Title: Implementing the Strengths Model of Case Management; Assessing Practice Three Years after Initial Implementation

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Compliance with Ethical Standards

There are no conflicts of interest to disclose for this study.

Ethics approval was obtained individually for each participating site in Ontario and Newfoundland, and centrally, as prescribed by the government of Québec, for sites in that province. Participants provided informed consent prior to the baseline interview.

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Abstract

While strengths approaches are important to recovery-oriented practice, implementation can be challenging. This study implemented the strengths model of case management (SMCM) in 11 CM teams and assessed the fidelity of delivery and staff perceptions of the model after 36 months using the SMCM fidelity scale and the Readiness Monitoring Tool. Paired sample t-tests assessed change in fidelity from baseline to 36 months. Adjusted regression analyses compared survey responses of direct and management staff. While fidelity ratings significantly improved across all domains, at 36 months they remained suboptimal in supervision practices and use of model tools. Staff perceptions were generally positive but consistently lower for front-line than management staff. Implementing SMCM into existing case management practice with good fidelity is feasible. However, clear support from management may strengthen staff motivation and delivery. A review of practice later in implementation can flag challenges for sustainability and guide implementation support.

Keywords: case management, strengths approach, implementation, fidelity

Background

The Strengths Model of Case Management (SMCM) is a recovery-oriented approach to delivering mental health care that emphasizes client strengths, use of naturally occurring resources in the community, and client agency in the helping process. It is a form of intensive case management, with no more than 20 clients being assigned to one case manager. Developed in the mid-1980s as a response to deficit-oriented approaches to care, over the years SMCM has become more refined and specific (Rapp & Goscha, 2012).

While strengths-based approaches are widely lauded as an important strategy for recovery-focused practice (Deane et al., 2019), providers lack clear guidance about their implementation. SMCM is structured around six core principles to help guide implementation: people can recover and reclaim and transform their lives; the focus is on the individual's strengths rather than their deficits; the community is an oasis of resources; the client is the director of the helping process; the relationship with the case manager is primary and essential; and, the primary setting for work is in the community. Additionally, delivery is based on a set of practice tools that include a strengths assessment, personal recovery plan, group supervision method, and field mentoring (Rapp & Goscha, 2012). These specific practices and methods assist the practitioner in working from a strengths-based orientation By supporting clients to pursue goals that are meaningful to them, the model aims to build client engagement, improve motivation and self-esteem, and aid in their longer-term recovery (Deane et al., 2019). There is growing evidence pointing to the effectiveness and cost-effectiveness of SMCM (Tse et al., 2016, Latimer & Rabouin, 2011).

To further guide implementation and clarify practice expectations, Rapp and Goscha developed the SMCM fidelity scale (Bond & Drake, 2020; Rapp & Goscha, 2012). The development of the SMCM Fidelity Scale has enabled the assessment of strengths model fidelity in both research and practice contexts (Teague et al., 2012), with feedback used to monitor and improve the quality of delivery. The scale has been used in two recent studies where higher fidelity of implementation was associated with better client outcomes in a number of domains, including hospitalization rates, employment/educational attainment and intrapersonal outcomes such as hope and well-being (Fukui et al., 2012; Tsoi et al., 2019). While both studies reported improvements in total fidelity over time, item and sub-domain scores were not reported, limiting learning to improve implementation.

Fidelity reviews assess model delivery in relation to expected practice but do not investigate the factors that may affect delivery. Important among these are the perceptions of those involved in delivery. Implementation is an inherently multilevel enterprise within an organization, and support and collaboration from all levels (providers,

managers, senior leadership) is needed for successful implementation, both initially and over time (Beidas et al., 2016; Salyers et al., 2007; Stirman et al., 2012). As such feedback from organizational staff about the implementation can further inform the program fidelity ratings by highlighting staff views about delivery. With this need in mind, Scaccia et al. (2015) developed a readiness survey that assesses staff perceptions about implementing a new model of care in three domains: *motivation* or beliefs about the innovation that contribute to whether it is used; *innovation-specific capacities* or the knowledge, skills, and conditions needed to implement a particular innovation; and *general organizational capacities* or the structures, functions and cultural aspects of an organization that impact its capabilities to undertake a practice change. The readiness survey can be administered early to guide initial implementation or at a later stage to flag barriers and target improvement efforts. Additionally, the survey can be completed by different stakeholder groups (i.e., senior leadership, management, front line) so that implementation supports can be more targeted (Livet et al., 2020; Scott et al., 2017; Wandersman & Scaccia, 2017).

During 2014-18, our research team received funding to study the incorporation of SMCM into existing case management practice in seven community mental health agencies. This quasi-experimental, longitudinal study assessed whether higher fidelity to the model was associated with better client outcomes (blinded, 2017). During the study, program fidelity reviews were regularly conducted and shared back to inform follow-up support and practice improvement efforts. At 36 months, when the final fidelity review was conducted, program staff also completed the readiness survey. These complementary data were intended to provide a fuller picture of the fidelity of program delivery and staff views at that stage, and where more support might be needed for practice sustainment after the end of the study.

The aims of the current study were to:

1. Describe program fidelity to SMCM after 36 months of implementation.
2. Describe perceptions of the model among front-line and management staff.
3. Identify areas of higher and lower performance and potential implementation barriers to inform future efforts to support and monitor implementation of the model.

The association between fidelity and client outcomes was also assessed in the study and is being reported separately (blinded).

Method

Sample

Seven community organizations with an interest in incorporating the strengths model into their current mental health case management practice joined the study. This included 3 in Ontario, 3 in Québec[1] and 1 in Newfoundland. At one site, implementation of the model started prior to the study. At the other sites, the teams were already delivering intensive case management, but the strengths approach had not been systematically incorporated. After 18 months, one of the 7 sites decided to discontinue implementation and was removed from the sample. The other six organizations implemented the model in 11 case management teams (one to three teams per organization) for the full 36 months. These 11 teams operating within 6 organizations constituted the study sample. Two teams that joined later in the study were excluded from the present analysis due to incomplete fidelity data.

Implementation

Implementation support included an in-person initial training by an international expert on the Strengths Model, an annual on-site coaching visit from the expert along with periodic remote coaching as needed, and ongoing supervision of staff by SMCM team leads in each organization. On-site fidelity assessments were conducted routinely during the study and summary reports of the results and recommendations were shared with each organization.

Measures and data collection

Program fidelity: The Strengths Model Case Management fidelity scale (SMCM-FS) was developed at the University of Kansas School of Social Welfare (Rapp & Goscha, 2012; Teague et al., 2012). It includes 31 items grouped into 9 subdomains and 3 overarching domains: structure (e.g., caseload size, community contact); supervision (e.g., structured group supervision, individual staff supervision), and clinical processes (e.g., use of strengths assessment, use of recovery plan, emphasis on naturally occurring resources and hope-inducing behaviors). Items are rated on a 5-point scale, with a rating of 1 indicating *low or no implementation* and a rating of 5 indicating *high implementation*. A rating of 4 or more is considered to represent adequate fidelity.

Trained assessors (usually two) conducted reviews of each team during a two-day visit to the organization. The visit included interviewing clients, case managers and supervisors, reviewing client charts, and observing staff meetings with clients and team meetings). The assessors each prepared preliminary ratings, met to reach a final

[1] While two of the three Quebec sites are funded and managed by the provincial government, they operate in different locations with different local management teams and so were considered separate organizations for this study.

consensus on the ratings, and reported the results back to the teams explaining their scores and providing recommendations. As part of project oversight, the central research team reviewed fidelity reports to monitor rating consistency across assessor teams.

Assessments were conducted at baseline (around the time when initial training was provided) and then approximately 6, 12, 18, 24 and 36 months later, with the last one completed in March 2018. For budgetary reasons and because fidelity was changing at a slower rate near the end of the project, no assessment was conducted at 30 months.

Staff readiness: The Readiness Monitoring Tool (RMT1.0) assesses extent to which an organization is willing and able to implement a particular innovation (Scaccia et al., 2015; Scott et al., 2017). It assesses three broad components associated with implementation success: motivation; innovation-specific capacities; and general organizational capacities. Each primary component is further divided into subcomponents (see table 1) and measurable items. The items are scored on a 7-point Likert scale from *strongly disagree* to *strongly agree*. Response options also include *don't know*. Ratings of 5 or below are considered to indicate areas for improvement. Results are reported at the component, subcomponent, and item level so that organizations can select one or more specific areas as a focus for improvement (Domlyn et al., 2021).

Development of the scale followed a staged process that included a comprehensive literature review, item generation, item review by content experts, refinement, and pilot testing for construct and criterion validity (Scott). In applications across diverse settings and interventions the tool has captured variation and shown sensitivity to change (Domlyn et al., 2021; Wandersman & Scaccia, 2017). In the present study, as has been done in other applications, some minor changes were made to the tool to be relevant to the study context (Domlyn et al., 2021; Livet et al., 2020).

At the end of the study, the central research team sent out a web-based survey invitation to individuals from each organization with influence over intervention implementation (direct delivery, team leads, managers). Completed surveys were automatically uploaded to a central repository managed by the research team. Participation was confidential but not fully anonymous as respondents provided organization and role information and, at the smaller sites, identification might have been possible. Staff professional details (time in organization and role) were collected but personal information was not. The survey took about 15-20 minutes to complete.

Ethics approval for the study was obtained individually for each participating organization in Ontario and Newfoundland, and centrally, as prescribed by the government of Québec, for the organizations in that province.

Analysis

Fidelity assessment: Subdomain, domain and total fidelity scores were calculated per team for each assessment period. Subdomain scores were the mean of relevant item ratings. Domain and total scores were the mean of subdomain scores. While assessments were conducted regularly during the study, the focus of this paper was the level of fidelity achieved after 36 months of implementation. To assess the change in fidelity from baseline to 36 months, paired samples t-tests were conducted for total, domain and subdomain scores. . Given the number of comparisons, the Bonferroni correction for multiple comparisons was applied, setting the alpha level for significance at 0.004 (0.05/12). Effect sizes with confidence limits are also reported. A rating of 4, regardless of the extent of change, indicates that the team has achieved good adherence to the measured domain/subdomain at 36 months. One subdomain (integration of the personal recovery plan into the treatment plan) was excluded from the analysis due to differences between assessors in the Québec and Ontario sites in how the rating was determined.

Readiness survey: Subdomain and domain scores were calculated for the total sample of respondents. Subdomain scores were the mean of relevant item scores; domain scores (motivation, general capacity, and innovation-specific capacity) were the mean of relevant subdomains. Item responses of 'don't know' were treated as missing and a minimum of item responses (60%) was required for calculating each subdomain score. If the minimum number of items was not answered, the subdomain score was treated as missing and the observation excluded from the analysis. Since staff were clustered within organizations, adjusted linear regression models were run to assess the association between staff role and domain/subdomain scores, with organization as a covariate, using robust heteroskedasticity-consistent standard errors known as HC3 (Hayes et al., 2007)).

Analyses were conducted using SPSS 25 (IBM Corp., 2017).

Results

Fidelity results

Total sample fidelity ratings per domain and subdomain are reported in Table 2. For each domain/subdomains, mean ratings increased from baseline to 36-months, with effect sizes (Cohen's *d* ranging from 0.55 to 4.01) suggesting meaningful change in practice. The changes in fidelity ratings were significant for the total score, the 3 domain scores and 6 of the 8 subdomain scores. In 5 of the 8 subdomains, scores reached or exceeded

good performance (score of 4 or more). At 36 months, the ratings were highest for the structure (M=4.82) and supervision (M=4.18) domains, and lowest for the clinical processes domain (M=3.71). At the subdomain level mean ratings were highest for caseload size (M=5.00), frequency of community contact (M=4.64) and following the team supervision protocol (M=4.68). Ratings were lowest (below 4) for individual supervision (M=3.68) and for completion of the strengths assessment and personal recovery plan tools (M=3.47and 3.20 respectively).

Readiness survey

A total of 78 individuals completed the survey across the six organizations., representing a response rate of 81%. This included 21 management and 57 direct delivery staff. Most respondents had been working for more than 2 years in the organization (98%) and in their current position (88%). Most reported (agreed or strongly agreed) that they had a good understanding of SMCM (94%). Among direct service staff, only 4% reported delivering SMCM for less than 6 months and most (82%) had been delivering for over two years. Among management, over half reported never directly delivering the model, reflecting the fact they were not in front-line roles.

The results are reported in Table 3. The mean domain ratings of innovation specific capacity (M=5.77), motivation (M=5.42) and general capacity (M= 5.28) all exceeded 5. Within the specific capacity domain, subdomain ratings were highest for having knowledge and skills to deliver SMCM and the presence of a program champion (M=6.34 and 5.89 respectively). Within motivation, subdomain ratings were highest for innovation compatibility and advantage (M= 5.80 and 5.58 respectively) and lowest for observability (M=5.04). Within organizational general capacities, subdomain ratings were highest for overall skills and expertise of organizational staff and culture of belonging (M=6.01 and 5.66) and lowest for organization receptiveness to innovation, day to day functioning (structure) and management of resource distribution (M= 5.00, 4.90, 4.75 respectively).

For every survey domain/subdomain, ratings were higher for management than direct staff, and significant differences were found between the two groups for motivation (3 of 4 subdomains) and general capacity (2 of 7 subdomains) in the adjusted regression models. Rates of missing (don't know) responses were high for 2 subdomains (resource use and availability of interorganizational supports), with direct staff accounting for most of the missing responses.

Discussion

Three years after the implementation of SMCM into existing case management programs, this study assessed fidelity of delivery to the model and staff perceptions of their readiness for this practice change. While

strengths approaches are widely embraced as important components of recovery-oriented mental health service delivery, implementation efforts have been hampered by lack of specific guidance on how to operationalize the approach (Deane et al., 2019; Tse et al., 2016). Using the Strengths Model Case Management-Fidelity Scale, we monitored fidelity over 3 years. At 36 months we also assessed staff readiness for implementation. An assessment at this stage was important to gauge the success of the implementation effort and to identify risks for sustained use where follow-up support might be needed. Collecting both staff and program level data provided richer information to guide this work and inform the tailoring of support strategies.

The fidelity results at 36 months suggested that SMCM can be implemented successfully at most sites. Adherence to the model improved over time and, at 36 months, performance was good (rating of 4 or more) overall and in five of the eight subdomains. One of these was group supervision. This is an important component of the model that focuses team meeting discussions on client growth rather than on crisis management and administrative issues (Petrakis et al., 2013). Group supervision can help to build positive staff attitudes and therapeutic optimism about client recovery, and it provides staff with concrete ideas for applying recovery principles in practice (Deane et al., 2019; Tse et al., 2019). The regular meetings and open discussion also build team cohesion as staff share challenges and learn from each other (Rapp & Goscha, 2012; Schuetz et al., 2021). Mean fidelity ratings also exceeded 4 at 36 months for use of naturally occurring resources and hope inducing practice, both important components of a strengths-based approach.

Areas where mean performance remained sub-optimal at 36 months (ratings below 4) included implementation of the supervisor role (weekly supervision and field mentoring) and use of the model tools (strengths assessment and recovery plan). As implementation of these elements at baseline was very low (< 2), they represented the areas requiring the greatest change and they did show significant improvement. Still more work is needed to fully integrate these model components into practice.

Individual supervision requires supervisors to spend approximately eight hours per week providing group supervision, reviewing use of the tools, providing feedback to individual staff, and conducting field mentoring. Managers often have multiple portfolios and they may have difficulty allocating time for this relatively intensive level of support. However, consistent feedback, especially through field mentoring, is key to helping staff learn and integrate new ways into practice, build confidence and develop a positive attitude toward change (Briand & Menear,

2014; Carlson et al., 2016; Schuetz et al., 2021). Without it there is a risk that staff will revert to their usual practices.

The strengths assessment and personal recovery plan are a cornerstone of the model, intended to be used routinely to elicit and document client strengths, stimulate discussions about meaningful goals, identify small, measurable steps to help the client achieve them, and track progress. This concrete planning and ongoing documentation can increase both staff and client confidence in the client's ability to undertake new challenges and over time provide tangible evidence of progress (Schuetz et al., 2021).

The tools, however, can be uncomfortable to use, especially when past interactions have been more informal. It can take time for staff to integrate the tools naturally into sessions with clients rather than view them as an added burden (Schuetz et al., 2021). Use of the tools was addressed during the coaching sessions and there was improvement over time. Still, more time for supervision may have helped as implementation remained a challenge at 36 months.

Feedback from the staff readiness survey suggested overall positive perceptions of the model, with ratings exceeding 5 in all but 3 of 15 subdomains. At the subgroup level, however, a more varied picture emerged. Ratings were lower for front-line than management staff for every domain and subdomain, underscoring the value of examining results by stakeholder subgroup.

The consistently higher ratings by management may reflect several factors. Management may not be aware of day-to-day challenges that the direct service staff face in implementing new practices that are complex such as SMCM. In our survey, over half of the management reported never having been involved in directly delivering the model. Also, adopting a practice is typically a top-down decision and organization planning is often not conveyed to direct staff.

Regarding specific readiness results, the ratings of general organization capacity were consistently lower for direct service staff than management staff and were below 5 in 4 of the 7 subdomains. This may partly be an issue of communication. It is helpful if direct service staff participate in early discussions about the decision to adopt new approaches (Briand & Menear, 2014). Moreover, management can clearly and concretely show their support for practice changes by protecting time for staff to build skills and refine delivery (Beidas et al., 2016; Briand & Menear, 2014; Livet et al., 2020). Forming a site implementation team that includes direct service staff can also strengthen communication by keeping management informed about staff needs and by providing concrete

suggestions to management for integrating the new practice into current processes. The implementation team can also become valuable champions for the practice change in the organization (Meyers et al., 2012b).

Mean ratings were also significantly lower for direct service staff than management staff in three of the four motivation subdomains. Even when there is initial interest, motivation can waver over time as staff begin to face the challenges associated with delivery of a new approach and the scope of work becomes apparent (Brown et al., 2011; Wandersman & Scaccia, 2017). In a study on implementation of integrated primary care that used the RMT, motivation declined from baseline to 12 months due to a decrease in the perceived advantage of the practice change and an increase in the perceived complexity of its implementation (Scott et al., 2017). In the present study, the observability subdomain received the lowest rating by direct service staff. Provider buy-in is enhanced when client improvement is observed and buy-in is an important driver of continued use (Beidas et al., 2016), so lack of observability is an implementation risk.

It is interesting that direct staff rated their knowledge and skills to deliver the model as high, which may suggest that they perceive challenges seeing positive results with some clients as a limitation of the relevance and flexibility of the model rather than of practice skills. In a recent study of delivery of SMCM for youth, providers reported making adaptations to accommodate different client abilities and needs (Schuetz et al., 2019). The potential need for adaptations and what they might look like, while retaining fidelity to the model, should be explored with SMCM staff.

Limitations

A number of study limitations should be noted. Program participation was voluntary and, while one organization discontinued implementation early, those that remained were likely motivated, at least at senior levels, to build capacity in strengths-focused service delivery. Additionally, the sample originates from a small number of case management teams located in a small number of community mental health organizations in Canada. As such, findings may not be generalizable to other services or contexts. Regarding the readiness survey, while responses were confidential, social desirability may have affected willingness to express frank views about the organization and about the new practice. The aim of this study was to investigate overall feasibility and challenges in implementing the SMCM. Variation at the site and team level was not explored but would provide valuable additional learning related to SMCM delivery. Finally, while this quantitative study was able to flag a number of

service delivery challenges, qualitative investigation is needed to more fully explore and understand the findings, particularly the differences in perceptions between direct service personnel and managers.

Conclusion

Recovery principles can be difficult to implement into community mental health practice. This study implemented the strengths model into case management and used standardized tools to assess adherence. The fidelity review provided feedback on alignment of program practices to the intended model and the readiness survey provided complementary feedback that gave voice to the views of both service providers and managers. Overall, these results affirm the feasibility of effectively implementing SMCM into routine practice and the importance of later feedback to flag challenges and target support.

Our findings suggest that direct service staff need time and guidance to build confidence in the approach, to successfully use the SMCM tools, and to see positive results in clients. Views of direct service staff about the model were less positive than management, suggesting that more effort is needed to communicate support for the model across the organization, include direct service staff in planning and provide ongoing training so that supervisors and staff can deliver the model as intended. Targeted efforts to address these challenges may increase likelihood of continued delivery of the model and inform broader efforts to implement strengths-based approaches in mental health care.

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Table 1: Readiness Monitoring Tool Components/Subcomponents

Component/ Subcomponent	Description	Number of items
Specific capacity	Skills, knowledge and conditions to implement a particular innovation	
Knowledge-Skills	Staff possess the abilities needed to deliver the innovation with quality.	4
Champion	An influential person actively supports implementation.	2
Implementation climate	The organization actively supports implementation	4
Inter-organization support	The organization communicates with and obtains support from others to implement the innovation	2
Motivation	Beliefs about an innovation that contribute to the desire to use it	
Compatibility	The innovation fits with other initiatives in the organization, is feasible and timely	4
Complexity	Innovation is perceived as difficult to understand and use.	3
Relative advantage	The innovation is better than what is currently being done	3
Observability	Staff see positive results, staff and clients view the innovation favorably.	5
Priority	The innovation is important, a top priority	2
General capacity	Skills, knowledges & conditions to implement any innovation	
Staff capacities	Staff have the right skills and expertise for day-to-day tasks	4
Culture	There is a shared vision in the organization and understanding of how things are done	6
Leadership	Leadership at multiple levels effectively address problems and challenges	7
Climate	Staff feel positive, valued	4
Innovativeness	The organization is open to change, adapts well	6

Structure	Day-to-day functioning is effective, makes it possible to do things well.	4
Resource use	The organization has clear plans and processes for distributing resources.	4

Table 2: Comparison of Baseline and 36-month Fidelity Ratings (N = 11 teams)

Domain and Subdomains				**Paired samples t-test results**			
		Mean	**SD**	***t(df)***	***p***	***d***	***95% CI***
Structure							
Domain score				4.94(10)	.001	1.49	0.60, 2.35
	Baseline	3.82	.78				
	36 months	4.82	.34				
Subdomain scores							
1. Caseload size				1.84(10)	.10	0.55	-0.10, 1.18
	Baseline	4.55	.82				
	36 months	5.00	.00				
2. Community contact				3.26(10)	.01	0.98	0.24, 1.70
	Baseline	3.09	1.89				
	36 months	4.64	.67				
Supervision							
Domain score				6.10(10)	<.001	1.84	0.83, 2.81
	Baseline	1.98	1.09				
	36 months	4.18	.57				
Subdomain scores							
3. Team supervision				4.77(10)	.001	1.44	0.56, 2.28
	Baseline	2.35	1.49				
	36 months	4.68	.37				
4. Supervisor				6.73(10)	<.001	2.03	0.96, 3.07
	Baseline	1.61	1.12				
	36 months	3.68	.86				
Clinical/Service Delivery							
Domain score				13.29(10)	<.001	4.01	2.18, 5.82
	Baseline	2.15	.54				
	36 months	3.71	.53				
Subdomain scores							
5. Strengths assessment				12.45(10)	<.001	3.75	2.02, 5.47
	Baseline	1.59	.91				
	36 months	3.47	.70				
7. Personal recovery plan				5.99(10)	<.001	1.81	0.81, 2.77
	Baseline	1.64	.71				
	36 months	3.20	1.02				
8. Use of natural resources				8.60(10)	<.001	2.59	1.31, 3.84
	Baseline	2.09	1.09				
	36 months	4.14	.78				
9. Hope inducing practice				4.95(10)	.001	1.49	0.60, 2.35
	Baseline	3.27	.41				
	36 months	4.05	.15				
Total Fidelity Scores				9.30(10)	<.001	2.81	1.45, 4.14
	Baseline	20.19	5.07				
	36 months	32.85	2.20				

Table notes: SD = standard deviation; df = degrees of freedom; d = Cohen's d; CI = confidence interval of Cohen's d; integration; Sub-domain 6 was removed.

Table 3: Readiness Monitoring Tool Component/Subcomponent Ratings by Role

Component/ Subcomponent	All staff				Direct staff				Management staff				Adjusted model[b]	
	N	M	SD		N	M	SD		N	M	SD		F[c]	η^2[d]
Specific capacity	78	5.77	0.92		57	5.76	0.93		21	5.8	0.9		0.03	0
• Knowledge-Skills	78	6.34	0.94		57	6.29	0.8		21	6.46	0.55		0.86	0.01
• Champion	74	5.89	1.13		54	5.75	1.19		20	6.28	0.87		3.35	0.04
• Implementation climate	69	5.36	1.22		49	5.31	1.12		20	5.49	1.45		0.32	0.01
• Inter-organization relations	41	5.05	1.29		23	5.17	1.2		18	4.89	1.42		0.48	0.01
Motivation[a]	78	5.42	1.2		57	5.16	1.27		21	6.12	0.59		11.2***	0.13
• Compatibility	77	5.8	1.25		56	5.52	1.34		21	6.55	0.46		11.82***	0.14
• Relative advantage	77	5.58	1.56		56	5.26	1.66		21	6.44	0.77		9.94**	0.12
• Observability	71	5.04	1.23		51	4.79	1.3		20	5.68	0.79		8.17**	0.11
• Priority	61	5.27	1.48		42	5.06	1.23		19	5.74	1.55		2.83	0.05
General capacity	78	5.28	1.17		57	5.13	1.25		21	5.69	0.82		3.65	0.05
• Staff capacities	77	6.01	0.96		57	5.9	1		20	6.33	0.76		3.04	0.04
• Culture	77	5.66	1.31		57	5.55	1.37		20	6	1.08		1.76	0.02
• Leadership	68	5.3	1.39		47	5.09	0.97		21	5.78	1.3		4.18*	0.06
• Climate	75	5.13	1.52		55	4.92	1.61		20	5.69	1.1		3.84	0.05
• Innovativeness	76	5	1.33		55	4.77	1.41		21	5.6	0.89		6.33*	0.08
• Structure	77	4.9	1.48		57	4.72	1.53		20	5.43	1.18		3.47	0.04
• Resource use	39	4.75	1.38		25	4.47	1.48		14	5.26	1.04		3.07	0.08

P values: *=<.05, **=<.01, ***=<.001

Table notes:

a. Complexity subdomain (within motivation) is not reported due to concerns about confusion with reverse scoring (agreement indicated more complexity).
b. Linear regression modeling with role (management or front line) as predictor, controlling for organization.
c. Degrees of freedom vary per subdomain due to missing.
d. $\eta^2 = 0.01$ indicates a small effect; $\eta^2 = 0.06$ indicates a medium effect; $\eta^2 = 0.14$ indicates a large effect.