



Using the Nominal Group Technique in Group Decision-Making: A Review

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Abstract

The Nominal Group Technique (NGT) is one of the most important and widely used methods for group decision-making. The NGT is a form of brainstorming in which a structured meeting is held among the group members, where they are required to find solutions to the problem identified for the discussion. The NGT includes four steps: generating ideas/brainstorming, recording ideas, discussing ideas, and voting on ideas. As with any technique, there are advantages and disadvantages. The primary advantage of the NGT over other strategies is the enhanced opportunity for all participants to contribute ideas and to minimize the domination of the process by more confident or outspoken individuals. A major disadvantage of NGT is that it lacks flexibility by dealing with only one problem at a time. Also, there must be a certain conformity among the members involved in NGT.

The NGT process is particularly useful when many stakeholders have diverse opinions or when the topic is sensitive, and people are reluctant to share their views publicly. However, it is important to note that the NGT is not appropriate for all situations. The ideal size of an NGT group is four to seven participants (participant range: 2 to 20 people per group). Compared to interacting groups, the NGT groups provide more unique ideas, more balanced participation between group members, increased feelings of accomplishment, and greater satisfaction with idea quality and group efficiency. Understanding the different stages of NGT and its benefits and disadvantages helps in using it efficiently in group decision-making processes.

Key Words: Advantages, Nominal Group Technique, NGT, Group Decision-Making.

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1- INTRODUCTION

Groups often struggle to find collaborative and structured processes for generating ideas and solutions for organizational and community issues. There are different methods for group decision-making, with the Nominal Group Technique (NGT) being one of the most important and widely used. The NGT is a group process involving problem identification, solution generation, and decision-making (1, 2). It can be used in groups of various sizes to make decisions quickly as by a vote, but taking everyone's opinions into account (as opposed to traditional voting, where only the largest group is considered) (3).

The method of tallying is different. First, every member of the group gives their view of the solution with a short explanation. Then, duplicate solutions are eliminated from the list of all solutions, and the members proceed to rank the solutions. Some facilitators encourage the sharing and discussion of reasons for the choices of each group member, thereby identifying common ground and a plurality of ideas and approaches. This diversity allows the creation of a hybrid idea (combining parts of two or more ideas), which is often found to be even better than the initial ideas. Then, the numbers received by each solution are totaled, and the solution with the highest total ranking (i.e., most favored) is selected as the final decision (4, 5). As this technique is used frequently in medical education today, this review provides a brief overview of NGT, its process, when to use it, and the advantages and disadvantages of its use.

2- MATERIALS AND METHODS

In this review, online databases, including Scopus, PubMed, Web of Science, ERIC, SID, CIVILICA, and Google Scholar search engine, were searched using English and Persian keywords with no time restrictions (up to

July 10, 2023) to find related articles about NGT, step process, NGT essentials, and the advantages and disadvantages of its use. The full texts of related studies were reviewed, and their main results were extracted. Then, similar results were categorized and presented descriptively. The search was done independently and in duplication by two reviewers, and any disagreement between the reviews was resolved by the supervisor.

3-RESULTS

3-1. Definition and history

The nominal (i.e., in name only) group technique is a structured variation of a small-group discussion to reach a consensus. NGT gathers information by asking individuals to respond to questions posed by a moderator and then asking them to prioritize the ideas or suggestions of all group members. The process prevents the domination of the discussion by a single person, encourages all group members to participate, and results in a set of prioritized solutions or recommendations that represent the group's preferences (6, 7). This technique was originally developed by Andre Delbecq and Andrew H. Van de Ven (1, 8), and has been applied to adult education program planning by Vedros (9). Nowadays, it is used for primary data collection, program planning, evaluation, and exploratory research (10-13). Taking a cue from the technique, Tunde Varga-Atkins, Jaye McIsaac, and Ian Willis (14) found that a two-stage combination of the focus group and the nominal group technique, coined as the nominal focus group, was particularly effective as an evaluation method.

3-2. Process

The NGT process is based on the following steps:

Generating ideas: The moderator presents the question or problem in written form

and reads the question to the group. The moderator directs everyone to write ideas in brief phrases or statements and to work silently and independently. Each person silently generates ideas and writes them down.

Recording ideas: Group members engage in a round-robin feedback session to record each idea concisely (without debate at this point). The moderator writes an idea from a group member on a flipchart visible to the entire group and proceeds to ask for another idea from the next group member, and so on. There is no need to repeat ideas; however, if group members believe that an idea provides a different emphasis or variation, they can include it. The process continues until all members' ideas have been documented.

Discussing ideas: Each recorded idea is then discussed to determine its clarity and importance. For each idea, the moderator asks, "Are there any questions or comments that group members would like to make about the item?" This step provides an opportunity for members to express their understanding of the logic and the relative importance of the item. The creator of the idea does not have to clarify or explain the item, and any member of the group can play that role.

Voting on ideas: In the last step, group members vote on the presented ideas (7, 8, 15-18).

3-3. NGT essentials

There are three NGT essentials: (1) a carefully prepared question that evokes responses at the desired level of specificity, (2) a group of task-oriented participants with expertise in the topic, and (3) a group leader who understands the process and is willing to act as a process facilitator, not a substantive expert (15, 19).

3-4. When to use NGT?

NGT can be effectively used when:

- Team decision-making is needed,
- The team wants to generate a large number of ideas in a short time,
- Some group members are much more vocal than others,
- There are limitations to group thinking,
- There is concern about some members not participating,
- The group does not easily generate ideas and solutions,
- All or some group members are new to the team,
- Participants have different power relations within the same group,
- Various stakeholder groups are consulted within the same research (e.g., from students to experts), and
- The issue at hand is controversial and may lead to a heated discussion (11, 13-18).

3-5. Size of the NGT group

Suitable participants in NGT are people with relevant experience and knowledge of the explored issues. The ideal size of an NGT group is four to seven participants (participant range: 2 to 20 people per group). Larger groups can be handled by making minor changes in procedure, but any group larger than 12 or 13 should be divided into smaller subgroups of 4-7/ 5-9 members (19-30).

3-6. The time needed for NGT

Adequate time must be allowed to conduct an effective Nominal Group Technique session. With a group of five to nine members, an NGT session for a single question will take a minimum of 45 minutes to an hour. The time needed may be more if the group identifies a large number of ideas for consideration. The best idea is to allocate more time in your schedule for each NGT question than is

presumed necessary. This will help avoid pressuring the group during the process. If the group finishes early, participants can either leave earlier or have a longer break between questions (additional time will also be necessary for each question when using the ranking card method of voting). If a larger group of participants is divided into smaller subgroups for the session, more time must be allowed for the smaller groups to work through the process and then combine their results with those of the other subgroups. If multiple questions are asked at the same meeting, the NGT process for subsequent questions after the initial question will usually not take as long because the participants and the subgroup leaders are now familiar and more comfortable with the process (31-33).

3-7. NGT advantages

The main advantages of the nominal group technique are:

- This technique is useful for identifying problems, exploring solutions, and establishing priorities.
- It is flexible and can be adapted to different situations.
- It can be used as a total assessment tool to identify the problem and generate and implement solutions.
- It encourages everyone to contribute and prevents people from dominating the discussion, allowing for everyone's opinions to be heard and judged equally.
- Participants are equal members of the group.
- It is a way of involving the "grassroots" in the decision-making process.
- Participants may be of mixed backgrounds, a variety of different people suggesting a variety of different perspectives and priorities.

- The written generation of ideas encourages the commitment of the participants to take part in the planned action.
- It requires only one skilled facilitator.
- It produces an answer with few resources.
- Decisions are made at the end of the meeting.
- The process is systematic and organized, saving a great amount of time.
- It minimizes pressure, competition, and domination among participants.
- It allows for prioritizing issues and ideas.
- It provides time to think about the question in silence before responding.
- It is quick and efficient compared to other methods, such as brainstorming.
- It produces more creative ideas than interacting groups.

3-8. NGT disadvantages

Although the nominal group technique is a highly effective decision-making tool, it has a few potential disadvantages.

- It relies on written responses and thus may not be suitable for all types of problems or all groups of people.
- Generating and ranking ideas can be time-consuming, which may not be ideal in all situations.
- It can address only one problem at a time.
- It requires all members to be available at the same time.
- It is time-consuming for group leaders and team members.
- It requires good preparation and a trained facilitator.

- It minimizes discussion, and some participants might find it rigid.
- It is not suitable for large groups.
- It requires extended preparation and cannot be a spontaneous technique.
- It tends to be limited to a single-purpose, single-topic meeting, and it is difficult to change topics in the middle of the meeting.
- It needs the agreement of all participants to use the same structured method, which some people might resist.
- It is regimented and lends itself only to a single-purpose, single-topic meeting.
- NGT may feel mechanical to some members. This can be minimized by ensuring that the facilitator shows flexibility in the process and implementation.
- Small groups limit participation and are pre-selected.
- NGT can sometimes result in fewer ideas than other brainstorming methods as it is focused on answering only one “nominal” question (23, 34-44).

3-9. The difference between NGT and Brainstorming

The nominal group technique and brainstorming are both methods of generating ideas but differ in how they generate and organize these ideas. NGT is a structured process in which a group of people anonymously generates ideas, which are then compiled, and votes are cast to prioritize the ideas. On the other hand, brainstorming is a more free-flowing process in which ideas are generated spontaneously and then discussed and refined as a group. While NGT can be more efficient at generating many ideas, brainstorming may be better at producing creative or unexpected solutions (45-48). NGT and brainstorming are similar

group creativity techniques as they both involve the generation of ideas and solutions to problems, e.g., identifying project requirements. These two allow equal opportunities for participants of all members of the group by avoiding domination. However, there are some major differences between the NGT and brainstorming that aspirants should understand to identify the correct method for the processes.

Nominal Group Technique: The Nominal Group Technique is a technique for small group discussion in which ideas/requirements are ranked/prioritized by all the members of the group after the generation of all ideas.

- The Nominal Group Technique was originally developed by Delbecq and Van de Ven as an alternative to brainstorming.
 - This technique prevents the domination of a single person over the discussion by allowing the voices of all members to be represented.
- Brainstorming:* Brainstorming is a group creativity technique in which member(s) are allowed to generate as many ideas/requirements as possible without criticism.
- Ground rules: there are no “no’s,” and criticisms are allowed
 - Participants are free to present their creative ideas even though some ideas are unrealistic.
 - All generated ideas/requirements are recorded without any assessments (1, 3, 45-50).

4- CONCLUSION

The Nominal Group Technique is one of the most important and widely used methods for group decision-making. The NGT is a form of brainstorming in which a structured meeting is held among the group members, where they are

required to find solutions to the problem identified for the discussion. The NGT process involves a small group of people coming together to discuss a topic, with each person sharing their ideas independently. Once everyone has had a chance to share their thoughts, the group brainstorms possible solutions or courses of action. In this process, there are three NGT essentials: (1) a carefully prepared question that evokes responses at the desired specificity level, (2) a group of task-oriented participants with expertise in the topic, and (3) a group leader who understands the process and is willing to act as a process facilitator, not a substantive expert. The NGT typically includes four steps: generating ideas/brainstorming, recording ideas, discussing ideas, and voting on ideas.

As with any technique, there are advantages and disadvantages. The primary advantage of the NGT over other strategies is the better opportunity for all participants to contribute ideas and minimize the domination of the process by more confident or outspoken individuals. A major disadvantage of NGT is that it lacks flexibility as it can deal with only one problem at a time. Also, there must be a certain amount of conformity among the members involved in NGT, and everyone must feel comfortable with the structure involved.

The NGT process is particularly useful when many stakeholders have diverse opinions or when the topic is sensitive, and people are reluctant to share their views publicly. The independent sharing of ideas helps prevent the group's dominant voices from overwhelming the conversation. However, it is important to note that the NGT is not appropriate for all situations. When time is limited, or there are already strongly held opinions in the group, another facilitation method may be more effective.

The ideal size of an NGT group is four to seven participants (participant range: 2 to 20 people per group). Compared to interacting groups, the NGT groups provide more unique ideas, more balanced participation between group members, increased feelings of accomplishment, and greater satisfaction with idea quality and group efficiency. Understanding the different stages of the technique and its benefits and disadvantages allows for the efficient use of NGT in the group decision-making process.

5- AUTHORS' CONTRIBUTIONS

Study conception or design: MV and MS; Data analyzing and draft manuscript preparation: AM, SS, and MS; Critical revision of the paper: MV; Supervision of the research: MV and MS; Final approval of the version to be published: MV, SS, AM, and MS.

6- CONFLICT OF INTEREST: None.

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