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Development and Validation of the International Extension Network Advocacy Capacity Scale

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Abstract

Extension is sometimes viewed globally as less important than academic research and innovation, even though these networks are crucial to agricultural development. Using Lewin's (1947) organizational change theory as a conceptual background, an instrument to measure advocacy capacity within international extension networks was developed. The resulting scale was analyzed for content validity, response process validity, internal structure validity, and consequential validity. An exploratory factor analysis (EFA) was performed on the proposed scale. The underlying structure of the scale was found to load onto five factors. The five extracted factors were labelled: 1) network support of advocacy, 2) network integration of advocacy, 3) network influence in advocacy, 4) network visibility in advocacy, and 5) network advocacy performance. The overall International Extension Network Advocacy Capacity (IENAC) scale, and associated subscales were all found to have acceptable levels of validity.

Keywords: Advocacy, international extension, scale development, rural advisory services, capacity assessment

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Introduction

International extension and rural advisory services play a crucial role in agricultural development; however, globally, extension is frequently considered of less importance than academic research and innovation (Davis et al., 2018; Davis & Sulaiman, 2014). Thus, using advocacy to highlight extension's importance in agricultural development is a primary need of strategic capacity development in international extension networks (Davis & Sulaiman, 2014; Davis et al., 2018; Lamm et al., 2018).

Advocacy, broadly defined, is the process of seeking support for a certain cause or proposal (Lamm et al., 2018; Lee, 1998; Merriam-Webster, 2017). Necessary capacities for effective organizational advocacy include communication of goals, objectives, and impact, strategic partnerships, organizational leadership, and resource management (Franz et al., 2014; Raynor et al., 2009; Steede et al., 2016). Advocacy is a complex strategy, impacted and influenced by multiple factors including aims, timeframes, and organizational power structures (Coates & David, 2002). Extension network advocacy is further compounded by complexities such as transcending domestic boundaries and engaging in conversations with international funding agencies. There is a need for advocacy at the global level coordinated with regional efforts to communicate impact and foster network trust (Anderson, 2008; Davis & Sulaiman, 2014; Keck & Sikkink, 1999; Lamm et al., 2018).

Despite its importance for international extension, little research exists investigating the necessary capacities needed for effective extension network advocacy (Lamm et al., 2018). Agricultural efforts based in the United States incorporate advocacy into their communication strategies, yet advocacy for global agricultural extension remains limited in both research and practice (Lamm et al., 2018; Steede et al., 2016). Responding to this gap in the literature, Lamm et al. (2018) conducted a Delphi study of international extension experts to determine the needed capacities for effective advocacy within global extension networks. This baseline assessment provided an emergent perspective of the unique context and advocacy needs of international extension networks.

Building off the work of Lamm et al. (2018), this study introduces an instrument for evaluating advocacy capacity within international extension networks (Lamm et al., 2017; Lamm et al., 2019). Developing a capacity assessment scale not only encourages extension providers to engage with findings and develop a common language around advocacy (Lamm et al., 2018), but allows for a network emergence perspective of capacity development not limited to a specific context or region (Davis et al., 2018). This network perspective and common language will provide international extension practitioners with tools for communicating their impact (OECD, 2006). Using the capacity needs found by Lamm et al., (2018), this scale is intended to provide standardized capacity

measurements among extension networks to facilitate knowledge sharing in the context of international extension network advocacy efforts.

Conceptual Framework

Three themes emerged from Lamm et al.'s (2018) Delphi study of needed capacities for effective international extension network advocacy. The first theme was that the network should understand international extension clientele. The second theme was that network advocacy messages should be communicated effectively. The final theme was network should be a visible actor for international extension services (Lamm et al., 2018). For context of organizational efforts in international extension advocacy, Lewin's (1947) organizational change theory was used to inform the study.

Lewin's (1947) Organizational Change Theory

Lewin's seminal planned approach to change describes successful organizational change in three steps: unfreezing, moving/changing, and refreezing (Burnes, 2004; Cummings et al., 2016; Lewin, 1947, 1951; Medley & Akan, 2008). While Lewin's planned approach model (1947) provides a framework for moving towards advocacy of international extension, examining the model in the context of ancillary efforts is critical to understanding the complex environments in which the theory is applicable (Cummings et al., 2016; Burnes, 2004).

Field theory, group dynamics, action research, and the three-step model of change have been regarded as an integrated system in which elements support and reinforce one another to enact planned change at the individual, group, organizational, and societal level (Burnes, 2004). Field theory underpins other elements of Lewin's work based on the potential to identify and map forces influencing individual behavior. This theory provides a perspective for better understanding group behavior, defined as a set of interactions affecting group structure and modifying individual behavior (Burnes, 2004; Lewin, 1947), which Lewin (1947) argued should be the focus of change efforts (Burnes, 2004). Group dynamics refer to the forces that operate within group structure. This theory addresses questions about the nature of group behavior and how organizational forces can elicit more desirable group behavior (Cartwright, 1951). Action research emphasizes that change requires action, recognizes that successful action is predicated by situational analysis, and identifies the most appropriate solution for a situation (Bennett, 1983). Action research builds on field theory based on a focus at the group level, which influences individual behaviors, and on group dynamics through an understanding of group behavior (Bennett, 1983).

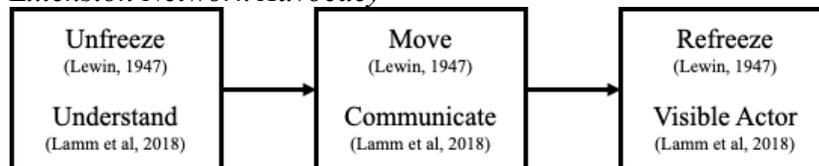
The underlying assumption in Lewin's (1947) three-step model is human behavior exists in a quasi-stationary equilibrium which requires destabilization to enact change (Burnes, 2004). Unfreezing requires a felt need for change to disrupt

organizational behavior stuck in equilibrium by complex restraining forces and increases actors' motivation for change (Cartwright, 1951; Medley & Akan, 2008). Within international extension contexts, the unfreezing step might therefore include first identifying a felt need for increased advocacy (Cartwright, 1951). The second step, changing, involves identifying a desired outcome and implementing the changes required to achieve it (Burnes, 2004; Medley & Akan, 2008). This step is complex as it is difficult to predict a specific desired outcome for planned change due to the confluence of forces present in any particular situation (Burnes, 2004). An iterative approach, in which outcome options are implemented and evaluated on a trial basis, should be considered as it allows organizations to identify behaviors desired by the majority (Kotter, 1990). Lastly, refreezing seeks to restabilize the group at a new quasi-stationary equilibrium to ensure sustained behavior change (Burnes, 2004; Medley & Akan, 2008). New behaviors, e.g., new advocacy policy, must be congruent with the organizational culture. Successful change can be viewed as a group activity which requires the evolution of social and organizational norms to ensure behavior change (Burnes, 2004; Lewin, 1947).

A proposed integration between Lewin's (1947) Organizational Change Theory and previous findings regarding international extension network advocacy capacity needs (Lamm et al., 2018) are presented in Figure 1. Specifically, the unfreeze stage has been hypothesized to be associated with the need for international extension networks to understand the needs of their clientele. For example, the change that clientele want or need. The moving/changing stage of the model has been hypothesized to be associated with the need for effective communication by international extension networks regarding advocacy. Lastly, the refreeze stage has been hypothesized to be associated with the network's ability to be a visible actor for international extension services.

Figure 1.

Integration of Lewin's (1947) Organizational Change Theory and International Extension Network Advocacy



Purpose and Objectives

The purpose of this study was to develop and validate an empirical instrument to measure the advocacy capacity of international extension networks.

The primary objective of the study was to establish the content validity, internal structure validity, response process validity, and consequential validity of a proposed international extension network advocacy scale.

Methods

The data presented in the present study were collected as part of a comprehensive analysis of international extension networks sponsored by the Global Forum for Rural Advisory Services. The goal of the larger project was to analyze the various aspects of international extension networks. One such aspect was international extension networks' advocacy capacity. However, there were several other aspects regarding international extension networks where data were collected. Therefore, the respondents for the current study are identical to respondents and methods associated with other aspects, and studies, associated with the project. Each of the different network aspects of interest have been analyzed independently; however, full disclosure of the context within which the study was conducted have been made based on recommendations within the literature (see Kirkman & Chen, 2011).

Respondents

As described previously, the data for the present study were collected as part of a larger international extension network project. To ensure a range of representation within international extension networks there were nine unique networks invited to participate in the project. The extension networks were located in: Africa, Latin and South America, the Caribbean islands, and the Pacific Islands. Within Africa there was one continental level network, one sub-regional level network (West Africa), and four country level networks included in the project. Latin and South America included a regional network, the Caribbean islands included a regional network, and Asia and the Pacific Islands also included a regional network. Respondents included Secretariat and board members from rural advisory service networks across regional, sub-regional, and country divisions.

Instrument Development

The international extension network advocacy capacity (IENAC) instrument was developed by the researchers and informed by previous literature within the context of extension advocacy. The results of the Lamm et al. (2018) Delphi analysis served as the foundation for both item development and hypothesized factors associated with extension advocacy. In addition to the results of the previous Delphi study, items were developed based on a review of relevant literature and specifically indicators of effective advocacy within the literature or from an applied perspective.

Overall, there were a total of 28 items included in the proposed IENAC. Based on the previous research (Lamm et al., 2018), it was hypothesized there would be three primary factors associated with extension advocacy: 1) the network should understand international extension clientele, 2) network advocacy messages should be communicated effectively, 3) the network should be a visible actor for international extension services the network should be a visible actor for extension.

Based on a review of the literature, and methodological considerations, a four-point Likert-type scale was employed. Although “five or seven points are the most common format used in applied research” (Cox, 1980, as cited in Asún et al., 2016, p. 111), four items were deemed most appropriate based on the intended use of the instrument. Previous research has indicated odd numbers of responses allow for a neutral option and sometimes respondents have been found to use a neutral, or intermediate, option when they do not want to express their true opinion (e.g. Kulas et al., 2008) or when social desirability in responding has been observed previously (e.g. Garland, 1991, see Masambuka-Kanchewa et al, 2020 for international extension context regarding social desirability in responding). The response options for the proposed scale included: *1 = little to no capacity, 2 = some capacity, but very limited, 3 = good capacity, but could still be improved, 4 = exceptional capacity, no need for improvement*. Respondents could also select *N/A = not applicable or no knowledge* as appropriate.

Data Collection

The data collection process included both a pilot of the instrument as well as a full administration of the instrument. The instrument was pilot tested in-person with data collected in a paper-based format. There were a total of 43 responses collected during the pilot from three different extension networks, representing a 100% response rate. The pilot administration of the instrument served to establish face and content validity of the instrument as well as response process validity. Detailed descriptions of validation processes are provided below.

Following the pilot administration of the instrument minor grammatical updates were made to the instrument. Additionally, the instrument was converted to the Qualtrics online survey tool to complete the remainder of the data collection associated with the project. The online data were collected in accordance with Dillman et al. (2014) Tailored Design Method recommendations. Specifically, the process included: first, sending a pre-notice message to potential respondents from a representative of the extension network. Second, after approximately two days, a personalized invitation email was sent to potential respondents. Lastly, respondents received at least three reminder messages every three to five days. A total of 85 individuals were invited to respond to the online survey. Seventy-nine responses were received for a 93% response rate.

Within the current study, the paper-based and online data were aggregated for analysis based on the identical nature of the items. Therefore, the overall data set included the 43 paper-based responses and 79 online responses for a total of 122 responses. In total, 128 individuals were invited to participate, resulting in an effective response rate of 95.3%.

Instrument Validity

Based on the purpose and objective associated with the study, several analyses of validity were undertaken in concordance with the literature (e.g., Crocker & Algina, 1986; Messick, 1995; Lamm et al., 2020). Specifically, first, content validity was established; second, response process validity was examined; third, internal structure validity was analyzed, and lastly, consequential validity was assessed.

Content Validity

According to Lamm et al. (2020), “Content validity refers to the ability of the scale to appropriately measure what it has been intended to measure” (p. 25). The literature provides recommendations for establishing content validity, including literature review, expert review, and the Delphi method (see Crocker & Algina, 1986; DeVellis, 2017; Garson, 2014). For the current study, content validity was established through the recommended mechanisms. For example, the foundation of the scale is based on the results of previous Delphi method research specifically related to international extension network advocacy capacity (see Lamm et al., 2018). Second, a thorough literature review was conducted to further inform and refine the foundational insights from the Delphi analysis. Lastly, a panel of experts were consulted to review and provide feedback regarding the proposed scale. The panel of experts were located in the United States or Europe and were all involved with international extension networks. Additionally, reviewers also had expertise in scale development, evaluation, research methodology, and policy development. The experts had professional titles such as: associate professor, assistant professor, Director, and program manager.

Response Process Validity

According to recommendations in the literature (e.g. Crocker & Algina, 1986), after developing a proposed scale and establishing sufficient content validity, response process validation should be undertaken. Response process validity is generally established by having a small group of respondents complete the proposed instruments. The respondents should be representative of the typical of individuals the scale is developed for. Within the current study, response process validity was evaluated by administering a paper-based version of the instrument while in person.

Following the completion of the instrument, a focus group and debrief was conducted with the respondents. Overall, the feedback from the group was positive and there was consensus regarding: clarity of instructions and clarity of specific items. However, there were also items the respondents recommended updating: 1) the length of the questionnaire was long, 2) there was not an option for *N/A* to indicate no opinion or no knowledge, 3) there were a few grammatical updates made based on minor issues within the instrument. To address the feedback from the group, the researchers clarified the scope of the project, including the advocacy and other areas of interest, and the reason for the questionnaire including the IENAC as well as other items of interest subsumed in the larger project. In the online administration of the instrument, an *N/A* option was added. Lastly, minor wording and grammatical updates were completed.

Internal Structure Validity

Internal structure validity was analyzed using statistical techniques recommended within the literature (e.g. Crocker & Algina, 1986). Both the pilot and primary study data were identical from an item level perspective, therefore pilot and primary study data were aggregated for analysis to increase statistical power. Initially, individual items were analyzed for response distributions including skewness and kurtosis of responses. The individual items analysis indicated adequate distribution across response options, without disproportionate representation within a specific response option. The results indicated further analysis was warranted. Following the individual item analysis, an exploratory factor analysis (EFA) was conducted. The EFA allowed individual items to group according to the underlying factor structure of the data. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's test of sphericity analysis both indicated sufficient statistical power, and item sufficiency, was available to support the EFA.

The results of the EFA were analyzed using the Kaiser criterion, specifically, factors were determined based on eigenvalues of 1.0 or greater (Kaiser, 1974). The EFA data analysis included a Varimax rotation to aid in the identification of latent variables. Within the rotated analysis, items with absolute loadings greater than 0.500 were retained. There was one item which did not sufficiently load on a unique factor and was removed. Based on the scale development process, there were three hypothesized factors within the scale. However, the results of the EFA identified six latent factors. The six latent factors were further analyzed for internal consistency using Cronbach's alpha. Additionally, descriptive statistics including mean, standard deviation, skewness, and kurtosis were conducted within extracted factors. Furthermore, correlations between extracted factors were conducted to further establish internal structure validity. All data analysis was completed using the SPSS v27 software package.

Consequential Validity

Consequential validity “appraises the value implications of score interpretation as a basis for action as well as the actual and potential consequences of test use” (Messick, 1995, p. 745). To establish consequential validity for the IENAC a survey of extension network leaders was completed in April 2017. There were 15 potential respondents representing the extension networks included in the larger project. Among the 15 invitations there were 14 responses for a 93% response rate. The respondents were asked to indicate their level of agreement or disagreement with two questions on a five-point Likert type scale (*1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, and 5 – strongly agree*). Specifically, respondents were asked to indicate: 1) how useful the results from the IENAC were, and 2) whether they planned to use the intended to use the IENAC information in their extension networks.

Results

IENAC Exploratory Factor Analysis

An EFA was conducted on the aggregate IENAC scale consisting of 28 items. The resulting extracted factor structure of the scale is displayed in Table 1. Following the EFA, six factors were extracted accounting for 74.85% of the total variance. The KMO value associated with the aggregate IENAC scale was 0.83 and the Bartlett’s test statistic was significant ($\chi^2 = 1661.51, p < .00$), which indicated factor analysis was justified. Following the EFA of the IENAC scale the items in the IENAC scale loaded onto six factors. There was one item which did not meet the minimum loading threshold of 0.50 and was removed from subsequent analysis. Furthermore, there was a single item loaded on factor six. Therefore, the sixth factor, and associated item were removed from further analysis.

Based on the structure of the IENAC scale, five new factors were proposed and additional analysis on each conducted. New factor names were created based on the nature of the items associated with the extracted factors, including: Factor 1 – network support of advocacy (support), Factor 2 – network integration of advocacy (integration), Factor 3 – network influence in advocacy (influence), Factor 4 – network advocacy performance (performance), and Factor 5 – network visibility in advocacy (visibility)

Table 1.*Exploratory Factor Analysis of Aggregate ICT Scale*

Scale Items	Factors					
	1	2	3	4	5	6
The network provides knowledge of RAS including the impact of initiatives and programs (ADV5)	0.83					
The network identifies champions for RAS (ADV3)	0.81					
There is grassroots support for the network (ADV26)	0.70					
The network uses data about RAS clientele, their challenges, and related policies to support advocacy activities (ADV2)	0.67					
The network links RAS to ongoing government and private sector programs (ADV4)	0.64					
Information related to RAS advocacy activities is made accessible to members of the network (ADV19)	0.62					
The network is effective in mobilizing resources to take action in support of advocacy activities (ADV10)	0.58					
Accountability measures are in place for advocacy activities (ADV9)	0.57					
The network defines, identifies, and articulates RAS stakeholder needs (ADV1)	0.54					
Advocacy activities are aligned with the network's goals (ADV8)		0.86				

Exploratory Factor Analysis of Aggregate ICT Scale

Scale Items	Factors					
	1	2	3	4	5	6
The network can adjust advocacy approaches as external conditions change (e.g., the political landscape, funding) (ADV7)		0.84				
The network uses new information to inform advocacy planning and activities (ADV6)		0.74				
The network shows the role/potential role of RAS in addressing priority concerns (for example poverty alleviation, food security) (ADV16)		0.63				
The network has compelling advocacy messages (ADV11)		0.60				
The network engages in discussions surrounding current policy trends (ADV12)		0.55				
Network clientele hold RAS in high regard (ADV24)			0.89			
The network is perceived as a positive influence on the decision making/policy process (ADV23)			0.81			
The network has representation on local, national, and international platforms/events (ADV28)			0.77			
Network stakeholders hold RAS in high regard (ADV25)			0.71			
RAS network officers are invited to be part of the decision making/policy process at all levels (ADV27)			0.61			

Exploratory Factor Analysis of Aggregate ICT Scale

Scale Items	Factors					
	1	2	3	4	5	6
The network is recognized as a relevant/important actor in RAS advocacy (ADV22)			0.60			
Sufficient funding to support advocacy activities is available (ADV21)				0.77		
The network effectively works with policymakers (ADV20)				0.70		
Network officers are seen as credible sources (ADV15)					0.86	
The purpose of the network's RAS advocacy activities are clear, broadly understood, compelling, and inspiring to others (ADV17)					0.61	
The network is connected with the right policymakers, regulatory bodies, and other individuals (ADV18)					0.52	
**The network uses appropriate media (traditional and/or social) to advocate for RAS (ADV13)						0.63
*The network communicates with the right audiences (e.g., policy/decision makers at all levels, general public) (ADV14)						

Note: Principal Component Factors. Blanks represent absolute loading values < 0.500. Item identifiers in parentheses. RAS – Rural Advisory Service. * - Item failed to reach minimum threshold for factor loading, ** - Item removed based on single item factor.

Scale Reliability and Correlations

Six latent factors emerged following the EFA on the IENAC scale. However, there was only one item that loaded on the sixth factor; therefore, the factor was removed from analysis because scales with less than two items generally lack interpretability (Loo, 2002). Thus, five new subscales based on the

five latent factors retained from the EFA were proposed. The descriptive statistics and measured of internal consistency for these subscales and an overall advocacy index scale are presented in Table 2. Normal response distributions (e.g., skewness and kurtosis) were analyzed to verify internal structure validity. Skewness values less than two and kurtosis values less than seven, were observed suggesting indicators of sufficient preliminary internal structure validity according to recommendations in the literature (see Fabrigar et al., 1999; West et al., 1995). Subsequent internal consistency analysis was completed using Cronbach's alpha. Coefficients for all factors was observed to be greater than 0.70 and thus deemed acceptable (see Cortina, 1993; Schmitt, 1996; Streiner, 2003). The performance factor, being composed of only two items was further analyzed using the Spearman-Brown coefficient (Eisinga et al., 2013), the results were consistent with an observed coefficient of 0.72.

Table 2.
Advocacy Scales: Descriptive Statistics and Scale Reliability

Factor	<i>N</i>	<i>M</i>	<i>SD</i>	Skewness	Kurtosis	Cronbach's α
Support	87	2.47	0.63	-0.20	-0.38	0.91
Integration	94	2.62	0.62	-0.33	-0.18	0.88
Influence	106	2.75	0.61	0.06	-0.67	0.88
Performance	108	2.00	0.58	0.75	-0.08	0.72
Visibility	105	2.78	0.58	-0.35	0.88	0.73
Overall Advocacy	71	2.59	0.51	-0.27	0.09	0.95

The correlation matrix between the advocacy subscales and index scale is displayed in Table 3. All the correlations were statistically significant ($p < .010$), indicating close scale interconnectedness.

Table 3.
Correlation Matrix of Advocacy Scales

Scale	Support	Integration	Influence	Performance	Visibility	Overall
Support	-					
Integration	0.72	-				
Influence	0.47	0.48	-			
Performance	0.64	0.49	0.54	-		
Visibility	0.63	0.67	0.49	0.48	-	
Overall	0.89	0.84	0.72	0.72	0.78	-

* $p < .010$

Extracted Factor Exploratory Factor Analysis

The first extracted advocacy factor was comprised of nine items and was labelled network support of advocacy. The EFA extracted one factor which accounted for 59.24% of the total variance and was associated with an eigenvalue of 5.33. The KMO value was 0.89 and the Bartlett's test yielded significant results ($\chi^2 = 458.10, p < .010$), thereby indicating further factor analysis was warranted.

The second extracted advocacy factor was comprised of six items and was labelled network integration of advocacy. The EFA extracted one factor which accounted for 62.94% of the total variance and was associated with an eigenvalue of 3.78. The KMO value was 0.84 and the Bartlett's test yielded significant results ($\chi^2 = 295.88, p < .010$), thereby indicating further factor analysis was warranted.

The third extracted advocacy factor was comprised of six items and was labelled network influence in advocacy. The EFA extracted one factor which accounted for 64.16% of the total variance and was associated with an eigenvalue of 3.85. The KMO value was 0.82 and the Bartlett's test yielded significant results ($\chi^2 = 359.40, p < .010$), thereby indicating further factor analysis was warranted.

The fourth extracted advocacy factor was comprised of two items and was labelled network advocacy performance. The EFA extracted one factor which accounted for 78.28% of the total variance and was associated with an eigenvalue of 1.57. The KMO value was 0.50 and the Bartlett's test yielded significant results ($\chi^2 = 40.66, p < .010$), thereby indicating further factor analysis was warranted.

The fifth and final extracted advocacy factor was comprised of three items and was labelled network visibility in advocacy. The EFA extracted one factor which accounted for 65.38% of the total variance and was associated with an eigenvalue of 1.96. The KMO value was 0.68 and the Bartlett's test yielded significant results ($\chi^2 = 66.74, p < .010$), thereby indicating further factor analysis was warranted.

Consequential Validity

The consequential validity analysis found 91% of respondents indicated that the advocacy assessment information was useful or very useful. Additionally, 100% of respondents indicated they agreed or strongly agreed that they would try to use the advocacy scale results to modify their extension networks. Furthermore, 92.31% of respondents agreed or strongly agreed that they intended to use the advocacy factor scale results to modify their existing extension network. Lastly, 91.66% of respondents agreed or strongly agreed that they expected to use their advocacy factor information to modify their existing extension network.

Conclusions, Implications, and Recommendations

The purpose of the study was to develop and validate an instrument to provide a quantitative measure of perceptions of advocacy capacity within

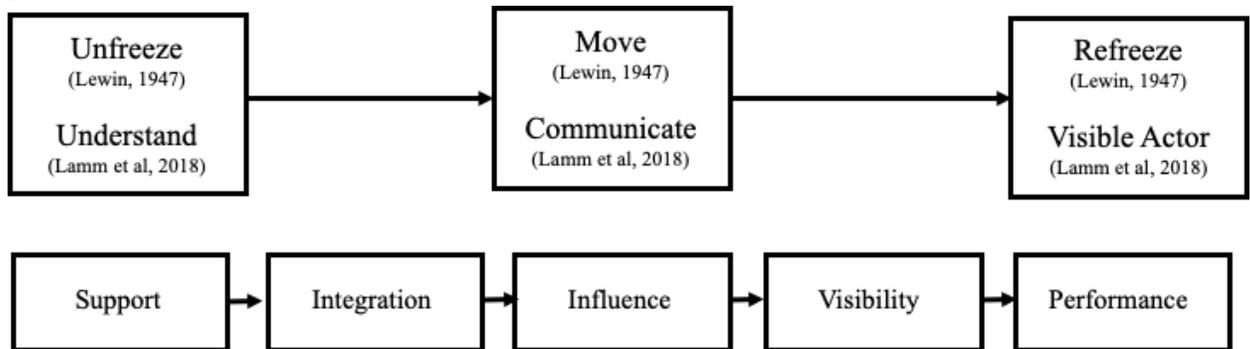
international extension networks. The proposed instrument was analyzed based on content validity, response process validity, internal structure validity, and consequential validity. To examine the internal structure validity of the instrument an exploratory factor analysis was conducted.

The extracted factors associated with the scale were anticipated to be aligned with the theoretical framework which informed the study, Lewin's (1947) Organizational Change Theory. The results of the EFA indicated that the underlying factor structure consisted of six latent factors. One item did not load onto any of the six latent factors and was removed. Additionally, the sixth factor only had one item that loaded onto it and was also removed. As a result, five factors were proposed, and included in further factor analysis. The new subscales measured perceptions of: 1) network support of advocacy (support), 2) network integration of advocacy (integration), 3) network influence in advocacy (influence), 4) network advocacy performance (performance), and 5) network visibility in advocacy (visibility).

From a conceptual perspective, the integration of the observed results within the study conceptual framework are presented in Figure 2. According to Lewin (1947), in order for change to occur, an unfreezing process must be initiated. From the current study, network support of advocacy serves as an initiating condition for the unfreezing to occur. At the boundary between unfreezing and movement/change in Lewin's model network integration is conceptualized to reside. Integration describes how a network includes advocacy activities within organizational norms and operations. Within the movement/change stage network influence is conceptualized. Within the present context, influence in advocacy denotes the position the network holds among other stakeholder groups and its impact on policymaking. In the boundary between movement/change and refreezing network visibility is conceptualized. The network visibility refers to whether other actors in international extension view the network as an effective advocate for international extension. Lastly, at the refreeze stage, network performance is conceptualized. The performance factor refers to whether the network has the means and ability to advocate effectively over time.

Figure 2.

Integration of Lewin's (1947) Organizational Change Theory and Observed Factors



Although the present study is not intended to serve as a theoretical work, the results are perhaps better understood within an existing theoretical framework. The proposed integration between the observed extracted international extension network advocacy factors and Lewin's (1947) Organizational Change Theory is intended to provide insights from both a practical and theoretical perspective. However, as an exploratory study interpretation of the proposed model is cautioned based on study limitations.

For example, one surprising finding was that item "The network communicates with the right audiences, e.g., policy/decision makers at all levels, the general public" did not load onto any of the latent variables for the aggregate IENAC scale. This finding does not align with previous literature which identified effective communication of extension stakeholder needs as a critical capacity for international extension advocacy (Lamm et al., 2018). Upon further analysis the item was found to load on three factors; however, none of the loadings were greater than the established .50 threshold. The observation may indicate the item is relevant; however, it is not specific enough to provide discrete insights to one unique factor. An associated recommendation is for future researchers to purposively develop a subscale measuring the effectiveness of communication in international extension networks. Effective communication is a clear need in advocacy capacity development in international extension networks and the lack of a subscale to measure this capacity is an area worthy of further investigation.

An associated limitation with the results of the present study is the emergence of a two-item factor associated with advocacy performance. Although the internal consistency statistics were acceptable, and two-item scales have been established as acceptable in the literature (e.g., Gosling et al., 2003), as a general rule multiple items typically have a better likelihood of describing a construct of interest (Eisinga et al., 2013). A recommendation would be to consider testing new items which may provide a more robust and meaningful measure of

international extension network advocacy capacity. Similarly, the item distribution within the scale may also warrant additional analysis. For example, with the support factor containing nine items it is likely there may be the need to determine whether all nine items are necessary to describe the construct of interest, or if some may be removed without sacrificing validity. Similar factor by factor item analysis is recommended to further improve and refine the scale.

Another important limitation of this study is the limited generalizability of results. Data were collected only in international extension settings in the global South including Africa, Latin America, the Caribbean, and the Pacific Islands. A recommendation is for future research to replicate the study and include larger samples with a more diverse selection of extension networks to improve scale robustness. Additionally, because this instrument measures perception of advocacy capacity and not discrete advocacy capacity, the applicability is limited. The results of the study indicate that further factor analysis is warranted for the aggregate advocacy scale as well as each of the proposed subscales. An associated recommendation is for future research to perform a confirmatory factor analysis on the IENAC scale and subscales to verify the proposed factor structure.

One of the theoretical implications of this study is that the identified advocacy factors could be integrated with Lewin's (1947) three-step model. Therefore, the results of the present study may help to inform where and when efforts should be focused based on location within the Lewin (1947) continuum. For example, unfreezing requires extension networks with the ability to increase an understanding of stakeholder needs. However, if there is already sufficient awareness of stakeholder needs, and the network has demonstrated sufficient levels of capacity necessary to support advocacy efforts it may be appropriate to focus efforts on subsequent foci of the IENAC scale. Specifically, focusing effort on the integration of advocacy efforts may be more germane to initiating change than support efforts.

From an applied perspective, the observed IENAC scale structure emphasizes the importance of network support and integration of advocacy activities. Additionally, these results highlight the importance of network influence with policymakers and stakeholders, visibility of the network, and the performance of the network on an ongoing basis. Being present, known, and heard are three of the most critical capacities for effective advocacy in international extension (Lamm et al., 2018). Above all, international extension networks exist to serve their clientele and network stakeholders must be able to observe the network and see their interests reflected. Cultivating trust with clientele and other stakeholder groups is essential. Extension networks can do so by integrating advocacy into their daily operations and supporting additional advocacy efforts championed by network members and clientele. In doing so, the

network builds social capital which may increase positive perceptions of network trustworthiness among stakeholders (Lin, 2008).

An associated recommendation would be for leaders of international extension networks to examine their internal operations and see how these affect external relationships with clientele, policymakers, and other stakeholder groups. For example, a recommendation is for extension networks to build trust with members and clientele by conducting an advocacy focused needs assessment. Such an assessment would provide valuable insights which could inform and improve network support of advocacy.

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