

Measuring Coalition Functioning: Refining Constructs Using Confirmatory Factor Analysis

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Introduction

- ❖ Community coalitions and the Communities That Care (CTC) model are a promising strategy for supporting the implementation of evidence-based practices that prevent drug abuse and delinquency.
- ❖ To understand how coalition functioning influences effectiveness, we must accurately measure and differentiate coalition functioning constructs that can influence coalition effectiveness.
- ❖ This study uses confirmatory factor analysis (CFA) to refine measures of coalition functioning that research suggests are important predictors of coalition effectiveness.

Coalition functioning constructs:

- ❖ *Board efficiency*: members work hard and efficiently
- ❖ *Board cohesion*: coalition unity and group spirit.
- ❖ *Board leadership style*: leadership seeks out members' views and reaches out for help.
- ❖ *Board leadership competence*: leadership is politically skillful and able to mobilize resources.
- ❖ *Sustainability*: board explores funding strategies and believes it can continue beyond current funding.
- ❖ *Community support*: key entities in the broader community are supportive of CTC efforts.
- ❖ *Mobilizer skill*: the lead staff person is knowledgeable and enthusiastic, with strong organizational and interpersonal skills.

Method

Procedure: Data collected through an annual web-based survey of over 1,000 coalition members representing 80 Communities That Care (CTC) coalitions operating in Pennsylvania from 2005-2007.

EFA Analyses tested whether the items comprising each construct developed in 2003 and 2004 maintain factor loadings greater than 0.40 without cross-loading more than 0.40 on a separate factor using data in 2005. We dropped items that do not meet these standards to increase the unique and distinct nature of each coalition functioning construct.

CFA Analyses examined whether item factor loadings remained stable across time by constraining loadings to be equal from 2006 to 2007. We calculated scale reliability estimates and confidence intervals using CFA-based methods. Finally, we used model fit indices to examine whether a higher order Coalition Functioning factor can adequately describe the correlations between our different coalition functioning constructs.

Results

Initial EFA analyses led to the deletion one item from the following scales:

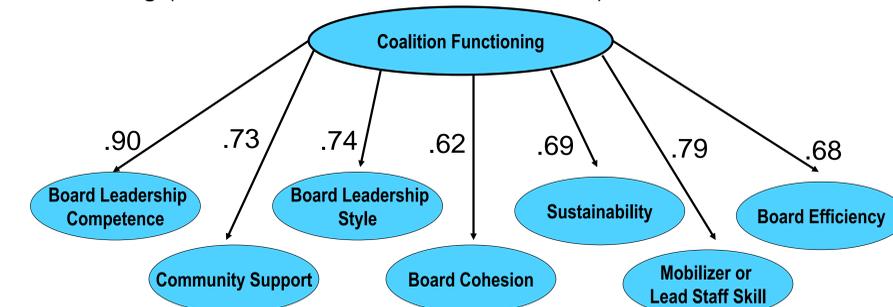
- ❖ Board Efficiency
- ❖ Board Leadership Style
- ❖ Board Cohesion
- ❖ Sustainability
- ❖ Board Leadership Competence

Table 1. CFA-based reliability estimates and correlations between coalition functioning scales in 2007 (N=881).

Variable name	Num. items	Reliability 95% C.I.	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Coalition Functioning	20	.92 - .94	-						
(2) Community Support	4	.72 - .79	.73	-					
(3) Board Cohesion	2	.55 - .73	.62	.45	-				
(4) Board Leadership Style	2	.72 - .82	.74	.54	.45	-			
(5) Board Leadership Comp.	3	.60 - .74	.90	.67	.55	.66	-		
(6) Mobilizer Skill	4	.77 - .85	.79	.58	.49	.58	.71	-	
(7) Board Efficiency	2	.70 - .83	.68	.50	.42	.50	.61	.54	-
(8) Sustainability	3	.69 - .77	.69	.51	.43	.51	.62	.55	.47

Note: Comp. = Competence; Num. = Number; C.I. = Confidence Interval;

Figure 1. Hierarchical confirmatory factor analysis model of coalition functioning (CFI = .95; TLI = .94; RMSEA = .06;).



Note: Coefficients are standardized, with first order latent variable indicators omitted for simplicity.

❖ Constraining factor loadings from 2006 and 2007 to be equal did not significantly reduce model fit (Wald test of parameter constraints = 14.1, $df = 13$, $p = .36$).

❖ The second order coalition functioning construct adequately describes intercorrelations between the first order factors (Higher-order TLI = .99).

❖ Model fit is poor when removing the first order factors and using only coalition functioning to represent intercorrelations between the 20 items (CFI = .66; TLI = .62; RMSEA = .14;)

Discussion

- ❖ The refined measures demonstrate strong psychometric properties as reliable and stable constructs that represent empirically distinct but interrelated aspects of coalition functioning.
- ❖ Results indicate item intercorrelations both cluster into the identified scales and share some common cross-scale variance represented by the overarching coalition functioning construct.
- ❖ Future research examining the influence of both the overall coalition functioning construct and its subcomponents on indicators of coalition effectiveness can help to identify the conditions necessary for coalition success.
- ❖ Future measurement development efforts with new items may be able to identify other distinct and important aspects of coalition functioning.
- ❖ Coalitions can use the measures as part of a feedback process to identify and address coalition functioning weaknesses.

Coalition Functioning Items

Board Leadership Competence¹ – The CTC leadership...

- (a) Is able to mobilize resources to aid CTC
- (b) Has the political knowledge and competence to support CTC
- (c) Is skillful in resolving conflict

Cohesion¹ – How much do you agree or disagree with the following statements.

- (a) There is not much group spirit among members of this coalition
- (b) It is difficult to develop a sense of trust with other board members

Community Support³

- (a) Do influential community leaders understand CTC and why it is important?
- (b) Does the administrative leadership in the school system champion CTC?
- (c) Does the administrative leadership in participating community agencies champion the CTC initiative?
- (d) The CTC Board has collaborative relationships with other key community institutions and coalitions

Board Leadership Style¹ – The CTC leadership...

- (a) Intentionally seeks out your views
- (b) Asks you to assist with specific tasks

Sustainability⁴

- (a) Has CTC developed a realistic, concrete plan for how to continue offering prevention programs when funding from PCCD ceases?
- (b) Has CTC explored potential funding sources for continuing similar programs?
- (c) How likely do you think it is that the CTC process will continue beyond the PCCD funding period?

Board Efficiency¹ – Please describe your experience of local CTC meetings over the past year.

- (a) This is a highly efficient, work-oriented team.
- (b) Team members work very hard.

Mobilizer Skill² - How skilled is your lead staff person in the following areas:

- (a) Interpersonal and communication skills
- (b) Organizational skills
- (c) Enthusiasm and passion for the CTC mission
- (d) Understanding and knowledge of prevention and CTC

Notes: All items use a 7-point response scale;

1 = Scale from Strongly Disagree to Strongly Agree;

2 = Scale from Needs Work to Very Strong;

3 = Scale from No to A Great Deal;

4 = Scale from Not At All to Yes for items (a) and (b);

Scale from Highly Unlikely to Highly Likely for item (c);