



Working together
www.rcis.ro

Revista de Cercetare si Interventie Sociala

ISSN: 1583-3410 (print), ISSN: 1584-5397 (electronic)

MEDIATORS' SKILLS FOR TRUST BUILDING INVENTORY. A PSYCHOMETRIC NETWORKS APPROACH

Joan Albert RIERA ADROVER, Albert SESÉ, Juan José MONTAÑO

Revista de cercetare și intervenție socială, 2022, vol. 77, pp. 106-124

<https://doi.org/10.33788/rcis.77.7>

Published by:
Expert Projects Publishing House



On behalf of:
„Alexandru Ioan Cuza” University,
Department of Sociology and Social Work
and
HoltIS Association

Mediators' Skills for Trust Building Inventory. A Psychometric Networks Approach

Joan Albert RIERA ADROVER¹, Albert SESÉ², Juan José MONTAÑO³

Abstract

Trust building depends both on therapeutic alliance construction and the quality of the intervention. Although trust-building has received much attention in the literature, there are hardly any validated tools to assess it. In order to cover this gap, the main goal of this work is to present a psychometric inventory for measuring both the skills for building a therapeutic alliance and the skills for intervention through a mediation process. 170 subjects, mediators and clients, voluntarily participated in the validation study. An advanced approach by means of psychometric networks was used to estimate and test the two-factor hypothesized model: 1) Skills for building a therapeutic alliance, and 2) Skills for the intervention in the mediation process. An Exploratory Graph Analysis (EGA) with the Triangulated Maximally Filtered Graph (TMFG) was implemented for estimating the inventory latent network with all items. Further bootstrapping techniques were used for assessing the latent structure stability. A Confirmatory Factor Analysis (CFA) over the best fitted EGA model was applied with a robust estimator (WLSMV). Reliability analyses for the best-fitted model were also implemented. Results indicated a stable and well-fitted two-factor latent network model, which was also confirmed by CFA: ($c^2_{scaled} = 216.84$, $df = 169$, $p = .008$, $RMSEA = .039$, $CFI = .986$, $TLI = .984$). All reliability indices for the two-factor model obtained adequate values (above .80) and all items provided adequate psychometric behavior. This new inventory can be useful for developing improvement professional practice training programs, and also for enriching mediation-related higher education curricula.

Keywords: mediation, therapeutic alliance, mediators' skills, psychometric tools, networks.

¹ University of the Balearic Islands, Palma, SPAIN. E-mail: joan.riera@uib.es

² University of the Balearic Islands, Palma, SPAIN. E-mail: albert.sese@uib.es

³ University of the Balearic Islands, Palma, SPAIN. E-mail: juanjo.montano@uib.es

Introduction

Success in mediation depends largely on building trust between the mediator and the parties (Goldberg, 2005; Poitras, 2009; Riera *et al.*, 2020). While it is true that it has not been sufficiently investigated (Deutsch, 1958; Giffin, 1967; Larzelere & Huston, 1980), the scientific community has defined trust building as overlapping expectations and predictability (Deutsch, 1958; Ferguson & Paterson, 2015; McKnight *et al.*, 2012). This object of study has been framed in the therapeutic alliance construct conceptualized by Bordin (1979; 1994), and expanded by Luborsky *et al.* (1988), and Waizmann and Roussos (2009). Mediator credibility and reputation (Fine & Holyfield, 1996; McKnight *et al.*, 2012; Poitras, 2009), content experience (Giffin, 1967; Goldberg & Shaw, 2007; Poitras, 2009), procedural experience (Davis & Gadlin, 1988; Poitras, 2009; Yiu & Lai, 2009), impartiality or neutrality (Davis & Gadlin, 1988; Goldberg *et al.*, 2009; Poitras & Raynes, 2013), and the will and empathy (Goldberg, 2005; Stuhlmacher & Poitras, 2010; Poitras & Raynes, 2013) are the main variables that the literature has stated in predicting trust.

Relationship stability between the mediator and the parties stands out among the main benefits of building trust. This translates into the commitment and cooperation of the parties in mediation (McKnight & Chervany, 2006, cited in Bachmann & Zaheer, 2006; McKnight *et al.*, 1998; Poitras & Bowen, 2002). Two broad categories can be established from the review of studies that have been carried out so far on the skills of mediators in predicting trust building: 1) Skills for building a therapeutic alliance (Lewicki & Tomlinson, 2014; Poitras, 2009; Swan *et al.*, 1995); and 2) Skills for the intervention in the mediation process (Della Noce, 1999; Poitras, 2009; Poitras & Bowen, 2002).

To define the factors that predict confidence building, 37% of the authors used structured or semi-structured interviews for data collection; 7.8% used an unstructured interview; 7.8% used other techniques, such as role playing; and the remaining 49% did not specify the method used, or they wrote theoretical articles. However, it has not been possible to identify the instrument used by authors who used structured or semi-structured interviews for data collection. Only Poitras (2009) published a scale to measure the trust level established between the mediator and the parties. The "*Scale to measure the generation of trust between the mediator and the parties*" was the product of a qualitative research methodology that was used to identify five key factors explaining why parties trust their mediator: degree of mastery over the process, explanation of the process, warmth and consideration, chemistry with the parties, and lack of bias toward either party (Poitras, 2009). Despite these evaluation attempts, to our knowledge, there is no rigorously validated tool for assessing mediators' skills for trust building.

By virtue of this scarce background, the objective of this paper is to propose a model to measure trust building, supported by mediators' skills. It excludes factors based on circumstantial or indirect components, such as the *previous experiences* of the served people (Rotter, 1967), *the trust that the parties acquire through a third person* (Kramer, 1999), or *mediator's reputation*. For accomplishing this goal this study presents the Mediators' Skills for Trust Building Inventory (MSTB-I); a new psychometric instrument that operationalizes mediators' skills in predicting trust generation, and consequently, increases the probability of achieving mediation success. To develop a rigorous instrument that overcomes the limitations of the qualitative techniques used in the literature, a new and advanced approach is used within the framework of psychometric methodology: the psychometric networks (Epskamp *et al.*, 2018). To measure these skills can be very helpful for developing intervention programs: a) for improving mediators' professional practice, and b) for being included in the curriculum of technical or higher studies related to mediation professional training. According to Gulati (1995), these skills can be extrapolated to different intervention contexts.

Methodology

Participants

An intentional non-probabilistic sampling was carried out on two target populations: a group composed by professional mediators enrolled in the Family Mediation Service, and a group of people attended by mediation services for one year. In this way, the validation sample includes both the mediator and the parties' perspective. The total sample was made up of 170 participants, 62 belonging to the professional mediators subsample, and 108 to the people that used the mediation services. For the mediators subsample, 94% were women, 16.1% was ranging from 26 to 35 years old, 41.9% between 36 and 45, 35.5% between 46 and 55, and 6.5% between 56 and 65. Regarding professional qualification, 76.7% had a Law Degree, 13.3% came from Social Work and 10% from Psychology. Most mediators held a master's degree in mediation (89.7%) while the remaining 10.3% continued his/her academic degree training through a specialty in mediation. Regarding the year of completion of postgraduate training, 70% of the total sample completed their studies between 2012 and 2015. Regarding the number of mediations carried out per year, 25.8% have taken between 1 and 3, 29% between 4 and 6, 35.5% between 7 and 9, and 10% more than 10 mediations per year. With respect to the mediation model used, 10% used the traditional model of Ury, Fisher & Patton (2011), 10% the transforming model, 3.3% the circular-narrative model, 3.3% the strategic model, while 73.3% of the sample referred to use an eclectic model. Finally, 58.1% of the mediators did not perform any type of supervision, 12.9%

carried out supervision with an authorized expert supervisor and 29% with an expert colleague.

As for the subsample of people involved in mediation processes (parties), 53.7% were women, 1.9% of the sample ranged from 16 to 25 years old, 13% from 26 to 35, 48.1% from 36 to 45, 35.2 % from 46 to 55, and 1.9% from 56 to 65 years old. Regarding the density of the place of residence, 15.7% of people resided in cities with fewer than 5,000 inhabitants, 43.1% lived in cities with between 5,000 and 40,000 inhabitants, and 41.2% with more than 40,000 inhabitants. Regarding marital status, single people accounted for 39.6%, married 34%, divorced 25.4%, and engaged 1.9%. According to the number of children, 90.7% have a total of 1-2 children, 7.4% have 3 or more children, while 1.9% have no children. The 11.1% lived alone, 24.1% were single-parent families, 25.9% lived as a couple with children, and 1.9% was reconstituted families, while 37% referred to other living units. Regarding the employment situation, 70.4% of the attended people had a job, while the self-employed and unemployed represented 20.4% and 9.3%, respectively. With regard to the highest level of academic education attained, 30.8% had completed university education, 15.4% Higher-level Professional Training, 11.5% Middle-level Professional Training, 25% had completed Baccalaureate, 11.5% ESO, 3.8% had completed Primary Education, and the remaining 1.9% referred to other situations.

Instruments

The conceptual model about the skills in predicting trust generation draws two areas or interest domains: 1) one formed by the skills for the construction of a therapeutic alliance; and 2) other formed by the skills for intervention in the mediation process. A systematic literature review showed that the main skills for building a therapeutic alliance are: to focus on the motivations and interests of the parties (Della Noce, 1999); to clarify the expectations of the parties (Swan *et al.*, 1995); to focus on the needs of the parties (Swan *et al.*, 1995); to support and transmit to the parties that they are there to help them (Poitras, 2009); to express expectations of success (Deutsch, 1958); to spend time talking about informal topics (Poitras & Bowen, 2002); to separate participants from the problem (Ury *et al.*, 2011); to take into account the parties when the mediation process will be developed (Doney *et al.*, 1998); to understand and endorse the parties (Suarez, 2002); and to perform a cooperative attitude, based on the values and beliefs of the parties (Fukuyama, 1995; Lewicki & Tomlinson, 2014).

Regarding the fundamental skills for the intervention in the mediation, the literature has collected the following: to perceive that the mediator is able to favor the overcoming of obstacles (Poitras & Bowen, 2002); to understand that interventions are properly oriented (Rotter, 1971); to focus on understanding the interests and motivations of the other person (Della Noce, 1999); the ability to manage the mediation process (Poitras, 2009); the ability to understand the

conflict (Poitras, 2009); the conflict resolution skills (Poitras & Bowen, 2002); the commitment to the case (Deutsch, 1958); to share the purpose (Deutsch, 1958); neutrality (Poitras, 2009); and to promote the relationship of the parties to the conflict in the face of future negotiations (Poitras & Bowen, 2002).

Once the model's domains of interest were identified, items were generated and selected for the creation of the inventory based on a previous work of the research team (Riera, 2018). An initial item bank was generated consisting of a total of 65 items to try to cover the mastery of skills according to those suggested in the literature. A declarative statement format was used using the first person and with a Likert-type graded response of five grades (from 1 "No agreement" to 5 "Strong agreement"). At all times the inclusion of technicalities was avoided to avoid cultural response bias. A group of five academic professionals and Mediation experts formed a panel that reviewed the initial bank using a Delphi method. Experts' panel assessed adequacy and importance of each item content, as well as their initial assignment to one of the two factors of the inventory latent structure.

After applying Delphi procedure, an inventory composed of 20 items was finally proposed, 10 of which were oriented to the measurement of skills for the construction of a therapeutic alliance, and the remaining 10 to measure intervention skills in the mediation process. Table 1 shows the formulation and content of all the items and their belonging to the two-factor latent structure.

Table 1. Inventory item's contents and latent two-factor structure

Skills for building a therapeutic alliance
F1_1. Focus on the motivations and interests of the parties
F1_2. Clarify the expectations of the parties
F1_3. Focus on the needs of the parties
F1_4. Support and transmit to the parties that are there to help them
F1_5. Express expectations of success
F1_6. To spend time talking about informal issues
F1_7. Separate people from the problem
F1_8. Take into account the parties during the mediation process
F1_9. Understand and endorse the parties
F1_10. Cooperative attitude, based on the values and beliefs of the parties
Skills for intervention in the process
F2_11. To perceive that the mediator is a person capable of favoring overcoming obstacles
F2_12. Understanding that the interventions are properly oriented
F2_13. Focus on the parties understanding the interests and motivations of the other person
F2_14. Ability to manage the mediation process
F2_15. Ability to understand the conflict
F2_16. Conflict resolution skills
F2_17. Commitment to the case
F2_18. To share the purpose
F2_19. Neutrality or impartiality
F2_20. Favors the relationship between the parties

Procedure

The collaboration of the Directorate General for Minors and Family of the Ministry of Social Services and cooperation of the Government of the Balearic Islands (Spain) was requested. Collaboration involved the participation request of both professionals registered in the Mediators' Bag of Mediation Service, and people served in the Mediation Service during the last year. Mediation professionals informed people who arrived at Mediation Service about to participate in a new inventory psychometric validation. By agreeing to participate voluntarily, mediators summoned the research team to answer the inventory with the mediators and the parties at the third session. The third session, close to the beginning of the process, was chosen because different studies indicate that the generation of trust between the mediator and the parties is established precisely in the initial moments (Butler, 1999; McKnight & Chervany, 2006; Stimec & Poitras, 2009). Data were collected using an easy-to-follow paper-and-pencil protocol and then entered into an electronic database to be analyzed. The study was approved by the University Ethics Committee and all participants signed an informed consent before completing the protocol.

Statistical analysis

Data matrix with participants' responses was processed and no outliers were detected using Mahalanobis distance. There were no missing values and therefore data imputation methods were not implemented. Different tests for checking multivariate normality were implemented, but most items fulfilled neither univariate nor multivariate normality. In order to obtain latent structure validity evidence, an Exploratory Graph Analysis (EGA) (Golino & Epskamp, 2016) was conducted using the package *EGAnet* (Hudson, 2020). The Triangulated Maximally Filtered Graph (TMFG) method was implemented for estimating the network (Massara *et al.*, 2017). TMFG uses as weights any arbitrary similarity measure to arrange data into a meaningful network structure that can be used for clustering, community detection and modeling. A competing models strategy was used for determining the best fitted ones. This best fitted model was then re-estimated by Confirmatory Factor Analysis (CFA) using packages *lavaan* (Rosseel, 2012), *semTools* (Jorgensen *et al.*, 2020), and *Psych* (Revelle, 2020). The Weighted Least Squares-Mean Variances (WLSMV) estimator for ordinal data was used, and for estimating robust goodness of fit estimates. Cut-off criteria for CFA goodness of fit indices used indicate an adequate fit with a non-significant chi-square, Comparative Fit Index (*CFI*) and Tucker-Lewis Index (*TLI*) $\geq .95$, a Root Mean Square Error of Approximation (*RMSEA*) $\leq .05$ (Hu and Bentler, 1999; Kline, 2016). For the analytical fit of the model parameters, a risk level of 5% was set ($|t| \geq 2.00$).

Following the network inference analysis, non-parametric bootstrap confidence interval, correlation stability coefficient, and bootstrapped difference tests were

conducted to study the significance of the estimates of EGA TMFG network obtained using *bootnet* R package (Epskamp *et al.*, 2018). Structural consistency was computed along with item stability under reliability analysis instead of internal consistency using the packages *EGAnet* (Golino & Christensen, 2020) and *psych*. Estimated reliability indices were Cronbach's alpha (α), Raykov's Omega coefficient (ω_R), Bentler's Omega coefficient (ω_B), Hierarchical Omega (ω_H), and the Construct replicability index (H). All these indices are indicative of good reliability with values above .80. The percentage of explained variance was also estimated for each factor. Finally, plots were generated using the package *qgraph* (Epskamp *et al.*, 2012). The R program (Version 4.0.3) (R Core Team, 2020) was used to conduct all statistical analyses.

Results

Multivariate Normality tests for all items were statistically significant: *Mardia's skewness* = 3039.12 ($p < .001$) and *kurtosis* = 18.29 ($p < .001$), *Henze-Zirkler* = 1.77 ($p < .001$), *Royston H* = 859.69 ($p < .001$), *Doornik-Hansen E* = 153.81 ($p < .001$), and *Energy* = ($p < .001$). Failure to comply with multivariate normality assumption led to use of robust estimators for model fitting. The EGA network estimated using the TMFG method and "walktrap" procedure obtained a clear two-factor latent structure, where all the 20 items were clustered according to the hypothesized model (Figure 1). The thickness of the lines that link the items represents the strength of the relationship, which is greater the thicker the line. For example, items 1 and 3 of Factor 1, and items 11 and 12 of Factor 2, present the strongest relationships in the network. For those items between which a line is not drawn in the network, they are interpreted as independent.

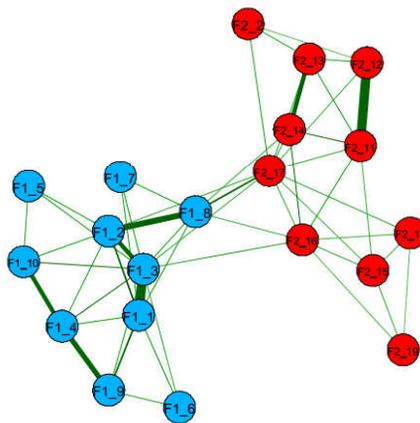


Figure 1. EGA network, estimated using TMFG method, showing the pattern of MSTBI items per latent factor

A model comparison approach was implemented in order to assess the network's dimensions number through non-parametric resampling (in this study, 1000 bootstraps). This procedure proportioned a typical median network structure, which is formed by the median partial correlations over the 1000 bootstraps (Figure 2). The resulting network clearly kept the two hypothesized dimensions, and all their assigned items. Only slight differences relative to the strength of links between several items were obtained. The total correlation of the dataset was .25 (.23 using the Miller-Madow correction), the Entropy Fit Index was -0.61 (-0.66 using the Miller-Madow correction), and the average entropy of the dataset was -0.81 (Golino *et al.*, 2020). In general, entropy indices for EGA networks can be compared with classical SEM indices such as *RMSEA*, *CFI*, or *TLI*. However, contrary to these well-known indices, EGA entropy indices cannot be used to evaluate the absolute fit of a model. In this study, all EGA models obtained after applying the bootstrap procedure were identical (two-factor model). For this reason, it made no sense to use entropy indices to compare different factor solutions. Anyway, lower values of these indices suggest better fit of a latent structure to the data.

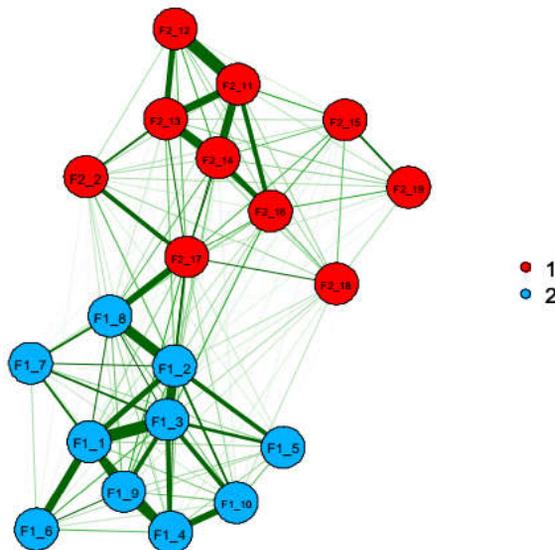


Figure 2. Bootstrapped EGA network, showing the pattern of MSTBI items per latent factor

Regarding the stability of the EGA factors after bootstrap resampling ($n = 1000$), factor 1 appeared consistently in 78.5% of the estimated models, and factor 2 in 80.9% of them. Regarding the stability of the items and their belonging to the structure factors through the resampling procedure, most items showed correct ascriptions percentages higher than 75%. Items 2 (68%) and 8 (59%) of Factor 1, and items 17 (51%), 18 (64%), and 20 (58%) of Factor 2, present less evidence of replicability through the 1000 resampled models (Figure 3). Indeed, these five items with the lowest percentage of replicability appear closer together in the EGA network, we can say, in the border area between both factors (Figure 2).

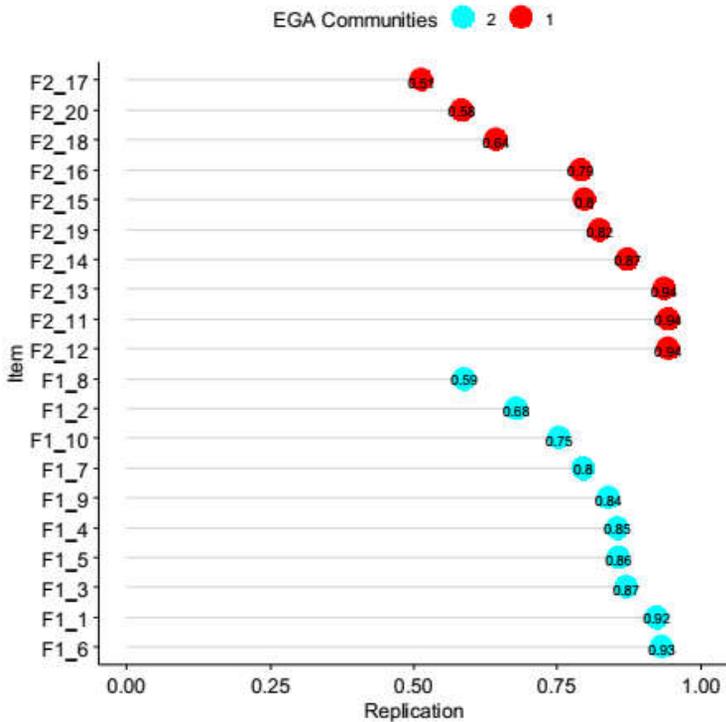


Figure 3. Replicability percentage of each item in the latent structure through the 1000 resampled EGA models

Also, an EBICglasso network was estimated using the 20 items of the inventory in order to triangulate results obtained with TMFG algorithm (Figure 4). Results were very similar to the EGA model with TMFG, both in terms of the number of factors detected (two-factor model), and items' behavior related to its factor ascription. Another bootstrap procedure was implemented for computing the 95% bootstrapped confidence intervals of each edge-weight for the EBICglasso network. All nodes did not differ significantly with respect to strength because all bootstrapped 95% CI's contained zero. Finally, another bootstrap procedure

was carried out to study the stability of the network when the participants are progressively eliminated from the original sample. In this way, it can be observed how the sample size reduction affects the latent structure stability. Results indicated that network stability fell down steeply and maximum drop proportions retained a correlation of .75 in at least 95% of the subsamples. This implies that the order of node strength was fairly accurate, despite the phasing out of the number of subjects per sample.

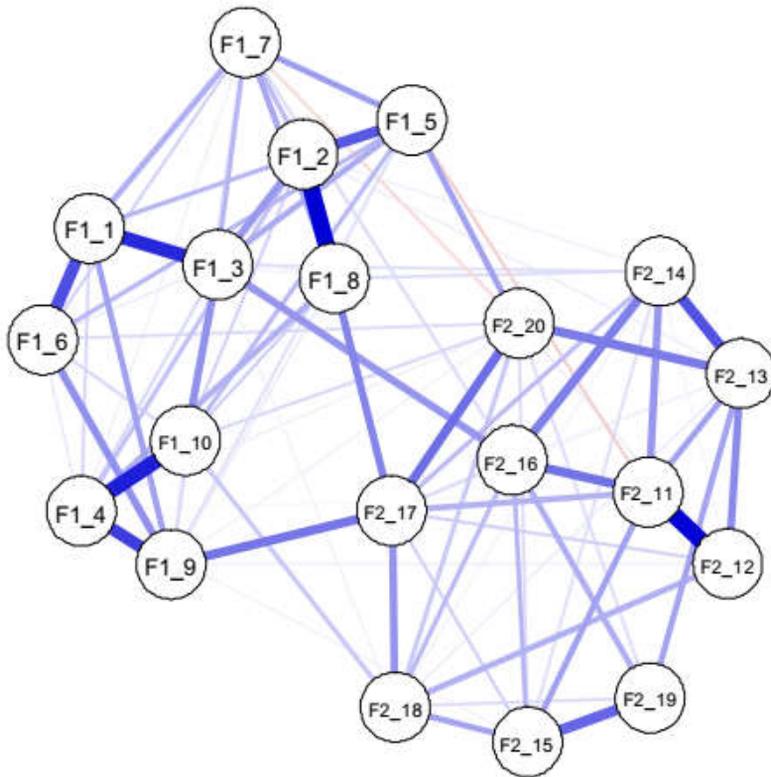


Figure 4. EBICglasso network estimated with the 20 items of the inventory

The last but not the least step of the study was to analyze the accuracy of the obtained EGA network through a CFA estimation and fit. Figure 5 shows a classical SEM diagram estimated using the 20 items and the two-factor latent structure and a robust estimator (WLSMV). The CFA model obtained a good fit ($c^2_{scaled} = 216.84$, $df = 169$, $p = .008$, $RMSEA = .039$, $p[RMSEA < .05] = .335$, $CFI = .986$, $TLI = .984$), thus corroborating the result of the EGA network. Regarding analytic fit, all loadings were statistically significant ($p < .001$), and also the correlation between the two factors (.54).

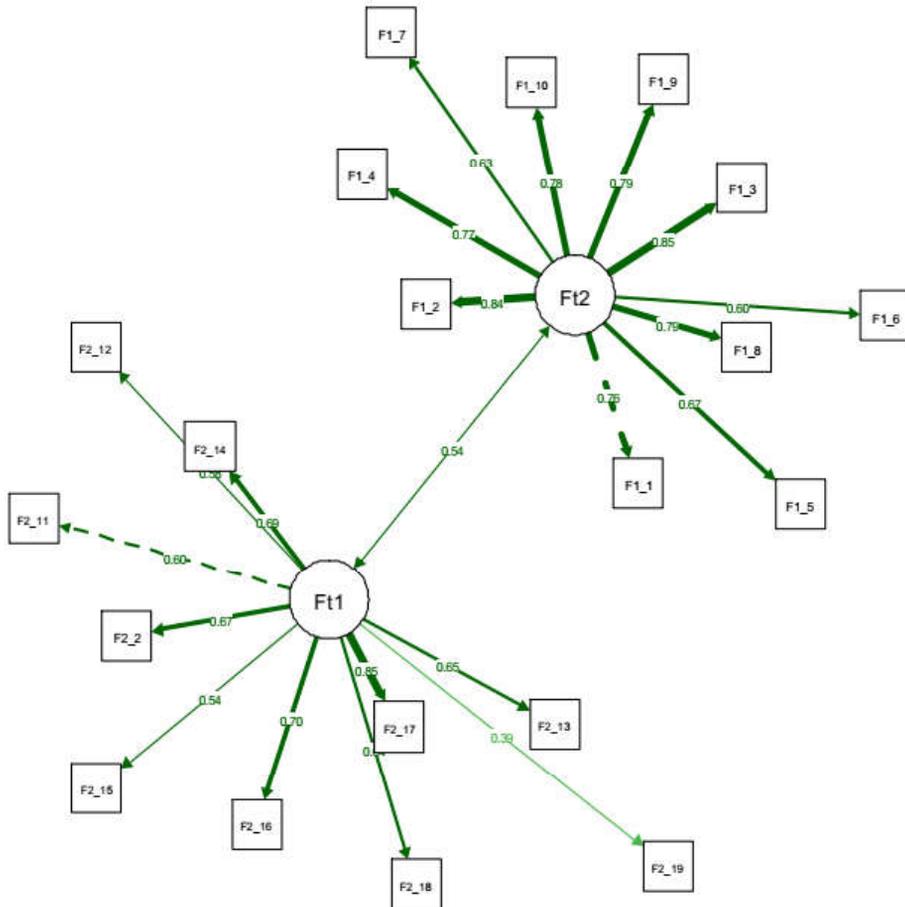


Figure 5. Standardized loadings of the CFA two-factor model from the latent structure suggested by EGA network with the inventory items

Given the good fit both the EGA model and its correspondent CFA solution, the factor loadings of all items and reliability indices were computed (Table 2). All factor loadings were statistically significant ($p < .001$), ranging from .39 (item F2_19) to .85 (item F2_17), with the same value for the *Mean* and the *Median*, .69. Reliability analysis of the latent structure showed good results, with greater consistency of the Skills factor for building a therapeutic alliance, with an alpha value (α) of .93, .92 for the Raykov's Omega coefficient (ω_R), .93 for the Bentler's Omega coefficient (ω_B), .91 for the Hierarchical Omega coefficient (ω_H), and .94 for the construct replicability index (H). This factor also explained 55.6% of the factor variance. On the other hand, the Skills factor for intervention in the mediation

process obtained adequate values although slightly lower, with .87 values for α , ω_R , and ω_B ; .85 for ω_H , and .89 for the index H ; and explains 42.1% of the factor variance. All the values of the estimated reliability coefficients were above .80, as the minimum cut-off criterion of good psychometric behavior. Finally, the correlation between the two factors reached a statistically significant value ($p < .001$) of .54, with a standard error of .09.

Table 2. Factor loadings of the latent structure and reliability indices

Items	Factor 1	Factor 2
Item F1_1	.76	
Item F1_2	.84	
Item F1_3	.85	
Item F1_4	.77	
Item F1_5	.68	
Item F1_6	.60	
Item F1_7	.63	
Item F1_8	.79	
Item F1_9	.79	
Item F1_10	.78	
Item F2_11		.60
Item F2_12		.58
Item F2_13		.65
Item F2_14		.69
Item F2_15		.54
Item F2_16		.70
Item F2_17		.85
Item F2_18		.64
Item F2_19		.39
Item F2_20		.67
%EV	55.6	42.1
ω_R	.92	.87
ω_B	.93	.87
ω_H	.91	.85
H	.94	.89
α	.93	.87

$\%EV = \% \text{ Explained Variance}$, $w_R = \text{Raykov's Omega}$, $\omega_B = \text{Bentler's Omega}$, $\omega_H = \text{Hierarchical Omega}$, $H = \text{Construct Reproductibility Index}$, $\alpha = \text{Cronbach's Alpha}$

Discussion

The success of mediation depends largely on the trust building between the mediator and the parties (Goldberg, 2005; Poitras, 2009; Riera *et al.*, 2020). While it is true that the trust phenomenon has been studied in the literature (Deutsch, 1958; Ferguson & Paterson, 2015; McKnight *et al.*, 2012), it is no less true that only one study based on a phenomenological methodology oriented to the measurement of the skills of mediation professionals has been proposed (Poitras, 2009). Poitras' work is based on the analysis of the parties' discourse on the factors that build trust. However, to confirm the relevance of the factors that emerged, he asked participants, using a scale containing three items relating to the degree of confidence they had established. In this way, he was able to highlight the factors that had appeared in the analysis of the speech of people who had built trust with the mediator, and those not. For this reason, it cannot be considered as a psychometric questionnaire.

In order to cover this gap in the literature, this paper presents a self-reported psychometric inventory for measuring two types of skills in the framework of a theoretical model: 1) Skills for building therapeutic alliance, and 2) skills for conducting an intervention in a mediation process. A two-factor latent structure has been best fitted to data as a result of an advanced psychometric networks approach and endorsed also by SEM techniques.

The items' contents of the factor *Skills for the construction of a therapeutic alliance* are related to *rapport*, a concept closely linked to the *therapeutic alliance*. Goldberg (2005) generated evidence about the link between *rapport* and the success of mediation. All items of this factor showed loadings above .40 and those ones with greater loadings were item 3 (.85) "*focus on the needs of the parties*" and item 2 (.84) "*clarify the expectations of the parties*". Both items are related to the concept of *rapport* and it is significant that their contents are consistent to even other studies developed in different contexts like marketing and consumer theory about how industrial salespeople gain customer trust (Swan *et al.*, 1995). This reinforces the thesis of Gulati (1995) on the possibility of transposing the variables that predict the generation of trust in different intervention contexts.

In the same way, several previous studies reinforce the presence of the rest of the items of the first factor: item 8 (.79) "*Take into account the parties when developing the mediation process*" (Doney *et al.*, 1998); item 9 (.79) "*Understand and endorse the parties*" (Suares, 2002); item 10 (.78) "*Cooperative attitude, based on the values and beliefs of the parties*" (Fukuyama, 1995; Lewicki & Bunker, 1996); item 4 (.77) "*Support and transmit to the parties that are there to help them*" (Poitras, 2009); item 1 (.76) "*Focus on the motivations and interests of the parties*" (Della Noce, 1999); item 5 (.68) "*Express expectations of success*" (Deutsch, 1958); and item 7 (.63) "*Separate people from the problem*" (Ury *et al.*, 2011). Finally, item 6 "*To spend time talking about informal issues*" (Poitras

& Bowen, 2002) has shown the lower but not inadequate factor loading value in the factor (.60).

It has been possible to verify that, as the items have moved away from the central concept of rapport, they have shown a decreasing trend in the weight they maintain in the factor. An example of this trend can be observed for the items 5, 6, and 7. Thus, it is possible to affirm that the first factor "Skills for the construction of a therapeutic alliance" is in line with the results presented by Goldberg (2005), thus confirming the importance of *rapport* establishing for mediation.

The items' contents of the second factor *Skills for intervention in a mediation process*, are related to the procedural experience of the mediator (Table 1). This variable has been highlighted by authors such as Davis and Gadlin (1988), Goldberg and Shaw (2007), Poitras (2009), Swan *et al.* (1995), and Yiu and Lai (2009). Most items of this second factor obtained statistically significant loadings above .40. Only one of them obtained a loading slightly below (.39): item 19, "*Neutrality or impartiality*" (Poitras, 2009). The item with greater loading value were item 17 (.85) "*Commitment to the case*" (Deutsch, 1958). It is important to point out that the item with greater loading maintain a closer relationship with the variable *Will and Empathy*.

The contents of the remaining items are related to the variable *Procedural experience of the mediator*: item 16 (.70) "*Conflict resolution skills*" (Poitras & Bowen, 2002), item 14 (.69) "*Ability to manage the mediation process*" (Poitras, 2009), and item 12 (.58) "*Understanding that the interventions are properly oriented*" (Rotter, 1971); or what the parties expect from the mediator when they go to a Mediation Service: item 20 (.67) "*Favors the relationship between the parties*" (Poitras & Bowen, 2002), item 13 (.65) "*Focus on the parties understanding the interests and motivations of the other person*" (Della Noce, 1999), item 18 (.64) "*To share the purpose*" (Deutsch, 1958), item 11 (.60) "*To perceive that the mediator is a person capable of favoring the overcoming of obstacles*" (Poitras & Bowen, 2002), and item 15 (.54) "*Ability to understand the conflict*" (Poitras, 2009).

The psychometric networks' approach has also reflected interesting relationships between the items. The thickness of the lines (edges) that join the nodes represents the strength or weight of the relationship, that is, the greater the strength of the association between nodes. According to the results, items 1 and 3 from factor 1, and items 11 and 12 from factor 2, show the strongest relationships in the network. The nodes that have manifested a greater magnitude of connection in factor 1 are related to the concept of *rapport* (Goldberg, 2005). In factor 2, the nodes that have presented a greater magnitude of connection are related to the variables *Credibility and reputation of the mediator* (Goldberg, 2005; McKnight *et al.*, 1998; Poitras, 2009) and *Procedural experience* (Goldberg & Shaw, 2007; Poitras, 2009; Yiu & Lai, 2009), respectively.

In relation to the stability of the nodes and their relevance to the structure factors through the sampling procedure, the items that showed the highest percentages of ascription, presenting more evidence of replicability through the 1000 resampled network models, have been the items 1 (92%) and 6 (93%) from factor 1; and items 11, 12, and 13 from factor 2, all with a 94%. Items with more replicability evidence from factor 1 are related to the concept of *rapport* (Goldberg, 2005), while the items from factor 2 are related to the variables *Credibility and reputation of the mediator* (Goldberg, 2005; McKnight *et al.*, 1998; Poitras, 2009) and *Procedural experience* (Goldberg & Shaw, 2007; Poitras, 2009; Yiu & Lai, 2009). The items with less evidence of replicability, item 2 (68%) and 8 (59%) from factor 1, are likewise related to the understanding category that encompasses the concept of *rapport* (Goldberg, 2005); and items 17 (51%), 18 (64%), and 20 (58%) from factor 2, are related to the *Procedural experience* variables (Goldberg & Shaw, 2007; Poitras, 2009; Yiu & Lai, 2009) and with commitment, will and empathy (Goldberg, 2005; Poitras, 2009; Poitras & Raynes, 2013).

The latent structure was also reliable because all reliability coefficients obtained adequate values for the two factors, clearly above the minimum adequacy value of .80. But the factor Skills for the construction of a therapeutic alliance obtained higher values (Table 2). The reason for this difference can rely on the more volatile and dynamic nature of the mediation process; it can be mediatized by a lot of variables, interactions, and is more time-dependent. It also important to note that the two latent factors showed a positive statistically significant correlation ($r = .54, p < .001$), that denotes interdependence between the skills for trust building and the skills for managing the mediation process.

The MSTB-I has also tried to address some limitations present in the literature. That way, most studies have been oriented on the perception of mediators (Goldberg, 2005) or on the perception of the parties (Poitras, 2009). For this reason, the inventory has included the perception of both groups. Moreover, authors such as Goldberg and Shaw (2007) pointed out the need to contrast whether the skills of mediators for the generation of trust in North America were similar in countries where mediation is gaining momentum as an alternative conflict resolution tool. Although this study does not have a cross-cultural nature, the evidence generated with a Spanish sample is properly aligned with the results of work carried out on North American samples. Precisely the creation of a new instrument such as MSTB-I can facilitate the development of future cross-cultural studies in order to have evidence on the comparison of the skills of professional mediators from different cultures.

The MSTB-I operationalizes the main mediators' skills and can be helpful to develop formative programs for both active professionals and for people who are enrolled in mediation-related higher education disciplines. This new reliable and valid inventory can be useful for both the improvement of professional practice, and for the reinforcement of the skills of mediators who are still in learning process. An advanced psychometric approach has been implemented to obtain evidence

of the reliability and validity of the inventory, in order to improve the qualitative approach used so far, and start from a rigorous quantitative scheme, within the framework of mixed methods. Complex psychometric networks can help the researchers to obtain better fitted models, and consequently, a better explanation of internal relationships among constructs contents domains.

However, this study presents some limitations such as the small sample size used, which should be expanded in future studies including *public mediation services* from different geographical areas. It also does not contribute evidence of relationship with other variables validity. This type of evidence remains pending estimation and replication by new psychometric sample trials. Obtaining new evidence from the use of this first version of the MSTB-I will contribute to its consolidation as a standardized instrument to measure the skills of mediators for trust generation, both in their training period and in their professional practice. A better professional performance of current or future mediators can lead to obtain a greater success rates and, in turn, people more satisfied with their problem solving.

References

- Bordin, E. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research and Practice*, 16, 252-260; DOI: 10.1037/h0085885.
- Bordin, E. (1994). Theory and research on the therapeutic working alliance: New directions. In A. Horvath and L. Greenberg (Eds.), *The working alliance: Theory, research and practice* (pp. 13-37). Wiley.
- Butler, J. K. (1999). Trust expectations, information sharing, climate of trust and negotiation effectiveness and efficiency. *Group and Organization Management*, 24(2), 217-238; DOI: 10.1177/1059601199242005.
- Davis, A. & Gadlin, H. (1988). Mediators gain trust the old-fashioned way - We earn it! *Negotiation Journal*, 4(1), 55-62; DOI: 10.1111/j.1571-9979.1988.tb00446.x.
- Della Noce, D. J. (1999). Seeing Theory in Practice: An Analysis of Empathy in Mediation. *Negotiation Journal*, 15(3), 271-301; DOI: 10.1111/j.1571-9979.1999.tb00196.x
- Deutsch, M. (1958). Trust and suspicion. *Journal of Conflict Resolution*, 2(4), 265-279; DOI: 10.1177/002200275800200401.
- Doney, P. M., Cannon, J. P. & Mullen, M. R. (1998). Understanding the influence of national culture on the development of trust. *Academy of Management Review*, 23(3), 601-620; DOI: 130.206.32.11.
- Epskamp, S., Borsboom, D., & Fried, E. I. (2018). Estimating Psychological Networks and their Accuracy: A Tutorial Paper. *Behavior Research Methods*, 50(1), 195-212; DOI: 10.3758/s13428-017-0862-1.
- Epskamp, S., Cramer, A. O. J., Waldorp, L. J., Schmittmann, V. D., & Borsboom, D. (2012). *qgraph*: Network Visualizations of Relationships in Psychometric Data. *Journal of Statistical Software*, 48(4), 1-18; DOI: 10.18637/jss.v048.i04.
- Ferguson, A., & Peterson, R. (2015). Sinking Slowly: Diversity in Propensity to Trust Predicts Downward Trust Spirals in Small Groups. *Journal of Applied Psychology*, 100(4), 1012-1024; DOI: 10.1037/apl0000007.

- Fine, G., & Holyfield, L. (1996). Secrecy, trust and dangerous leisure: generating group cohesion in voluntary organizations. *Social Psychology Quarterly*, 59(1), 22-38; DOI: 10.2307/2787117.
- Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*. Free Press.
- Gainey, T. W., & Klaas, B. S. (2005). Outsourcing relationships between firms and their training providers: The role of trust. *Human Resource Development Quarterly*, 16(1), 27-32; DOI: 10.1002/hrdq.1122.
- Gibson, K. (1999). Mediation in the medical field: Is neutral intervention possible? *Hasting Centre Report*, 29(5), 6-13; DOI: 10.2307/3527730.
- Giffin, K. (1967). The Contribution of Studies of Source Credibility to a Theory of Interpersonal Trust in the Communication Process. *Psychological Bulletin*, 68(2), 104-120; DOI: 10.1037/h0024833.
- Goldberg, S. (2005). The secrets of successful mediators. *Negotiation Journal*, 21(3), 365-376; DOI: 10.1111/j.1571-9979.2005.00069.x
- Goldberg, S., & Shaw, M. L. (2007). The secrets of successful (and unsuccessful mediators) continued: Studies two and three. *Negotiation Journal*, 23(4), 393-418; DOI: 10.1111/j.1571-9979.2007.00152.x
- Goldberg, S., Shaw, M. L., & Brett, J. M. (2009). What difference does a robe make? Comparing mediators with and without prior judicial experience: Research reports. *Negotiation Journal*, 25(3), 277-305; DOI: 10.1111/j.1571-9979.2009.00227.x.
- Golino, H. F., & Epskamp, S. (2016). Exploratory graph analysis: A new approach for estimating the number of dimensions in psychological research. *PLoS ONE*, 12(6): e0174035; DOI: 10.1371/journal.pone.0174035.
- Golino, H., Moulder, R. G., Shi, D., Christensen, A. P., Garrido, L. E., Neito, M. D., Nesselroade, J., Sadana, R., Thiyagarajan, J. A., & Boker, S. M. (2020, July). Entropy fit indices: New fit measures for assessing the structure and dimensionality of multiple latent variables. *Multivariate Behavioral Research*, DOI: 10.31234/osf.io/mtka2.
- Gulati, R. (1995). Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *Academy of Management Journal*, 38(1), 85-112; DOI: 10.2307/256729.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1-55; DOI: 10.1080/10705519909540118.
- Hudson, G. (2020). *EGAnet: Exploratory Graph Analysis – A framework for estimating the number of dimensions in multivariate data using network psychometrics*. R package version 0.9.5. Available at <https://cran.r-project.org/web/packages/EGAnet/>
- Johnson-George, C., & Swap, W. C. (1982). Measurement of specific interpersonal trust: Construction and validation of a scale to assess trust in a specific other. *Journal of Personality and Social Psychology*, 43(6), 1306-1317; DOI: 10.1037/0022-3514.43.6.1306.
- Jorgensen, T. D., Pornprasertmanit, S., Schoemann, A. M., & Rosseel, Y. (2020). *semTools: Useful tools for structural equation modeling*. R package version 0.5-3. Retrieved from <https://CRAN.R-project.org/package=semTools>
- Kline, R. B. (2016). *Methodology in the social sciences. Principles and practice of structural equation modeling (4th Ed.)*. Guilford Press.

- Kramer, R. M. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual Review of Psychology*, 50, 569-598; DOI: 10.1146/annurev.psych.50.1.569.
- Larzelere, R. J., & Huston, T. L. (1980). The dyadic trust scale: Toward understanding interpersonal trust in close relationships. *Journal of Marriage and the Family*, 42(3), 595- 604; DOI: 10.2307/351903.
- Lewicki, R. J., & Bunker, B. B. (1996). Developing and maintaining trust in work relationship. In R. M. Kramer and T.R. Tyler (Eds.), *Trust in organizations: frontiers of theory and research*. Sage Publications.
- Lewicki, R. J., & Tomlinson, E. C. (2014). Trust, Trust Development, and Trust Repair. In M. Deutsch, P. T. Coleman and E. C. Marcus (Eds.), *The Handbook of Conflict Resolution: Theory and Practice* (pp. 104-136). Jossey-Bass.
- Luborsky, L., Crits-Christoph, P., Mintz, J., & Auerbach, A. (1988). *Who will benefit from psychotherapy? Predicting therapeutic outcomes*. Basic Books.
- Massara, G. P., Di Matteo, T., & Aste, T. (2017). Network filtering for big data: Triangulated maximally filtered graph. *Journal of Complex Networks*, 5(2), 161-178; DOI: 10.1093/comnet/cnw015.
- McKnight, D. H. & Chervany, N. L. (2006). Reflections on an initial trust-building model. In R. Bachmann and Zaheer (Eds.). *Handbook of Trust Research* (pp. 29-51). Edward Elgar.
- McKnight, D. H., Cummings, L. L., & Chervany, N. L. (1998). Initial trust formation in new organizational relationships. *Academy of Management Review*, 23(3), 473-490; DOI: 10.5465/AMR.1998.926622.
- McKnight, D. H., Liu, P., & Pentland, B. T. (2012). How events affect trust: A baseline information processing model with three extensions. *Trust Management VI*, 374, 217-224; DOI: 10.1007/978-3-642-29852-3_16.
- Poitras, J. (2009). What Makes Parties Trust Mediators. *Negotiation Journal*, 25(3), 307-325; DOI: 10.1111/j.1571-9979.2009.00228.x.
- Poitras, J., & Bowen, R. (2002). A framework for understanding consensus-building initiation. *Negotiation Journal*, 18(3), 211-232; DOI: 10.1111/j.1571-9979.2002.tb00741.x.
- Poitras, J., & Raines, S. (2013). *Expert Mediators: Overcoming Mediation Challenges in Workplace, Family, and Community Conflicts*. Rowman & Littlefield.
- R Core Team (2020). *R: A language and environment for statistical computing (version 4.0.3)*. R Foundation for Statistical Computing, Vienna, Austria. URL <http://www.R-project.org/>.
- Revelle, W. (2020). *psych: Procedures for Psychological, Psychometric, and Personality Research*. Northwestern University, Evanston, Illinois. <https://CRAN.R-project.org/package=psych>.
- Riera, J. A. (2018). *La generación de confianza en la práctica de la Mediación Familiar: ¿Por qué las partes confían en los mediadores?* [Unpublished Doctoral Thesis]. Universitat de les Illes Balears.
- Riera, J. A., Cuartero, M. E., & Montañó, J. J. (2020). Mediators' and Disputing Parties' Perceptions of Trust-Building in Family Mediation. *Negotiation and Conflict Management Research*, 13(2), 151-162 ; DOI : 10.1111/ncmr.12167.

- Rosseel, Y. (2012). *lavaan*: An R Package for Structural Equation Modeling. *Journal of Statistical Software*, 48(2), 1–36; DOI:10.18637/jss.v048.i02.
- Rotter, J. (1967). A New Scale for the Measurement of Interpersonal Trust. *Journal of Personality*, 35(4), 651-665; DOI: 10.1111/j.1467-6494.1967.tb01454.x.
- Rotter, J. (1971). Generalized expectancies for interpersonal trust. *American Psychologist*, 26(5), 443-452; DOI: 10.2466/pr0.1976.39.2.649
- Stimec, A., & Poitras, J. (2009). Building trust with parties: Are mediators overdoing it? *Conflict Resolution Quarterly*, 23(6), 317-331; DOI: 10.1002/crq.235.
- Stuhlmacher, A., & Poitras, J. (2010). Gender and Job Role Congruence: A Field Study of Trust in Labor Mediators. *Sex Roles*, 63(7-8), 489-499; DOI: 10.1007/s11199-010-9844-9
- Suares, M. (2002). *Mediando en sistemas familiares*. Paidós.
- Swan, J. E., Trawick, I. F., & Silva, D. W. (1985). How industrial salespeople gain customer trust. *Industrial Marketing Management*, 14(3), 203-211; DOI: 10.1016/0019-8501(85)90039-2
- Ury, W., Fisher, R., & Patton, B. (2011). *Obtenga el sí. El arte de negociar sin ceder*. Gestión 2000.
- Waizmann, V., & Roussos, A. (2009). Acerca de la dificultad en la conceptualización de la alianza terapéutica. *Intersubjetivo*, 1(10), 122-133.
- Yiu, T. K., & Lai, W. Y. (2009). Efficacy of trust-building tactics in construction mediation. *Journal of Construction Engineering and Management*, 135(8), 683-689; DOI: 10.1061/(ASCE)CO.1943-7862.0000028.