

Collecting Q Methodology Data through Electronic Distribution in Qualtrics™

Haleigh Erramouspe
Texas Tech University
806-742-2816
haleigh.erramouspe@ttu.edu

Dr. Lindsay Kennedy
Texas Tech University
806-742-2816
lindsay.kennedy@ttu.edu

Dr. David Doerfert
Texas Tech University
806-742-2816
david.doerfert@ttu.edu

Dr. Nellie Hill
Kansas State University
nlhill@ks.edu

Introduction/Need for Innovation

Q methodology (hereafter Q) is a semiquantitative methodology utilized to study the subjectivity of individuals on a specific topic and the varying individual perspectives on an issue which could inspire multiple points-of-view (Brown et al., 2008; Stenner et al. 2008). This method focuses on similarities between individuals, rather than between questions or variables (Zabala et al., 2018). There are seven stages in the Q process: defining and building the concourse, developing the Q set, selection of the P set, conducting the Q sort, post Q interviews, analysis, and interpretations (Damio, 2016). Conducting a Q sort has been previously done using physical cards that contain statements. Study participants use these cards to rank a set of Q statements into a quasi-normal distribution array by placing the statement cards they most agreed with on the positive side of the array and statements they least agreed with on the negative side (Watts & Stenner, 2012). However, this process can inhibit the ability to collect data when study participants are not in the same physical location creating a need to distribute the survey electronically or through the mail (Watts & Stenner, 2012). Distributing the survey through the mail often results in many participants either failing to complete the Q sort or returning flawed data (Watts & Stenner, 2012). The only electronic distribution method recommended by Watts & Stenner (2012) that is still accessible is QAssessor. Q Method Software was discovered to be another viable option for distribution and analysis (Erramouspe et al., 2023). However, these software programs did not offer the opportunity to include survey questions outside of the Q sort.

In research seeking to describe sorghum farmers' perceptions of agricultural sustainability, Erramouspe et al. (2023) distributed a survey including a Q sort through Qualtrics™ to describe the attitudes of sorghum producers in national leadership positions in the sorghum industry toward agricultural sustainability. Qualtrics™ was used in this study primarily because of the platform's capacity to distribute the survey asynchronously to participants across the country and for the researcher to include a wide variety of questions in the survey in addition to the Q sort (Erramouspe et al., 2023). Furthermore, this platform is one to which most institutions have access and is used frequently by institutions and other organizations providing a program with which participants are familiar.

How it Works

To collect additional data outside of the Q sort, the online survey distribution software, Qualtrics™, was used. The researcher created a Likert type matrix table question with drag and drop answers. The Q set statements were randomized for each participant. Twenty Q set statements were listed on the left side of the screen and nine boxes were listed on the right side of the screen ranging from *most strongly disagree* to *most strongly agree*. This format allowed the participants to engage with and see all Q set statements at once (Watts & Stenner, 2012).

The researcher created a detailed condition of instruction as found in Damio (2016) outlining the number of statements to be placed in each box within the question instructions. To assure participants placed the correct number of statements in each box, a custom validation of count must equal a particular number was added to the question for each of the levels of agreement according to the quasi-normal distribution array determined by the researcher. This validation prevented the participant from proceeding to the next question in the survey if the incorrect

number of statements was in any box. An error message provided clarity to participants as to what the error was and what they must do to proceed as recommended by Dillman et al. (2014).

Post Q interviews were also adapted for electronic distribution in Qualtrics™. The purpose of the post Q interview is to have participants explain their reasoning behind their placement of the cards on the Q sort grid and collect demographic information about the participants (Damio, 2016; Jones, 2003) In this study, respondent reasoning was inferred through their selections on questions about their succession planning, their willingness to adopt and current implementation of sustainable practices, what incentivizes them to make these decisions, and their beliefs on the availability of natural resources. Demographic information was collected through fill-in-the-blank questions on the instrument.

Implications

Collecting Q data through a digital platform allows organizations with membership in a large geographical region to understand the subjective opinions present throughout their membership. Additionally, this model could be applied in a variety of subject areas that impact the agricultural organizations' membership base, allowing the organization to better align with the values their members. The evaluation of perceptions of agricultural issues is not exclusive to a particular industry, and this model could be used similarly in other commodities. As Q is used to study the subjectivity of options present in a population, the potential topics across agriculture and education which this research model could be used to are essentially limitless.

Future Plans and Advice

Whether reimplementing this research survey to sorghum farmers or adapting it to be applied in other agricultural sectors and subjects, the presented methodology could be improved. The researcher chose to only include 20 statements within the Q sort due to recommendations from a panel of experts based on the viewing limitations presented by the software used to administer the survey. Additional research can identify best practices for administering a Q sort within the Qualtrics™ platform to determine the ideal number of statements to maximize information gathered and optimize usability. Future research should evaluate opportunities to use different software that allows for the presentation of more Q statements. This could allow for more nuances in perspectives to be evaluated and provide a more robust evaluation of the perspectives.

Resources Needed

A subscription to the Qualtrics™ platform is needed to use this data collection and analysis software. Once the data is collected, the researcher needs to have access to or a subscription to a platform that is equipped to analyze Q data. As opposed to traditional factor analysis (R methodology) comparing questions or variables, Q focuses on the similarities between individuals by analyzing the correlation of one participant's Q sort to the Q sorts of other participants (Damio, 2018; Zabala et al., 2018). This analysis requires software that is uniquely designed to analyze Q data, such as Q Method Software, QAssessor, or PCQ (Erramouspe et al., 2023; Jones, 2003; Watts & Stenner, 2012).

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