# Rural Health Network Sustainability Assessment Study

## Year 2: Technical Findings

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### **PURPOSE**

The Rural Health Network Sustainability Assessment Study is a two-year study developed collaboratively starting in 2015 by Rural Health Innovations (RHI), the National Cooperative of Health Networks (NCHN), and Evalytics, LLC and was funded from the U.S. Department of Health and Human Services, Health Resources and Services Administration, Federal Office of Rural Health Policy (FORHP). The primary purpose of this study was to develop a valid and reliable instrument to assess sustainability of rural health networks. The secondary purpose of the study was to identify conceptual network characteristics to better understand and support rural health network sustainability. The overall goal of the study was to increase the impact of rural health networks.

This Rural Health Network Sustainability Assessment Study: Year 2 Technical Findings report describes the study methodology and assessment findings that document validation of the assessment instrument, five conceptual factors of network sustainability and specific assessment question results. Conducting this study of network sustainability factors through a second iteration of data gathering and analysis was essential for validating the results from the first year of the study. The Year 2 Study methodology repeats the methodology of Year 1.

## STUDY METHODOLOGY AND INSTRUMENT VALIDATION

## **Instrument Development and Description**

The Study instrument has two sections. The first section asks questions about the characteristics of the network organization (years in existence, net income, member types, etc.). The second section asks respondents to respond to a series of statements in each of six areas of sustainability using a three-item Likert scale, "Yes", "No" or "N/A". Since this assessment was designed to obtain information about network sustainability, respondents were instructed to answer from the perspective of the network or grantee organization and not from a project or program perspective. The six areas of sustainability and the categorized assessment questions included in the Year 2 Study instrument are the final results from the Year 1 Study analysis. The six areas included in the Year 2 Study instrument include: Collaboration, Communication, Evaluation and Measurement, Financial Infrastructure Leadership, and Member-Driven.

#### **Assessment Administration**

Lists of potential respondents were provided to Evalytics by NCHN and RHI, and the assessment was administered through an online assessment tool during April through June 2017. A total of 167 potential respondents were invited to participate in the

Sustainability Assessment. Of these, 99 completed the assessment<sup>1</sup>. This represents a 59% response rate.

## **Analysis Tools and Methods**

Brief overview of statistical approach: It is important to understand that statistical analyses and testing have a long history in science and social science. Usually social scientists are interested in understanding the population being studied; in this case, rural health networks and organizational sustainability. Our hypothesis is that assessment questions within key areas accurately and precisely indicate measures necessary for rural health care networks sustainability.

By using two types of statistics – descriptive and inferential – we create a picture of the study sample, using descriptive statistics, and gathered information to make unknown characteristics known, using inferential statistics. The responses to the assessment statements from the sample provide data for both types of statistical tests. Inferential statistics tests are based in both probability theory and mathematics. Probability theory underlies our hypothesis and is based on research into organizations and sustainability. Accuracy of the results is determined by using a reliable sample from which to generalize. The statistical tests conclude the confidence level that the data show. Generally, when we talk about the results of a specific statistical test, social scientists will indicate whether or not the result (or finding) is *statistically significant*. This statement means there is a specific probability the result is correct, e.g., statistically significant at the .05 level concludes that 95% of the time the result is correct and 5% of the time the result will not be correct. A 95% or greater confidence level is used throughout the statistical testing for this study.<sup>2</sup>

As indicated previously, the assessment questions and conceptual factors which emerged through the Year 1 Study were used in the Year 2 assessment. There were 30 assessment questions within six conceptual factor areas. The conceptual factors included: *Leadership, Collaboration, Member-Driven, Communication, Evaluation and Measurement, and Financial Infrastructure*.

### **Correlational Analysis - Results**

The purpose of correlational analysis is to determine whether there is a linear relationship between variables. In other words, correlations indicate to what extent two or more variables fluctuate together. These relationships can either be positive or negative. A positive correlation indicates that both variables either increase or

 $<sup>^{1}</sup>$  A total of 103 individuals opened the survey. However, four did not answer any questions which resulted in a total of 99 completed surveys.

<sup>&</sup>lt;sup>2</sup> These two paragraphs provide a brief explanation for statistical testing. In no means should this be considered sufficient for understanding what, why and how of statistics. Many books have been written on this topic and should be accessed for anyone interested in fully understanding statistics testing.

decrease together and a negative correlation indicates that as one variable increases, the other decreases. Correlations are measured in terms of the *Pearson's r* correlation coefficient and can range from -1.00 to +1.00. A coefficient of +1.00 indicates a total positive correlation, a -1.00 indicates a total negative correlation and a coefficient of 0 indicates no correlation.

The results of the correlational analysis showed significant correlations between most of the 30 statements on the assessment, meaning significant linear relationships exist. All the significant correlations were positive, meaning that there are linear relationships between the assessment questions.

Table 1 provides a summary of the correlations showing the total number of possible correlations, total significant positive correlations and the percent of significant positive correlations within each of the conceptual factors. The percent of significant positive correlations provides a guide to the strength of the linear relationship between the key areas.

Table 1. Summary of Correlational Analysis

Scale Comparison	Total Possible Significant Positive Correlations	Total Significant Positive Correlations	% Significant Positive Correlations
Communication with Evaluation and Measurement	24	24	100%
Member-Driven with Communication	16	16	100%
Leadership with Collaboration	24	24	100%
Member-Driven with Financial Infrastructure	24	23	96%
Collaboration with Financial Infrastructure	36	3	83%
Collaboration with Evaluation and Measurement	36	28	77%
Leadership with Financial Infrastructure	24	17	71%
Evaluation and Measurement with Financial Infrastructure	36	18	50%
Member-Driven with Evaluation and Measurement	24	10	42%
Collaboration with Communication	24	10	42%
Leadership with Evaluation and Measurement	24	10	42%
Communication with Financial Infrastructure	24	9	38%
Leadership with Communication	16	5	31%
Collaboration with Member-Driven	24	4	17%
Leadership with Member-Driven	16	2	13%

Statistical significance is measured at the .01 and .05 levels. Percentages are rounded.

## **Reliability Analysis - Results**

The purpose of reliability analysis is to determine whether a scale composed of Likert questions consistently measures a construct. The constructs tested are the conceptual factors from Year 1, including, *Leadership*, *Collaboration*, *Member-Driven*, *Communication*, *Evaluation* and *Measurement*, and *Financial Infrastructure*. The reliability of an instrument is measured by the *Cronbach's Alpha* reliability<sup>3</sup> coefficient which measures internal consistency, or how closely related a set of assessment questions are as a group. In most social science research, a reliability coefficient of .70 is considered acceptable. As can be seen in Table 2, the *Cronbach's Alpha* reliability coefficient for each key area is well above the acceptable.

Table 2. Summary of Reliability Analysis

Factors	Cronbach's Alpha
Member-Driven	.961
Evaluation and Measurement	.941
Communication	.935
Financial Infrastructure	.899
Leadership	.857
Collaboration	.856

## Factor Analysis - Results

The statistical technique of factor analysis is used to reduce the number of survey or assessment questions (data reduction) and to detect structure in the relationships between the questions (classification). Data reduction and classification are important steps when developing and validating an assessment instrument. Reducing the number of questions within an assessment helps accurate measurement of a construct with as few questions as possible, resulting in respondents taking less time to complete the instrument. Reducing the time it takes a respondent to complete an instrument could have a positive impact on response rates to the assessment.

Assumptions regarding the data must be met prior to conducting a factor analysis. There are two assumptions. The first assumption is for an adequate number of responses for each assessment question. The first assumption is tested using the *Kaiser Meyer Olkin (KMO)* measure of sampling adequacy. recommends a minimum value of 0.5 KMO value. Furthermore, values between 0.7 and 0.8 are acceptable and values above 0.9 are considered excellent. The second assumption that must

<sup>&</sup>lt;sup>3</sup> Pedhazur & Pedhazur Schmelkin, 1991, p.92-94.

be met is to verify linear relationships between questions. *Bartlett's Test* is used to measure this assumption with a significance level less than .05. Additionally, the results of the factor analysis should account for an acceptable amount of cumulative variance (at or above 66%) with the fewest number of assessment factors. The factor analysis of the network sustainability questions required three separate iterations. The final iteration results met all the needed criteria. See Tables 3 and 4 for documented results.

Table 3 illustrates both data assumptions being met; an adequate number of responses and for each item with 0.846 KMO value results of the *KMO* and a linear relationship between the questions based on the results of Bartlett's Test significance level less than .05.

Table 3. KMO and Bartlett's Test Results: Third & Final Iteration

	KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of S	0.846		
Bartlett's Test of Sphericity	Approx. Chi-Square	2430.644	
	df	300	
	Sig.	.000	

Table 4 illustrates the cumulative variance of the assessment factors with the third and final iteration of factor analysis, showing the instrument successfully meeting the criteria of a cumulative percent variance greater than 66%.

Table 4. Factor Variance Explained: Third & Final Iteration Sorted by % of Variance

Assessment Factors	% of Variance	Cumulative % Variance
Evaluation and Measurement	34.905	34.905
Collaborative Leadership	14.935	49.840
Financial Infrastructure	13.379	63.219
Member-Driven	9.188	72.407
Communication	6.123	78.530

Factor analysis identifies relationships between assessment questions and then classifies them into *factors* based on what is commonly referred to as a *factor scale score*. Factor scale scores represent the relationship between the question and the factor. Factor scale scores are interpreted in much the same way as correlation coefficients - the higher the number, the greater the relationship. In most research fields, factor scale scores at or above .60 are considered acceptable and indicate a

strong relationship between the question and the assessment factor. In the naming of factors based on the grouping of questions we refer to the assessment factors as conceptual factors.

Within the Year 2 Study results of factor analysis, the third and final iteration reduced the number of factors from six to five and the number of assessment questions from 30 to 25. All the factor assessment questions had a factor scale score > .60. Initial naming of the conceptual factors is considered an intermediate naming step. Final conceptual factor naming will take place with further discussion and dialogue to be presented by RHI and NCHN in a final study report.

For the remainder of this technical report the conceptual factors are listed in alphabetical order:

- Collaborative Leadership
- Communication
- Evaluation and Measurement
- Financial Infrastructure
- Member-Driven

Table 5 illustrates factor scale scores for each assessment question above the minimum acceptable score of .60. <u>The conclusion is that the Rural Health Network</u> <u>Sustainability Assessment is a reliable and valid instrument to identify sustainability characteristics of a rural health network.</u>

Table 5. Study Questions and Factor Analysis Results - Third and Final Iteration

Conceptualized Factors and Study Questions	Factor Scale Score	Year 2 Area of Study
Collaborative Leadership <sup>4</sup>		
Network leader is aware of regional and national health care trends that could impact network members.	.878	Leadership
Network leadership creates opportunities for members to share ideas and problem solve together.	.863	Leadership
Network leadership creates opportunity for innovation.	.819	Collaboration
Network leader promotes transparency by disclosing information about network activities to their members.	.758	Leadership
Network forms strategic partnerships or relationships that are aligned with its mission and vision.	.735	Collaboration
Network leader meets face to face with members to promote trust.	.713	Leadership

<sup>&</sup>lt;sup>4</sup> Suggested name for this factor as it represents statements from both Collaboration and Leadership.

Conceptualized Factors and Study Questions	Factor Scale Score	Year 2 Area of Study
Communication		
Network's communication plan is consistent with its goals and objectives.	.874	Communication
Network's communication plan informs others about its mission, activities and key metrics.	.851	Communication
Network continuously monitors its communication plan to assess progress towards communication goals.	.836	Communication
Network's Board of Directors reviews the communication plan annually.	.804	Communication
Evaluation and Measurement		
Network's evaluation plan is consistent with network goals and objectives.	.925	Evaluation and Measurement
Network's evaluation plan includes process measures to determine progress towards projects and activities.	.901	Evaluation and Measurement
Network shares its evaluation and measurement results with members and stakeholders on a regular basis.	.829	Evaluation and Measurement
Network leaders and Board of Directors are involved in the process and development of evaluation measures.	.817	Evaluation and Measurement
Network has an evaluation plan to monitor progress toward goals, objectives and outcomes.	.807	Evaluation and Measurement
Network's Board of Directors reviews the evaluation plan and results quarterly.	.806	Evaluation and Measurement
Financial Infrastructure		
Network has financial systems and practices in place.	.895	Financial Infrastructure
Network leadership reviews financial statements on a regular basis.	.864	Financial Infrastructure
Network maintains adequate cash resources for its operations.	.795	Financial Infrastructure
Network has on staff or on contract a proven financial expert.	.738	Financial Infrastructure
Network has external audits each year or as required by law.	.734	Financial Infrastructure
Member-Driven		
Network's marketing plan is consistent with its mission and vision.	.934	Member-Driven
Network's marketing plan was developed from an assessment of member needs for network services.	.925	Member-Driven

Conceptualized Factors and Study Questions	Factor Scale Score	Year 2 Area of Study
Network continuously reviews its marketing plan to monitor progress toward marketing goals.	.922	Member-Driven
Network has a written marketing plan that incorporates member needs into product and service development.	.833	Member-Driven

## ASSESSMENT FINDINGS

## **Network Organization Description**

Network organization description variables were included in the assessment survey. Following are the assessment results for these variables.

## **Membership Type**

Most participating network organizations indicated they have members (93%). Respondents were asked to identify the types of organizations that comprised their network membership. Since networks can have a variety of member types, respondents were asked to select all organization types.

Table 6 shows the number and percent of network member types of Year 2 respondents. In Year 2, 79% of respondents (n = 78) indicated they had Hospitals as members, 50% (n = 49) had Primary Care Clinics and 41% (n = 41) had Behavioral Health Clinics as network members.

Table 6. Network Respondents Member Types

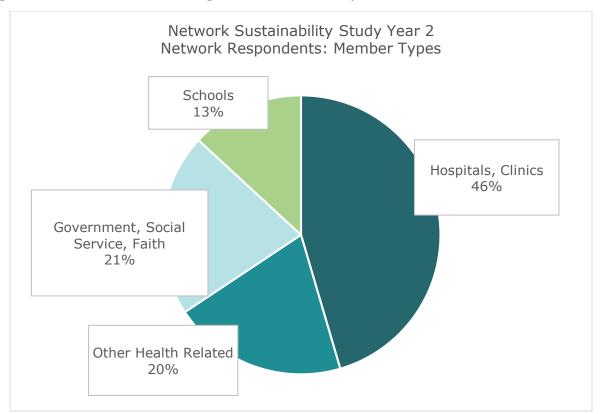
Network Respondents Member Types	Number of Responses	Percent of Responses
Hospital	78	79%
Primary Care Clinic	49	50%
Behavioral Health Clinic	41	41%
Community Health Center	39	39%
Public Health Organization	34	34%
Social Service Organization	30	30%
University or College	24	24%
Specialty Care Clinic	17	17%
Long Term Care Organization	16	16%
Elementary or Secondary School	15	15%
Technical or Community College	13	13%
Faith Based Organization	12	12%

Network Respondents Member Types	Number of Responses	Percent of Responses
State Department	11	11%
Emergency Services	10	10%
Home Health Organization	9	9%
Allied Health Organization	7	7%

Percentages rounded

Figure 1 shows a summary of network member organizations of Year 2 Study respondents that categorized the member types, as follows: Hospitals and/or Clinics, Other Health-Related Facilities, Government Agencies, Social Services and Schools (K-12 and Post-Secondary). The following chart displays the type of member organizations broken out into these four categories.

Figure 1. Network Member Organization Summary



### **Years in Existence**

Twenty-five percent of respondents' organizations have been in existence for more than 15 years. Twenty-one percent have been in existence less than 3 years. Figure 2 displays Year 2 results of the respondents' years in existence.

Network Organization: Number of Years in Existence

15+ Years
25%

0 -5 Years
40%

Figure 2. Network Years in Existence

#### **Annual Net Income**

Respondents were asked to provide the network's annual net income for the last fiscal year. The assessment defined annual net incomes as "all revenues and grant funds minus all expenses for the network organization." Fifty-six percent of respondents reported their network had an annual net income of Less than \$50,000. Fifteen percent reported net incomes above \$500,000.

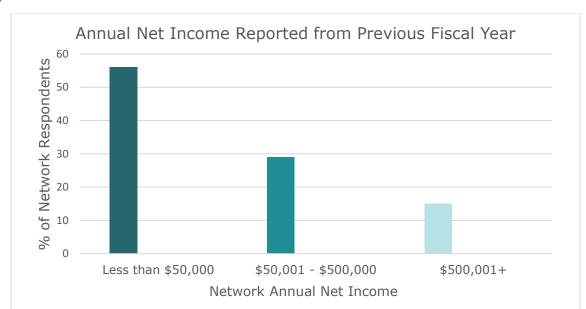


Figure 3. Network Annual Net Income

## **HRSA Grant Program Participation**

Respondents were asked to indicate which grants they currently have and which grants, if any, they have received from HRSA in the past two years. Table 7

includes results that show 39% of networks indicated having a Rural Health Network Development Program Grant, 8% indicated having a Rural Health Network Development Planning Grant and 8% indicated having a Rural Health Allied Health Training Program Grant. One-third (33%) of respondents indicated None of the grants listed and 19% indicated Other (see table below).

Table 7. HRSA Grant Program Participation in Current Grants

Grant Program Participation - Current	Percent of Cases
Rural Health Network Development Program	39%
Rural Health Network Development Planning	8%
Rural Network Allied Health Training Program	8%
Rural Health Information Technology Workforce	7%
Rural Health Care Coordination Network Partnership	3%
Small Provider Health Care Quality Grant Program	2%
Delta State Rural Development Network	1%
Telehealth Network Grant Program	1%
None	33%
Other	19%

Table 8 shows that over the past two years, 32% of respondents indicated receiving a Rural Health Network Development Program Grant, 23% reported receiving a Rural Health Network Development Planning Grant and 8% reported receiving a Rural Health Information Technology Workforce Program Grant. One quarter of respondents (26%) indicated they had not received any of the listed grants in the past two years, and, 10% indicated they had received Other grants.

Table 8. HRSA Grant Participation in the Last Two Years

Grant Program Participation – Last Two Years	Percent of Responses
Rural Health Network Development Program	32%
Rural Health Network Development Planning	23%
Rural Health Information Technology Workforce	8%
Rural Network Allied Health Training Program	7%
Small Provider Health Care Quality Grant Program	4%
Rural Health Care Coordination Network Partnership	3%

Grant Program Participation – Last Two Years	Percent of Responses
Telehealth Network Grant Program	3%
Delta State Rural Development Network	1%
None	26%
Other	10%

## Conceptualized Factors

## **Summary**

Table 9 shows a summary of factor scale scores organized by conceptual factor. The results were calculated for descriptive and statistical analysis purposes. To calculate the factor scale scores, responses of "Yes" were given a numerical value of "2", "No" responses were given a numerical value of "1" and "N/A" responses were given a numerical value of "0". Where the frequency distribution minimum scale score was "0" the respondent indicated "N/A" for each of the assessment questions comprising that scale.

Due to the different number of assessment questions which compose each factor, the minimum and maximum scores will vary across factors. The factors with more questions will have higher minimum and higher maximum scores and the factors with fewer questions will have lower minimum and lower maximum scores. Due to these differences, comparisons between factors scores should not be made. Conceptual factors are listed alphabetically.

Table 9. Summary of Factor Scale Scores

Factor Scale Scores	Number of Respondents (N)	Frequency Distribution Minimum Score	Frequency Distribution Maximum Score	Frequency Distribution Mean Score
Collaborative Leadership	97	4.00	12.00	11.74
Member-Driven	98	0.00	8.00	4.41
Communication	97	0.00	8.00	5.77
Evaluation and Measurement	97	0.00	12.00	9.28
Financial Infrastructure	97	0.00	10.00	8.48

The following tables, one for each conceptual factor, includes a frequency distribution for each conceptual factor including the number of responses, (N), and percentages by factor for the three possible responses, (Yes, No, N/A).

## **Collaborative Leadership**

All questions within the Collaborative Leadership factor have percentages of respondents that indicated "Yes" at or above 95% (Table 10).

Table 10. Collaborative Leadership: Factor Frequency Distribution

Collaborative Leadership		es		No	NA	
Collaborative Leadership	N	%	N	%	N	%
Network leader is aware of regional and national health care trends that could impact network members.	96	97%	1	1%	2	2%
Network leadership creates opportunities for members to share ideas and problem solve together.	95	96%	3	3%	1	1%
Network leadership creates opportunity for innovation.	94	96%	3	3%	1	1%
Network leader promotes transparency by disclosing information about network activities to their members.	93	94%	2	2%	4	4%
Network forms strategic partnerships or relationships that are aligned with its mission and vision.	94	95%	2	2%	2	2%
Network leader meets face to face with members to promote trust.	95	96%	2	2%	2	2%

#### Communication

The *Communication* factor is comprised of four assessment questions, and the percentage of respondents who indicated "Yes" on the assessment ranged from 42% to 77% (Table 12). The largest percentage of respondents who indicated "Yes" was in response to the statement, "The communication plan is consistent with the networks goals and objectives."

Table 11. Communication: Factor Frequency Distribution

Communication		Yes		No		NA	
Communication	N	%	N	%	N	%	
Network's communication plan is consistent with its goals and objectives.	75	77%	6	6%	17	17%	
Network's communication plan informs others about its mission, activities and key metrics.	70	71%	11	11%	17	17%	
Network continuously monitors its communication plan to assess progress towards communication goals.	59	60%	20	20%	19	19%	
Network's Board of Directors reviews the communication plan annually.	41	42%	33	34%	24	25%	

## **Evaluation and Measurement**

The *Evaluation and Measurement* factor is comprised of six questions regarding the network's evaluation and measurement activities. Eighty-one percent of respondents indicated their Network has an evaluation plan to monitor progress towards goals, objectives and outcomes, but only 36% indicated The network's Board of Directors reviews the evaluation plan and results quarterly.

Table 12. Evaluation and Measurement: Factor Frequency Distribution

Evaluation & Measurement		Yes		No		A
Evaluation & Measurement	N	%	N	%	N	%
Network's evaluation plan is consistent with network goals and objectives.	79	81%	4	4%	15	15%
Network's evaluation plan includes process measures to determine progress towards projects and activities.	73	75%	9	9%	16	16%
Network shares its evaluation and measurement results with members and stakeholders on a regular basis.	62	63%	20	20%	16	16%
Network leaders and Board of Directors are involved in the process and development of evaluation measures.	70	71%	14	14%	14	14%
Network has an evaluation plan to monitor progress toward goals, objectives and outcomes.	76	78%	18	18%	4	4%
Network's Board of Directors reviews the evaluation plan and results quarterly.	35	36%	46	47%	17	17%

### **Financial Infrastructure**

The Financial infrastructure is comprised of five assessment questions. The percent of "Yes" responses ranged from 89% to 71% (Table 14). The assessment question "Network has financial systems and practices in place" has the highest percentage 89%.

Table 13. Financial Infrastructure: Factor Frequency Distribution

Financial Infrastructure		Yes		No		NA
riilaliciai Illiiasti uctule	N %		N	%	N	%
Network has financial systems and practices in place.	87	89%	3	3%	8	8%
Network leadership reviews financial statements on a regular basis.	84	86%	5	5%	9	9%
Network maintains adequate cash resources for its operations.	77	79%	8	8%	13	13%
Network has on staff or on contract a proven financial expert.	70	71%	20	20%	8	8%
Network has external audits each year or as required by law.	70	71%	11	11%	17	17%

#### **Member-Driven**

The *Member-Driven* factor is comprised of four questions and has the lowest percentage of respondents who indicated "*Yes*" on each assessment item. The percentages of "*Yes*" responses range from 39% to 48% (Table 11).

Table 14. Member-Driven: Factor Frequency Distribution

Member-Driven	Yes		No		NA	
	N	%	N	%	N	%
Network's marketing plan is consistent with its mission and vision.	47	48%	12	12%	40	40%
Network's marketing plan was developed from an assessment of member needs for network services.	42	42%	18	18%	39	39%
Network continuously reviews its marketing plan to monitor progress toward marketing goals.	39	39%	21	21%	39	39%
Network has a written marketing plan that incorporates member needs into product and service development.	39	39%	48	49%	12	12%

Factor comparisons to key network characteristics are possible. One-way analysis of variance was used to determine whether statistically significant differences were observed between key network characteristics. Only one of the five conceptual factors had statistically significant differences compared to network characteristics; Financial Infrastructure.

Table 15 illustrates statistically significant differences with the conceptual factor of financial infrastructure to the number of years in existence. Networks that have been in existence 5 to 10 Years had a statistically significant lower average financial infrastructure factor scale score.

Table 15. Factor 3: Financial Infrastructure

Network Years in Existence Comparison						
	N	Mean				
Less than 3 Years	20	7.70				
3 to 5 Years	18	8.16				
5 to 10 Years	17	7.35				
10 to 15 Years	17	9.41				
More than 15 Years	25	9.48				
Respondent Count	97					

Table 16 shows statistically significant differences with the conceptual factor of financial infrastructure and network annual net income. Networks that have the least annual net income (less than \$50,000) had a statistically significant lower average financial infrastructure factor scale score. Interestingly, networks with incomes in the third group (\$250,000-\$500,000) also had a statistically lower average financial infrastructure factor scale score<sup>5</sup>.

Table 16. Factor 3: Financial Infrastructure

Annual Net Income Comparison						
	N	Mean				
Less than \$50,000	53	7.75				
\$50,001-\$250,000	19	9.52				
\$250,001-\$500,000	10	8.20				
\$500,001-\$750,000	5	9.80				
\$750,001 and greater	10	10.0				
Respondent Count	97					

<sup>&</sup>lt;sup>5</sup> For analytical purposes, annual net income was recoded into five groups for the comparison with factor scores.

## CONCLUSION

Conducting the *Rural Health Network Sustainability Assessment* a second time confirmed the validity and reliability of the assessment for understanding and ascertaining the characteristics needed for sustaining a rural health network organization. The second iteration of the study further condensed the number of required assessment questions, dropping from thirty to twenty-five; and the number of factors, from six to five. Both the Year 1 and Year 2 Technical Findings documents will be available on the RHI and NCHN websites.

The five sustainability factors represent a system approach describing characteristics that enable rural health networks to thrive, not just survive from grant to grant; to understand the value of building infrastructure, not just grow the annual budget or numbers of programs; and to create an asset for their communities that will be there tomorrow, not just today. **The Network Sustainability Assessment is a tool to be used to improve efforts with the goal of sustainability.** 

Organizational sustainability is a key consideration for a variety of stakeholders, such as public and private grantors, consortiums in the health care field, boards of directors or trustees of health networks, employees, and communities in which health networks are present. The Sustainability Assessment allows network leaders and stakeholders to better understand areas in which network organizations struggle, need additional resources, or lack expertise. It is a validated tool to identify areas to focus or initiatives to pursue that will increase their likelihood of becoming and remaining sustainable organizations.

An important following-step to this Year 2 Study: Technical Findings documentation is to discern a shared understanding of the five conceptual factor names and descriptions. Having a common understanding and enabling easy access of the validated sustainability assessment by network leaders will encourage continuous improvement and support network sustainability in rural communities across the country. A final report that describes the conceptual factors, or characteristics, will be presented at the 2018 NCHN Annual Conference, provided to the Federal Office or Rural Health Policy, Community Based Division as part of the RHI Network Development Technical Assistance deliverables and published to the RHI Network Aim For Sustainability Portal.

## **BIBLIOGRAPHY**

Chetty, Priya and Datt, Shruti. *Interpretation of Factor Analysis Using SPSS.* Projectguru.in. Project Guru, February 2015. Web.

Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method* (Second ed.). New York, NY: John Wiley & Sons, Inc.

Gallaher, J. (2016). Retired; Previously Director of Research, American Academy of Family Physicians. (G. Martin, Interviewer)

Hildebrand, D. K. (1977). Analysis of Ordinal Data. Newbury Park: SAGE Publications, Inc.

Miller, D. C. (1983). *Handbook of Research Design and Social Measurement* (Fourth ed.). White Plains, NY, USA: Longman, Inc.

Moore, D. S. (2003). *The Practice of Business Statistics: Using Data for Decisions.* New York: W. H. Freeman and Company.

Moore, D. S. (2012). *Statistics: Concepts and Controversies* (Eighth ed.). New York: W H Freeman.

Pedhazur, E. J. (1991). *Measurement, Design, and Analysis*. Hillsdale: Lawrence Erlbaum Associates.

Rural Health Innovations (2016). Rural Health Network Sustainability Assessment Study: Year 1 Technical Report and Findings. RHI web.

Reynolds, H. (1984). *Analysis of Nominal Data*. Newbury Park: SAGE Publications, Inc.

Starkweather, Jon. *Principal Componens Analysis in SPSS*. Unt.edu. Univeristy of North Texas Research and Statistical Support. January 2014. Web.