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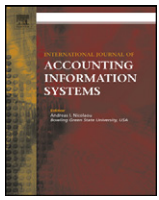

Focus group methods: Using interactive and nominal groups to explore emerging technology-driven phenomena in accounting and information systems

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ABSTRACT

This paper puts forth arguments for why focus group methods should be used more frequently in accounting and information technology research in order to address emerging technology-driven phenomena in accounting. In this overview of focus group methods and their application to studying accounting and information technology phenomena, we focus on what alternative types of focus group methods may be applied, when such methods are applicable, and what methodological challenges the researcher must address. In examining the methodological challenges that face researchers when using these methods, we demonstrate how these challenges have been addressed in our own research as a way of exemplifying the challenges researchers may face and what compensating strategies researchers might use. Our objective is to highlight when focus groups may be the best method for accounting information systems researchers and demonstrate how they can be used when they are applicable.

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1. Introduction

One of the major challenges in researching emerging technologies is the limited theoretical understanding of related phenomena coupled with limited knowledge of how prior research on other technologies apply. The use of focus groups has been advocated as one methodology that can be particularly useful in these circumstances (Havelka et al., 1998; Sutton et al., 2008; O'hEocha et al., 2011). Still, focus groups remain an underutilized research method in studying technology-driven phenomena despite their suitability (O'hEocha et al., 2011).

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The purpose of this research note is to explore the strengths and weaknesses of focus group methodologies, their applicability in various circumstances, the challenges in undertaking such research, and the alternative approaches that are available within the portfolio of prescriptions for conducting group research. For our purposes, focus group methods are defined as a "research technique that collects data through group interaction on a topic determined by the researcher" (Morgan, 1997) and "involves a group of participants and one or more moderators" (O'hEocha et al., 2011). While some researchers narrow focus groups to only include interacting groups (Morgan, 1996, 1997), we explore a broader set of group processes that include brainstorming techniques, nominal group processes, and so forth. Delphi groups that are non-interactive will only be briefly discussed.

The purpose of using a focus group in research is to acquire as much information as possible from a group of experts on a given topic. This is accomplished by prompting the group with pre-specified topics and open-ended questions, allowing the discussion to evolve around these open-ended questions, and facilitating interaction among the participants. This process allows participants to interject their own observations and understandings while also feeding off of the ideas of other participants. Using focus groups allows the researcher to extract expertise and insights from the participants. Focus groups are particularly useful when access to data is limited and when the researcher is addressing unexplored and emerging phenomena (Sutton et al., 2008; O'hEocha et al., 2011; Sutton et al., 2011).

The remainder of this paper focuses on defining the various types of group processes, using focus groups in multi-method research, and overviewing methodological concerns including data sources and analyses. This general discussion of group methods integrates an overview of the techniques our research teams have used over the years, highlighting how the methodological issues have been handled in alternative settings. The value of focus group research in a discipline such as accounting information systems has very high potential as researchers take on the challenges to explore emerging technological changes in the accounting environment.

2. Interactive vs. nominal vs. Delphi groups

Group processes, from a research perspective, generally revolve around three methods: interactive, nominal, and Delphi. Interactive groups, as the name suggests, are free flowing group meetings that are guided and directed by a moderator, but driven by the participants. Nominal group processes are more structured and rely heavily on individual brainstorming, sharing of ideas, and additional brainstorming in light of group discussions during the sharing of ideas. Delphi groups have commonalities with nominal groups in terms of relying on individual brainstorming, but the sharing of ideas does not occur through group interaction. Rather, the researcher synthesizes ideas from the individuals and then re-distributes information on aggregate idea generation. These three methods are discussed in greater detail in the following subsections, along with their associated strengths and weaknesses.

2.1. Interactive groups

Interactive groups are a research technique used to collect data through the interaction of experts on a given topic as defined by the researcher (Morgan, 1996). Interactive groups are considered 'normal' groups in that they are the default format that has been used for as long as group decision making has taken place. Interactive groups generally have a leader (a researcher or other moderator for research purposes) who initiates the discussion with an initial problem statement, which is followed by an unstructured group discussion that hopefully leads to consensus, or at least a majority vote (Van de Ven and Delbecq, 1974). The interaction among the group members is considered the critical element of data collection in interactive groups (Morgan, 1996).

The benefits that are associated with interactive groups revolve around the researcher's ability to study interactions among group members in order to tease out the complexity of behaviors, motivations, and other interrelationships at the heart of a given phenomenon (Morgan, 1996). Focus groups are also viewed as a very efficient way to solicit the ideas of several experts within a short period of time which individual interviews would easily accommodate (Fern, 1982).

The problem with interactive groups is that they are not as effective as alternative group methods or even individual interviews. Fern (1982) found that regardless of the size of groups, individual interviews

generated more and better insights than did groups; other research shows similar effects for group versus individual brainstorming (Paulus and Dzindolet, 1993). In part, the poorer performance of interactive groups arises from several biases/dysfunctional behaviors that arise in group interactions. These include common method bias where participants tend to focus on commonly held information (O'Donnell et al., 2000; Hunton, 2001), group dynamics that can inhibit participation from some members (Van de Ven and Delbecq, 1974; Calder, 1977), diversions such as maintaining social–emotional relationships among group members as opposed to focusing on tasks (Van de Ven and Delbecq, 1974), conforming behavior that tends to arise among participants rather than focusing on diverse views (Van de Ven and Delbecq, 1974).

2.2. Nominal groups

The nominal group technique uses a structured format where participants are brought together and begin the task with silent brainstorming. The brainstorming includes a period of silent writing, which is then followed by round robin presentation of single ideas, documentation in a few brief words for each idea on a display in front of the group, and discussion of the documented ideas in order to clarify and evaluate. After the exhaustive list of ideas is documented, each individual silently votes to rank order or rate the ideas generated (Van de Ven and Delbecq, 1974). The group decision is derived by the researcher, subsequent to the meeting, by aggregating the voting.

The strengths of nominal group processes are general consistency in outputs that are less variable based on the participant mix or moderator behavior, better balance between socio-emotional needs and task performance efforts, higher quality idea generation based on time for reflection, better equality of participation among members, and a greater sense of closure for the participants at the end of the process (Van de Ven and Delbecq, 1974). Nominal groups are particularly useful in groups of experts where the experts generally value hearing each other's ideas while jostling for power within the group is essentially negated. Nominal groups also yield a substantive output, and the participants can be used to define ideas rather than the researcher interpreting intended definitions.

The weaknesses in nominal group processes center around concerns over qualitative input versus quantitative input. While voting processes can lead to clearer understanding of the value that group participants place on individual ideas, qualitative researchers argue that the richness is in the interaction and the meaning, and relationships should be evaluated more interpretatively (O'hEocha et al., 2011). The use of hierarchical groups is considered somewhat inferior, as hierarchical groups can limit the effectiveness of the nominal group processes. More junior members are often inhibited in their idea generation when senior management is present. We experienced this effect in working with external auditors where staff and seniors became much more inhibited in their input during the sessions attended by partners and managers of the same firm office (Sutton, 1993).

2.3. Delphi groups

The primary difference between nominal groups and Delphi groups is that the group members are physically dispersed and do not meet face-to-face for group meetings. Rather, the Delphi technique uses a systematic process of solicitation and collation of judgments on a given topic with the researcher providing summarizations after each round of solicitation, before revisiting the topic again (Van de Ven and Delbecq, 1974). While early versions of this technique used only two rounds (Van de Ven and Delbecq, 1974), researchers have moved to multiple rounds in contemporary studies with the goal of eventually reaching consensus (Hasson et al., 2000).

Delphi groups do have advantages. First, they tend to yield high quality ideas as participants focus on writing in an understandable fashion. Second, the anonymity of respondents makes some participants more confident and more open. Third, closure is reached, although not at the end of a meeting, but rather some time after completion of the last task (Van de Ven and Delbecq, 1974). Thus, Delphi groups tend to be more effective than interactive groups in the generation of quality ideas related to a given problem domain.

The problem is that Delphi groups are often less satisfying to the participants as social–emotional rewards are not considered. Also, participants do not benefit from the interaction with other experts.

The absence of verbal clarification or comment from other group members can also lead to communication and interpretation problems when reviewing other participants' ideas in subsequent rounds. Further, participants do not get the opportunity to challenge or question others' ideas (Van de Ven and Delbecq, 1974).

The Delphi approach is the least useful to accounting and information systems researchers who wish to bring experts together. The researcher misses the interaction between participants which can be critical to understanding an emerging technology-based phenomenon. Further, bringing experts together in a satisfying experience can be difficult when they are asked to contribute to the research task but do not get the feedback and interaction of other experts such as that provided in a group setting. This could hurt longer term participation by such experts in other studies. Overall, the Delphi method seems more appropriate in areas like nursing where the Delphi approach is used to bring together patient groups or nurses (Hasson et al., 2000), more so than in areas requiring high levels of poorly understood expertise. Thus, from this point we focus on interactive and nominal groups.

3. Mixed method approaches using groups

Before progressing to more detail on using group methods, recognition should be given to the frequency in which group methods are used as part of a portfolio of methodological approaches in exploring emerging phenomena. Frequently, the use of multi-method approaches occurs due to the fact that the researcher is delving into unexplored phenomena. One common multi-method strategy is the use of interviewing prior to focus group meetings to help the researcher develop a baseline understanding that may allow for better facilitation of group sessions. Alternatively, when structured group processes such as nominal group or Delphi groups are used, advance interviews can help the researcher design the structure of the group meeting. Even more often, the desire for multi-method approaches arises because of concerns over establishing the validity of research results—or, perhaps, we should say convincing readers, reviewers, and editors of the findings' validity (Calder, 1977; Morgan, 1996).

Interviews and interactive group discussions can be very helpful supplements to structured group processes. The use of interviews before applying Delphi processes is considered critical in many cases in order to engage participants for the long run (Hasson et al., 2000). On the other hand, in conducting nominal group sessions, we have found it much more beneficial to begin nominal group sessions with some interactive group discussions and to intersperse such discussions throughout the nominal group sessions (Lampe and Sutton, 1994; Havelka et al., 1998; Sutton et al., 2008; Arnold et al., 2011a). The interactive sessions build mutual respect among the group participants, provide opportunity for experts to share ideas and gain perspective from each other, break up the more mundane tasks associated with nominal techniques, and re-energize participants in order to avoid negative effects on research outcomes as a result of participant fatigue or distraction.

Combinations of group processes and surveys are the most common. Morgan (1996) notes that in a review of materials from *Sociological Abstracts*, in the prior decade over 60% of the empirical research applying focus group methods also used another method, with the most frequent coupling being with surveys. Combining group processes and surveys can be done in a number of ways including the following: (1) use of focus groups prior to survey construction with the survey being the dominant method, (2) use of surveys as a preliminary strategy with use of focus groups as the primary method, (3) surveys as the dominant method and focus groups as ex post methods to aid in interpreting survey results, and (4) use of focus groups as the dominant method and use of follow-up surveys to 'verify' the results (Morgan, 1996). The first approach of using focus groups to help construct surveys, is a common survey technique when new constructs are needed (e.g. Elbashir et al., 2011) or a better understanding of the phenomenon is needed (e.g. Dowling, 2009). The second approach essentially displaces interviews and the role they play as noted previously. Adopting the third approach is most likely when the survey is more open ended and qualitative than when the survey uses well-developed latent constructs. The fourth approach carries the risk of criticism from the qualitative research community for not letting the qualitative data speak for itself (Morgan, 1996), but such surveys can help the researcher convince readers, editors, and reviewers of the validity of the data (e.g. Sutton et al., 2008). The latter approach, if done diligently, may require more than one paper as a series of studies are conducted to validate and refine the observed phenomena and associated descriptions. For instance, in our most extensive use of the multi-method approach with focus groups, interviews set the initial theoretical understanding of B2B e-commerce risk (Khazanchi and Sutton, 2001), focus groups with multiple groups fleshed

out 48 critical risk factors in B2B e-commerce relationships (Sutton et al., 2008), and a survey approach was used to place the risks within contexts of the overall interorganizational relationship dynamics while simultaneously extending the validation of the risk factors (Arnold et al., 2011b).

4. Methodological challenges in focus groups

The first question a researcher should always ask before using focus groups is, "Why are focus groups the appropriate method?" (Calder, 1977). Focus groups require a substantial amount of effort by the researcher, require a substantial commitment by numerous domain experts who are almost always very busy, require independent judgment by the researcher to interpret, and provide outputs that can be challenging to validate. Our first foray into focus group methods was the first author's dissertation which posed the research question, "How do we measure the quality of the audit process during the conduct of an audit?" The study required 3 days of focus groups which included partner, manager, senior, and staff level participants. Parts of the process were replicated with multiple similar groups in shorter periods (Sutton, 1993). The second foray was a replication of the first study but with internal auditors in order to help the Institute of Internal Auditors provide guidance to its members on implementing total quality management practices in the internal audit function. This time, six groups of internal auditors undertook 3 days of focus groups (Lampe and Sutton, 1994).

Shorter versions of the methodology taking only a day have been used in subsequent studies. One day focus groups were used to explore differences between users and developers on the quality of the information requirements' phase of systems development in order to provide insights for information systems quality assurance practices (i.e. SysTrust). The result was sessions with three groups of users and three groups of developers (Havelka et al., 1998). The aforementioned B2B assurance project included three corporate groups (consisting of IS auditors, IS security, e-commerce developers, e-commerce managers, etc.), all of the IT audit partners and managers in the northeast region of a Big 4 audit firm, and the divisional managers for each of four divisions of an e-commerce consulting firm (Sutton et al., 2008). In a study exploring what users desire in management's discussion and analysis portion of annual reports and how to better structure this information to facilitate data tagging, we conducted two hour focus groups with six groups of retail investors and four groups of financial analysts from multiple regions of the U.S. (Arnold et al., 2011a). Even in the case of these shorter group processes, an extensive time commitment by the researcher is necessary in order to gain access, schedule sessions with participants, travel to corporate sites, and logistically arrange the necessary facilities for effective groups. But the real key is that in each case experts who hold unique knowledge are used to examine a phenomenon. Other research methods would provide limited capability for exploring the intricacies of the research question.

Once the researcher decides that focus groups are the preferred method, the challenges arise in how to execute the research process. The questions are not much different than any other project—how much data? How to conduct the research? How to analyze the data? What are the ethical implications? Focus group processes are different, however; and, each of these questions has challenges that differ from most other research methods.

4.1. Data

Calder (1977) outlines a number of challenging questions when approaching focus group research. After one gets past the question of 'why focus groups', these questions focus mostly on data issues. How many groups? How many group members? Should one use homogeneous or heterogeneous groups? What expert credentials should group members have? The heuristics are generally accepted to be 4–6 groups consisting of 6–10 participants each (Lampe and Sutton, 1994; Morgan, 1996; Sutton et al., 2008), where the groups provide diversity within a common frame. We coupled IS auditors, IS security, and e-commerce developers together in our B2B e-commerce study (Sutton et al., 2008), but we separated IT users from IT developers because of the strong differences in reference frame (Havelka et al., 1998). However, the answer to the question of when to stop collecting more focus groups is when the researcher has reached saturation—the point when the researcher can anticipate what focus group members are going to say even before they start. There is essentially no additional knowledge to be gathered by additional groups (Morgan, 1996).

The expertise of the participants is very important and represents a weakness in many focus group applications because of the difficulty of bringing together numerous experts in a session. Yet, getting the right experts is arguably the most important component of a focus group study (Okoli and Pawlowski, 2004). Segmentation is also important in constructing focus groups. Have all of the important types of experts been included in the process? Have these varied experts been grouped in a fashion where each group of participants can understand and relate to others in their group? (Morgan, 1996). Again, referring back to our B2B e-commerce risk study, we grouped corporate representatives together in diverse groups with common reference frames (IS security, IT audit, e-commerce developers, etc.), but we held separate focus groups for external auditors and e-commerce consultants (Sutton et al., 2008).

4.2. Conducting focus group sessions

Moderating sessions can play a very important part in how effective the research process is at discovery. The moderator needs to be directive in terms of guiding the flow toward the areas of interest in the research, but the moderator needs to make sure they are not so active as to disrupt the interactions that were the point of bringing the group together (Morgan, 1996). However, a higher degree of control by the moderator (i.e. structured focus groups) allows the moderator to better control what topics are discussed and explored in greater depth (Morgan, 1996). From a research perspective, structured groups tend to be more effective at eliciting the information of greatest interest to the research question (Morgan, 1997; O'hEocha et al., 2011).

The moderator also needs to focus on the group dynamics that develop and to alleviate as much social pressure as possible. The moderator should from the very beginning emphasize that participants not be critical of each others' ideas and encourage the generation of the maximum number of ideas without filtering for the most important (Paulus and Dzindolet, 1993). Members of interactive groups will be influenced by the performance and reactions of other group members around them, and the interactions occurring early on in the group process can shape the dynamics for the entire session (Paulus and Dzindolet, 1993). Constructing groups with members of common reference frames and specific expertise will generally alleviate most of these issues if the moderator is also careful to monitor and control any aggressive or dominating individuals that may end up in groups. In our B2B e-commerce groups, maintaining good group cohesion and support was not difficult (Sutton et al., 2008); but, it proved more challenging for the moderator when dealing with retail investors in a later study that necessitated greater focus on diversity in age, gender and race. Use of a professional moderator proved very beneficial for this particular study (Arnold et al., 2011a).

While we do not advocate that all researchers use the high level of structure we have used in our nominal groups, we have found that mixing interactive group discussions, while primarily focusing on nominal group techniques, has allowed us to maintain good social status and comfort and has allowed us to focus on the phenomenon of interest in a given study. The general process applied is shown in Table 1. Note that while the process is dominated by the nominal group techniques (i.e. brainstorming, listing, reflection, and ranking), interactive group discussion is used to define the process in the beginning, to clarify definitions during the listing process, and to summarize general conclusions during the post-briefing on the process and day's activities. The first interactive session is critical to the researchers in that it helps the researchers to understand the terminology used by group members, better understand the type of work performed by individual participants, and develop a rapport with the participants. The interactive process of defining factors is very important to objectivity of the research. Because the factors are defined by the participants, this alleviates the need for the researcher to define the factors after the sessions and possibly interject bias into definitions. This also increases the need for a second and preferably third researcher in the room during the session to record the definitions (the third allowing comparison for accuracy). Ideally, the researchers can enter the definitions into a document listing all factors that can be provided to the participants during the evaluation process.

4.3. Analyzing data

Data analysis will differ, of course, based on the focus group processes used and the data collected. Recording and developing transcripts for sessions are ideal for catching interactive group discussions, while they are less important for nominal group processes where the data is almost entirely recorded through the process. Qualitative analysis of discussion can be undertaken a number of ways. Many researchers prefer to use some form of software system for quantifying the transcript contents, including software such as

Table 1
Nominal group process blended with interactive segments.
Adapted from Havelka et al. (1998).

Process[a]	Description
1. Introduction	Participants are asked to introduce themselves and give a short description of their background (related to task focus). The moderator then discusses the activities to be undertaken during the course of the meeting time. This is followed by a brief review of the scope of the problem being discussed (e.g., information requirement definition or risks associated with B2B e-commerce trading relationships). Generally, the participants will have an interactive discussion at this stage on breaking the overall task into sequential or independent sub-processes (e.g., technical versus application versus business-level aspects of a B2B e-commerce trading relationship). Finally, the nominal group process and the rules of the process are discussed.
2. Generation of factors	The participants are asked to silently and individually brainstorm and generate a list of all factors that they believe may influence the phenomenon of interest (i.e., efficiency/effectiveness/quality of the information requirement development process or risks associated with the technical/application/business-level aspect of B2B trading relationships).
3. Listing of factors	The factors generated in process 2 are listed one at a time in round-robin fashion on flip charts, video projection, or some other means of display that allow the group participants to view the aggregate list. The round robin process continues until all participants' lists are exhausted. As each factor is presented, the participant is asked to define the factor. Other group members can question or suggest alterations of the definition, and discussion on whether a factor really represents two or more factors is also encouraged. The goal is to have a complete set of unique factors that all participants can agree upon the definition.
4. Evaluation of factors	After all factors are listed, the participants are directed to individually evaluate the factors. This normally entails first separating the factors into two categories, critical and noncritical, and secondly ranking the critical factors by importance.

[a] Note that processes two and three are repeated a second time after they have been sequentially completed the first time and before proceeding to process four.

NVivo or Diction. Other researchers feel that the richness of the data is lost by focusing on words and phrases versus the emotive content and the bigger picture of the discussion. These are the on-going debates of qualitative research as a whole (O'hEocha et al., 2011).

With nominal groups, the listing and ranking processes provide what, on the surface, appears to be more objective and quantifiable information. Actually, conducting such a study quickly brings the researcher back to reality—there is still substantial subjectivity that requires careful judgment by the researcher. The first challenge arises when different groups break down the overall process into its sub-processes; if those sub-processes are different between groups, how does the researcher compare results from different groups? The reader can see this issue addressed in Lampe and Sutton's (1994) work on internal audit quality. In the B2B e-commerce study we addressed this challenge differently by proposing a breakdown for the sub-processes at the initial of the interactive group discussion (Sutton et al., 2008). We applied the framework from Khazanchi and Sutton (2001) as a starting point and agreement with the framework was acquired from the multiple groups. The risk associated with using this strategy is that the moderator forces group participants into a frame that is not a reflection of the participants' reality (Sutton et al., 2008).

The second challenge, which is even more likely to create differences, is the generation of factors by multiple groups. Different groups will rarely identify factors by the same name, may break one group's factor into multiple factors within their own group, and will have varying definitions. The research team must reconcile the differences between the groups' factors in order to identify commonalities between groups' factors to derive the final combined list of factors.

The third challenge comes from the rating process where participants are asked to separate critical and non-critical factors, before ranking. Within groups individual participants will rank different sets of factors based on the set they chose as critical. Between groups is even more complex as the researcher must address how to handle a factor identified by only one group, but rated as critical, when comparing with other groups that did not identify the factor. Thus, the factor is not evaluated in terms of critical/non-critical and is not rank ordered. Addressing this challenge is documented throughout our work, but Sutton et al. (2008) presents the most complex such case encountered when looking at B2B e-commerce risk factors across five groups, which included the use of segmentation to group like participants.

5. Concluding thoughts

The presentation here has focused on an overview of using focus groups in their various forms to attack challenging research questions in the realm of emerging technology-driven phenomena in accounting. We would expect that certain aspects will entice many researchers by the richness of the research experience, but would also expect that we have scared many researchers based on the effort required, the qualitative aspects of the data captured, and the challenges presented in analyzing the data. The reader should weigh both aspects carefully—focus group projects can be very rewarding to the researcher; and, oftentimes the researcher benefits the most from such studies. S/he almost always walks away with a substantially greater understanding of an emerging phenomenon that can drive future research while also enriching the classroom as this new knowledge is shared.

At the same time, our presentation has been necessarily limited by the desire to provide a brief and approachable summary of the research method, the method's applicability, and the challenges in using the method. The 'how to' part of the manuscript is necessarily limited as books and monographs address this topic in greater detail. Nonetheless, this overview coupled with the research cited that applies the methods should give the researcher a good base set of tools from which to evaluate the usefulness of focus group methods to a particular research question.

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