceived collective efficacy was treated as both an independent variable (i.e., as a predictor of perceived group performance) and as a dependent variable (i.e., as an outcome in relation to sources of collective efficacy belief). Absent any established measures of perceived collective efficacy appropriate for this particular context, a 6-item scale was developed (see Appendix C). Three items were drawn from Carroll, Rosson and Zhou’s (2005) 17-item *Community Collective Efficacy Scale* and an additional three items were developed, guided by Bandura’s recommendations for efficacy scale construction (Bandura, 2006). Pilot feedback guided modifications to these items. To measure perceptions of the CCI’s collective efficacy, participants used a 7-point scale ranging from 1 “strongly disagree” to 7 “strongly agree”, to rate statements such as “Our collaboration will be able to acquire adequate resources to address our shared goal over the long-term” and “Our collaboration can actively engage those people and organizations that are critical to the success of our collaborative initiative”.

Higher scores on this scale indicated stronger belief that the group had the ability to succeed and meet its objectives. Items were averaged to produce a score for collective efficacy and the scale had excellent internal consistency reliability ( $\alpha = .87$ ).

**Sources of collective efficacy belief information.** Five separate scales were used to measure each of the proposed sources of collective efficacy belief information (enactive mastery experience, vicarious experience, verbal persuasion and group affective state, see Appendix C). Two of the five scales were adaptations of existing scales, and three were developed for this study, since appropriate scales could not be found for all five predictors of interest. For each measure, participants indicated their agreement using a 7-point rating scale ranging from 1 “strongly disagree” to 7 “strongly agree”, with higher scores indicating an increased presence of the particular source of efficacy information. For all scales, individual scores were averaged to produce one score for each of the proposed sources of collective efficacy belief information.

*Enactive mastery experience scale.* Based on information provided in the literature (Bandura, 1997; Gibson, 2003) and the pilot study feedback, a 3-item measure of enactive mastery experience was developed. Referencing task-specific activities identified as being factors that contribute to success in CCI, this scale measures perceptions of the extent to which the collaboration in question has directly experienced success in their work. For example, participants indicated their extent of agreement with “Our collaboration has successfully developed and/or implemented a strategy that is grounded in an assessment of community needs and resources”. A high level of internal consistency reliability was observed for this measure ( $\alpha = .87$ ).

*Vicarious experience scale.* To measure perceptions of the extent to which the collaborations have experienced indirect or vicarious successes in their work, a 3-item scale was derived from Kiser’s (2008) *Student Appraisal Inventory Scale* and the results of pilot feedback. The purpose of this scale was to determine the extent to which the CCI

was aware of and had incorporated the successes of similar groups into their own work. Participants indicated their degree of agreement with statements such as “Our collaboration has taken ‘best practices’ from other initiatives and adapted them to our circumstances.” Levels of internal consistency reliability were good for this measure ( $\alpha = .80$ )

***Verbal persuasion scale.*** Measurement of verbal praise and feedback received by CCIIs about their performance was obtained via a 3-item scale of verbal persuasion that was adapted from Kiser’s (2008) *Student Appraisal Inventory Scale* and pilot feedback. In general, the scale items speak to the validation and reinforcement that CCIIs may or may not have received while working toward their shared objectives. For example, participants indicated the extent to which they agreed that “Our collaboration is encouraged to remain committed to achieving our goals.” Very good levels of internal consistency reliability were observed for this scale ( $\alpha = .88$ ).

***Group affective state scale.*** A 3-item measure of group affective state was developed for this study based on descriptions of this source of efficacy belief in other research (Bandura, 1997; Gibson, 2003), as well as the pilot research done for this study. Items within this scale, including “Our collaboration is generally able to manage stress through mutual support”, measure perceptions of the general positivity of the mood or atmosphere within the collaboration. A high level of internal consistency reliability was found for this scale ( $\alpha = .93$ ).

***Effective guidance scale.*** To measure the effectiveness of the guidance or leadership received by the CCI, a brief, 3-item scale was created, informed by the relevant literature on leadership (Bohn et al., 2002; Taggar et al., 2003) and by feedback

from pilot participants. Included in this scale were statements about the quality of guidance groups received to help them understand how they could learn from other initiatives, and how their own activities contributed to goal achievement. A high level of internal consistency reliability was observed for this scale ( $\alpha = .94$ ).

**Contextual information.** Basic information was also gathered about the individual participants, the organizations they represent (if any) and their respective comprehensive community initiative (CCI) in order to gain a better understanding of the contexts in which participants were operating. Each of the single-item contextual variables is described below.

***Number of years respondent involved with CCI.*** The number of years that a respondent had been involved in the CCI in question was requested. This was an open-ended question, which for analysis was dichotomized, based on the median, into novices (less than 4 years) and veterans (4 or more years).

***Role of respondent/organization within CCI.*** Categorical data was collected on the role within the CCI of the respondent or the organization represented by the respondent. Roles included that of a funder, key partner, secondary partner or other.

***Type of organization represented by respondent.*** This categorical variable provided information on the type of organization represented by the respondent, selected from a list that included not-for-profit organization, business, government, other, or not applicable. From the responses entered into the 'other' field, two categories were created, community organization and university.

***Position of respondent within organization.*** Where applicable, the respondent indicated whether the position they occupied in their organization was that of board

member, manager/director, administrator, project leader, researcher or policy analyst, or other.

***Paid or volunteer position.*** Regarding their positions, participants were also asked whether theirs was a paid or volunteer position.

***CCI's stage of development.*** Participants were asked to indicate the stage of development of their CCI among the following categories: establishing partnerships and/or developing a governance structure; gathering information about community conditions related to the issue of concern; developing an action/strategic plan or strategies; implementing an action/strategic plan or strategies; or monitoring results and/or adjusting plan/strategies based on results.

***Number of years CCI has existed.*** This was an open field in which respondents could provide the number of years that the CCI had existed. For analysis, it was subsequently recoded into a dichotomous variable, based on the median, into new (less than 5 years with its current key partners) and established (5 or more years).

***Number of participants.*** The approximate number of participants involved in the CCI was also captured and then recoded into two categories, based on the median, indicating the size of the CCI from small (15 or fewer participants) to large (more than 15 participants).

***Method of collaboration.*** This categorical variable identified whether the CCI communicated mainly through regular face-to-face meetings, occasional face-to-face meetings supported by other modes of communication (telephone, e-mail, etc.) or mainly by telephone, e-mail or other Internet-based tools. For analysis, this variable was recoded

into a dichotomous variable, split between those CCI's that collaborate via regular face-to-face meetings and those that use other methods.

***Sectors represented.*** Due to the importance placed on the multisectoral composition of CCIs in the literature, information was gathered about the types of organizations involved in CCIs as represented by respondents (not-for-profit organizations, businesses, government, community and other). This categorical variable was dichotomized between those CCIs that involved all three sectors (civil, private and public sectors) and those involving two or fewer.

***Primary focus of CCI.*** The primary focus of the CCI's work was captured, with categorical options of poverty reduction, immigration settlement, early childhood education, homelessness or other. From the 'other' responses provided, additional categories were created including health, children & youth, community well-being, safety, and family supports.

## **Procedure**

The Carleton University Ethics Committee approved this study prior to participants being recruited to complete the online survey. A survey invitation (Appendix A), which included background information about the research project and a URL link to the informed consent form (Appendix B) and survey (Appendix C), was sent via email to potential participants.

The online survey was hosted in English only on the SurveyMonkey website. Potential respondents first completed an informed consent form (Appendix B), followed by the survey questions (Appendix C). A debriefing form (Appendix D) was made available to both those who did not provide consent and to those who completed the

survey. Participation was voluntary and participants did not receive compensation for their participation.

**Sampling Strategy and Participant Recruitment.** A nonprobability sample was recruited for the present study with an emphasis on recruiting typical cases (i.e. people working directly in comprehensive community initiatives). A targeted sampling strategy was used to contact individuals working in collaborative community initiatives (CCIs). A snowball sampling strategy was also used, with all targeted respondents encouraged to pass the survey link on to others working in CCIs

Participants were recruited from CCIs across Canada directly and using a range of networks to disseminate the survey invitation. In total, over 920 individuals and organizations from across Canada were sent e-mail invitations to participate in the survey. Individuals from three groups were targeted directly, namely Vibrant Communities, a pan-Canadian poverty reduction initiative; United Way of Canada affiliates; and, those involved in Community-University Research Alliances (CURA), a funding program of the Social Sciences and Humanities Research Council of Canada (SSHRC). While those targeted were associated with not-for-profit organizations, the expectation was that the invitation, as specified, would be shared with others involved in CCIs, including those from other sectors. Nonetheless, over 85% of survey respondents were from not-for-profit organizations.

Contact information was obtained from the Vibrant Communities website for the twelve participating CCIs and two members of the coordinating body. The United Way of Canada local United Ways search tool was used to identify the e-mail addresses of over 400 individuals. The Social Sciences and Humanities Research Council (SSHRC)

Awards search engine was used to identify over 30 individuals involved in CURA projects. The search was limited to CURA projects within the “Community Development” discipline from competition years 2006-2009 in hopes of (a) targeting the most relevant projects, and (b) reaching those whose projects had begun, but had not been completed.

Additionally, the survey invitation was sent to those responsible for relevant formal networks and those with informal networks. Formal networks included the Canadian Association of Family Resource Programs (FRP Canada), with over 400 member organizations (FRP Canada), and the Alliance to End Homelessness in Ottawa with close to 70 member organizations (Alliance to End Homelessness, 2009). Informal networks were accessed by sending a request to individuals in the not-for-profit sector and to federal public servants with knowledge or involvement in CCIs to forward the survey invitation to those working in CCIs.

Given that a combined approach of targeted and snowball sampling was used, the specific number of potential participants who were approached but declined to participate is unknown. Although a true response rate is impossible to calculate, of the 192 individuals who logged on to the survey, one declined at the consent stage, and 60 others consented to complete the survey, but went no further. Sixty-eight percent ( $N=131$ ) of those who responded to the consent form completed the survey.

**Group-level concepts measured at the individual level of analysis.** It has been noted that when examining group-level attributes, the measure needs to reference and be analyzed at the group level (Goddard, 2002). While the focus of this study is group-level attributes, an insufficient number of respondents associated with each collaborative

initiative participated to permit a sufficiently large sample at the group-level of analysis. Accordingly, the individual is the primary unit of analysis for this study, though contextual material and questions referenced the group, guiding participants to focus on the collaborative initiative as a whole rather than on themselves as individuals when responding to the survey.

## Results

### Participants

One-hundred and thirty-one ( $N=131$ ) individuals responded to the survey. The average number of years of involvement in a collaborative community initiative (CCI) by participants was approximately five ( $M=4.98$  years,  $SD=3.76$ ;  $N=117$ ). The majority of respondents were managers or directors (59%;  $N=114$ ) in paid positions (87%;  $N=116$ ) within not-for-profit organizations (90%;  $N=114$ ) that were key partners in a CCI (78%;  $N=117$ ).

Participants who indicated the area of focus of their CCI ( $N=110$ ) were involved in CCIs covering a range of topics including early childhood education (25%), poverty reduction (18%), health (15%), immigration settlement (8%), homelessness (7%), and children and youth (6%). CCIs were, for the most part, in the later stages of development with 51 percent implementing action plans or strategies and 28 percent monitoring results. The CCIs referenced by participants who provided information on duration have existed for an average of about six years ( $M=5.76$ ,  $SD=4.5$ ;  $N=108$ ) with a median number of 14.5 organizational-level participants in each ( $M=22.39$ ,  $SD=43.76$ ;  $N=104$ ).

### Preliminary Data Analyses

**Data Screening.** Basic data screening procedures were conducted to examine the data for errors, outliers, and assumptions of normality. No major problems were uncovered. See Appendix E for a complete description of data screening procedures and results.

**Basic Descriptive Statistics.** Table 1 provides the basic descriptive statistics for each continuous variable examined in this study, including means, standard deviations and inter-variable correlations. In general, respondents rated their CCIs high on all scales, generally somewhat agreeing or agreeing with positive statements about their CCIs. In terms of the two outcome variables of primary interest, *perceived group performance* ( $M=5.89$ ;  $SD=.74$ ) and *perceived collective efficacy* ( $M=5.82$ ;  $SD=.86$ ) both had average scores of almost six on a seven-point scale. Overall, respondents seemed to feel quite positively about the collective capacity of their CCIs to achieve stated goals, and about the groups' overall performance.

With respect to the primary dependent and independent variables of interest, all bivariate correlations were in the expected direction, with moderate, positive relationships between them. Indeed, as shown in Table 1, higher levels of *perceived group performance* were associated with higher levels of *perceived collective efficacy* as well as higher levels of each source of collective efficacy information. Not surprisingly, *perceived group performance* was positively associated with better work-related *guidance*.

In terms of continuous contextual variables, only two significant bivariate relationships were observed. Specifically, the number of years that the respondent had been involved with the specified CCI was positively correlated with *verbal persuasion*

( $r=.25, p<.01$ ) and with *enactive mastery experience* ( $r=.19, p<.05$ ). The longer an individual's tenure with a particular CCI, the more they tended to report direct experience with success in the work of the CCI and experience with positive feedback. Table 2 provides descriptive statistics on contextual categorical variables. These figures show minimal variability within the sample. As stated earlier, the majority of respondents were paid management within the not-for-profit sector whose organization was a key partner in a CCI that was in the implementation phase of the initiative.

Table 1  
Means, Standard Deviations, and Inter-Scale Correlations

Variables	1	2	3	4	5	6	7	8	9	10
1. Perceived Group Performance	---									
2. Perceived Collective Efficacy	.69**	---								
3. Enactive Mastery Experience	.62**	.64**	---							
4. Vicarious Experience	.61**	.51**	.60**	---						
5. Verbal Persuasion	.62**	.61**	.66**	.50**	---					
6. Group Affective State	.70**	.75**	.52**	.43**	.45**	---				
7. Guidance/Informal Leadership	.62**	.65**	.55**	.55**	.55**	.60**	---			
8. Number of Years CCI Existed	.04	.07	.16	.07	.11	.03	-.03	---		
9. Number of CCI Participants	-.08	.02	.05	.06	.06	-.08	-.04	-.02	---	
10. Number of Years Respondent Involved in CCI	.10	.08	.19*	.06	.25**	.01	.05	.58**	-.06	---
Mean	5.89	5.82	5.88	5.62	5.76	5.75	5.35	5.76	22.4	4.98
Standard Deviation	.74	.86	.93	.95	.93	1.02	1.35	4.50	43.8	3.76

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

Table 2  
Descriptive Statistics on Contextual Variables

Variables	Levels	Valid Percent
Number of Years Respondent has been involved in CCI	<4 years	48.7
	>=4 years	51.3
Respondent/Organization's Role within CCI	Funder	3.4
	Key Partner	77.8
	Secondary Partner	8.5
	Coordinator	4.3
	Other	6.0
Type of Organization	N/A	2.6
	NFP Organization	89.5
	Government	7.9
	Community Organization	1.8
	University	0.9
Respondent's Position in Organization	Board Member	5.3
	Manager/Director	58.8
	Administrator	6.1
	Project Leader	19.3
	Researcher or Policy Analyst	3.5
	Other	7.0
Respondent is paid or a volunteer	Paid	87.1
	Volunteer	12.9
CCI's Stage of Development	Establishing structure	1.8
	Gathering info	5.4
	Developing action plan	14.4
	Implementing action plan	50.5
	Monitoring results	27.9
Years CCI Existed	< 5 years	43.5
	>= 5 years	56.5
Number of CCI Participants	<= 15	59.6
	>15	40.4
Method of Collaboration	Reg Face-to-Face Mtngs	58.9
	Other	41.1
Sectors Represented	< =2 sectors	66.1
	>= 3 sectors	33.9
Focus of CCI	Poverty Reduction	18.2
	Immigration Settlement	8.2
	Early Childhood Educ.	24.5
	Homelessness	7.3
	Health	14.5
	Children & Youth	6.4

**Screening for Covariates.** In order to explore potential relationships between contextual or other 'secondary' variables and key outcomes, preliminary analyses were conducted. A consistent pattern of such relationships may suggest that a particular variable should be included as a covariate in the model predicting a particular outcome or

outcomes. It may be, for instance, that perceived group performance is rated higher in more established versus newer CCIs simply because more established CCIs have had more time to succeed. In order to try to 'rule out' or at least try to statistically control for such possible 'third variable' explanations, a preliminary screening for potential covariates was conducted.

First, the relationships between *perceived group performance* and each contextual variable and between *perceived collective efficacy* and each contextual variable were examined to determine if *perceived group performance* and *perceived collective efficacy* differed as a function of important contextual factors. A series of univariate ANOVAs were conducted to determine whether *perceived group performance* and *perceived collective efficacy* differed as a function of: the number of years an individual had been involved with their current CCI (less than 4 years vs. 4 or more years); the size of the CCIs network (15 or fewer participants vs. more than 15 participants); whether the CCI was new or established (less than 5 years with its current key partners vs. five or more years); the primary method of collaboration among CCI participants (face-to-face vs. other methods of communication); and, the number of different sectors involved in the CCI (2 or fewer vs. 3 or more). *Perceived group performance* and *perceived collective efficacy* did not vary significantly as a function of any contextual variable.

Relationships between quality of *guidance* as assessed by respondents and the main dependent variables were also explored. Moderate positive correlations were observed between *guidance* and *perceived collective efficacy* ( $r=.65$ ), *perceived group performance* ( $r=.62$ ) and *group affective state* ( $r=.60$ ). Specifically, more effective *guidance* was associated with higher *perceived group performance*, stronger perceptions

of *collective efficacy* and more positive levels of *group affective state*. Based on these results, *guidance* was included as a covariate in all of the regression models conducted in the main analyses in an attempt to statistically control for the effects of this variable on *perceived collective efficacy* and *perceived group performance*.

### **Main Data Analyses**

The results of the statistical analyses addressing each hypothesis in turn are presented below.

*Hypothesis 1: Collective efficacy beliefs will predict perceived group performance in comprehensive community initiatives (CCIs), such that respondents who perceive higher levels of collective efficacy will tend to rate group performance highly as well.*

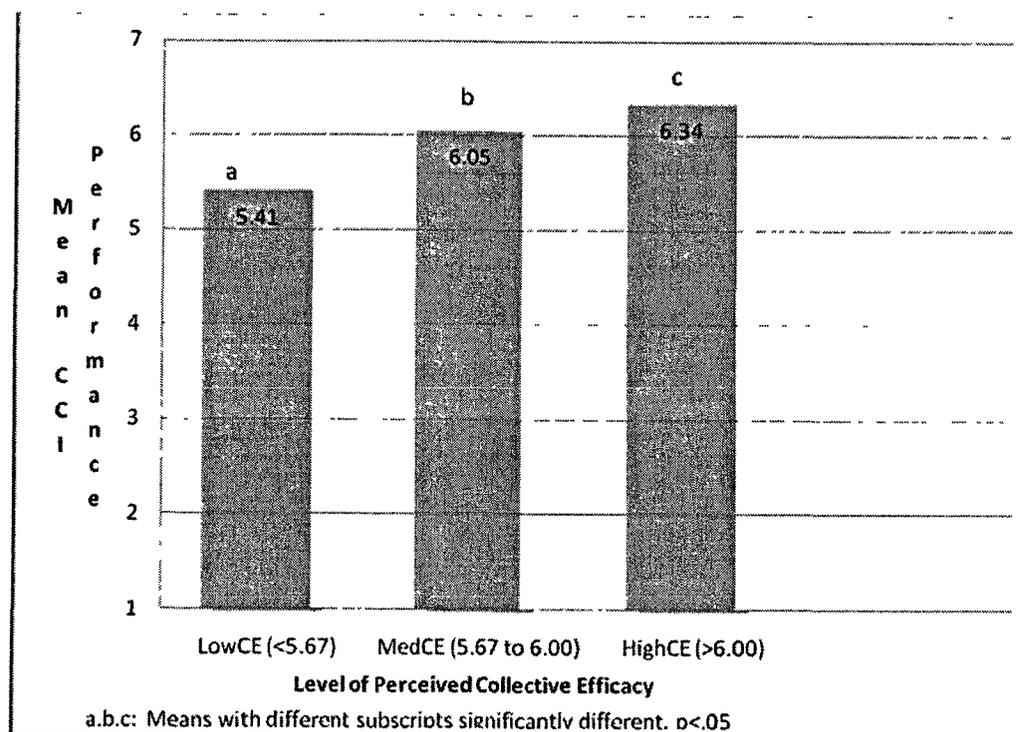
A central theoretical link in this study is between perceptions of collective efficacy and of group performance. Indeed, if believing in a group's collective capacity to achieve its goals does not translate into strong perceived group performance, the concept of collective efficacy belief may be called into question. According to the prediction outlined in Hypothesis 1, *perceived group performance*, or assessments about how well the group is actually doing, should vary as a function of collective efficacy perceptions. In other words, individuals who perceive their group as having a strong belief in its collective capabilities, should also judge the group's performance to be strong, relative to individuals who do not judge their group's belief in its capabilities to be as strong.

To test this central hypothesis, the sample was divided into three groups based on an approximate tertile split of *perceived collective efficacy* scores. Individuals with scores of less than 5.67 (N=41) were classified as 'low' in *perceived collective efficacy*, those

with scores between 5.67 and 6 (N=30) were classified as 'medium', while those with scores above 6 (N=43) were classified as having a 'high' degree of *perceived collective efficacy* belief. A univariate ANCOVA was conducted with *perceived group performance* as the dependent variable, level of *perceived collective efficacy* (low, medium, high) as the independent variable, and reported level of *guidance* as the covariate.

*Perceived group performance* differed significantly across levels of *perceived collective efficacy*,  $F(2, 110) = 12.23$ ,  $p < .01$ . As shown in Figure 2, the mean of *perceived group performance* was rated significantly lower among those with low *perceived collective efficacy* compared to those with moderate and high *perceived collective efficacy*. Moreover, group performance was perceived to be significantly lower by those with moderate and high perceived collective efficacy beliefs.

Figure 2. Mean Reported CCI Performance as a Function of Level of Perceived Collective Efficacy



*Hypothesis 2a: The sources of efficacy belief information (enactive mastery experience, vicarious experience, verbal persuasion, and group affective state) will each explain a unique source of variance in collective efficacy perceptions.*

The second main research question in this study focused on whether Bandura's proposed sources of collective efficacy belief each contributed unique explanatory power to the prediction of *perceived collective efficacy* within CCIs. To address this question, a regression analysis was conducted with *perceived collective efficacy* as the dependent variable, and *enactive mastery experience*, *vicarious experience*, *verbal persuasion*, and *group affective state* as predictor variables. Effectiveness of *guidance* was included as a covariate in the model to statistically control for the relationship between guidance and collective efficacy. The results of the regression model are summarized in Table 3 below.

The combined model explained a significant proportion of the variance in *perceived collective efficacy* ( $R^2=.71$ ),  $F(5,108) = 52.67, p<.001$ . An examination of the unique contribution of each individual predictor revealed that only *enactive mastery experience*, *verbal persuasion* and *group affective state* explained a significant amount of unique variance in *perceived collective efficacy*. Specifically, participants who reported higher levels of direct successful experiences in the CCI (enactive mastery experience) tended to perceive higher levels of *collective efficacy*; those who felt their CCIs were recognized for their efforts (verbal persuasion) also tended to view their CCIs as having higher *collective efficacy*, as did those who believed their CCIs provide a supportive environment (group affective state). Examination of the regression coefficients revealed *group affective state* to be the strongest predictor among the four sources of *perceived collective efficacy* information. Counter to the original prediction, neither *vicarious*

*experience* with success in CCIs, nor quality of *guidance* explained a significant amount of variance in *perceived collective efficacy*.

Table 3

*Summary of Regression Analysis for Perceived Collective Efficacy Belief (N=113)*

Predictor	B	SE B	$\beta$	<i>t</i>	Sig. ( <i>p</i> )
<i>Enactive Mastery Experience</i>	.193	.072	.201	2.670	.009**
<i>Vicarious Experience</i>	.039	.064	.040	.599	NS
<i>Verbal Persuasion</i>	.188	.066	.201	2.821	.006**
<i>Group Affective State</i>	.441	.061	.489	7.269	.000**
<i>Guidance</i>	.080	.057	.105	1.389	NS
Constant	.378	.367		1.029	NS

Notes:  $R^2 = .709$

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

Hypothesis 2b: *The sources of efficacy belief information (enactive mastery experience, vicarious experience, verbal persuasion, and group affective state) will each explain a unique source of variance in group performance perceptions.*

The pattern of results concerning *perceived collective efficacy*, or beliefs about the group's ability to achieve its goals, called to mind the issue of *perceived group performance*. Indeed, one wonders whether the key sources of collective efficacy operate similarly as sources of perceptions of *actual* performance. To address this question, another regression analysis was conducted to test whether the sources of efficacy beliefs themselves predicted *perceived group performance*, while controlling for *perceived collective efficacy* and effective *guidance*.

As shown in Table 4, the pattern of results differs somewhat when predicting *perceived group performance* compared to *perceived collective efficacy*. The overall model explained a significant proportion of the variance in *perceived group performance* scores, ( $R^2=.64$ ),  $F(6, 105)= 31.56$ ,  $p<.001$ . An examination of the details of the model

revealed that, although *verbal persuasion* and *group affective state* remained significant predictors of *perceived group performance*, *vicarious experience* also explained unique variance in *perceived group performance* scores. Interestingly, neither *enactive mastery experience*, nor *perceived collective efficacy* were significantly related to *perceived group performance*.

Table 4

Summary of Regression Analysis for Perceived Group Performance (N=111)

Predictor	B	SE B	$\beta$	t	Sig. (p)
<i>Enactive Mastery Experience</i>	.033	.065	.044	.503	NS
<i>Vicarious Experience</i>	.131	.056	.177	2.322	.022*
<i>Verbal Persuasion</i>	.126	.061	.172	2.068	.041*
<i>Group Affective State</i>	.255	.064	.366	3.969	.000**
<i>Guidance</i>	.051	.050	.088	1.022	NS
<i>Perceived Collective Efficacy</i>	.116	.084	.150	1.386	NS
Constant	1.835	.321		5.713	.000

Notes:  $R^2 = .643$ 

\*Correlation is significant at the 0.05 level (2-tailed)

\*\*Correlation is significant at the 0.01 level (2-tailed)

*Hypothesis 3: Perceived quality of guidance moderates the effect that the proposed sources have on collective efficacy beliefs in CCIs. Specifically, the strength of the relationship between collective efficacy belief and each information source (enactive mastery experience, vicarious experience, verbal persuasion and group affective state) will be enhanced under effective, as compared to ineffective guidance.*

The final research question concerned the role of work-related *guidance* in strengthening or diminishing the effects of the four sources of collective efficacy belief on *perceived collective efficacy*. More specifically, the question was whether effective *guidance* in CCIs facilitates the relationship between Bandura's proposed sources of

efficacy belief information (*enactive mastery experience, vicarious experience, verbal persuasion and group affective state*) and *collective efficacy* perceptions.

To examine the potential moderating effect of *guidance* on the relationships between *perceived collective efficacy* and the four belief sources (*enactive mastery experience, vicarious experience, verbal persuasion and group affective state*) a series of regression analyses were conducted. Following Baron and Kenny (1986), tests for linear moderation effects were conducted. For each analysis, *perceived collective efficacy* was the dependent variable (Y). Predictors in the model included effective *guidance*, or the proposed moderator (Z), the proposed source variable (X: *enactive mastery experience, vicarious experience, verbal persuasion and group affective state*), and the interaction between effective *guidance* and the source variable (XZ). Moderation is indicated by the presence of a significant interaction term in the model (Baron & Kenny, 1986). None of the four interaction terms reached statistical significance. The moderator hypothesis was not supported for any of the source variables examined.

### **Discussion**

A chief aim of the present study was to examine Bandura's collective efficacy construct within the context of comprehensive community initiatives (CCIs). Of interest specifically was (a) the extent to which a group's belief in its capabilities (i.e., collective efficacy belief) translated into perceived group performance in CCI environments, (b) whether Bandura's proposed sources of efficacy belief information (*enactive mastery experience, vicarious experience, verbal persuasion and group affective state*) helped to explain variation in these beliefs, and perceived group performance in the CCI context, and (c) whether effective guidance strengthened collective efficacy by highlighting and 'decoding' these sources of information to aid performance. The results of the study

provided clear support for the first hypothesis. Controlling for the quality of guidance received, the extent to which CCIs believed that they could succeed, as perceived by individual participants, influenced assessments of group performance. In other words, those participants who perceived their CCIs to have stronger collective efficacy belief also reported greater success in their CCI's activities.

The study's second hypothesis was only partially supported by the data. Participants' perceptions of their CCI's belief in its collective capacity were dependent on only three of the four efficacy belief information sources suggested in Social Cognitive Theory (SCT). In particular, participants who perceived their CCI to have strong collective efficacy tended to also assess their CCIs as having high levels of actual success (enactive mastery experience), reported receiving recognition for their efforts (verbal persuasion), and saw their group environment as supportive and encouraging (group affective state). Counter to predictions, vicarious experience was not significantly associated with strong perceptions of collective efficacy. While it lacked predictive strength in relation to collective efficacy, vicarious experience, as well as verbal persuasion and group affective state, were all significantly related to perceived group performance. The strongest predictor among the three variables was group affective state, for both perceived collective efficacy belief and perceived group performance

With respect to the role of guidance, no support was found for the final hypothesis in this study. The effectiveness of the guidance received by CCIs did not influence the strength or direction of the relationship between the sources of efficacy belief information and collective efficacy perceptions.

### **Collective Efficacy Predicts Perceived CCI Performance**

From a theoretical perspective, this study confirms past research in demonstrating perceived collective efficacy to be a strong predictor of perceived group performance (Gully et al., 2002; Stajkovic et al., 2009), and extends its applicability into the CCI environment. The theorized relationship between this group-level attribute and group performance held despite the potential differences in size and structure of CCIs as compared to other groups examined in previous research, such as schools, military units and medical teams. While CCIs are work teams in the sense that many of the participants are involved as a consequence of their work functions, CCIs differ from other work teams in that they are not embedded in one specific organizational context that establishes boundaries and influences interactions among participants (Mathieu, Maynard, Rapp and Gilson, 2008). Yet, as shown in this study, CCIs are able to develop strong collective efficacy beliefs and thereby influence their goal attainment.

### **Enhancing Collective Efficacy and Perceived Group Performance Through Group Affective State and Verbal Persuasion**

In addition to the robust relationship between perceived collective efficacy and perceived group performance, the results of this study highlight the importance of positive group affective state and verbal persuasion in the CCI context. CCIs with more supportive environments in particular (group affective state) and those that received external recognition for their successes from respected sources (verbal persuasion) had both stronger beliefs in their collective capacity to achieve their goals and better perceived group performance. These findings are consistent with both social psychological findings and the guiding principles behind the structure of many CCIs.

Several studies in the social psychological literature have demonstrated support for the role of group affective state (Gibson, 2003; Kiser, 2008) and verbal persuasion (Goncalo et al., 2010; Kiser, 2008; Prussia et al., 1996) in the formation of efficacy beliefs and in support of the relationship between group affective state and perceived group performance (Greer & Jehn, 2007; Prussia et al., 1996; George, 1990). Additionally, the CCI literature points to the potential importance of group affective state in this context, suggesting that working collaboratively in an atmosphere of trust can lead to accomplishing mutual goals (Petersen, 2002) and citing the importance of managing collaborative relationships as critical for success (Wellesley Institute, 2010).

In terms of the Social Cognitive Theory (SCT) framework, this study provides support for a re-examination of the relatively low placement of group affective state (in particular) and verbal persuasion within the hierarchy of sources of efficacy belief information. It also points to the need for a deeper investigation into the factors that activate group affective state and verbal persuasion as sources of efficacy information, over and above direct and indirect experience (enactive mastery experience and vicarious experience), the traditional heavy hitters. Among the four sources of efficacy belief information, group affective state and verbal persuasion both rely heavily on intangible social qualities, including support, trust and respect, and provide potential direction regarding relevant factors in determining which source will be more salient to a group.

In practical terms, the importance of having a supportive and encouraging environment, as seen in this study, may be explained by the collaborative learning approach employed in many CCIs. This structure may serve as a vehicle for sharing best

practices originally conceived, but may also serve to transmit and emphasize positive performance feedback.

### **Inconsistent Roles of Enactive Mastery Experience and Vicarious Experience in Predicting Collective Efficacy and Perceived Group Performance**

In contrast to the consistently positive impact of group affective state and verbal persuasion on perceived group performance and efficacy belief, the roles of enactive mastery experience and vicarious experience seemed to depend on whether the outcome of interest was perceived group performance itself, or perceived collective efficacy.

While the findings related to enactive mastery experience are in keeping with those of other studies in terms of its positive association with collective efficacy beliefs (though not the strength of this association) and the absence of direct association with perceived group performance (Hsu et al., 2007; Jung et al., 2003), vicarious experience was inconsistent in its lack of significant relationship with perceived collective efficacy beliefs (Kiser, 2008; Prussia et al., 1996).

Particularly curious in this context was the lack of relationship between collective efficacy perceptions and vicarious experience. Indeed, central to a collaborative learning model, and the structure of many CCIIs, is the practice of sharing ‘best practices’ (Torjman et al., 2004). One might reasonably infer that knowledge of other CCIIs’ accomplishments (vicarious experience) would be a strong predictor of collective efficacy beliefs, using the logic “If they can do it, so can we”. This was not the case with the present study. Indeed, it was only actual successful performance (enactive mastery experience) that significantly predicted perceived collective efficacy (“We’ve done it before, we can do it again”).

Interestingly, however, vicarious experience was directly linked to perceived group performance in this study. Consistent with this finding, Bandura (1986) indicates that while generally weaker, at times, vicarious experience can have more sway than the direct experience of enactive mastery experience. To understand how this might function, consideration was given to the performance and the types of observed or reported successes of others to which CCIs might be exposed. As mentioned previously, outcome achievement is difficult to measure in the community context (Wellesley Institute, 2010; Kurbisch, 2005). For this reason, the successful experiences of other similar groups (vicarious experience) presented to CCIs in the form of community stories or verbal accounts of best practices, tended to be performance behaviours rather than performance outcomes, i.e. actions that contribute to success rather than instances of success specifically (Mathieu et al., 2008). This is also true of the United Way of Canada's *Collaboration Assessment Guide and Tool*, on which the perceived group performance scale is based. That is, respondents rated the extent to which their CCI had certain key success factors in place, rather than rating their CCI's overall performance. This emphasis on perceived performance behaviours, as opposed to performance outcomes, in both the vicarious experience models associated with CCIs and the perceived group performance scale in the survey instrument could explain the association between vicarious experience and perceived group performance found in this study.

### **Role of Guidance in Interpreting Efficacy Belief Information**

With regards to hypothesis 3, that effective guidance would enhance the strength of the relationship between the four sources of efficacy belief information and collective efficacy, this was not supported. This is surprising given that, as noted earlier, the

collective efficacy literature points to the need for interpretation of the sources of efficacy belief as a means of maximizing the learning and motivational potential of these sources of information (Goddard, LoGerfo & Hoy, 2004; Bandura, 1986). Further, the CCI context seems ripe for assistance in navigating the formation of strong collective efficacy beliefs, since these are larger, less structured governance models than one might find in other domains examined and therefore CCIs might encounter difficulties developing a unified interpretation of efficacy belief information. Indeed, within the CCI literature, guidance plays an important role, facilitating systems change and collective influence (Martin & Faris, 2004; Torjman et al., 2003). However, it is also noted that traditional leadership approaches are not ideal for the CCI context, with “collaborative leadership” being advocated in the CCI literature (Cheuy, 2010). As the name suggests, this is a collaborative approach to leadership, involving several people in leading and learning (Cheuy, 2010).

Indeed, this collaborative leading, along with the active learning approach and observed role of group affective state might negate the need for a guide to act as interpreter. As outlined in the literature, collaborative learning serves to facilitate coordination, the development of synergy and access to existing experience, including how others cope with similar challenges (Doner, 2010; Martin et al., 2004). This in conjunction with the supportive and encouraging environment seen in those CCIs represented by the current study may provide a positive base from which to form collective interpretations of efficacy belief information. This suggests that a distinct role for interpretation of efficacy belief information may not be needed within CCIs.

### **Implications and Limitations**

The results of this study reinforce the value of collective efficacy as a predictor of group performance. The present research also extends the collective efficacy construct to the CCI context, and contributes to the limited research on the antecedents of collective efficacy as outlined in Social Cognitive Theory (enactive mastery experience, vicarious experience, verbal persuasion and group affective state) (Gibson et al., 2007). In terms of the community environment specifically, this study expands our understanding of the functioning of comprehensive community initiatives (CCIs) and provides some direction on how to strengthen the capacity of CCIs to deliver on community outcomes. The findings highlight the importance of social supports in CCIs, both as represented by the internal validation of the group environment or mood (group affective state) and through external validation in the form of recognition of the group's efforts and successes (verbal persuasion). Further study would shed light on the relative importance of these variables and would contribute to a better understanding of how these collective efficacy sources operate within this specific environment.

**Sample representativeness.** The seeming over-representation of certain segments of the CCI population, as seen in the contextual information of respondents (e.g. large percentage were in paid management positions within not-for-profit organizations), and of organizations and of CCIs represented (mainly not-for-profit organizations that are key partners in CCIs currently in the implementation phase), may have played a role in the results observed in this study. Unfortunately, statistics are not available to determine how representative this sample is in relation to the larger CCI population. It is difficult, then, to say how well the results of the present study would generalize to other CCIs.

Based on certain characteristics, it is reasonable to assume that the sample is not far from what would be expected. For example, it is possible that many of those involved, particularly in CCI governance structures, would be in management positions. Further, while it cannot be quantified, it is unlikely that the organizational representation within the general population of CCIs is evenly grouped among not-for-profits, businesses and government representation. It is more likely that the majority of organizations involved in CCIs are not-for-profit organizations. However, given the large percentage of survey respondents who represent not-for-profit organizations (90%), the implication is that the sample is not representative of CCIs. Alternatively, if the sample is representative, CCIs are not the multi-sectoral entities defined by the model, but rather are not-for-profit lead and run initiatives with occasional involvement from businesses, government and community residents/volunteers, as these make up only ten percent of the sample.

Overall CCI composition aside, the sample used in the present study may not adequately reflect other important aspects of the diversity of CCIs or CCI participants. Given that the majority of respondents are involved in established CCIs (78% implementing or monitoring stages), those that are just starting may be underrepresented, and based on the selection criteria, those that did not succeed are not included. One wonders whether (and to what extent) a 'positivity bias' characterizes the results of the present study. Generally, respondents 'somewhat agreed' or 'agreed' with positive statements about their CCIs. This suggests a potential selection issue, recognizing that participants were not randomly selected, but identified through snow-ball sampling, making a certain amount of homogeneity likely among respondents. Respondents self-selected and were offered no incentives for participation. As a result, it may be that

mainly those with positive views elected to share them, representing a selection factor that may threaten the generalizability of these results to CCIs in general.

In subsequent studies, a different sampling strategy or survey design should be considered to minimize the potential for sampling bias. For example, a study that selects for pre-existing performance based on some objective measure may allow for more planned variability in the sample. This could potentially help provide a fuller picture of the relationships among perceived collective efficacy, sources of efficacy belief information and performance in CCIs.

The example provided above could also address another compromise related to measurement in this study; one source was used for both the assessment of performance and all other variables. Although the challenges of effectively assessing CCIs were noted in the literature (Wellesley Institute, 2010; Auspos et al., 2004; Cabaj, Curwood & Leviten-Reid, 2008, Gamble, 2008), an objective measure of CCI performance, independent of CCI participant's assessments, would be ideal. Future work in this area should concentrate on the development of such objective CCI performance assessments.

**Group vs. individual-level analysis.** In terms of measures, it cannot be overlooked that the focus of the study was a group-level attribute and data were gathered and analyzed at the individual-level. This was necessary due to the relatively small sample size of the study. Studies have shown that aggregated individual assessments of a group's collective efficacy belief are positive predictors of the variable in question (Gibson et al., 2000; Goddard, 2002). However, due to the fact that scores were collected and analyzed at the individual-level in this study, the findings do not necessarily reflect each group as a whole and do not allow for differentiation among groups (Gibson et al.,

2000). The small sample size also precluded a fuller analysis of the contextual variables, both of which are issues that could be addressed with a different survey design.

**Correlational vs. causal.** And finally, since this is not an experimental study, causal inferences cannot be drawn. Not only can causation not be established, but the direction of the relationships discussed cannot be known based on this research design. This reinforces the need for the constructs, as applied to CCIs, to be examined in future research through experimental design.

Despite these limitations, this research provides sufficient evidence for the applicability of the collective efficacy construct and its sources of efficacy belief in the CCI context. Collective efficacy within its larger theoretical frame of Social Cognitive Theory (SCT) proposes a model of learning that provides concrete information about how to be successful in reaching a given goal, while providing the necessary motivation and reinforcements to sustain the behaviour/activities necessary for success. The study showed that in the CCI context, better performance was reported by those CCI participants who assessed their CCIs as having stronger collective efficacy beliefs. These beliefs in turn were associated with more experience with successful performance (enactive mastery experience), receiving recognition for their efforts (verbal persuasion), and a supportive group environment (group affective state). While a fourth source of performance feedback, as outlined in SCT, was not significantly associated with perceived collective efficacy, this source, the observed successful performance of another similar group (vicarious experience), along with verbal persuasion and group affective state, were all significantly related to perceived group performance. In all instances, neither the strength nor the direction of the relationships was influenced by the

effectiveness of the guidance received by CCIs. These results expand the application of SCT, and more specifically the collective efficacy construct, and demonstrate how it functions within the context of comprehensive community initiatives (CCIs).

Given the challenges faced by those addressing complex social problems and the limited control that can be exercised on external factors, such as funding and other resources, these research findings provide CCIs with internal factors that can be modified toward improving the successful functioning of these collaborations and thereby enhancing outcomes for the communities they serve.

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## Appendix A - Survey Invitation

You are receiving this message because you are involved in a community collaboration and/or may know of others in your community who are. Researchers at Carleton University are interested in what makes collaborative community initiatives (CCI) successful. For the purposes of this research, a CCI is defined as a long-term community collaboration involving three or more community players to address specific community conditions.

To help us better understand community collaborations of this sort, we are asking you to complete a BRIEF survey concerning your experiences in a CCI. This survey will take about 15 minutes to complete. If you are involved in a CCI, and are willing to share your experiences, please complete the survey at: <http://www.surveymonkey.com/s/5ZYZ7QQ>

This research has been approved by Carleton University's Psychology Ethics Review Board. Your survey responses are completely anonymous.

For this research to be useful, a good response rate is needed. A good response rate includes many people responding to the survey both from within the same community collaboration and from different collaborations.

If you are interested in learning more about the final results of this research, be sure to provide your e-mail address where indicated in the survey. We will be happy to share a summary of the results of this study with you.

Please share this invitation with others within the field of community development. The deadline for responses to this survey is March 7, 2011.

Thank you in advance for contributing to this important research.

Sincerely,

Kim L. Gauvin  
Principle Investigator

Dr. Bernadette Campbell  
Faculty Sponsor

## Appendix B - Informed Consent Form

The purpose of an informed consent form is to ensure that you understand the purpose of this survey and the nature of your involvement. There should be sufficient information for you to determine whether you wish to participate.

The title of this survey/study is "Understanding Collaborative Community Initiatives". Your participation in this survey will provide useful information for those working in collaborative community initiatives (i.e. long-term community collaborations involving three or more community players to address specific community conditions).

The aim of this study is to examine, in the context of community collaborations, whether group beliefs regarding their capabilities influence their ability to achieve set goals, as well as to understand how these beliefs are developed. The study involves completing an on-line survey by indicating your level of agreement to 30 statements about the community collaboration with which you are involved. Additionally, you will be asked several questions regarding aspects of your involvement with the community collaboration (e.g. length of time you have been involved). The survey should take approximately 15 minutes to complete.

**Potential Risk/Discomfort:** These questions should not arouse discomfort, but you are free to skip a question if it makes you uncomfortable.

**Right to Withdraw and Anonymity/Confidentiality:** Your participation in this study is entirely voluntary. At any point during the study you have the right to not complete certain questions or to withdraw with no penalty whatsoever.

The data collected in this experiment are confidential. All data are coded such that your name is not associated with the data. The coded data are made available only to the researchers associated with this project.

This study has been approved by the Carleton University Ethics Committee for Psychological Research. If you have any ethical concerns about how this study is conducted please contact Dr. Monique Sénéchal (Chair of the Carleton University Research Ethics Committee for Psychological Research, 613-520-2600 ext. 1155) or Dr. Janet Mantler (Chair of the Department of Psychology at Carleton University, 520-2600, ext. 2648).

Faculty Sponsor: Dr. Bernadette Campbell, (613) 520-2600 ext. 4080, e-mail: bernadette\_campbell@carleton.ca

Principle Investigator: Kim L. Gauvin, e-mail: klgauvin@connect.carleton.ca

1. I have read the above description of the study entitled "Understanding Collaborative Community Initiatives". The data collected will be used in research publications and/or for teaching purposes. I agree to participate in the study, and this in no way constitutes a waiver of my rights.

Yes

No

## Appendix C - Survey

### PERCEIVED GROUP PERFORMANCE SCALE (Based on United Way of Canada Collaboration Assessment Tool)

Thank you for agreeing to participate in this study. There are a total of 30 statements in this survey that may apply to the collaborative community initiative (CCI) in which you are a participant. Please select one answer for each statement to indicate how much you agree or disagree with each statement, from strongly disagree (1) to strongly agree (7).

The next four statements relate to formation and planning within community collaborations. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

- |   |
|---|
| 1. The collaboration has taken the time to learn about key community organizations and community characteristics, needs and assets. |
| 2. The collaboration has developed a shared vision.   |
| 3. We have taken time to build trust and a sense of shared ownership among participating organizations and individuals.             |
| 4. The collaboration has developed a plan to evaluate its work.   |

The next three statements relate to organizational structure and governance. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

- |   |
|---|
| 5. Participants in each group within the collaboration have the appropriate level of knowledge, skills and decision-making authority (i.e. the “right” people are at each table). |
| 6. There are clear reporting and accountability mechanisms.   |
| 7. Leaders have the required skills and knowledge, and can communicate a compelling vision that engages others in the collaboration’s work.                                       |

The next two statements relate to implementation. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

- |   |
|---|
| 8. Participating individuals and organizations contribute resources to the collaboration (according to their means) such as time, expertise, leadership, contacts, funds, and in-kind supports. |
| 9. People and organizations that participate in the collaboration benefit from being involved and have a stake in the collaboration’s success.  |

### COLLECTIVE EFFICACY PREDICTOR SCALES

The next three statements relate to achievements that may apply to your collaboration. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

<b>Enactive Mastery Experience Scale</b>
1. Our collaboration has demonstrated its ability to set and/or meet specific objectives.
2. Our collaboration has successfully developed and/or implemented a strategy that is grounded in an assessment of community needs and resources.
3. Our collaboration has a good performance record.

The next three statements are about awareness and knowledge of other collaborations. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

<b>Vicarious Experience Scale</b>
1. Our collaboration has taken "best practices" from other initiatives and adapted them to our circumstances.
2. Our collaboration is aware of other community collaborations that have faced serious challenges, and have nonetheless been able to have a positive effect on their community.
3. Our collaboration has learned from other collaborations that have succeeded in making progress in tackling a similar community issue.

The next three statements are about support and recognition. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

<b>Verbal Persuasion Scale</b>
1. Our collaboration is recognized for the beneficial work that we do in the community.
2. Our collaboration is encouraged to remain committed to achieving our goals.
3. Our collaboration receives supportive feedback from respected individuals and/or organizations.

The next three statements relate to collaboration dynamics. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

<b>Group Affective State Scale</b>
1. The atmosphere among those involved in our collaboration is generally positive.
2. Our collaboration is generally able to manage stress through mutual support.
3. Our collaboration provides an encouraging environment to all those involved even when we face obstacles in achieving our poverty reduction goals.

The next three statements relate to leadership or guidance. When responding, focus on your collaboration as a whole, and not on yourself as an individual or on the organization that you represent (if any). Please answer to the best of your knowledge.

<b>Informal Leadership/Guidance Scale</b>
1. Our collaboration receives effective guidance in understanding how we can learn from the experiences of other initiatives.
2. Our collaboration receives effective guidance in understanding how our activities contribute to achieving our goals.
3. Our collaboration is guided to take advantage of opportunities and minimize the effects of obstacles.

### **PERCEIVED COLLECTIVE EFFICACY SCALE**

For the last six statements, it does not matter whether your collaboration has or has not already accomplished these types of activities as the statements are about your collaboration's collective belief in its POTENTIAL to achieve these objectives in the future. Please base your answers on what you believe to be the shared view of those involved in your collaboration and answer to the best of your knowledge.

1. Our collaboration can present a united vision of our goal to others.
2. Despite obstacles, we can remain committed to our common goal.
3. Our collaboration can demonstrate to participants/members that the benefits of participation outweigh the costs.
4. Our collaboration is able to build and/or maintain trust and a sense of shared ownership among participating organizations and individuals.
5. Our collaboration can actively engage those people and organizations that are critical to the success of our collaborative initiative.
6. Our collaboration will be able to acquire adequate resources to address our shared goal over the long-term.

**INDIVIDUAL AND ORGANIZATIONAL INFORMATION**

To help us understand your role in the collaboration, please provide the following information about yourself and your organization (if applicable).

The number of years that I have been involved in this collaboration is approximately:

My role (or that of my organization) in this collaboration is:

Funder

Key partner (one of several decision makers who participates actively and shares responsibility for the initiative)

Secondary partner (participates regularly, but does not share same level of responsibility as key partners)

Other (please specify)

The organization that I represent is a:

Not applicable (no organization represented)

Not-for-profit organization

Business

Government

Other (please specify)

My position within the organization that I represent is:

Board Member

Manager/Director

Administrator

Project Leader

Researcher or Policy Analyst

Other (please specify)

My position within the organization that I represent is a:

Paid Position

Volunteer Position

To help us understand the structure of the collaboration, please provide the following information about your collaboration.

The name or commonly used descriptor of the collaboration I am involved in is (This information is needed to group responses appropriately):

Currently, the collaboration is in the following stage of development:

establishing partnerships and/or developing a governance structure

gathering information about community conditions related to the issue of concern

developing an action/strategic plan or strategies

implementing an action/strategic plan or strategies

monitoring results and/or adjusting plan/strategies based on results

The number of years that this collaboration has existed in its current form (with the same key partners) is approximately:

The approximate number of community participants or organizational representatives actively involved in this collaboration is:

The work of the collaboration is conducted primarily through:

- regular face-to-face meetings
- occasional face-to-face meetings supported by other modes of communication (telephone, e-mail, etc)
- mainly by way of telephone, e-mail or other Internet-based tools (e.g. skype, instant messaging, on-line file repository, Web meeting platforms)
- Other (please specify)

This collaboration involves representatives from (check all that apply)

- Not-for-profit organizations
- Businesses
- Government
- Community (individual residents)
- Other (please specify)

The efforts of this collaboration are focused on (if several apply, select the one that is the primary focus):

- Poverty reduction
- Immigration settlement
- Early childhood education
- Homelessness
- Other (please specify)

## Appendix D - Debriefing

Thank you for completing the *Understanding Collaborative Community Initiatives* (CCI) survey! Your time and effort are greatly appreciated. Without the participation of people like you, important questions in community development could not be answered. Please read the following information about the study to learn more.

If you chose not to complete the survey, please read the following information about the study, but do not return to complete the survey, as it may influence your answers.

### **What are we trying to learn in this research?**

This post-survey information is designed to help you understand the nature of the research. The purpose of the study you just completed is to investigate factors that contribute to the success of collaborative community initiatives. Certain social psychological concepts and theories explain group motivation and behaviour, and may be usefully applied to existing mechanisms within collaborative initiatives.

### **Why is this important to researchers or the general public?**

New approaches involving community-based collaboration show promise in tackling deep-rooted social problems, but collaboration is itself complex. This study seeks to explore whether collective efficacy, a group's belief in its capacity to achieve its shared goal, can be used to explain differences in performance among community collaboration. Further, this study examines whether the associated psychological theory (social cognitive theory) can be used to define simple ways of enhancing these beliefs within community collaborations, thereby helping them to achieve their goal of improving the quality of life within their communities.

### **What are the hypotheses and predictions?**

As mentioned, this study investigates social cognitive theory, and examines the construct of collective efficacy specifically. This theory proposes that a group's shared belief in its capacity to achieve a common goal is related to its eventual performance, with those collaborations with strong beliefs in their capability more likely to succeed than those that do not. Further, the theory identifies four ways a group's collective efficacy can be enhanced, namely, by:

- acknowledging and understanding past achievements;
- creating awareness of the achievements of other similar collaborations;
- providing feedback on steps taken towards goal achievement; and,
- creating a positive general mood or group atmosphere

This study seeks to understand whether these elements, which have been successfully applied in other domains (schools, military units, work groups, medical teams), strengthen the collective efficacy beliefs of community collaborations, and in this way help them realize their objectives. It is believed that these elements are comparable to mechanism already in place in many community collaborations, mainly through collaborative learning structures.

The role that leadership plays in enhancing or activating these sources of group belief is also examined, with the expectation that informal leadership or guidance will facilitate the development of stronger collective efficacy beliefs.

In order to investigate these links, you were asked to answer a series of questions and complete several scales to assess a variety of measures. This data will be analyzed to see if the findings support the above described predictions.

### **Want to Learn More?**

**You can learn more about collective efficacy by reading the following articles:**

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, 9, 75-78.  
( <http://des.emory.edu/mfp/Bandura2000CDPS.pdf> )

Bandura, A. (2008). An agentic perspective on positive psychology. In S.J. Lopez (Ed.). *Positive psychology: Exploring the best in people*. Volume 1, pp. 167-196. Westport, CT: Greenwood Publishing Company. ( <http://des.emory.edu/mfp/Bandura2008PPch.pdf> )

Carroll, J.M., Rosson, M.B., & Zhou, J. (2005). Collective Efficacy as a measure of community. CHI 2005, April 2-7, 2005. Portland, Oregon, USA.  
( <http://jcarroll.ist.psu.edu/files/papers/CE-CHI2005.pdf> )

### **What if you have questions later?**

If you have any questions or comments about this research, please feel free to contact:

#### *Research Personnel:*

**Principal Investigator:**  
Kim L. Gauvin. Carleton University graduate student  
Tel:  
E-mail: [klgauvin@connect.carleton.ca](mailto:klgauvin@connect.carleton.ca)

**Faculty Sponsor:**  
Dr. Bernadette Campbell  
Tel: (613) 520-2600 ext. 4080  
E-mail: [bernadette\\_campbell@carleton.ca](mailto:bernadette_campbell@carleton.ca)

#### *Ethical concerns:*

Dr. Monique Sénéchal, Chair of Carleton University Ethics Committee for Psychological Research  
Tel: 613-520-2600 ext. 1155

#### *Any other concerns:*

Dr. J. Mantler, Chair of the Department of Psychology at Carleton University  
Tel: 613-520-2600 x. 2648

Lastly, for those who responded to the survey questions, please know that you have the right to withdraw your data. That is, if you do not want your data used, tell the principal investigator (via phone or e-mail) that you would like your data withdrawn. If you choose to withdraw your data, all information that you have provided will be eliminated.

## Appendix E – Data Screening

Using a data screening checklist (Tabachnick & Fidell 1996), the data collected were screened on six aspects, namely, the accuracy of the data file; missing data; outliers; normality; homoscedasticity; and multicollinearity and singularity. The first was the accuracy of the data file. Due to the fact that the data were collected using an on-line system, input errors that could be detected were expected to be minimal. Nonetheless, the data were reviewed and questionable data examined further to ensure accuracy. The second element examined was missing data. Despite the decrease in sample size, listwise deletion was used for missing data to achieve unbiased parameter estimates, given that missing values were shown to be missing completely at random (Howell, 2009).

The data were then screened for potential outliers. Among the seven variables of interest, seven cases contained an outlier, spread across five of the variables (perceived group performance and verbal persuasion did not contain outliers). The outliers were assessed to determine cause. It was determined that the outliers were part of the population of interest, but were extreme cases. To determine the impact of these outliers, the analysis was run with the outliers present and with those cases containing outliers removed. The results were comparable, with the same variables being significant regardless of the presence or absence of these outliers. With respect to the dichotomous contextual variables, these were examined to ensure that there were no cases with extremely uneven splits (e.g. 90% and 10%). The most extreme division was 66% and 34%, therefore no cases were deleted.

All independent variables were then screened for normality by verifying the distributions and the measures of skewness and of kurtosis. No extreme values for skewness or kurtosis were present, with the exception of group affective state, which had a value of 3.24 for kurtosis (Hays, 1994).

This study employs both regression analysis and analysis of variance; therefore the assumption of homoscedasticity was checked for the former and homogeneity of variance for the latter (Hays, 1994). For homoscedasticity, simple scatterplots of the variables of interest were examined and variability appeared to be relatively equal. With respect to the assumption of homogeneity of variance, Levene's test was used for continuous dependent variable perceived group performance with three levels of the independent variable perceived collective efficacy (low, medium, high). The results were significant ( $p < .025$ ), which is beyond the threshold of the significance level of .001, therefore the assumption of homogeneity of variance holds.

Finally, the data were examined for multicollinearity and singularity by running bivariate correlations between all variables. None of the correlations were at or above .90, therefore, multicollinearity and singularity were assumed not to be a concern in the analysis.

The cases to independent variable ratio falls within the ideal range of 15-20:1, as the maximum number of predictor variables included in a given model was six (Princeton, 2007). All scales have over 100 cases for each, with over 115 cases for the key variables of interest.