Received: 24 October 2018 | Revised: 24 April 2019 | Accepted: 29 April 2019

DOI: 10.1111/1467-8500.12386

RESEARCH AND EVALUATION

WILEY

Measuring dynamic collaborations: Collaborative health assessment tool

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Funding information
Macquarie Group Foundation

Abstract

The changing nature of organisations in the public sector means that collaboration has become an imperative for many. Notwithstanding considerable scholarly agreement about factors contributing to successful collaboration, a broadly accepted model of collaborative practice has not coalesced. In this paper, we put forward an augmented collaboration assessment tool. Building on existing research, we argue that systems thinking can help us better account for the dynamic and multidimensional nature of collaboration – a process in which partner organisations are interconnected and organised in a way that seeks to achieve a common purpose that they could not have achieved alone. We tested the validity of our tool using a three-stage, iterative mixed-methods approach. Our research confirms the value of a diagnostic tool to assist collaboration partners navigate an often uncertain terrain. It further establishes the value of our tool in illuminating a collaboration's dynamic interactions as a means to evaluate 'collaboration health'.

KEYWORDS

assessment tool, collaboration, interconnections, systems thinking

1 | INTRODUCTION

Collaboration has multiple definitions: an overarching structure that can take multiple forms (Larsen, 2017); a stage on a continuum of inter-organisational connections (Hrelja, Pettersson, & Westerdahl, 2016); a cross-sectoral working arrangement (Guarneros-Meza, Downe, & Martin, 2018); and a relational system in which stakeholders pool resources to meet objectives they cannot meet on their own (Stout, Bartels, & Love, 2018). Sullivan (2015) argued that collaboration has become 'the new

normal'. This has occurred due to a range of factors including the emergence of wicked problems and the increasingly networked nature of organisations in the public sector and civil society (Head & Alford, 2015). As Head (2014) noted, previously top-down models of public administration have been replaced by a range of horizontal measures that are more flexible and require greater collaboration. Hence, collaboration is now an imperative for many, if not all, organisations.

Although much effort has been directed towards clarifying what constitutes successful collaboration (e.g. Dal Molin & Masella, 2016; Hrelja et al., 2016; Stout et al., 2018), the development of nuanced measures has been slow. Although many tools exist in the collaboration space, they approach collaborations as static. This is reflected in the practitioner literature (e.g. Centre for the Advancement of Collaborative Strategies in Health, 2002; Keast & Mandell, 2013; McLeod, 2005), where collaboration tools tend to focus on measures of readiness for collaboration and the provision of educational information on how to become ready. This is not consistent with developments in public policy and administration theory and practice more broadly, which has emphasised the dynamic and complex nature of policy systems (Geyer & Cairney, 2015).

In this paper we present a theory-driven augmented tool that seek to take account of the dynamic nature of collaboration and that can be used by practitioners to assess the 'health' of their collaboration over time. In the creation of the tool we drew upon existing collaboration literature as well as key concepts from the field of systems science – specifically, Complex Adaptive System theory. Our starting point is to conceptualise collaboration as a dynamic process and assign collaboration interconnections to two broad domains – structure and process (Dal Molin & Masella, 2016; Stout et al., 2018), with the two domains interacting. We argue that collaborations are, in fact, complex adaptive systems – that is, they are composed of many interactive agents (as opposed to variables), from whose adaptive behaviour stems complexity (Morel & Ramanujam, 1999). Although social network theory provides insight into how 'the structure of social relations determines the content of those relations' (Mizruchi, 1994, p. 330), it does not allow to take into account the complexity of the context in which those relations unfold. For example, social network analysis can map and measure the type, nature, and strength of relationships but not the processes/structures, which often requires qualitative insights. Complex Adaptive System theory allows us to do so by illuminating the feedback loops at play in complex intra- and inter-organisational (and interpersonal) relationships and their resulting emergent properties – that is, self-organising behaviours (Goldstein, 1999). It is widely acknowledged that the complex problems typically addressed by collaboration are themselves embedded in complex adaptive systems (O'Flynn, 2009). This means that partner organisations can use the same mindset to measure collaboration health and address the issue sought to be resolved by collaborating. Given both the imperative to collaborate and the high cost (both societally and in dollar terms) of doing so (Keast, 2011), it is critical to find ways of assisting collaborators without further draining resources.

The aim of this paper is to test the effectiveness of our Collaboration Health Assessment Tool (CHAT) and the validity of the associated measures. Our contributions are threefold. First, we categorise existing characteristics of collaboration to provide a robust basis for developing measures of success and to systematically investigate collaboration health. Second, we propose an augmented measure of collaboration that uses a systems approach. Such an approach allows us to further illuminate the dynamic interactions between elements of process and structure and provides a means for evaluating 'collaboration health'. Third, we recognise that at the practitioner level, organisations have no easy way of assessing the health of their collaborative practices and, therefore, whether the collaboration is going well or not. We put forward a theoretically informed online tool that organisations can use to assess the health of their collaboration. In doing so, we anticipate that the tool presented here will facilitate collaboration so that organisations can work together more effectively towards a shared goal.

2 | LITERATURE REVIEW

Collaboration differs from other forms of inter-organisational relationships (Longoria, 2005). Individual behaviour, exchanges at the organisational level as well as interactions with the broader environment – such as policy and governance environments – and the target population all affect collaboration (Bronstein, 2003; Robson, 2012). In this research, we argue that a systems approach allows us to illuminate the collaboration's dynamic intra- and inter-organisational (and interpersonal) interconnections and, therefore, better account for collaboration as a multidimensional process (Curseu & Schruijer, 2018; Pettersson & Hrelja, 2018; Stout et al., 2018).

2.1 | Collaboration systems

'In the most basic sense, a system is any group of interacting, interrelated, or interdependent parts that form a complex and unified whole that has a specific purpose' (Kim, 1999, p. 2). Complex adaptive system characteristics identified in the literature enable us to conceptualise collaborative initiatives as 'unified wholes' and, therefore, better understand the dynamics of a collaborative initiative and what makes it successful. Collaborations are made of *multiple components*, both tangible and intangible (e.g. people, resources, and services, as well as relationships, values, and perceptions). These components are all *interconnected* through a process of reciprocal interdependence whereby success is reliant on the actions of all collaborators and a recognition that they can achieve together something they cannot alone (Keast & Mandell, 2014). These interconnections give rise to dynamic relationships that influence how the collaboration functions and behaves. Through a process of *feedback loops*, these relationships enable the collaborators to understand the 'wiring' of their system – the implications of their actions (Kim, 1999) – which in turn shapes the strategies that collaborators put in place. In complex adaptive systems these interconnected components are imbued with *emerging properties* – that is, 'the arising of novel and coherent structures, patterns and properties during the process of self-organisation in complex systems' (Goldstein, 1999, p. 49). By self-organising, the collaboration exhibits behaviours – the dynamics of which grow out of the collaboration's internal structure and nonlinear relationships between the components (Rhodes & Mackechnie, 2003). Emergent properties, therefore, refer to those characteristics that make the whole greater than the sum of its parts (Checkland, 2011): the very goal of a collaborative initiative. Collaboration systems are also nested within other 'sub-systems' (e.g. organisations and individuals in those organisations) and are, therefore, made of *layered structures* (Atwood, Pedler, & Pritchard, 2003). These sub-systems are themselves subject to recombination and evolutionary pressures, thus adding complexity (Anderson, 1999). Finally, collaboration systems exist in an environment of which they are interdependent and with which they interact, making them sensitive to the specific context in which they evolve (Van Beurden, Kia, & Zask, 2011). They are, therefore, *contextually bound*. Collaboration systems are capable of learning from, and responding to, their environment. A systems approach is consistent with recent developments in public administration that have called for the development of governance and management approaches to account for the dynamic nature of collaboration (Carey & Harris, 2015).

Complex Adaptive System theory tells us that interconnections, 'the relationships that hold the elements together' (Meadows, 2012, p. 13), are core to the dynamics of a collaboration system. We argue that considering the interconnections between different individuals involved in a collaborative relationship allows the assessment of the strengths and weaknesses of the bond. It, therefore, allows us to understand how feedback cycles give rise to emergent properties such as self-organising behaviour (Morel & Ramanujam, 1999). Further, examining the relationships between the various actors in a collaborative initiative can also provide evidence of progress, for example, through strengthened

connections. Such relationships are particularly relevant in collaboration as goals are often long term and success or failure may not be immediately noticeable.

2.2 | Dimensions of collaboration systems: Structure and process

A review of the literature identified a total of 35 potential characteristics that affect the health of relationships (i.e. dynamic interconnections) in a collaboration system. Collaborative relationships are characterised by the rules governing the arrangement of the collaboration (i.e. *the structure*) as well as how the relationships between collaborative partners function (i.e. *the process*; Dal Molin & Masella, 2016; Stout et al., 2018). To further conceptualise our research, we consolidated the 35 characteristics into dimensions of 'structure' and 'process' and further investigated the most important aspects of each of these (i.e. sub-dimensions; italicised), as discussed next.

Structure' refers to administrative design characteristics of the collaborative arrangement that guide collective action (these characteristics comprise shared goals, shared resources, shared authority, and shared accountability; Thomson & Perry, 2006). 'Process' captures the relational dimensions that define members' interactions with each other and with their environment, and that enable collaborative relationships (these relational dimensions comprise whole-system engagement, communication flows, adaptive capacity, holding/authorising environment; Hrelja et al., 2016).

2.3 | Structure: The rules governing the collaboration

The involvement of partner organisations in defining shared goals ensures the active negotiation and *understanding of the approach* to collaboration to be followed as well as the construction of *shared aspirations* and *understanding of challenges* (Campbell & Vainio-Mattila, 2003). To achieve their common goal, partner organisations tend to share resources. *Sufficient and appropriate resources*, including adequate and consistent *financial support*, are needed to ensure sustainable long-term action (Emerson, Nabatchi, & Balogh, 2012). In a collaboration system, partners are also expected to *share their skills, expertise and competencies* (i.e. shared capabilities) as well as integrate their *data* to develop joint and better integrated strategies and activities (Kania & Kramer, 2011).

Therefore, for the collaboration system to be successful, its members must perceive that the *mutual benefits* to be gained from the relationship will offset any loss of autonomy (Mattessich and Monsey, 1992). Such an offset is often operationalised through a process of shared authority – *shared decision-making and power* (Walter & Petr, 2000) – in which representatives need to be given sufficient *authority to commit* their organisations to avoid stagnation and ensure responsiveness (Huxham, Vangen, & Huxham, 2000). Establishing a sense of shared accountability through clarifying roles and responsibilities, as well as instilling a sense of *shared responsibility* and *shared ownership* of the results and outcomes of the collaboration, is thus important (Dal Molin & Masella, 2016). A shared measurement system can facilitate such a process by enabling members to *monitor each other's performance* and hold each other accountable, as well as promoting continuous learning and improvement (Salignac, Wilcox, Marjolin, & Adams, 2017). *Monitoring the health of the collaboration* can further allow partners to understand how the system functions (Marek, Brock, & Savla, 2015).

2.4 | Process: The functioning of the relationship

In a whole of system approach, large-scale sustainable change requires *the variety of stakeholders affected by the issue to work together*. The community in which a collaboration operates is considered *one of the most important stakeholders* as it influences the goals pursued by the collaboration by

identifying the needs to be addressed (Selsky & Parker, 2010). Due to the diversity of the stakeholders involved, communication flows are critical. This includes *adequate internal communication* between collaborating members as well as *adequate external communication* between the collaboration and the broader community (Reilly, 2001). Regular *reflection and the implementation of progress evaluation* through seeking feedback as well as establishing a *shared language* can also help remove ambiguity and allow collaboration systems to define and develop a consistent framework for action in which to combine their resources (Thomas & McDonagh, 2013).

A crucial emergent property of collaboration systems is their adaptive capacity. That is, the ability to learn and refine as you go. It is, therefore, important to establish a strong *learning culture* (Botcheva, White, & Huffman, 2002) by fostering an environment in which risk-taking and learning from mistakes are possible and *innovative solutions* and approaches are sought through staff involvement at all levels (Keast & Mandell, 2014). The holding/authorising environment is also important to take into account; an effective environment maintains enough pressure to support action without being overwhelming (Chrislip, 2002, p. 5). In this environment, developing *trust* between collaborating members by developing a context in which they feel '*safe*' (Salignac et al., 2017) is critical (Himmelman, 2002; Huxham & Vangen, 1996). A certain *level of urgency* is also suggested as being helpful for collaborative initiatives to evolve. It creates a window of opportunity for the collaborative system and *generates support* from leadership, the community and the public, and, therefore, enhances the likelihood of success (OECD, 2017).

2.5 | Augmented Collaboration Health Assessment Tool

Notwithstanding considerable agreement in the literature about the contributing factors in successful collaboration, we find that current assessment tools do not adequately consider the dynamic nature of collaboration.

Some of the most well-known theory-driven measures of collaboration include those by Thomson, Perry, and Miller (2009) and Marek et al. (2015). Both models acknowledge the dynamic nature of collaboration; however, we find the focus to be stronger in the measure by Marek et al. (2015), which includes dimensions of context, collaboration membership, structure, and process. Thomson et al. (2009) model, which focuses more on collaboration administration and governance, fails to capture specific aspects of collaboration dynamics, such as the ability to learn from successes and failures (adaptive capacity). We note that both models propose relatively long questionnaires that are likely to inhibit uptake in practice. For example, in Thomson et al. (2009), measures are conceptualised around five main dimensions: governance, autonomy, administration, mutuality, and norms, for a total of 56 items. Marek et al. (2015) had also produced a relatively long questionnaire (67 items). Both models have significant strengths that the current research aims to replicate in a shorter measurement format. However, neither model sufficiently emphasises the dynamic interconnection of their dimensions. Marek et al. (2015) did refer to the analogy of 'working gears', which suggests that one dimension of collaboration affects another, but do not elaborate further. This lack of conceptualisation inhibits practitioners' ability to identify what actions should be taken to improve their collaboration health.

Building on extant literature, we define collaboration as the interactions of interconnected and interdependent agents who work within structure and process rules towards a common purpose that they could not have achieved alone. We argue that using Complex Adaptive System theory enables us to take the dynamic behaviour of those structure and process dimensions into account by making visible the wiring of the collaboration system. Systems thinking, thus, allows us to better understand the connections (e.g. communication flows, whole-system engagement) and patterns (e.g. decision-making dynamics, shifts over time) that are present in a collaborative system and, therefore, anticipate the

system's behaviour. On this basis, we develop a multidimensional theory-driven diagnostic tool that organisations can use to assess the health of their collaboration: the CHAT. In this paper, we aim to test the appropriateness and validity of our tool. We argue that by providing collaboration health scores on structure and process dimensions, the CHAT enables collaborating members to visualise and quantify individual components of their collaboration system. Such measurement allows them to better identify the 'big levers' for change, as well as to understand how feedback is generating behaviours so that change is enacted where appropriate and collaboration health is improved (OECD, 2017).

3 | METHODS – VALIDATING THE CHAT

3.1 | Participants and procedures

Individuals who self-identified as working in a collaborative initiative within the social purpose sector were eligible to participate in the survey. Noting the tendency towards a general appropriation of the term 'collaboration' to encompass all forms of working together (Innes & Booher, 2010; O'Flynn, 2009), efforts were made to identify genuine collaborative efforts. Evidence, though retrospective, was sought at various stages of the collaboration process: agreement that the issue was too complex to address alone; interdependency (through articulation of a shared goal going beyond that of the partner organisations involved); and shared results and outcomes. Although it is possible that some of these features act as precursors or outcomes of collaboration rather than evidence of genuine collaborative behaviour, future research, and data collection will enable us to clarify the direction of the relationships.

Using these criteria, we identified 25 collaborative initiatives known to be in operation based on online data and the networks of the researchers. An email was then sent to the initiative's representative to invite them to take part in the study and complete the online survey. The representatives of collaborative initiatives were asked to forward the invitation onwards to individuals working with them, as part of the initiative. The initial sample of collaborative initiatives was supplemented through a snowballing technique.[1] Using the same selection criteria, a further 34 collaborations were selected, which resulted in a total participant pool of 63 people representing 59 collaborations. For those selected participants, an invitation email to take part in an interview was sent.

Survey data were collected online: the completed responses of 63 individuals were used for the study. As a snowballing technique was used to recruit survey participants, it was not possible to calculate a response rate. At the end of the online survey, participants were asked to leave their contact details if they were interested in taking part in a follow-up interview. Interviewees were selected according to the results collected in the surveys, to ensure that a variety of self-reported levels of collaborative health were considered. Eight participants completed a 30-minute follow-up interview. The semi-structured interviews were conducted by telephone, recorded and transcribed for analysis following our institution's research ethics protocol.

3.2 | Measures: CHAT items

3.2.1 | Collaboration health

Four structure and four process dimensions, as well as their associated sub-dimensions, influential to successful collaborative relationships were identified and consolidated from the literature review. Measures from previous research were adapted (Audit Commission, 1998; Hardy, Hudson, & Waddington, 2003; Marek et al., 2015; Thomson et al., 2009): where gaps were identified, the authors developed new measures. This resulted in a list of 135 measures, each mapped to a sub-dimension. By removing

duplicates and measures containing ambiguous language, the list was further refined to 70 measures. The measures were then pre-tested using an existing collaboration known to the researchers, which led to the deletion of 29 measures and the use of a 5-point rather than a 7-point response scale. The 41 remaining collaboration health measures, our penultimate CHAT items, were put forward for testing and refinement using a 5-point agreement scale. A full list of questions and descriptive statistics are provided in Tables 1 and 2. The final list of questions is provided in the Appendix.

3.2.2 | Validating items

Eight measures from Marek et al. (2015) were used to validate the CHAT items. These assessed participants' perceptions of their collaboration's effectiveness, efficiency, and capacity to serve their communities, now and into the future.

3.3 | Data analysis

Three approaches were used to analyse the data. Thematic analysis was used to test the appropriateness of our conceptualisation. A triangulation of the survey and interview responses, and analysis of the correlations between the CHAT items and the validating items, was performed to test the CHAT's validity. The results from these three phases of analyses were then used together to refine and reduce the number of CHAT items comprising the final measure.

The interview data were analysed using a thematic analysis – that is, a systematic search of the dataset was conducted to identify repeated patterns of meaning. This analytical approach corresponded with the exploratory orientation of our study and allowed us to generate unanticipated insights (Braun & Clarke, 2006). It also helped to ensure that the key dimensions were covered in our model and that our conceptualisation resonated with the participants. The interviews were transcribed and coded in NVivo. We adopted a 'theory-led' approach (Locke, 2001) that was shaped by our literature review. Analytic coding involved considering how meaning was constructed, creating conceptual categories and abstracting from the data, which was an ongoing iterative process (Strauss & Corbin, 1998).

The aim of the triangulation was to demonstrate alignment between participants' scores on the collaboration health items and their perceptions of their collaboration's health from the follow-up interviews. Alignment would provide evidence that the CHAT is measuring what it purports to measure. Two of the researchers independently coded the interview transcripts to identify which dimensions of collaboration each participant identified as either going well or not going well. These instances were mapped onto the relevant collaboration health items and coded as either 'high' or 'low'. The reviewers then examined each other's codes, noting agreements and disagreements. A third researcher examined the coded transcripts and made the final decision. Where ambiguity in coding of an item remained, the item was not put forward for testing. Following this, codes for each participant were compared to their survey responses on the relevant collaboration health item. Survey responses of '1', '2' or '3' were re-coded as 'low' and responses of '4' and '5' were re-coded as 'high'. Where participants' transcript codes (e.g. high) matched their survey code (e.g. high), support for the measure was inferred. One of the eight transcripts was not coded as the participant was referring to different collaborations in their survey and follow-up interview. This participant's data were retained for the thematic and correlational analysis as alignment across collaborations was not required for these phases of analysis.

For the correlational analysis, we followed the example of Marek et al. (2015) by hypothesising that CHAT scores would be positively correlated with participants' perceptions of the collaboration's functioning. The validating items assessed were: perceived success in implementing strategies (V1), achieving goals (V2), making a difference in the community (V3), perceived confidence the collaboration will be in operation in 2 years (V4), that goals will continue to be met (V5) and that the

TABLE 1 Structure items and descriptive statistics

	Item number		Mean	*SD*
Shared goal	S1	Our collaboration has clearly defined the problem that it wishes to address	4.40	0.959
	S2	Partners understand why collaboration is required to address the problem	4.27	0.787
	S3	Partners have a clear understanding of what a collaborative approach requires	3.57	1.118
	S4	There is a clear understanding of partners' interdependence in achieving some of their goals	4.00	0.950
	S5	The principal barriers to successful collaboration working are known and understood	3.33	1.020
	S6	The principal facilitators to successful collaboration working are known and understood	3.43	1.064
Shared resources	S7	We have separate funding for coordinating our collaboration's activities	3.58	1.248
	S8	We can access the data we need	3.32	1.133
	S9	There are sufficient funds to sustain collaboration operations for the next 2 years	2.95	1.281
	S10	We have the skills/expertise/specialisation to address the goals of the collaboration	4.28	0.783
	S11	The skills/expertise/specialisation that partners bring to the collaboration are appreciated	4.47	0.804
	S12	Our organisation feels it is worthwhile to work with partner organisations rather than leave the collaboration	4.63	0.630
	S13	Our organisation realises the benefit of collaboration	4.68	0.469
	S14	Our organisation achieves its own goals better working with partner organisations than working alone	4.42	0.645
	S15	There is a clear commitment to collaboration working from the most senior levels of each partner organisation	3.68	1.105
Shared authority	S16	All partners participate in decision-making	3.63	1.097
	S17	Partners have sufficient authority to commit their organisations to decisions	3.86	0.907
	S18	Partners are willing to distribute power in a manner that is in the collaboration's best interest	3.60	1.158
Shared accountability	S19	We have a system in place by which progress towards shared goals is measured	3.46	1.060
	S20	Each partner's areas of responsibility are clear and understood	3.38	1.084
	S21	Partners feel ownership in the results/products of their work	3.70	0.944
	S22	We have a system in place to evaluate how well our collaboration is performing	3.25	1.044

TABLE 2 Process items and descriptive statistics

	Item number		Mean	*SD*
Whole-system engagement	P1	Key stakeholders are members of this collaboration	3.85	0.880
	P2	Partners in our collaboration represent the cultural diversity of our community	3.07	1.158
	P3	This collaboration has an established system to regularly assess community needs and resources	3.19	1.115
	P4	Our collaboration has a diverse range of members (e.g. funders, local government reps)	4.32	0.839
Communication flows	P5	The collaboration has ensured that monitoring and review findings are, or will be, disseminated amongst partners	3.92	0.816
	P6	Our organisation/agency shares information with partner organisations that will strengthen their operations and programs	4.20	0.610
	P7	Communication among partners is effective (promotes understanding, cooperation, and transfer of information)	3.66	1.027
	P8	This collaboration has established communication channels with local community leaders	3.65	1.009
	P9	We use common language to describe our approach	3.84	1.011
Adaptive capacity	P10	We are able to discuss different viewpoints to find alternative solutions	3.67	0.914
	P11	We have a practice of regular reflection to ensure we are staying on purpose	3.43	0.998
	P12	We have a learning process to reflect on our collaboration's progress	3.59	0.912
Holding/authorising environment	P13	We have support and buy in at the appropriate leadership level (e.g., CEO, Director or government level)	4.13	0.907
	P14	Our collaboration has the capability to find allies and partners with authority	4.24	0.797
	P15	There is clear urgency across my community to address the issue	3.87	1.000
	P16	This collaboration provides a safe environment in which disagreements and conflicts between members can be discussed	3.37	1.065
	P17	Partners can share failures with each other	3.69	1.096
	P18	Collaboration members are able to reflect and ask questions of each other when challenges are faced	3.68	0.973
	P19	Collaboration members share an understanding and respect for each other	3.86	0.991

collaboration will continue to make a difference (V6), and perceived effectiveness (V7) and efficiency (V8) of the collaboration compared to that of a single organisation. Given the small sample size and associated lack of statistical power, we adopted an exploratory approach to testing the hypotheses. That is, where collaboration health items were correlated with at least half of the eight validating items, support for that item was inferred. This approach accounts for the fact that although a collaboration may not be 'making a difference in the community' (a validating item), its partners may still be working together effectively and efficiently: change at the community level can take many years to achieve.

4 | RESULTS

4.1 | Thematic analysis

4.1.1 | What does collaboration mean?

We were interested to hear participants' views on what collaboration meant to them and to determine whether common patterns of meaning emerged that were aligned with our conceptualisation of collaboration. This allowed us to ensure that we had not missed any important dimensions in the CHAT.

In line with our conceptualisation, the participants talked of collaboration as a way to 'join forces' between interconnected and interdependent agents, and ensure scaling of impact by minimising isolated efforts (Kania & Kramer, 2011). For example, one participant stated: 'Working in silos just doesn't work so it is imperative that we actually look to work together' (Natalie). At the core of this idea of working together was the importance of a common purpose towards which partners of the collaboration could direct their efforts, and the need for these partners to have complementary expertise. For example, Julie stated that 'The collaboration came together because the leaders of those organizations recognized that we needed to do something differently, there was an opportunity to collectively set an agenda and then design a way forward to deliver on that agenda'. This is what Huxham and Macdonald (1992) referred to as 'collaborative advantage'. This view supports the importance of shared goals, one of our structure dimensions. Participants talked of partnerships with organisations as being able to achieve something that they could not on their own. For example, David stated that 'we are able to do something we couldn't do alone by being in this collaboration'. There was a strong sense that collaborations are systems that make up a whole that is bigger than the sum of its parts (Checkland, 2011), thus supporting our systems-based conceptualisation. If successful, a collaboration was said to enable a holistic approach and enable partner organisations to create change on a different scale: systems change – referring to a whole-system approach, listed under our process dimensions.

4.1.2 | Are there any specific success factors?

Once we had a better idea of what collaboration meant for the participants, we were interested in finding out whether they could 'extract' any success factors in collaborative relationships based on their experience. Both structure and process dimensions listed in our conceptualisation of collaboration were raised.

References to structure dimensions were a recurrent theme among the participants. For example, Sarah referred to the need for 'strong documentation' (i.e. shared resources) as well as 'clear outcome measurement and agreement on what the outcomes are' (i.e. shared accountability). The rules governing the arrangement of the collaboration (i.e. the structure) appeared key to the success of the collaboration. For example, Marie mentioned the need for 'resourcing, somebody who can actually facilitate that collaboration' – 'a binder' – to make sure the collaboration would not 'fragment and kind of disperse across multiple stakeholders'. There was a sense that collaborative relationships were

formed with a shared goal in mind – further reinforcing the importance of this dimension – and that 'formal direction' was needed to steer the process and to keep collaborators connected and 'working as one' in that system.

The health of the relationships themselves also appeared core to working well together; that is, relationships that ensured 'mutual benefits' (Sarah; i.e. structure dimension: shared resources) and 'trust' (Marie; i.e. process dimension: holding/authorising environment). Participants referred to the importance of personal characteristics, such as 'good social skills' (Paul), to establish trust and provide a holding/authorising environment that was conducive to healthy relationships. However, it was strong foundations through a sense of mutual benefits and commitment from partner organisations (i.e. structure dimension: shared authority) not just commitment to outcomes that appeared key; a sense of common purpose/shared goals was critical. For example, Paul stated: 'I've been part of collaborations before where organisations are committed to the end goal but they can't sort of stomach the way that they have to sort of work together with other organisations and not take the credit for it'. Once strong foundations were established, the findings showed that, in line with the literature and our conceptualisation, trust was an important success factor in creating healthy relationships (Huxham & Vangen, 1996). This further highlights the importance of a holding/authorising environment, one of our process dimensions.

Communication flows, one of our process dimensions, was also found to be an important success factor (Reilly, 2001). For example, Natalie stated: 'I think communication is absolutely key whether it's good news or bad news, whether it's comfortable or uncomfortable. … it needs to be face-to-face. Emails can get futile a little bit. People need to be held accountable'. Communication was said to enable strong and healthy relationships among interconnected and interdependent partner organisations, and was seen to be a mechanism to hold people accountable. This not only reinforced our conceptualisation but suggested a link between two of our dimensions: communication flows (i.e. process) and shared accountability (i.e. structure). Communication was also found to facilitate further engagement with the community (i.e. process dimension: whole-system engagement) – one of the most important stakeholders (Robson, 2012) - and ensured collaboration health.

4.1.3 | What's working and what's not?

To get a sense of participants' perception of how well their collaborative initiative was going, and indeed whether it was in line with the results compiled from our quantitative survey, we asked what they felt went particularly well in their collaboration and whether there had been any challenges.

Although communication flows appeared to be a dimension that the participants found important for working well together, it was also one that appeared to be working well for most of them. Most participants talked of holding regular meetings with the aim of building strong relationships as well as actively seeking an open communication style. For example, Julie stated: 'I think that's the one thing that did develop within the collaboration, that people have come to speak more openly about what they're doing, what the challenges are'. This view points to the adaptive capacity of a collaborative system (one of our process dimensions). Others mentioned that communication helped to set clear expectations and keep partner organisations accountable, further supporting a link between our communication flows (i.e. process) and shared accountability (i.e. structure) dimensions. Formal agreements also appeared to be important in enabling good working conditions and to create an effective holding/authorising environment within the collaboration – suggesting another link between two of our dimensions. For example, Sarah stated: 'I think the other thing is to make sure we have very solid agreement in the beginning that we have a public statement that we put out saying this is what the collaboration does.'

When asked whether there had been any challenges, the participants' responses were diverse although two main themes emerged. The first was a lack of stability/consistency in terms of what to expect from 1 year to the next, both in terms of funding (i.e. structure dimension: shared resources) as well as not having a clear pathway (i.e. structure dimension: shared accountability) to address the issue at hand. Another important challenge shared by participants across initiatives related to managing tensions when working together towards a common agenda (i.e. structure dimension: shared goals) while bridging individual expectations and responsibilities (i.e. structure dimension: shared resources). This strongly reinforces the importance of interconnected and interdependent relationships, and also points to another link between two of our dimensions. For example, Marie stated: 'Working out how to actually operate … Everyone's got their own work responsibilities outside of the collective impact model way of operating, so how do you actually find a common way of doing things?' The idea of 'working out how to operate' and fit together while keeping a sense of 'individual identity' was raised very early on, and reinforces the importance of an agreed common agenda (i.e. our shared goals dimension). This again highlights the importance and dynamics of interdependent relationships and reinforces our conceptualisation of collaboration as systems.

4.2 | Triangulation

The triangulation process resulted in 46 transcript codes being put forward for testing. Fourteen of these codes predicted lower collaboration health item scores and 32 predicted higher scores. The participants' relevant collaboration health scores were aligned with 40 of the 46 codes, representing a success rate of 87%. Therefore, it was concluded that the relevant collaboration health items were capturing participants' perceptions of their collaboration. Notably, item S1 ('the collaboration has defined the problem') and S16 were each coded incorrectly for two participants. S13 and P4 were also incorrectly coded. This information was used in conjunction with other data to refine the final list of items for the CHAT.

4.3 | Correlations

For the structure dimension, 15 of the 22 items were retained for the final CHAT (see Table 3). However, of the 15 items retained, five did not have significant relationships ($r < 0.25$) with at least half of the eight validating items put forward by Marek et al. (2015). These items were retained because they are critical indicators of our conceptualisation, as shown by the results of the thematic analysis and triangulation exercise.

In terms of empirical justification, item S10 ('we have the skills and expertise') was retained because it exhibited significant correlations with most of the other structure items and its correlations with the validating items were on the cusp of significance. Items S7 ('funding for coordination') and S9 ('funding for next 2 years') were retained because they may be more strongly associated with the success of *future* collaboration. Items S2 ('understanding of why collaboration is required') and S16 ('shared decision-making') were retained because they were talked about extensively in the follow-up interviews. Interestingly, some of the discussion around these aspects of collaboration was ambiguous, suggesting a need for future research. Like item S10, the correlation of these items with the validating items was also on the cusp of significance. Minor wording changes were made to shorten item S18 ('distribution of power').

Some items were also dropped despite being positively correlated with the validating items. For example, S4, S5, and S6 ('understanding of interdependence', 'known facilitators' and 'known barriers', respectively) were dropped because they were covered sufficiently by S1–S3. Higher and lower

TABLE 3 Bivariate correlations between the process items and the validating items

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	V1	V2	V3	V4	V5	V6	V7
Shared goal	**S1**																													
	S2[a]	0.07																												
	S3	0.31	0.56																											
	S4	0.62	0.37	0.47																										
	S5	0.40	0.45	0.55	0.50																									
	S6	0.46	0.42	0.62	0.60	0.85																								
Shared resources	**S7**[a]	0.15	−0.10	0.05	0.21	−0.07	0.16																							
	S8	0.52	0.26	0.39	0.52	0.37	0.43	0.25																						
	S9[a]	0.30	0.18	0.23	0.33	0.21	0.18	−0.01	0.39																					
	S10[a]	0.66	0.12	0.36	0.47	0.33	0.36	0.21	0.40	0.26																				
	S11	0.14	0.35	0.46	0.27	0.31	0.30	0.12	0.14	0.19	0.34																			
	S12	0.46	0.23	0.32	0.27	0.11	0.25	0.10	0.21	0.20	0.50	0.38																		
	S13	0.11	0.15	0.14	0.11	0.05	0.04	−0.03	0.16	0.03	0.26	0.15	0.53																	
	S14	0.00	−0.17	−0.03	−0.03	−0.19	−0.12	0.03	0.12	0.07	−0.01	0.02	0.06	0.05																
	S15	0.24	0.60	0.43	0.44	0.47	0.54	0.04	0.27	0.26	0.17	0.41	0.33	0.10	−0.03															
Shared authority	**S16**[a]	0.20	0.12	0.40	0.34	0.36	0.30	0.10	0.22	0.06	0.35	0.36	0.06	0.02	−0.08	0.15														
	S17	0.22	0.54	0.23	0.32	0.24	0.28	0.06	0.28	0.06	0.15	0.12	0.30	0.31	0.07	0.65	0.01													
	S18[b]	0.26	0.56	0.58	0.44	0.44	0.54	0.07	0.40	0.36	0.19	0.46	0.24	0.03	0.04	0.52	0.42	0.32												

(Continues)

TABLE 3 (Continued)

	Item	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	S17	S18	S19	S20	S21	S22	V1	V2	V3	V4	V5	V6	V7
Shared account-ability	**S19**	0.36	0.12	0.36	0.56	0.31	0.34	0.33	0.44	0.16	0.32	0.17	0.09	0.01	−0.03	0.26	0.29	0.19	0.19											
	S20	0.40	0.35	0.59	0.63	0.49	0.61	0.23	0.49	0.20	0.39	0.29	0.28	0.18	−0.11	0.54	0.30	0.32	0.34	0.74										
	S21	0.44	0.37	0.58	0.65	0.37	0.55	0.31	0.42	0.28	0.30	0.23	0.35	0.07	−0.11	0.44	0.36	0.34	0.54	0.43	0.65									
	S22	0.33	0.02	0.31	0.45	0.31	0.44	0.26	0.39	0.01	0.40	0.06	0.06	−0.04	0.07	0.28	0.26	0.19	0.12	0.57	0.65	0.41								
Validating items	V1	0.61	0.14	0.38	0.46	0.45	0.51	0.20	0.47	0.19	0.42	0.22	0.28	0.06	−0.04	0.34	0.31	0.25	0.26	0.56	0.61	0.38	0.37							
	V2	0.44	0.13	0.41	0.37	0.12	0.25	0.22	0.41	0.04	0.25	0.29	0.37	0.08	0.00	0.24	0.19	0.19	0.21	0.38	0.54	0.42	0.34	0.70						
	V3	0.27	0.21	0.27	0.44	0.06	0.28	0.13	0.31	0.07	0.24	0.24	0.50	0.10	0.00	0.28	−0.01	0.23	0.25	0.30	0.43	0.37	0.31	0.50	0.65					
	V4	0.40	0.22	0.12	0.41	0.21	0.29	−0.08	0.25	0.26	0.14	−0.03	0.43	0.06	0.03	0.51	0.00	0.50	0.28	0.16	0.25	0.41	0.19	0.26	0.22	0.37				
	V5	0.43	0.28	0.40	0.56	0.37	0.50	0.02	0.33	0.25	0.33	0.34	0.53	0.10	0.03	0.62	0.23	0.44	0.43	0.28	0.46	0.54	0.32	0.47	0.48	0.57	0.81			
	V6	0.24	0.18	0.27	0.25	0.15	0.27	−0.05	0.16	0.13	0.21	0.37	0.57	0.16	−0.02	0.47	0.25	0.36	0.29	0.22	0.32	0.31	0.19	0.43	0.50	0.51	0.59	0.80		
	V7	0.32	0.17	0.40	0.48	0.15	0.35	0.38	0.37	0.13	0.21	0.19	0.44	0.10	0.00	0.50	0.23	0.41	0.41	0.52	0.62	0.61	0.46	0.50	0.63	0.60	0.43	0.65	0.56	
	V8	0.43	0.45	0.58	0.44	0.34	0.48	0.11	0.45	0.00	0.31	0.36	0.41	0.08	0.07	0.46	0.33	0.41	0.48	0.21	0.47	0.61	0.32	0.45	0.60	0.44	0.31	0.51	0.37	0.53

Note: Bold items are retained for final version. Correlations greater than $r = 0.25$ are significant at $p < 0.05$.

[a]Retained, but no relationship with half or more validating items.

[b]Retained but wording is altered for final version.

scores for the other collaboration health items are also indicators of facilitators and barriers, respectively. S15 ('commitment to collaboration') was dropped because it was adequately captured by items assessing 'shared authority', 'shared accountability' and 'buy-in at the leadership level' (P13).

For the process dimension, 12 of the 27 items were retained (see Table 4). Of these, three did not have significant relationships ($r < 0.25$) with at least half of the eight validating items (items P2, P4, and P15). These items were retained due to their centrality in our conceptualisation. Specifically, the three items assess different aspects of community, including the extent to which the collaboration represents the cultural diversity of the community (item P2), sectoral diversity of members (item 4) and perceived urgency by community members regarding the issue (item P15). However, item P2 was simplified to 'those affected by the issue are members of this collaboration', which captured elements of the dropped item P1. The necessity for engaging communities of interest in collaboration activities is widely assumed in the Collective Impact literature (Salignac et al., 2017). However, there has been little assessment of the long-term benefits of community engagement for collaboration success.

Five items were also reworded to either reduce the text (items P3, P5, P10, and P13) or to make a small change to the meaning of the items. For item P11, the text 'we have a practice of regular reflection to ensure we are staying on purpose' was changed to 'we have a practice of regular reflection to ensure we learn as we go' to better align with the dimension of adaptive capacity. Some process items were also dropped despite statistically significant relationships with the validating items, largely due to overlap with other items. P8 ('communication with local leaders') was dropped because of overlap with the dimension of whole-system engagement (P2–4) and P17–18 were dropped because of overlap with P16 ('a safe environment for discussion'). Finally, P19 ('understanding and respect') was replaced with 'collaborators trust each other' because the interview participants spoke significantly more about trust than respect for the collaborators.

5 | DISCUSSION

By drawing on Complex Adaptive System theory, we were able to better account for the dynamic nature of collaboration; that is, collaboration as a 'unified whole' that gives rise to dynamic relationships (i.e. the behaviour of the collaboration). Building on extant literature, we further proposed that collaboration health is best understood and measured through four structure (i.e. shared goal, shared resources, shared authority and shared accountability) and four process (i.e. whole-system engagement, communication flows, adaptive capacity, and holding environment) dimensions – which form the basis of successful collaboration and are measured by the CHAT. Our study enabled us to test our tool and broadly validate the diagnostic CHAT items, which led to several adjustments (e.g. altered assessment scale, simplified language, consolidated measures and additional goal alignment measures).

5.1 | The CHAT: Conceptualisation and measurement

The thematic analysis yielded valuable insights into the factors of greatest salience for those engaged in collaboration. It provided strong support for our categorisation of success factors under the structure and process dimensions as well as our conceptualisation of collaboration initiatives as complex adaptive systems.

Shared goals appeared to be a core dimension of our conceptualisation in that, together, partner organisations can achieve goals they could not have achieved otherwise on their own. This dimension appeared closely linked to that of 'shared purpose' in the systems literature (Kim, 1999) – a characteristic we had not previously emphasised and that we refocused on in our revised version of the

TABLE 4 Bivariate correlations between the process items and the validating items

	Item	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	V1	V2	V3	V4	V5	V6	V7
Whole-system engagement	P1																										
	P2[a]	0.27																									
	P3[b]	0.21	0.31																								
	P4[a]	0.37	0.22	−0.05																							
Communication flows	**P5**[b]	0.10	0.30	0.46	−0.06																						
	P6	0.02	0.17	0.01	0.17	0.17																					
	P7	0.11	0.18	0.26	0.05	0.38	0.36																				
	P8	0.19	0.46	0.53	0.15	0.49	0.20	0.36																			
	P9	0.12	0.14	0.52	0.07	0.41	0.28	0.47	0.32																		
Adaptive capacity	**P10**[b]	0.11	0.07	0.23	0.10	0.33	−0.07	0.46	0.15	0.41																	
	P11[b]	0.19	0.34	0.28	0.29	0.36	0.19	0.39	0.46	0.32	0.46																
	P12	0.21	0.24	0.19	0.29	0.06	0.27	−0.11	0.26	0.08	−0.05	0.36															
Holding/ authorising environment	**P13**[b]	0.23	0.11	0.48	0.03	0.23	0.00	0.37	0.19	0.46	0.32	0.14	−0.08														
	P14	0.37	0.24	0.14	0.22	0.16	0.17	0.15	0.15	0.32	0.09	−0.01	0.03	0.52													
	P15[a]	0.14	0.45	0.36	0.16	0.35	0.20	0.35	0.52	0.38	0.19	0.32	0.14	0.26	0.28												
	P16	0.13	0.17	0.25	0.33	0.20	0.20	0.62	0.33	0.45	0.62	0.56	0.08	0.38	0.09	0.22											
	P17	0.03	0.19	0.29	0.07	0.55	0.43	0.68	0.39	0.48	0.29	0.51	0.22	0.31	0.13	0.36	0.46										
	P18	0.20	0.37	0.12	0.23	0.18	0.11	0.29	0.28	0.04	0.53	0.66	0.39	0.02	−0.08	0.20	0.47	0.27									
	P19	0.17	0.18	0.26	0.22	0.18	0.25	0.67	0.29	0.40	0.67	0.51	−0.05	0.30	0.09	0.27	0.72	0.44	0.46								

(Continues)

TABLE 4 (Continued)

	Item	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	V1	V2	V3	V4	V5	V6	V7
Validating items	V1	0.17	0.32	0.38	0.17	0.47	−0.02	0.26	0.31	0.38	0.56	0.44	0.08	0.30	0.26	0.20	0.43	0.30	0.34	0.39							
	V2	0.06	0.34	0.38	0.20	0.38	−0.04	0.24	0.43	0.23	0.38	0.43	−0.01	0.20	0.03	0.33	0.32	0.23	0.23	0.39	0.70						
	V3	0.14	0.14	0.28	0.28	0.12	0.09	0.27	0.27	0.07	0.35	0.39	0.12	0.20	0.07	0.05	0.31	0.26	0.22	0.48	0.50	0.65					
	V4	0.20	−0.10	0.25	−0.06	0.38	0.20	0.48	0.23	0.34	0.26	0.19	−0.08	0.43	0.24	0.06	0.32	0.44	0.01	0.27	0.26	0.22	0.37				
	V5	0.20	0.04	0.36	0.14	0.40	0.13	0.53	0.38	0.34	0.42	0.42	0.02	0.40	0.14	0.14	0.49	0.52	0.26	0.52	0.47	0.48	0.57	0.81			
	V6	0.18	0.03	0.17	0.12	0.40	−0.04	0.40	0.42	0.10	0.36	0.36	−0.11	0.27	0.06	0.13	0.31	0.37	0.34	0.39	0.43	0.50	0.51	0.59	0.80		
	V7	0.07	0.10	0.35	0.15	0.31	0.18	0.46	0.39	0.28	0.37	0.32	−0.07	0.43	0.03	0.11	0.44	0.43	0.21	0.53	0.50	0.63	0.60	0.43	0.65	0.56	
	V8	0.06	0.23	0.45	0.21	0.34	0.15	0.41	0.33	0.51	0.50	0.60	0.02	0.41	0.10	0.42	0.51	0.46	0.34	0.58	0.45	0.60	0.44	0.31	0.51	0.37	0.53

Note: Bold items are retained for final version. Correlations greater than $r = 0.25$ are significant at $p < 0.05$. Items in bold were retained despite showing sub-optimal validity.

[a]Retained, *but* no relationship with half or more validating items

[b]Retained but wording is altered for final version

tool. Collaboration initiatives, thus, were seen as systems that make up a whole that is bigger than the sum of their parts (Checkland, 2011). In this system, trust was identified as an important success factor in creating healthy relationships (Huxham & Vangen, 1996) and highlighted the importance of the holding/authorising environment – one of our process dimensions. The findings further suggested that some of our dimensions were linked and influenced each other. For example, 'communication flows' was found to enable strong and healthy relationships among interconnected and interdependent partner organisations, as well as hold people accountable (Reilly, 2001). Such a connection suggests a link between communication flows (i.e. process) and shared accountability (i.e. structure). The findings showed working together to be a complex endeavour that goes beyond checklists of organisational or individual characteristics, as often found in the literature. In particular, the CHAT allowed us to understand how partner organisations work towards a shared goal while keeping a sense of 'individual identity' and maintaining a sense that the relationship was mutually beneficial (i.e. shared resources). This highlights the importance and dynamics of interdependent relationships within collaborative endeavours.

Triangulation and correlational analysis provided support for our conceptualisation and for the validity of our collaboration health measure. Importantly, participant data enabled us to reduce the number of CHAT items from 41 to 28. Minor wording changes to simplify the language further reduced any cognitive load. As previously noted, however, the thematic analysis highlighted one potential gap in our measure: the importance of partner alignment to the purpose of the collaboration. The three shared goal items ('the problem is defined', 'understand why collaboration is needed' and 'understand the approach') may capture alignment of purpose when considered together. To fill this potential gap while also introducing an element of objectivity to the measure, our revised version of the CHAT now requires collaboration gatekeepers to state the goals of the collaboration. Participants then rank each goal according to their perceived importance (the categories being 'less important', 'important', and 'critical'). Simple inter-rater reliability statistics can then be calculated to assess how well partners' views of are aligned with the purpose of the collaboration.

5.2 | Limitations and future research

Some limitations of the research should be acknowledged. First, the analysis presented here is preliminary and based on a small sample size. Second, participants were involved in almost entirely different collaborations which gave us an incomplete picture of any one collaboration's health. Although data from several partners within collaborations would have strengthened our analysis, there was sufficient evidence to refine the CHAT. Third, the CHAT has been launched as an online tool for practitioners. There are currently 65 collaborations in Australia using the tool. Future research could identify which dimensions of collaboration are most important for its success, depending on the nature of the collaboration's shared goal, size and maturity, and develop benchmarks that can be used to gauge the progress of collaboration. Lastly, methods such as social network analysis – the study of the pattern of ties or relations between actors (Scott, 2017) – could further enhance the effectiveness of CHAT. As such, the next iteration of the tool will also allow collaborations to map their network structure. This will help them to identify potential gaps in representation (e.g. across sectors) and to hypothesise which links are responsible for driving change or maintaining maladaptive system behaviour. From a research perspective, this will allow us to draw on both social network analysis and systems thinking to answer research questions not previously possible. How do network ties interact with a collaborations' structure and process to create positive or negative outcomes for collaboration? To what extent do high scores across the eight dimensions of collaboration compensate for a weak network structure, and vice versa?

6 | CONCLUSION

Our research confirms the value of a diagnostic tool in assisting collaboration partners to navigate an often uncertain terrain and, in particular, the value of our tool in illuminating the collaboration's dynamic interactions as a means to evaluate 'collaboration health'. The combination of existing expertise in the field of collaboration as well as insights from systems thinking has enabled us to better account for the dynamic nature of collaboration. By providing health scores on structure and process dimensions of collaboration, the CHAT enables better identification of the 'big levers' for change in collaborations and, therefore, enables improvements in collaboration health. In turn, our built-in systems approach enables partner organisations to take the dynamic behaviour of those components into account. This makes visible the wiring of the collaboration system and provides partner organisations with a better understanding of existing connections and patterns and, therefore, the system's behaviour. We anticipate that, through further use and research, our tool will facilitate more effective and efficient work to solve society's most wicked problems and contribute to providing a theory of collaboration that more accurately reflects practice.

ACKNOWLEDGEMENTS

We wish to acknowledge the contribution of Kerry Graham and Liz Skelton in the conceptualisation of this work. This work was supported by the Macquarie Group Foundation.

ENDNOTE

[1] Snowball sampling refers to the generation of a participant pool through referrals made by individuals sharing a common characteristic with the target population (Crouse & Lowe, 2018).

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How to cite this article: Salignac F, Marjolin A, Noone J, Carey G. Measuring dynamic collaborations: Collaborative health assessment tool. *Aust J Publ Admin* 2019;1–23. https://doi.org/10.1111/1467-8500.12386

APPENDIX

Final list of questions

Dimension	Sub-dimension	Measure
Shared goal	Shared aspiration	Our collaboration has clearly defined the problem that it wishes to address
	Shared understanding of challenge	Partners understand why collaboration is required to address the problem
	Shared understanding of approach	Partners have a clear understanding of what a collaborative approach requires
Shared resources	Sufficient resources for coordinating infrastructure	We have separate funding for coordinating our collaboration's activities
	Shared data	We can access the data we need
	Financial support	There are sufficient funds to sustain collaboration operations for the next 2 years
	Shared capabilities	We have skills/expertise/specialisation to address the goals of the collaboration
	Mutually beneficial	Your organisation feels it worthwhile to stay and work within the collaboration
Shared authority	Participatory decision-making	All partners participate in decision-making
	Authority to commit	Partners have sufficient authority to commit their organisations to decisions
	Shared power	Partners are willing to distribute power to achieve our goals
Shared accountability	Tracking progress and impact	We have a system in place by which progress towards shared goals is measured
	Shared responsibility	Each partner's areas of responsibility are clear and understood
	Shared ownership of the final products or outcomes	Partners feel ownership in the results/products of their work
	Tracking collaboration's health	We have a system in place to evaluate how well our collaboration is performing
Whole-system engagement	Stakeholders/community as stakeholders	Those affected by the issue are members of this collaboration
	Needs-based response	Community needs inform our collaboration's responses
	Diversity of stakeholders	Our collaboration has a diverse range of members (e.g. funders, local government reps, community members)
Communication flows	Dissemination of evaluation data	The collaboration reviews and shares its findings
	Adequate internal communication	Communication among partners is effective (promotes understanding, cooperation, and transfer of information)
	Adequate external communication	This collaboration has an external communication strategy to help achieve our goals
	Shared language	We use common language to describe our approach

(Continues)

Dimension	Sub-dimension	Measure
Adaptive capacity	Commitment to seeking innovative approaches	We seek out different viewpoints to find alternative solutions
	Learning culture	We have a practice of regular reflection to ensure we learn as we go
Holding/authorising environment	Generating support	Our collaboration is continuously building support and buy in at a leadership level
	Level of urgency	There is clear urgency across my community to address the issue
	Safety	This collaboration has designed a safe environment in which disagreements and conflicts between members can be discussed
	Trust	Collaboration members trust one another