Stakeholder Network Analysis: a tool to support collaboration for better health

COMPLEX SYSTEMS AND NETWORK SCIENCE FOR PREVENTION AND CONTROL OF NONCOMMUNICABLE DISEASES

A WHO COLLABORATING CENTRE FOR RESEARCH AND TRAINING

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Abbreviations

GNAFCC	Global Network for Age-Friendly Cities and Communities
NGO	Non-governmental Organization
SNA	Stakeholder Network Analysis
NCD	Noncommunicable Diseases

1. What is stakeholder network analysis (SNA)?

Stakeholders can be defined as individuals, groups or organizations that have some degree of interest in the outcome of an intervention or project.

A 'network' in public health is a collection of interconnected entities, such as individuals, organizations or stakeholders.

SNA is the exploration of the interactions between individuals, organizations or stakeholders, and the relationships between them. It provides a set of theories, techniques, and tools useful for understanding a broad range of structural and relational aspects as stakeholders and organizations interact with others. Therefore, it is both a methodological tool and a theoretical paradigm *(1)*.

A stakeholder network analysis has four important features:

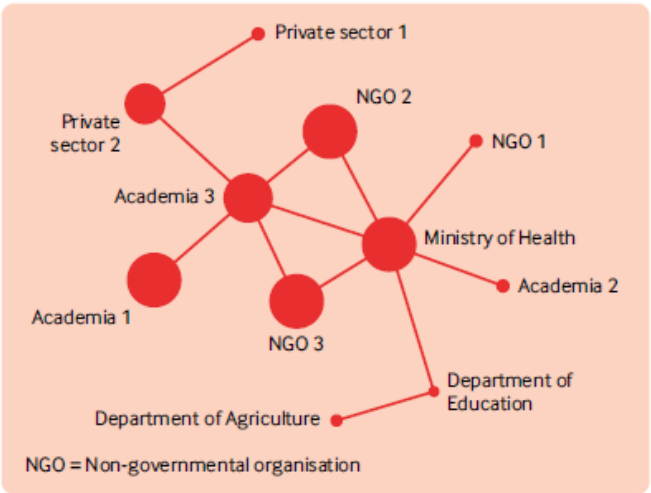
1. Application of a structural approach that focuses on patterns of linkages between stakeholders.
2. Based on empirical data.
3. Use of mathematical and computational models.
4. Presentation of graphics to highlight findings.

SNA is conducted by recording data on who is connected to whom. These relationships can be many and varied and can be derived from survey information, such as who shares resources with whom, or archival traces, such as email exchanges.

The data are used to derive individual network measures, such as the number and nature of links or relationships each individual or organization has, and network level measures, such as network density, which is a count of the number of links or relationships between organizations presented as a proportion of all links or relationships possible.

Typically, the relationships are presented visually using network diagrams (see Fig. 1).

Fig.1. Example of a stakeholder network[a]



a The nodes represent organizations and lines represent collaborations between organizations. The larger nodes represent organizations with the most collaborators.

Source: (2).

Network terminology

One difficulty with understanding SNA terminology is that many disciplines, such as mathematics and sociology, represent relationships with a network, leading to multiple terms for the same concept. Appendix A provides definitions of core terminology commonly used in SNA.

The stakeholder

Stakeholders are defined as individuals or organizations with an interest in the outcome of an intervention or project. In practice, it is useful to differentiate between the range of groups/individuals involved and the roles they might have in achieving a successful outcome. Depending on the purpose or stated objectives of the stakeholder analysis, the approach for defining stakeholders can vary.

A common framework for defining stakeholders is by categorizing them as primary, secondary, or key stakeholders. A primary stakeholder is one that will be a contributor to and/or affected by a project's outcomes either positively (beneficiary) or negatively (e.g. those involuntarily displaced). Secondary stakeholders are the intermediaries in the delivery process of outcomes. Key stakeholders are those who will be significantly affected by the project and/or significantly contribute to the project. Assigning stakeholders categories such as these is not normally done in isolation, but also by prioritizing them, taking into consideration the degree of influence and degree of importance they may have.

An alternative framework for identifying the stakeholders in a study is the In/Out/Seeker/Provider (IOSP) framework *(3)*, which is similar to a stakeholder matrix used in many existing toolkits and which helps to identify the actors and their roles at different stages of the intervention. The unique contribution of this framework is that it locates actors as either in or out of a geographic area of interest, initially presented as a way of locating stakeholders within the catchment of a disaster setting. It can be used at different activity levels of interest: with individuals, groups, or individuals as the unit of analysis.

Why conduct stakeholder network analysis?

The concept of interorganizational networks in health-care provision is seen as advantageous for a number of reasons: lateral rather than vertical governance can be more effective, better coordination leads to less duplication of resources and increased cohesion, and the adoption of interventions and implementation of programmes can be improved *(3)*. Stakeholder networks hold the potential to:

- promote healthier environments in both physical and digital spaces;
- improve access to and the availability of healthy and sustainable diets and opportunities for physical activity;
- enhance transparency and mitigate conflicts of interest, especially within industries such as food, tobacco, and alcohol, which often clash with NCD prevention goals; and
- identify and harness win-win opportunities for cross and multisectoral action.

Stakeholder network analysis can grant researchers, policy-makers and public health professionals a wealth of insight into the networks they sit within, highlighting influential stakeholders who can play a key role in the implementation of an intervention, project, or programme. It can highlight gaps in networks, identifying if and where stakeholders are

missing from conversations or collaborations, and thus help shape and improve networks to maximize success and the impact of implementing interventions and programmes.

2. How to conduct a stakeholder network analysis?

There are a number of different tools available to help support the conduct of SNA. However, while many tools for the design, data collection, and data analysis of stakeholder network surveys exist, they are not always free of charge or covering all three of these steps. For instance, the PARTNER CPRM™ (Community partner relationship management tool), developed by VisibleNetworkLabs[1], has all these functionalities but they are part of a paid service. Network Canvas[2] is a free software that allows users to design and deploy network surveys for personal networks, but it is not web-based and requires interviewers equipped with a tablet or laptop to carry out the surveys. Some free software exists to analyse network data, such as the igraph package[3] for R and Python (free software for statistical computing) and Gephi[4].

One particular tool that this manual is aligned with is the Stakeholder Net tool[5]. This tool has been developed by Queen's University Belfast WHO Collaborating Centre for research and training on complex systems and network science for NCD prevention and control, as part of a collaboration with the Special Initiative on NCDs and Innovation (SNI) of the WHO Regional Office for Europe. It is a web-based tool created to facilitate the design, data collection, and data analysis of stakeholder network surveys.

The following section provides a step-by-step guide on how to conduct an SNA.

Planning process

A robust plan for conducting your SNA is needed. As with any other project, this will take an investment of time, which will vary according to the scope and scale of your study concept. The first steps you should consider when undertaking a SNA will be to define its purpose, establish the scope of existing data, identify potential users of the information, and outline how you intend to use the information you decide to collect. These steps can be supported using the Stakeholder Net tool.

What is the purpose of your stakeholder network analysis?

It is important to have a clear focus on what you want to understand about the stakeholder relationships in your field of interest. This will help establish the parameters of your SNA and clearly identify variables to be measured later in the process. As you move into thinking about how to conduct the SNA, clarifying your objectives will indicate the various steps that need to be taken in the methodology and establish the limits of your SNA. Having clarity around the

[1] VisibleNetworkLabs. In: VisibleNetworkLabs [website]. VisibleNetworkLabs; 2023 (https://visiblenetworklabs.com/partner-cprm/).
[2] Network Canvas. In: Network Canvas [website]. Network Canvas; 2023 (https://www.networkcanvas.com/).
[3] igraph – The network analysis package. In: igraph [website]. igraph; 2023–2024 (https://igraph.org/).
[4] The Open Graph Viz Platform. In: Gephi [website]. Gephi (https://gephi.org/).
[5] Stakeholder Network Visualization. In: Stakeholdernet [website]. Queen's University Belfast and WHO Regional Office for Europe; 2024 (stakeholdernet.org).

purpose of your SNA is also beneficial from an ethical standpoint, as it will enable you to avoid the collection of any data that is not strictly required.

To identify the purpose of your SNA, existing knowledge in your field of interest should be considered. This will help identify gaps in the current evidence base and/or your own professional knowledge. Additionally, it might be useful to reflect upon the issues you are attempting to address and map these out before progressing to the design stages. This can be as simple as creating a list of issues, interests, objectives and desired outcomes and prioritizing them.

While planning the purpose of your SNA, relevant examples of how the Stakeholder Net tool can be used should be considered including:

- developing a protocol
- providing input for other analyses
- informing or updating action plans
- providing information to challenge or support policy, or
- guiding participatory consensus-building processes, where related experts and citizens as well as the target population or direct/indirect stakeholders are involved in the policy-decision-making process.

An example of a protocol for the collection of stakeholder network data in the context of the Global Network for Age-friendly Cities and Communities (GNAFCC) is available in Appendix B.

Identify information users

Depending on the purpose of your SNA, the user group – that is, the research or project team conducting the SNA – will vary. When defining a user group, this means primarily those who will be involved in the collection of data and secondarily those who will directly benefit from the collection of the data. In some instances, perhaps bigger or more complex studies, it may be useful to establish a working group of these users, who can contribute to the study protocol, analyses, and strategies for using the data. It is equally important to consider users of the information beyond this working group and how they might access any data made available.

Review existing information

There may be existing data about the organizations and connections you intend to map. It might be possible to use these data to supplement or support your SNA, or in some circumstances, render it unnecessary. It is suggested to identify local sources, and depending on your familiarity with potential participant organizations, contacting them about their own collection of data and its availability. Understanding what data is in circulation about your target group will also help you avoid collecting unnecessary or duplicate data.

What information do I want to collect? How might I use this information?

The quality of data, not necessarily the amount of data, will better support your objectives and enable you to affect necessary change more readily. It is important to carefully consider the information you intend to collect and how you plan to put this to use, prior to conducting a stakeholder network analysis. To do this, it is useful to identify a question or a range of sub-questions relating to your objectives.

An example of a survey questionnaire for the collection of stakeholder network data in the context of the GNAFCC is available in Appendix C.

Develop a timeline

A core tenet of the network concept is that a network is dynamic, fluid and temporal – relationships, even organizational ones, are not static. Therefore, when conducting a stakeholder network analysis, consider the temporality of the project/network you intend on mapping. You should establish a timeline for the process that is realistic and achievable, including all the major steps for conducting a stakeholder network analysis detailed in the Stakeholder Net tool.

Ethical requirements

Check ethical protocols and requirements with your organization. These may vary according to internal policy and the legal jurisdiction in which your organization is located. Generally, any research involving human participants, particularly those characterized as vulnerable, such as children and displaced people, should require robust ethical checks. This is particularly salient given the invasive nature of network analysis, in which participants are expected to nominate connections and provide data regarding these interactions or relationships. In some instances, this can deter participants from responding to questions. Therefore, having clearly articulated ethical procedures can reassure them and enhance response rates. It is important to consider implications for General Data Protection Regulation (GDPR) when managing data within the European Union/European Economic Area and exporting personal data outside these areas.

Network survey development

Core survey components

There are a number of question categories that can be useful when trying to understand the effectiveness of partnerships involved in reaching the overall objectives of a given intervention or programme. Five categories are suggested to produce data that is relevant to your project or programme.

1. Background information. This component of the survey is designed to elicit data about a respondent's organization, including items such as key sectors, organizational type, numbers of employees, and its organizational objectives.

2. Participation. It is important to understand the nature of the network or programme being examined. Therefore, we ask questions about the frequency, duration, and types of engagement that have taken place in this context, and the barriers and facilitators for participation or collaboration.

3. Exchange of information. This survey component examines the exchange of information and knowledge between stakeholders directly involved in the development and implementation of an intervention or programme. Stakeholder Net helps you to identify how information (knowledge) flows within a network or programme. Gaps in information can disrupt effective delivery and, as such, Stakeholder Net helps to identify ways the effectiveness of a partnership or network can be improved or remain resilient.

4. Collaborations and interactions. These questions focus on the types of engagements respondents have within a network or programme. This information is useful for identifying key sites of interaction within a network and identifying individuals or stakeholders that may need improved support or attention. Questions in this component will also reveal the scope and scale of the stakeholder network underpinning a programme.

5. Functioning of the stakeholder. This section evaluates the functioning of those involved in the activity of the network or programme being examined. Stakeholder Net examines aspects such as facilitation, recruitment, participation, and the opportunities that are involved for stakeholders during the implementation of a network or programme. By collecting these data, it is possible to identify leaders within the stakeholder network and those organizations/individuals with whom influence and power resides.

Examples of some of the available question types that can be used in the survey tool are available in Appendix D.

3. Analysing and interpreting the data

The data analysis is typically divided into three elements. Below we provide an example from a stakeholder network analysis conducted as part of the GNAFCC. This example is based on the Age Friendly Ireland (AFI) network. AFI is the organization responsible for the national Age Friendly Programme, affiliated to WHO's GNAFCC.

First, we analyse the reasons for being part of the GNAFCC and AFI, and the main barriers to engage with other members of these networks.

Second, based on the collaborations nominated by the respondents, we generate a graph representing the network, with each node representing one AFI member, and each link representing a collaboration between two members. We also calculate a series of network-level statistics that describe the general structure of the network. In particular, calculating these statistics can help provide a better understanding of the structure, characteristics, and function of stakeholder networks. These insights have been used to improve the efficiency and effectiveness of novel interventions, and also to identify important subnetworks which could be beneficial for aligning priorities, such as for NCD prevention) *(2)*.

For calculations, useful network-level statistics include:

- number of nodes, which is the number of members of the network;
- number and percentage of respondents, which is the number and proportion of members of the network who responded to the survey;
- number of links, which is the number of relationships between members of the network, based on the nominations made by the survey respondents;
- number and percentage of links per purpose and level of engagement, which is the number and proportion of relationships per purpose and level of engagement, based on the nominations made by the survey respondents;

- number of components, which is the number of portions of the network that are disconnected from each other, indicating whether there are sub-networks that are not connected with other parts of the network;
- density, which is the number of relationships reported, divided by the number of all possible relationships in the network, ranging from 0 (no connections at all) to 1 (all possible relationships were reported) – the closer to 1, the denser the network is, meaning that a larger number of connections exist between its members;
- global reciprocity, which is the proportion of mutual connections between members of the network: a mutual connection happens when Respondent A nominates a connection with Respondent B, and Respondent B nominates a connection with Respondent A. This ranges from 0 (no mutual connections at all) to 1 (all connections are mutual, that is, where they are reported by the two parties involved);
- global transitivity, which is the number of triangles (i.e. three nodes all connected between themselves) divided by the number of triplets (i.e. three nodes connected, either closing a triangle or not). Fig. 2 exemplifies these two types of triplets. This ranges from 0 (no triangles at all) to 1 (all triplets are triangles) – the closer to 1, the more likely it is that the collaborators nominated by one node will also collaborate among themselves, closing a “collaboration triangle”; and
- number of cliques, which is the number of portions of the network where all nodes are connected between themselves, forming a completely connected group (i.e. clique). In this report, the minimum clique size is three.

Fig. 2. Examples of triplets[a]

[a] The triplet on the right is also a triangle.

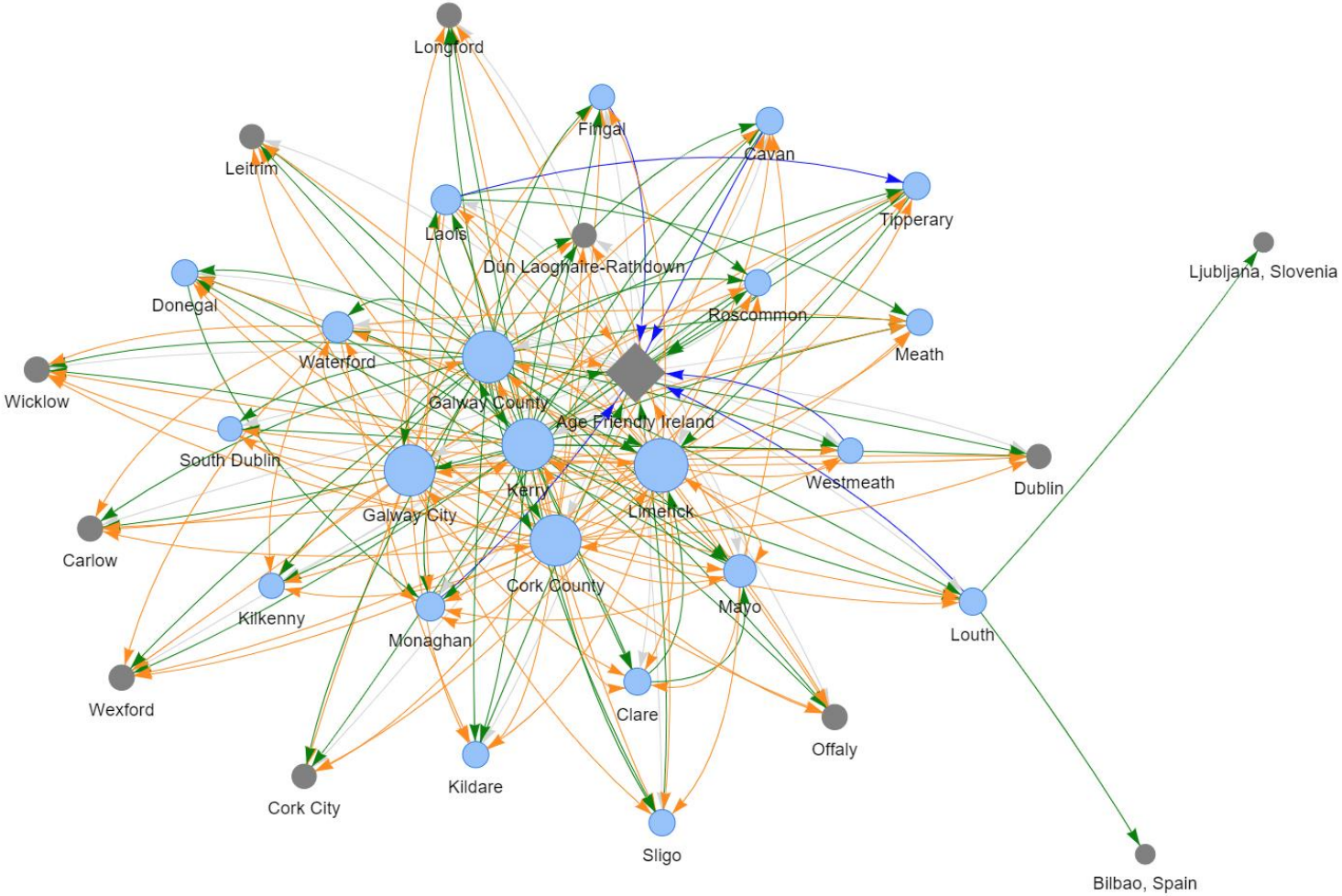
Lastly, calculation of node-level statistics describes the number of connections and the role each member plays in the network structure. These statistics are reported for each respondent and calculate the mean, standard deviation, maximum, minimum, and frequency for the entire set of respondents. These node-level statistics can help identify key influential stakeholders, which can be beneficial for optimizing information flow, resource allocation and strategic partnerships.

For calculations, useful node-level statistics include:

- outdegree centrality, which is the number of nominations made by a survey respondent, indicating how many members of the networks the respondent has a relationship with;
- indegree centrality, which is the number of nominations received by a network member, indicating how many respondents have a relationship with the nominated node, or its “popularity”;
- degree centrality, which is the sum of indegree and outdegree centrality, indicating the total number of relationships that a node has and manages;
- number of links per purpose and level of engagement, which is the number of relationships per purpose and level of engagement, based on the nominations made by the survey respondents;
- betweenness centrality, which is how important a node is in connecting other pairs of nodes in the network who otherwise would be disconnected or have a longer path connecting them, indicating how important a node is in playing the role of “bridge” between other nodes;
- local reciprocity, which is the proportion of mutual connections between the node of interest and the collaborators it nominates. A mutual connection happens when the node of interest nominates a connection with Collaborator A, and Collaborator A nominates a connection with the node of interest. This ranges from 0 (no mutual connections at all) to 1 (all connections are mutual, reported by the two parties involved); and
- local transitivity, which is the number of triangles (i.e. three nodes all connected between themselves) divided by the number of triplets (i.e. three nodes connected, either closing a triangle or not) involving the node of interest. Fig. 1 exemplifies these two types of triplets. This ranges from 0 (no triangles at all) to 1 (all triplets are triangles) – the closer to 1, the more likely it is that the collaborators nominated by the node of interest will also collaborate among themselves, closing a “collaboration triangle”.

Fig. 3 presents a visualization of the Age Friendly Ireland network.

Fig. 3. Age Friendly Ireland network[a]



Legend: Blue nodes: members that responded to the survey. Grey nodes: members that did not respond to the survey but were nominated by respondents. Diamond: Age Friendly Ireland Programme. Arrows: orange – communication only; blue – share resources; green – joint programming; light grey – joint programming (reported by Age Friendly Ireland Programme).

a The size of the nodes is at scale with the number of members in the network.

4. Useful resources

Introductory textbooks:

- Hanneman RA, Riddle M. Introduction to social network methods. Riverside, CA: University of California, Riverside; 2005 (http://faculty.ucr.edu/~hanneman/).
- Borgatti SP, Everett MG, Johnson JC, Agneesons F. Analyzing social networks. SAGE Publications Ltd; 2024 (https://uk.sagepub.com/en-gb/eur/analyzing-social-networks/book281575?gad_source=1&gclid=CjwKCAjw9IayBhBJEiwAVuc3fpWE49o6dwVPAKhGBKfBWcS05vBrkr4II9mxSc8nTebmSsVsOHicnRoCyJEQAvD_BwE).
- Valente TW. Social Networks and Health. Models, Methods, and Applications. New York: Oxford University Press; 2010 (https://academic.oup.com/book/4172).
- Barabasi AL. Network Science. In: Network Science [website] (http://networksciencebook.com/).

Societies:

- International Network for Social Network Analysis (INSNA)**.** In: INSNA [website]. INSNA; 2014 (http://www.insna.org/).
- European Social Network (EUSN). In: European Social Network [website]. EUSN (http://www.esn-eu.org/home/index.html).

Software:

- Borgatti SP, Everett MG, and Freeman, LC. Ucinet for Windows: Software for Social Network Analysis. In: UCINET Software [website]. Harvard, MA: Analytic Technologies; 2002 (https://sites.google.com/site/ucinetsoftware/home?pli=1).
- The Open Graph Viz Platform. In: Gephi [website]. Gephi (https://gephi.org/).
- Mrvar A, Batagelj V. Analysis and visualization of large networks with program package Pajek. Complex Adapt Syst Model. 2016;v4(6). https://doi.org/10.1186/s40294-016-0017-8.
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2. Hunter RF, Wickramasinghe K, Ergüder T, Bolat A, Arı HO, Yıldırım HH, et al. National action plans to tackle NCDs: role of stakeholder network analysis. BMJ. 2019;365:l1871. Doi: 10.1136/bmj.l1871.
3. Varda, DM, Forgette R, Banks D, and Contractor N. Social network methodology in the study of disasters: Issues and insights prompted by post-Katrina research. Population Research and Policy Review. 2009;28(1):11–29.

Annex A. Terminology and theoretical development of SNA

The table below provides definitions of core terminology commonly used in SNA.

Basic definitions	
network	Set of nodes AND set of ties representing entities and one or more relationships between them.
node	Representation of an entity, such as a person, organization or stakeholder involved in Age-friendly Cities and Communities (AFCC) programmes. This is also called a vertex or actor.
tie	Representation of a relationship between a pair of entities, such as collaborations or shared resources between AFCC organizations. This is also called an edge, arc, or link.
directed/undirected	The relationship may be one way (directed) or two way (undirected). As a directed example, Kilkenny could consider Dublin a collaborator, even if Dublin doesn't consider Kilkenny a collaborator.
Node properties	
neighbours	The set of nodes that have a tie with the given node.
degree	The number of ties attached to the given node. An example is the number of organizations that Kilkenny considers to be collaborators.
clustering coefficient	The proportion of potential ties between a node's neighbours that are actual ties. An example is the proportion of pairs of Kilkenny's collaborators who are collaborators with each other.
closeness	The average distance (number of ties on shortest path) to each other node in the network.
betweenness	The number of shortest paths between pairs of nodes that pass through the given node.
Other terminology	
geodesic	Formal name for the shortest path between a pair of nodes.
diameter	The length of the longest of all the shortest paths in the network. Note that some authors use diameter to refer to the average length of shortest paths.
component	A subset of nodes completely disconnected from the rest of the network.
clique	A subset of nodes where each node has ties with all other nodes.

community	A subset of nodes with relatively high tie density, so the nodes are mostly connected to other nodes in the community rather than the rest of the network.
homophily	Tendency to form relationship with nodes with a characteristic in common.
reciprocity	Tendency for ties to be paired in both directions. This only applies to directed networks. An example is if Kilkenny considers Dublin to be a collaborator, then it is relatively likely that Dublin considers Kilkenny to be a collaborator too.
transitivity	Tendency to "close triangles". An example is if Kilkenny collaborates with Dublin and Dublin collaborates with Mayo, then Kilkenny and Mayo are relatively likely to become collaborators.

Theoretical development of stakeholder network analysis

One key development in the conceptualization of stakeholder analysis is the acknowledgement that stakeholder groups are temporaneous and many projects, by nature, are not static. For example, public health interventions have been described as "dynamic systems with nested levels of interaction" (Varda et al, 2012); as such, an appropriate and robust set of measures to collect data on the dynamic nature of connections between these providers has been considered.

Specific to the field of public health, the growing practice of collaboration between different public health (and other) organizations to improve community outcomes has been recognized within the literature relevant to stakeholder analysis. Varda and Retrum (2012) advocate a broader analysis of collaboratives to capture the complexity of interventions and public health strategies. It is claimed that the practice of collaboration is well-documented, but the process and what constitutes effective collaboration remains an area in need of further research.

A further development of interest is the recognition by researchers that managing large projects was complex and that multiple concurrent interactions and activities presented challenges that required a unique response. Drawing on examples from the field of business, attention was given to network approaches, or the importance of understanding a so-called delivery network, to manage complex tasks and projects (Kennon, Howden, & Hartley, 2009). They offer a number of stated advantages to adopting a network perspective for stakeholder analysis, including effectiveness, efficiency, legitimacy, innovation, diffusion, and building collaborative infrastructure.

Annex B. Example of a protocol for the collection of stakeholder network data in the context of the Global Network for Age-Friendly Cities and Communities (GNAFCC)

The WHO GNAFCC[6] was established in 2010 to connect cities, communities and organizations worldwide on healthy ageing.

The mission of the GNAFCC is to stimulate and enable cities and communities around the world to become increasingly age-friendly. The GNAFCC seeks to do this by:

- inspiring change by showing what can be done and how it can be done;
- connecting cities and communities worldwide to facilitate the exchange of information, knowledge and experience; and
- supporting cities and communities to find appropriate innovative and evidence-based solutions.

Its objective is the mapping and stakeholder network analysis of:

1) the GNAFCC
2) two national affiliate programmes affiliated to the GNAFCC
3) one member of each selected national affiliate programme.

Steps of data collection include the following.

1) Define network survey questions and decide on whether and which data will be collected by other means.
2) Email members and affiliates to update on focal points.
3) Build the network survey on Stakeholder.Net (https://stakeholdernet.org/).
4) Prepare an email invitation, participant information material, and consent form.
5) Identify national programmes to be mapped.
6) Identify one member, such as a city, of each national programme to be mapped (see required conditions below).
7) Deploy network survey.

Actors' attributes of interest include the following.

1) For members of and affiliates to the GNAFCC, attributes include:
    a. general attributes, including name of the member, job title, and email address of member (some information on members and affiliates are available in the GNAFCC database); and
    b. perceptions about the GNAFCC, based on the GNAFCC's mission, which includes the following:
        i. inspiring change
        ii. connecting to the exchange of information, knowledge, and experience
        iii. support to find appropriate innovative and evidence-based solutions.

[6] About the Global Network for Age-friendly Cities and Communities. In: Age-friendly World/WHO Global Network [website]. WHO Global Network for Age-friendly Cities and Communities (https://extranet.who.int/agefriendlyworld/who-network/).

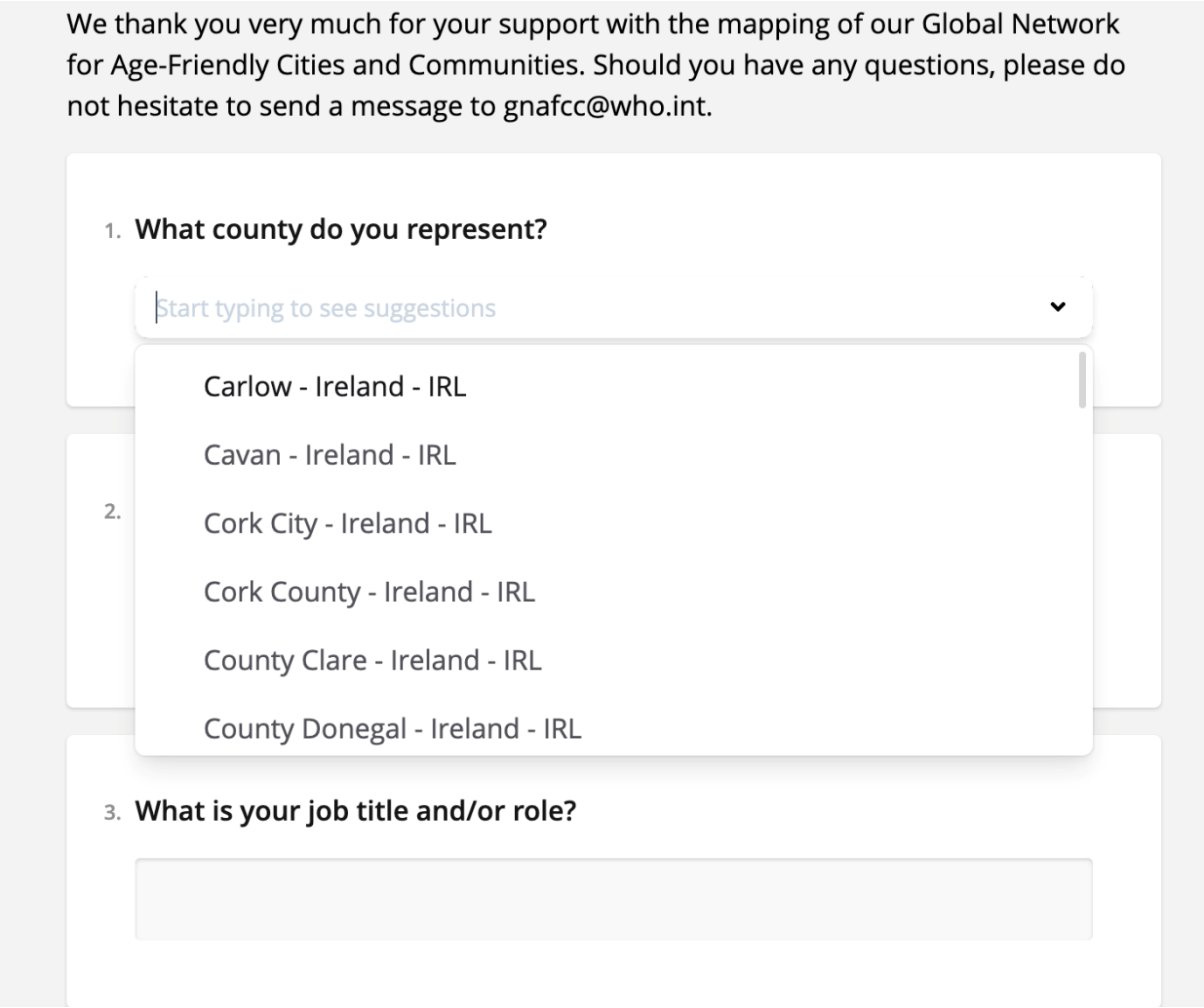
2) For actors who are not part of the GNAFCC, but who were nominated by GNAFCC members, attributes include:

    a. general attributes, including name of the member, job title, and email address of respondent; sector (e.g. public, private business, voluntary or community organization); jurisdiction (e.g. city, regional, national); and actor type (e.g. government, research and academia, NGO).

Links' attributes of interest include:

1) nominated actors the respondent is linked to that help the respondent deliver its age-friendly actions:
    a. 12-month time frame;
2) the types of relationship, based on the GNAFCC's mission, including:
    a. inspiring change
    b. connecting to the exchange of information, knowledge, and experience
    c. support to find appropriate innovative and evidence-based solutions; and
3) the strength of the relationship with the nominated actor, with examples of relationships including communications, sharing resources, and joint work).

Network survey questions.



7. **The list below contains all the cities, communities, and organizations that are members of Age Friendly Ireland and/or WHO Global Network for Age-Friendly Cities and Communities, plus the WHO headquarters and regional offices. To the best of your knowledge, with which of these members did you engage in the last 12 months? (you will be able to add more collaborators after)**

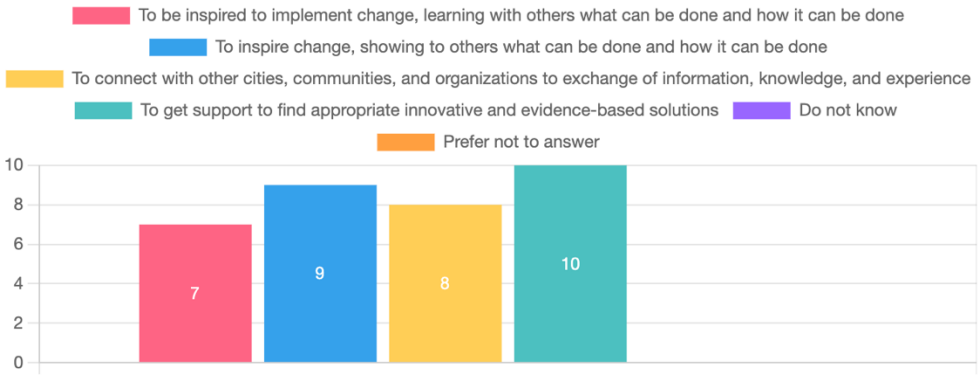
Collaborator

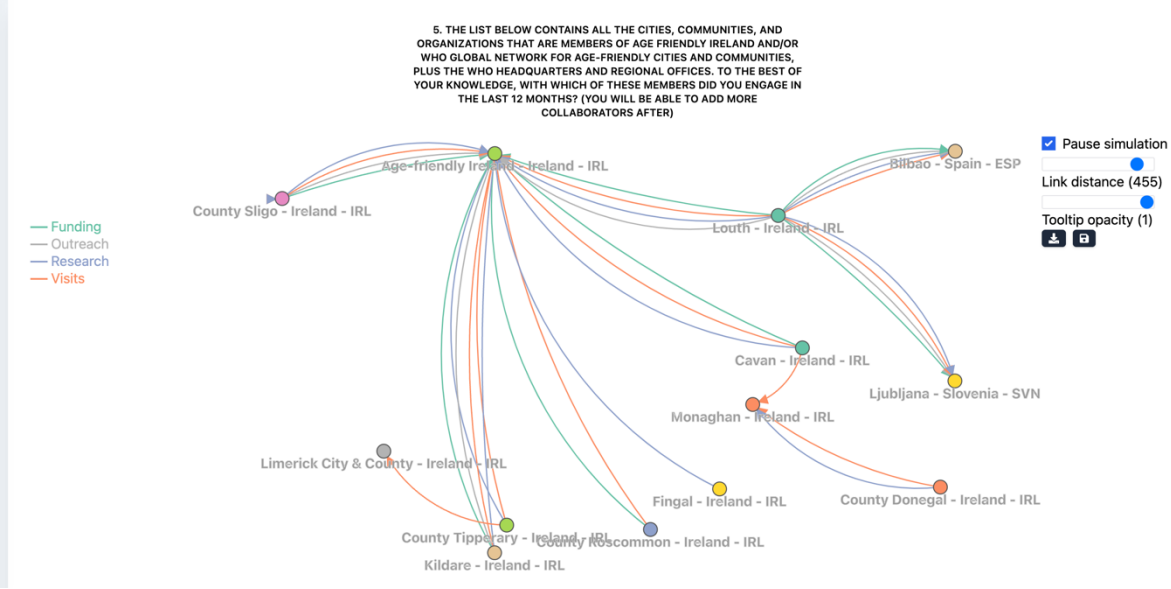
Start typing to see suggestions

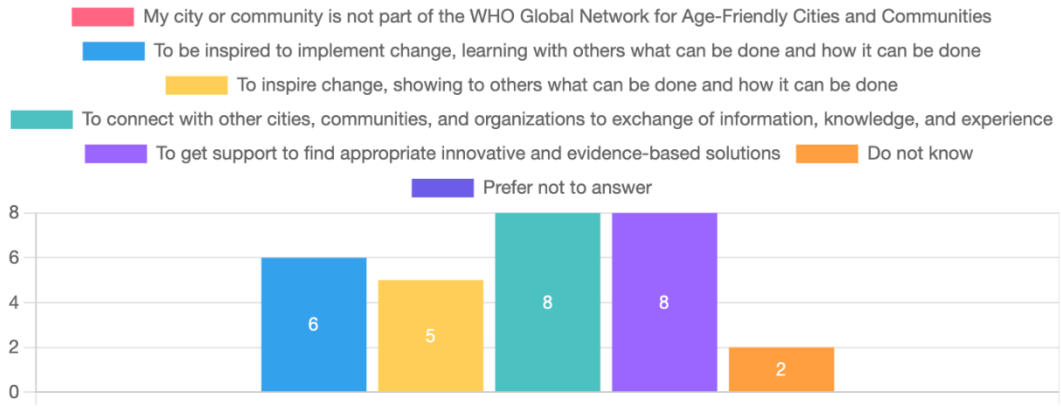
- AARP Network of Age-friendly Communities - United States of A...
- Abadino - Spain - ESP
- Abadiño - Spain - ESP
- Abanto Zierbena - Spain - ESP
- Acton - United States of America - USA
- Acushnet - United States of America - USA

☐ To get support and resources to implement appropriate innovative and evidence-based solutions

1. WHAT ARE THE REASONS FOR BEING PART OF AGE FRIENDLY IRELAND FOR THE COUNTY THAT YOU REPRESENT? (SELECT ALL THAT APPLY)







Deploy network survey

1) For the global GNAFCC, only GNAFCC members and affiliates will be invited to participate, and nominations will be allowed only between them.
    a. This survey will be deployed to all members and affiliates, except those from the National Affiliate Programme, who will answer these questions in the national network survey.
    b. As part of the global network mapping, GNAFCC members and affiliates will also be asked about relationships with other GNAFCC members and affiliates globally.
2) For the national network, all network members of the country will be invited to participate, and nomination will not be restricted to network members.
    a. For the national network, only actors within the country of interest can be nominated.
        i. Actors who are not GNAFFC members but were nominated by GNAFCC members will not be invited to take part in the survey.

3) For the member network, seed actors will be invited to participate in the survey. The actors they nominate will be invited to participate, too, as well as any new actors nominated by this second group.
    a. Only actors within the geographical boundaries of the network can be nominated.

Annex C. Survey questionnaire from an example of a stakeholder network analysis conducted with the Global Network for Age-Friendly Cities and Communities (GNAFCC) using the Stakeholder.Net (https://stakeholdernet.org/) tool

Q1. What county do you represent?
Drop-down menu with all members of Age Friendly Ireland

Q2. What is your name?
Open field

Q3. What is your job title and/or role?
Open field

Q4. What is your professional email address?
Open field

Q5. What are the reasons for being part of **Age Friendly Ireland** for the county that you represent? (select all that apply)
☐ To be inspired to implement change, learning with others what can be done and how it can be done
☐ To inspire change, showing to others what can be done and how it can be done
☐ To connect with other cities, communities, and organizations to exchange information, knowledge, and experience
☐ To get support to find appropriate innovative and evidence-based solutions
☐ Do not know
☐ Prefer not to answer
☐ Other: *Open field*

Q6. What are the reasons for being part of the **WHO Global Network for Age-Friendly Cities and Communities** for the county that you represent? (select all that apply)
☐ To be inspired to implement change, learning with others what can be done and how it can be done
☐ To inspire change, showing to others what can be done and how it can be done
☐ To connect with other cities, communities, and organizations to exchange of information, knowledge, and experience
☐ To get support to find appropriate innovative and evidence-based solutions
☐ Do not know
☐ Prefer not to answer
☐ Other: *Open field*

Q7. The list below contains all the cities, communities, and organizations **that are members of Age Friendly Ireland (AFI)** and/or **WHO Global Network for Age-Friendly Cities and Communities (GNAFCC)**, plus the **WHO headquarters and regional offices**. To the best of your knowledge, which of these members did you engage with in the last 12 months?
Drop-down menu including all AFI members + GNAFCC members and affiliates beyond AFI + WHO headquarters and regional offices

Q7.1. What were the **purposes** of each of these connections? (select all that apply in the last 12 months) *[asked individually for each collaboration reported in Q7]*

☐ To be inspired to implement change, learning with others what can be done and how it can be done

☐ To inspire change, showing to others what can be done and how it can be done

☐ To connect with other cities, communities, and organizations to exchange of information, knowledge, and experience

☐ To get support to find appropriate innovative and evidence-based solutions

☐ Do not know

☐ Prefer not to answer

☐ Other: *Open field*

Q7.2. What was the **level of engagement** with each of these connections? (select the highest level achieved in the last 12 months) *[asked individually for each collaboration reported in Q7]*

☐ Communication only (shared information but no other resources)

☐ Shared resources (e.g. infrastructure, staff, capacity building)

☐ Joint programming (worked closely together towards common goals)

☐ Do not know

☐ Prefer not to answer

Q8. Now, to the best of your knowledge, please list any other collaborators whom the member you represent engaged with in the last 12 months. These could be any group, organization, city, or community within or outside your country/region. You will not need to detail the type and level of engagement of the relationships with the collaborators you list here.

Open field

Q9. What are the **main barriers to engage** with other cities, communities, and organizations **in Age Friendly Ireland**? (select all that apply)

☐ Lack of time

☐ Lack of human resources or technical capacity

☐ Lack of funding

☐ Leadership or governance structure that is not conducive to networking

☐ Failure to identify or engage with other members of the GNAFCC

☐ Lack of engagement or involvement of all parties

☐ Conflicting objectives

☐ Negative past experiences

☐ Do not know

☐ Prefer not to answer

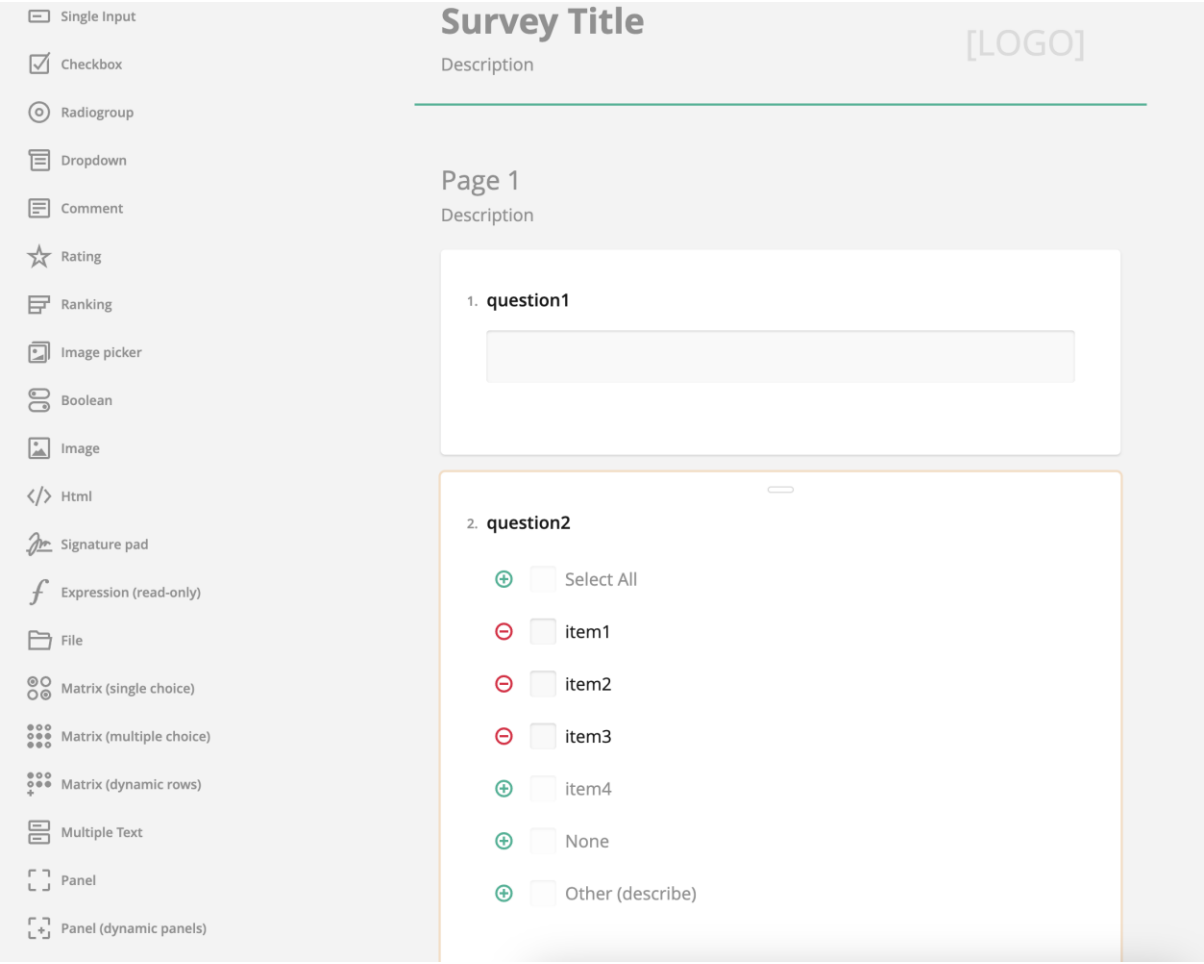
☐ Other: *open field*

Q10. What are the **main barriers to engage** with other cities, communities, and organizations that are part of the **WHO Global Network for Age-Friendly Cities and Communities**? (select all that apply)

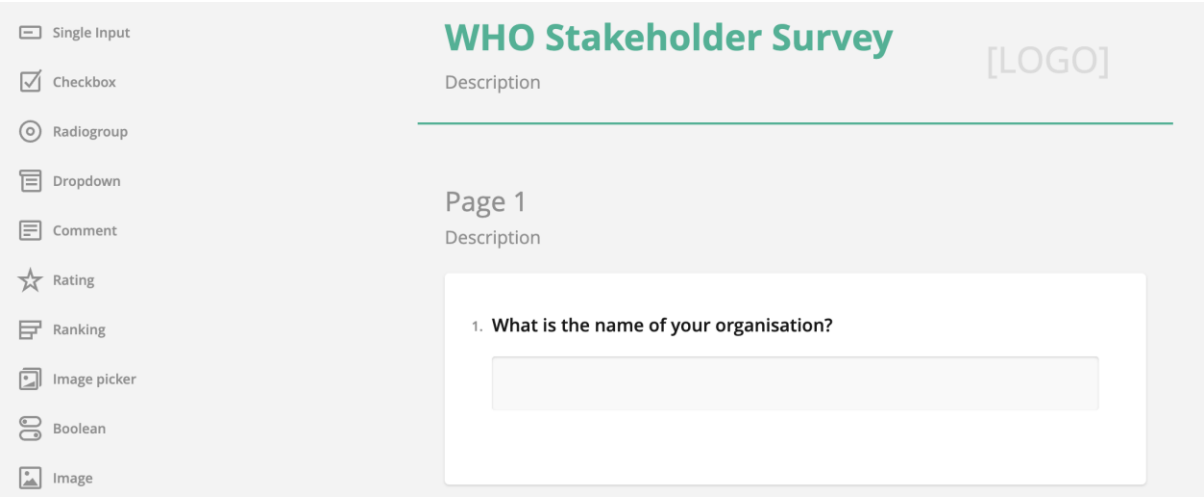
☐ Lack of time
☐ Lack of human resources or technical capacity
☐ Lack of funding
☐ Leadership or governance structure that is not conducive to networking
☐ Failure to identify or engage with other members of the Network
☐ Lack of engagement or involvement of all parties
☐ Conflicting objectives
☐ Negative past experiences
☐ Do not know
☐ Prefer not to answer
☐ Other: *open field*

Annex D. Screenshots showing examples of building questions into a survey using the Stakeholder.Net (https://stakeholdernet.org/) tool

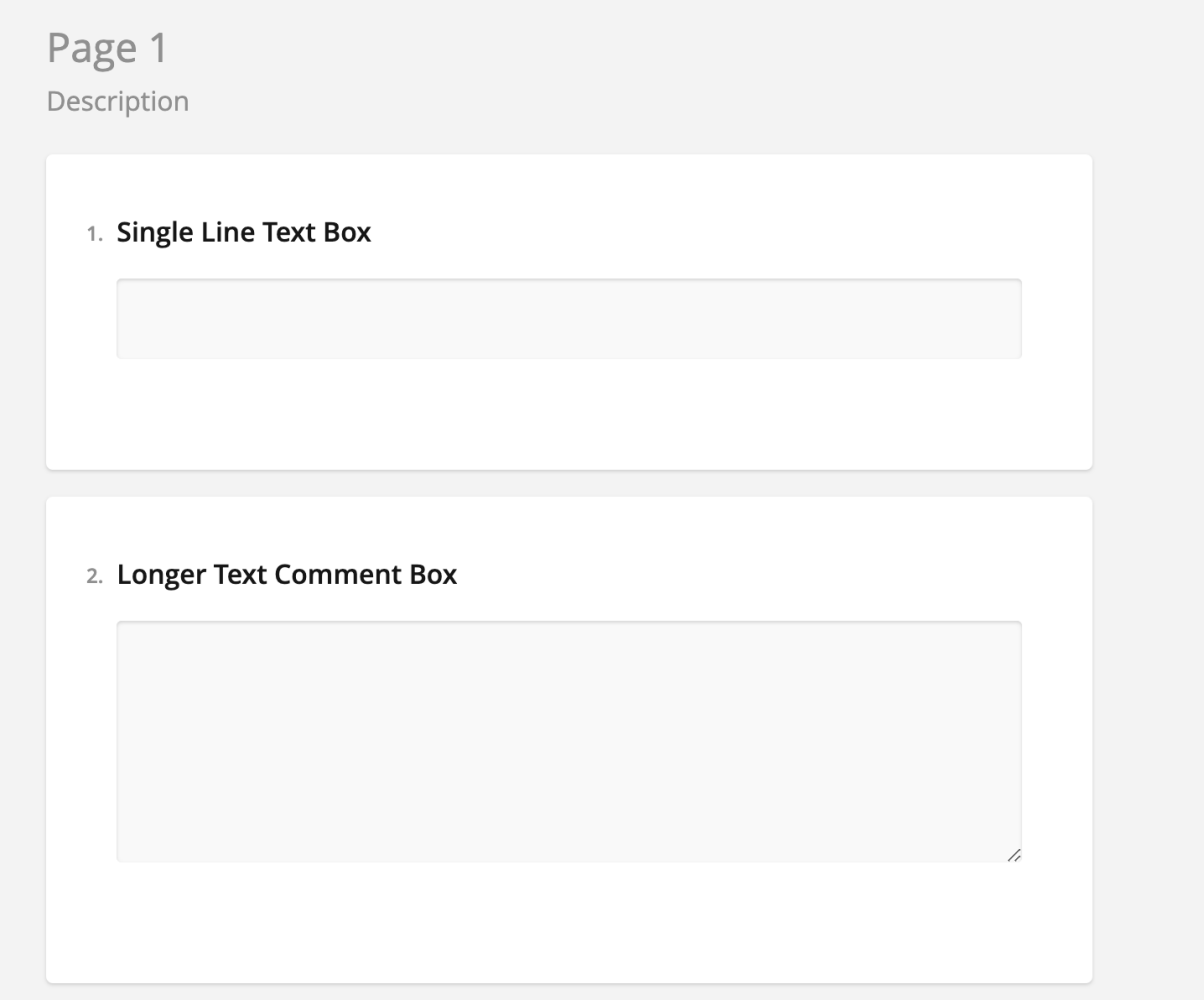
Sample questions in the survey building section prior to customization, are provided below.

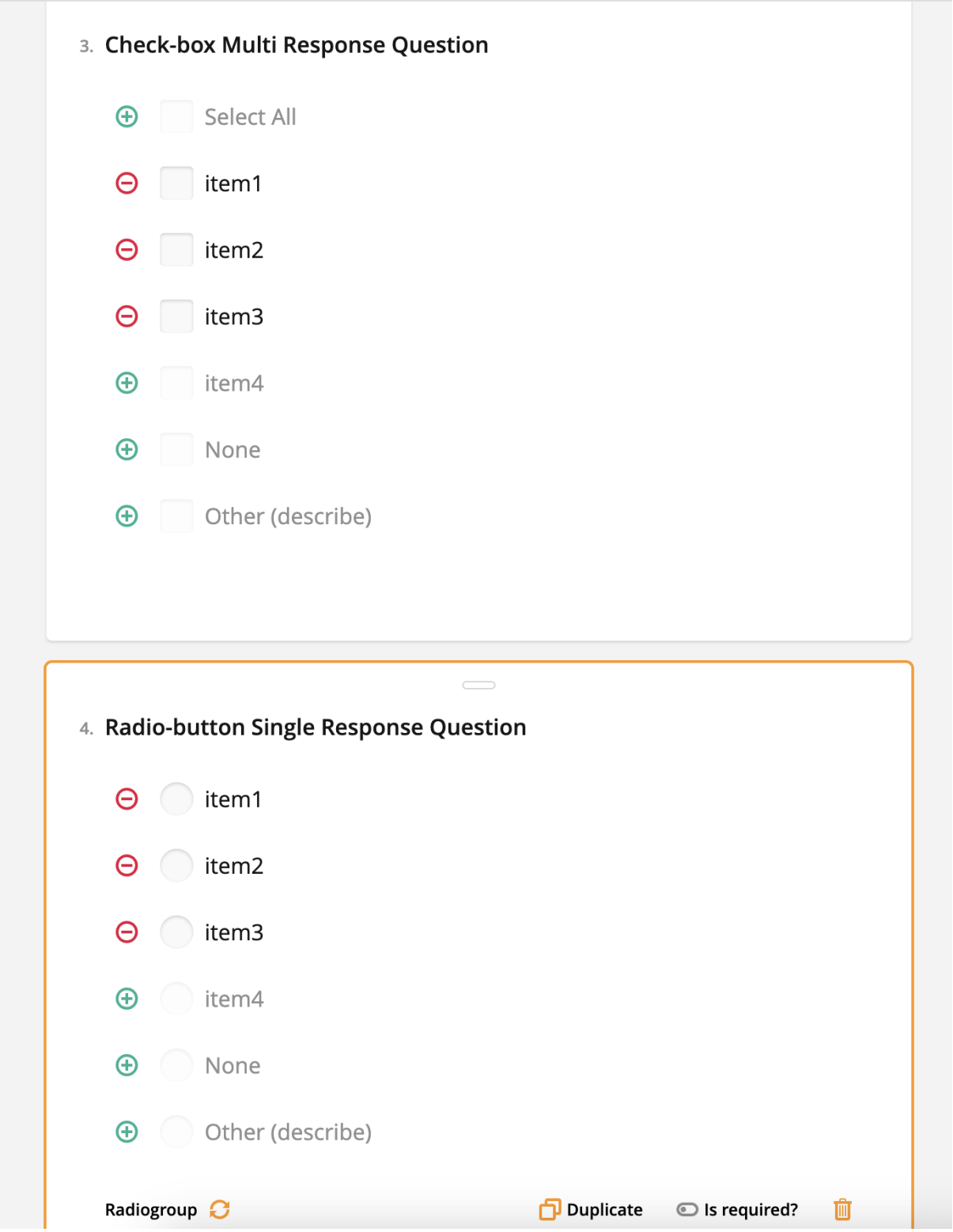


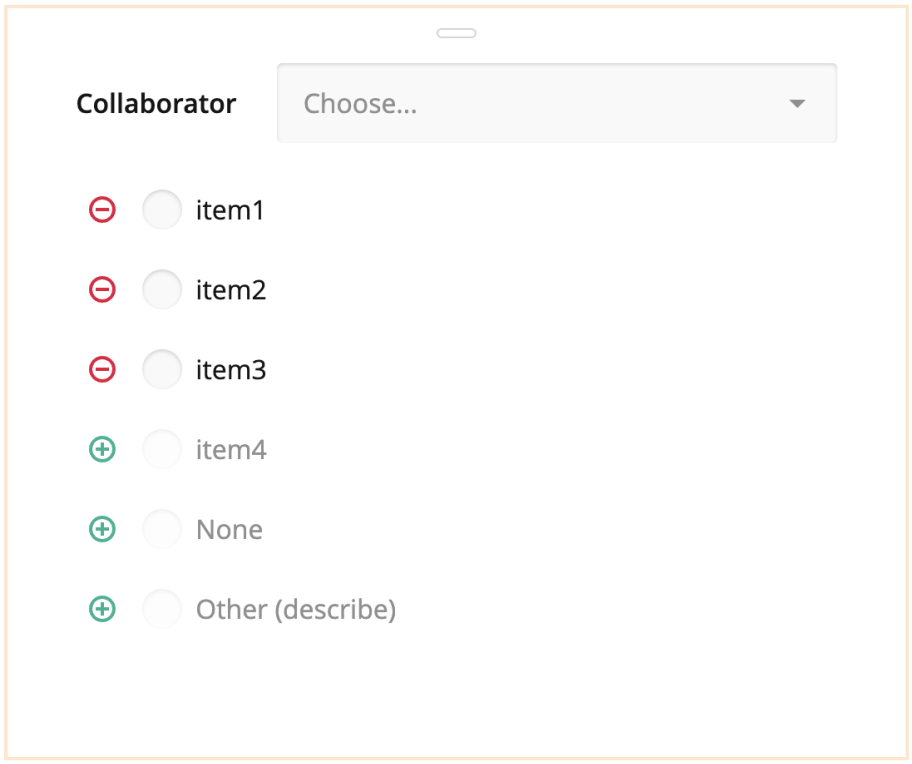
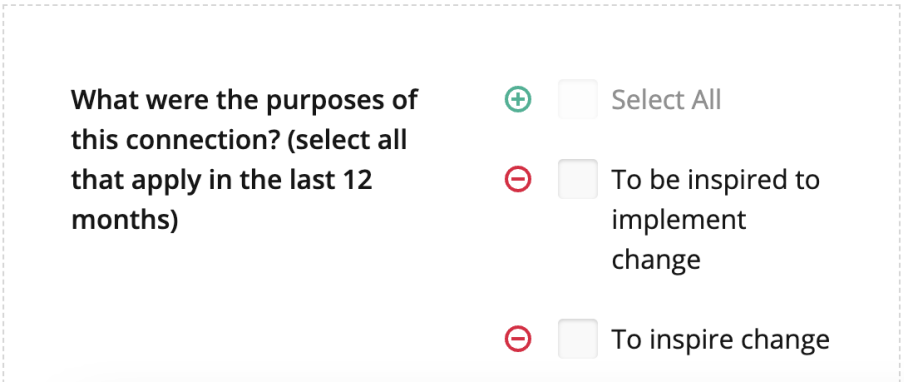
Sample questions in the build interface, after customization, are provided below.



Examples of question types





Example network question

6. **The list below contains all the cities, communities, and organizations that are part of the WHO Global Network for Age-Friendly Cities and Communities, plus the WHO headquarters and regional offices. To the best of your knowledge, which of these members did you engage with in the last 12 months?**