

12-31-2002

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Recommended Citation

Bernard, Terrill and Flitman, Andrew, "Using Repertory Grid Analysis to Gather Qualitative Data for Information Systems Research" (2002). *ACIS 2002 Proceedings*. 98.
<http://aisel.aisnet.org/acis2002/98>

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Using Repertory Grid Analysis to Gather Qualitative Data for Information Systems Research

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Abstract

Repertory Grid Analysis (RepGrid) is a research method commonly used in a quantitative manner. This paper supports the argument that RepGrid is a suitable tool for information systems researchers to use in gathering qualitative data. This argument is based on experiences with using RepGrid as a qualitative tool in the preliminary stages of an information systems research project and concurs with the findings of two previous authors. The paper begins by describing the method and its potential applications. It then describes the specifics of the research setting and how and why RepGrid was utilised. The authors' findings in relation to the methods suitability are then presented; these are classified as either 'limitations' or 'strengths'. Mechanisms for overcoming the limitations are detailed. These findings support the conclusion that RepGrid is a suitable tool for gathering qualitative data. The paper is of value to information systems researchers considering various qualitative data gathering techniques. It adds further weight to the findings of previous authors supporting the use of RepGrid and presents materials to assist those considering its use.

Keywords

Repertory Grid Analysis, RepGrid, qualitative research, interviewing techniques

INTRODUCTION

A research method gaining increased interest within the IS community is the Repertory Grid Method (RepGrid). Originally developed by George Kelly (1955) for use in psychological research, it has since been applied in a wide range of different disciplines. Whilst it is commonly used in a **quantitative** manner, this paper supports the argument that RepGrid is a suitable method for information systems researchers to use in gathering **qualitative** data. This argument is based on experiences with using the tool in the preliminary stages of an information systems research project.

The paper begins by describing RepGrid in general. The specifics of the research project, and how RepGrid was utilised, are then detailed. Also described are the reasons why RepGrid was chosen. During the research a number of observations were made concerning the suitability, or otherwise, of the RepGrid method. These are presented and classified as either 'limitations' or 'strengths'. Recommendations on how to overcome the limitations are provided.

The paper concludes by presenting its central argument: that RepGrid is a suitable tool for information systems researchers to use in gathering qualitative data. This concurs with the findings of previous authors (Hunter, 1997; Moynihan, 1996), two information systems researchers who also applied RepGrid in a qualitative manner. This paper further strengthens their findings by demonstrating how RepGrid was applied successfully in a different research context.

THE REPERTORY GRID METHOD

To simplify, RepGrid is an interviewing method for eliciting people's ideas or opinions about some aspect of reality, expressed in their own personal terminology. For example, if one was interested in what people regarded as desirable characteristics in a manager, then RepGrid could be utilised to gather these opinions. In doing so, it would allow the people's opinions to be expressed in the terminology that they personally use, as distinct from a predetermined set of closed survey questions that require them to express their opinions in relation to terminology chosen by someone else.

In its more advanced usage the tool provides means to explore the respondents personal terminology in more depth: clarifying meaning, application and the relationships amongst the terms used. In this sense, RepGrid is a tool falling in the wider genre of "cognitive mapping" (Huff, 1990), a set of tools for understanding and describing individuals mental contents about particular topics.

Kelly developed the tool as an operationalization of his "Personal Construct Theory" (PCT). This theory holds that individuals interpret and understand experiences, and anticipate future events, by way of a "personal construct system". This system, in turn, is derived from and altered by the individual's experiences. The interested reader should consult Fransella and Bannister (1977) or Kelly's original work (1955) for a more extensive discussion.

Constructs and Elements

According to RepGrid terminology, the ideas or opinions the researcher gathers during an interview are referred to as "constructs". Constructs are: "...individuals' personal interpretations and assessments of the environment around them." (Coshall, 2000). An essential feature of constructs, as described by Kelly, is their bipolar nature. Kelly's position was that we never affirm anything without simultaneously denying something (Fransella and Bannister, 1977). This means that constructs are always expressed as two ends of a continuum (the "likeness pole" and the "contrast pole"). Gathering both "ends" of the construct is essential for understanding the constructs meaning. So, for example, we may hold an opinion about a particular manager that describes them as "effective" – we designate this the "likeness pole". As a contrast pole, one individual may state, "time waster"; another individual may state, "non political". The two individuals obviously hold very different meanings of "effective", one seeming to regard it as an ability to work consistently and efficiently without wasting time; the other seems to regard it as an ability to deal with organisational "politics" in order to achieve ones ends.

As noted by Stewart and Stewart (1981) the contrast pole may be, but is not always, the semantic opposite of the likeness pole. In the above example the semantic opposite would be "not effective" whereas the contrast poles (of two different individuals) were "time waster" and "non political". Constructs are denoted using the form: <likeness pole>-<contrast pole>. For example: effective-time waster.

If constructs are an individual's opinions or ideas about a particular aspect of reality, then the entities that they hold these opinions about are referred to as "elements". Typically, elements are nouns and verbs: specific people, objects, events or activities (Stewart and Stewart, 1981). In the example above, the elements would be the managers that the subject can locate somewhere on the "effective-time waster" continuum.

To use terminology more familiar to those from a technical background: the elements are the "objects" or "entities" that we are studying; the constructs are the "attributes" of those objects or entities. Said attributes being expressed as a continuum bounded at either end by the likeness and contrast pole (Shaw and Gaines, 1989). To consider two further examples: Stewart and Stewart (1981) describe a research study concerning doctors attitudes towards particular medical specialities (with the aim of identifying why there were shortages in some specialities and over-supply in others). The elements of the study were the various medical specialities (Psychiatry, Paediatrics, Pathology, General practice etc.). The constructs were the various opinions about these specialities, expressed in bipolar form. For example: "patients die or get well – patients linger; unconscious patients – patients can talk back to you; old patients – young patients" (1981:89).

Hunter (1997) conducted a study to determine the skills held by “excellent” systems analysts. In this case the elements were specific analysts the respondents had experience with and the constructs were the various skills held by “excellent” analysts. For example: “delegator – does work himself; informs everyone – keeps to himself; good user rapport – no user rapport” (1997:73).

Gathering Constructs and Elements

RepGrid provides various alternatives in regards to the identification of elements and constructs. The elements of the study can be provided to the respondent or “elicited” from them. An example of the former would be a market research study regarding perceptions of various perfumes. The elements in this case (the various perfumes) would be fixed; they would not differ from respondent to respondent. An example of the latter is the study by Hunter (1997). In this case the respondents were asked to identify “...up to six systems analysts with whom he/ she had interacted in the current or a previous organization.” (1997:73). One can also ask a series of specific “element elicitation questions”. For example: “your current manager?”, “your previous manager?”, “a manager you regarded as effective?”, “a manager you regarded as ineffective?”

If possible, elements should be discrete and specific. Verb elements should be of specific events or activities (for example, “meeting with manager on Mar 26” cf. “meetings with manager”). Refer to Stewart and Stewart (1981) and Fransella and Bannister (1977) for further guidelines in regards to element selection.

Having provided or elicited elements, the interview now proceeds to the “construct elicitation” stage. The most common form of this is referred to as “triadic comparison”. The interviewer takes three elements (typically noted on some type of memo card), presents them to the respondent and asks them to identify a way in which two of the elements are the same yet different from the third. The way in which two of the elements are similar provides the likeness pole, the way they are different from the third provides the contrast pole. For example, a respondent may designate that two managers are similar in that they are “stressed”, different from the third who is “easy going” (forming the construct “stressed – easy going”).

The respondent identifies constructs in this manner until no more are forthcoming. They are then presented with different elements. The process continues in this manner until no further constructs are identified. Each triad is referred to as a “sort”. Different alternatives exist in regards to sort order and content. For example Kelly describes the “Sequential Form”, where only a single element within the triad is changed for each sort, and the “Minimum Context Card Form” where two or all three can be changed at once. Bender (1974) showed that changing one element at a time produced less “important” constructs than when two at a time were changed. Refer to Fransella and Bannister (1977) for a more detailed discussion on sorts and relevant guidelines.

Stewart and Stewart (1981) explain the necessity of asking for “purpose related constructs”. Given a set of elements (such as managers) there are many alternative aspects of interest. For example, one researcher may be interested in the characteristics of “effective” managers, another may be interested in what characteristics employees like or dislike in managers. The interviewer must therefore direct the respondent’s attention to the particular purpose at hand. For example: “in terms of what you like or dislike in managers, can you identify a way in which two of these managers are alike yet different from the third”.

Whilst triadic comparison is the most common, “There is nothing sacrosanct about the triad” (Fransella and Bannister, 1977); two elements (a dyad) or more than three elements may be used. An example of the later is Kelly’s “Full Context Form” where all the elements, on cards, are presented to the respondent and they are asked to identify important similarities amongst the elements.

Dyads are used when triads may overload the mental capacities of the respondent. This can be due to the limited capacity of the respondents themselves, for example, when dealing with children (Allison, 1972), or because the elements are of a complicated nature. For example, Ryle and Lunghi (1970) used interpersonal relationships as elements: “self-to-Peter”, “Peter-to-self”, “self-to-Paul” etc. The reader may appreciate the mental difficulties

involved in considering three such elements and having to identify ways in which two are similar yet different from a third.

Similarly, when first presented with a triad (or dyad) the respondent may experience “overload” related difficulties. They are confronted with the novelty of a new technique and, at the same time, have to consider the elements themselves and how they are similar and different in respect of the interviewers particular purpose. All the while the interviewer is silently waiting for an answer. To ease this burden Stewart and Stewart (1981) provide an example by which the subject may be eased into the technique. For example, they may be asked to simply consider the three elements and identify one way in which two of them are similar. Then, as a separate question, asked whether that similarity applies to the third as well. After repeating this a few times the respondent becomes more used to the techniques requirements and it is possible to revert back to the standard elicitation question.

Laddering

Laddering is a technique originally conceived by Hinkle (1965) as a means to identifying the hierarchical relationships amongst constructs. For example, in a given individuals personal construct system, the construct “fast response time – slow response time” may be one aspect of the superordinate construct: “good software – poor software”.

In qualitative research it can be used to gather further information about the context and meaning of a particular construct (Hunter, 1997; Stewart and Stewart, 1981). For example, the construct “high quality – poor quality” alone conveys very little about the meaning an individual attaches to it. Laddering provides a means by which we can explore this meaning further.

As described by Stewart and Stewart (1981), one can ladder up, to gain an understanding of superordinate constructs, or ladder down, to reveal subordinate constructs. Laddering up involves asking the respondent which of the two poles expresses their preference and why that is. Stewart and Stewart (1981) work through an example involving a respondent producing constructs about what she likes/dislikes in her fellow workmates. One construct is “fairly thorough – a bit slapdash”. Laddering up reveals that this construct is related to the higher-level construct: “exciting – routine” – her preference is the “slapdash” people whom she regards as more exciting than the “routine thorough” ones.

Laddering down allows a high level, general construct to be broken down into its constituent parts. This is achieved by asking the subject to reveal, in more detail, how the likeness and contrast pole are different. Hunter (1997) elicited the construct “good user rapport – no user rapport” (a characteristic of systems analysts. Laddering down revealed that, in the opinion of the respondent, an analyst with good user rapport is a good listener and takes time to answer users questions. An analyst with bad user rapport is not a good listener, has little concern for the user and can be aggressive.

Full Grid and Analysis

Construct elicitation and laddering may be all that is required. This is the case for example, if the purpose is to gather qualitative data for subsequent analysis or to generate items for a later questionnaire (Hunter, 1997; Tan and Hunter, 2002; Stewart and Stewart, 1981; Cammock *et al.*, 1995). The interview can continue however with a more quantitative technique designed to further explore the relationships between the elements and constructs. This is referred to as “Full Grid”. It consists of turning each construct into a Likert scale, with the likeness and contrast pole forming either end. The question as to how many intervals to use is subject to the same considerations as for standard Likert scales. Neuman (1999) states the optimal number as between 4 and 8, reliability tends to level off at about 7 intervals. The subject is then asked to rate each element against each of the scales. The following example shows part of a full grid where the elements were the respondent’s colleagues. The Likert scales used in this case had 5 intervals:

1	T E D	T O N Y	J O H N	S H I R L E Y	A L A N	F R A N C E S	D O U G L A S	B O B	L O U I S E	5
Career specialist	1	1	5	5	2	2	4	4	3	Got into his line by accident
Self protective	1	1	5	2	1	1	5	2	4	Bucaneer
Easily swayed by fads	1	1	5	5	1	1	2	3	4	Knows what he wants
20 years experience	1	3	2	2	4	5	1	1	5	Very new
Would say had come up the hard way	1	3	2	3	3	4	1	1	5	Hard path made smooth
Trimmers, aware of political reality	1	2	1	5	3	3	1	4	5	Think rational argument will solve any problem

Figure 1: Sample full grid (adapted from Stewart and Stewart 1980:40)

There are a number of variations on this general theme. See Fransella and Bannister (1977), Stewart and Stewart (1981) and Tan and Hunter (2002) for more information.

Having gathered qualitative and quantitative data in the manner described, one can turn to analysis of that data. There are a wide range of different alternatives, some of the more common are presented below, refer to the above references for a more comprehensive coverage:

Frequency counts

This involves a simple counting of the number of times particular constructs are mentioned and thereby provides an approximate indication of their importance.

Content analysis

Content analysis can be used to categorise the constructs. The categories can be pre-determined (for example, from a reading of relevant literature) or can “emerge” from the data itself. Weber (1990) provides more information and Cammock *et al.* (1995) may be consulted for an instructive example.

Qualitative analysis

Construct elicitation and laddering alone will produce a large amount of qualitative data. This may be analysed using standard qualitative techniques (Neuman, 1999; Dey, 1993; Miles and Huberman, 1994). Hunter (1997) adopted this approach. At its most simple this will result in the allocation of the constructs to a categorisation scheme however it may be extended to more advanced forms of analysis.

Cluster analysis and principal components analysis

Assuming full grid data was gathered, more advanced statistical techniques may be employed to investigate the relationships amongst the elements and constructs. Cluster analysis for example will indicate if particular constructs and/ or elements are highly correlated. This may indicate that, in the personal construct system of the individual involved, certain constructs are very similar in meaning or closely related. The significance of this (and of loosely correlated items) depends on the research context. A simpler form of cluster analysis is referred to as “visual focusing” – refer to Stewart and Stewart (1981) for more detail on both topics and Phythian and King (1992) and Latta and Swigger (1992) for examples.

Principal component analysis helps identify how many independent variables are needed to explain or “predict” the variability in the data. Four given constructs, for example, may together explain 75% of the variability in the data, another three, grouped together may

explain another 20%. Stewart and Stewart (1981) provide an example where the elements are people at work. 85% of the variability in one individual's full grid data could be explained by two constructs: "Weak – Strong" and "I get one well with – I do not get on well with". Again, the significance of this depends on the particular research context.

RESEARCH SETTING

RepGrid was used in the preliminary phase of a research project investigating the factors that influence user satisfaction with knowledge management systems (KMS). KMS are a relatively recent class of IS that have emerged to support the increasing interest in knowledge management. They may be defined as "...a class of information systems applied to managing organizational knowledge. That is, they are IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application." (Alavi and Leidner, 2001)

Within this general category there is a wide array of different systems. This research project concentrated on a particular type of KMS, "codified KMS", which is characterised by the storage of documents in a large repository of some type. Employees share relevant knowledge by contributing documents (Word, Excel, Powerpoint, Acrobat etc) to the repository. Other employees can utilise this knowledge by accessing the repository and retrieving the relevant documents. For example, Ernst and Young International, a global accountancy and consulting firm, utilise an internally developed KMS referred to as the "Knowledge Web" (Kweb). Amongst other things, this Lotus Notes based repository contains deliverables from previously executed projects. A consultant interested in say, SAP engagements, can quickly retrieve sample project plans, deliverable templates, functional and technical designs and more (Rollo and Clarke, 2001). This type of KMS is very common; indeed, it is often what many practitioners are referring to when they discuss KMS. It may be distinguished from another class of KMS, "tacit KMS", which focuses on sharing knowledge amongst employees using real time collaboration (rather than explicit documents of some type).

User Satisfaction is a body of theory within the wider field of IS success theory (Garrity and Sanders, 1998). This field studies the measurement of IS success (exactly how do we measure if a system was successful or not?) and the factors that influence that success, or lack of. User satisfaction is regarded as one possible measure of IS success. Simply put, if the users express satisfaction with the system then it may be regarded as successful. Refer to Garrity and Sanders (1998) and DeLone and McLean (1992) for full coverage of this topic.

The preliminary phase of this research called for interviews with KMS end users. The results of the interviews, combined with findings from relevant literature, will be used to construct a preliminary model to be investigated in the later major phase of the research.

Having decided upon the need for preliminary interviews it was necessary to decide on an interviewing method. RepGrid was chosen based primarily on the reasoning expressed in Hunter (1997). Hunter reviewed a number of research methods against his research objectives. He found RepGrid to be the most suitable for a number of reasons:

- The method elicits subjects opinions based on **actual** experiences compared to other methods that may allow the subject to give theoretical or "text book" answers to the questions. This research is interested in factors that influence user satisfaction with KMS. It was important that users expressed these factors based on their actual experiences with the system as distinct from giving answers gathered elsewhere (from conversations or reading). In this sense RepGrid is similar to the "Critical Incident" interviewing method (Flanagan, 1954; 1978) which also couches subject responses in the context of actual experiences.
- RepGrid provides a structure to interviews but still allows some flexibility to explore issues that arise (during the laddering process for example). This flexibility was important given the preliminary nature of the interviews however the structure provided by RepGrid would allow the interviews to stay focused on the research question.

- RepGrid reduces observer bias to a minimum. The factors identified as influencing user satisfaction with a KMS should be obtained from the actual users themselves, not formed solely on the opinion of the researcher.
- RepGrid is a valid method for gathering qualitative data in the preliminary phase of research. This is an oft cited advantage (Hunter, 1997; Cammock *et al.*, 1995; Tan and Hunter, 2002).

The research described in this paper validated these reasons, as described in more detail below.

METHODOLOGY

Whilst experienced with interviewing in general, the primary researcher had no prior experience with RepGrid in particular. A number of exercises from Stewart and Stewart (1981) were performed. A preliminary interview schedule was then developed. To confirm the method, a trial interview was conducted with a KMS end user. The focus in this interview was on the method rather than content. The trial interview resulted in a number of changes to the interview schedule (see “Findings and Recommendations” below for more detail). A full copy of the final interview schedule is available on request.

After standard opening remarks (introductions, logistics etc.) the interviews commenced with a number of questions about the KMS used by the subject. This was necessary as contextual information and also directed the respondents’ thoughts to the subject of interest.

The interview elements were the users actual experiences with the KMS (some thought was given to using different KMS as the elements – this was not pursued as most users have experience with one, or perhaps two different systems). The experiences of every user were unique so it was not possible to use predetermined elements. Elements were elicited by the following questions:

1. Your most recent use of the KMS
2. Your next most recent use of the KMS
3. A positive experience with the KMS
4. A negative experience with the KMS

The subject was asked to describe each experience briefly and then identify a short label for the experience. This label was then written on a memo card. Following Hunter (1997), two additional elements were added: “The best possible experience” and “The worst possible experience.”

A key finding from the trial interview was that a triad of such elements tended to overload the subject. Therefore, two elements at a time (a dyad) were presented to the subject and they were asked to identify similarities and differences “in terms of what satisfied them or did not satisfy them” or “in terms of what they liked/did not like”. Sort order was predetermined and detailed in the interview schedule.

Laddering was utilised for each elicited construct. Downwards laddering was the most commonly used in order to reveal more detail about relatively high level or general constructs.

Sorts continued until no new constructs were forthcoming or the allotted time was nearing an end (prior to the interview, subjects were told that the interview would take no more than 90 minutes).

All interviews were recorded and notes were also taken during the construct elicitation phase. This helped the researcher keep focused on a particular construct and identify any points to be pursued further. For example, it was common for subjects to quickly state a number of distinct constructs. These were noted and then returned to later to ensure the contrast pole was obtained and laddering performed. Notes were taken on pre-designed stationary (available on request).

The interviews were completed by briefly examining two additional elements. These were occasions when the subject had considered using, or potentially could have used, the system, but did not. The constructs elicited here focused on the reasons why the system

was not used (this was considered an additional way to investigate factors influencing the users satisfaction with the system).

The interviews were closed in standard fashion (questions from the subject, next steps etc.)

Four subjects were interviewed. Each subject was interviewed twice. The first interview focused on their experiences when **retrieving** knowledge from the system, the second focused on their experiences when **contributing** knowledge to the system.

A full transcript of each interview was prepared and provided to the subject for confirmation.

Analysis (not complete at the time of writing) will utilise the qualitative coding approach detailed in Dey (1993). "Nvivo", a qualitative research software package, will be used. The result of the analysis will be a preliminary model describing factors influencing user satisfaction with KMS.

As a further confirmatory step this preliminary model will be presented to, and discussed with, the interview subjects.

FINDINGS

The primary purpose of the interviews was to gather qualitative data in relation to the research question: factors influencing user satisfaction with KMS. During the process the authors also made a number of observations in regards to the RepGrid method itself. These observations were classified as either 'limitations' or 'strengths' and are recounted following. How the limitations were overcome is also noted. Readers considering the use of RepGrid can use these observations, by integrating them with the objectives of their particular research task and observations of other authors, as additional decision-making material.

Limitations

Subjects focusing on method rather than content

Some interview subjects may regard the method as somewhat 'artificial' or 'different'. When invited to an interview most practitioners will expect a standard question and answer type format; they may not be expecting the use of memo cards, comparison amongst elements, attention to obtaining the contrast pole etc. This could lead to difficulties in the interview due to the subject focusing more on the method rather than the question at hand. To mitigate this risk, subjects of this research were given a brief introduction and explanation of RepGrid, prior to the interview itself.

Overloading the subject

Another risk with RepGrid interviews lies in the possibility of overloading the subject. As previously discussed, if ones elements are of a more complicated, intangible nature (such as the elements used in this research) then the presentation of triads may prove too taxing. A trial interview allows one to assess this risk. Also useful is the initial 'lead in' when presenting the first triad/ dyad as discussed above ("Gathering constructs and elements"). The subject should also be informed that it is acceptable to take time in considering their responses – silences, relatively long silences, are perfectly acceptable in RepGrid interviews.

Possible loss of control during interviews

In comparison to a fully structured interview, the author found RepGrid interviews more difficult to control. In a structured interview the researcher asks a question, waits for the subject's response, moves to the next question, and so on. In the RepGrid interviews, considerable discipline was required to keep the subject focused on ones purpose and to keep track of points requiring completion. For example, when first presented with a dyad, some participants would immediately launch into a long undifferentiated list of what satisfied them or did not satisfy them in regards to those particular experiences. Not wanting to stifle this flow the interviewer had to note these down and then, afterwards, return to them one by one to obtain the contrast pole and perform laddering. The note taking previously discussed was particularly valuable in this respect.

Need for considerable practice prior to the actual interviews

The above observation also necessitates considerable practice prior to the actual interviews themselves. Effective RepGrid interviewing is definitely an acquired skill – even after considerable practice and a trial interview, this researcher still noticed considerable improvement between the first and last interview.

Strengths

Ability to stimulate subject responses

Construct elicitation was effective in ‘drawing out’ a number of items which, according to the end users, influence their satisfaction, or otherwise, with the KMS they use. Focusing on specific experiences helped the subjects remember different items that satisfied them or did not satisfy them. As different elements were presented they would remember different items. The researcher often observed a reaction along the lines of, “oh yes, I remember...” The interviews therefore generated a large amount of different constructs. This contrasts with the situation whereby a subject is simply presented with a general question such as, “Please list the things that satisfy or don’t satisfy you about KMS?” Without the stimulation offered by the construct elicitation process it is doubtful whether they would respond with as many items.

Ability to generate ‘rich’ qualitative data

Obtaining the contrast pole and laddering provided contextual information about each of these items. Information which helps interpret the meaning assigned to the item by the interview subject. This is consistent with the qualitative goal of providing a ‘rich’ contextually based description of the subject under investigation (Kaplan and Duchon, 1988).

Laddering as a mechanism for reaching the correct level of abstraction

Laddering was an effective mechanism for focusing the discussion at the appropriate level of detail. On occasions, subjects would provide constructs that were unique to their particular KMS. By laddering upwards it was possible to move their answer to a higher, more generalizable level of abstraction. For example, one subject when discussing making contributions to the KMS, provided the construct, “notification email – no notification email”. This referred to a particular feature of the KMS that notifies a contributor when items they have submitted have been accessed by other employees. By laddering upwards we discovered that what satisfied the subject was knowing his contribution had proved of value to other employees, a point possibly applicable to many users, irrespective of the particular KMS being utilised.

Some subjects would respond with a high level construct. In such cases, laddering down was used to move the discussion to a more specific level of detail. For example, an IT consultant, when discussing retrieving items from the KMS, provided the construct: “good content – poor content”. Laddering down revealed what this meant for her: quantifiable business benefits, a focus on solving the customers problem (as distinct from a detailed focus on technology), clarity, accuracy and consistency.

Provision of structure

The method provided a structure to the interviews that allowed the focus to remain on the subject of interest. On some occasions, the subjects exhibited a tendency to digress into interesting, but not strictly relevant, areas. The discipline imposed by RepGrid: noting down the constructs, obtaining the contrast poles and then laddering, ensured such digressions were kept to the minimum. Examining the in-progress notes allowed the researcher to identify points still requiring coverage and thereby ensured the interview returned to more relevant discussions.

This structure also allowed a certain consistency across all interviews. They all adhered to the same basic pattern, thereby facilitating the subsequent analysis.

That said, the structure imposed did not forbid all flexibility. Particularly in the laddering process, the researcher was able to investigate relevant areas as they arose – areas that could not have been foreseen prior to the interview.

In this sense, RepGrid interviews can be seen as semi-structured interviews. The interviewer is not restricted to the exact recitation of predetermined questions (as in a

structured interview) yet still follows a basic pattern and series of steps (unlike an unstructured interview which can vary widely from interview to interview).

This structure was suitable in this particular research setting as the interviews addressed a relatively focused, specific question. RepGrid would not be suitable for more wide-ranging, open-ended interviews. It forces you to focus on particular, specific elements and then elicit particular, purpose focused, constructs about those elements. Such structure may not be suitable in certain contexts.

Allowing the subjects to respond in their own terms

Adhering to the standard pattern of construct elicitation and then laddering ensured the subjects used their own terminology. It was up to the subject to consider the elements and then provide the constructs. The researcher then guided the laddering in terms of a neutral question, "can you provide more detail concerning...?" This contrasts with a fully structured interview or a questionnaire where the respondent must respond to the preconceived terminology of the researcher. "Thus, whether it be a questionnaire, a laboratory measure or a projective test, the subject's contributions are compounded into categories and scale positions, the subject cannot do what we allow him to do in conversation, propose his own terms" (Fransella and Bannister, 1977)

Prevents researcher leading the subject

A well-known risk in interviewing is the possibility of the researcher leading the subject in some way and thereby influencing their answer. Kvale (1996) reports on studies which show that even a slight rewording of a question can significantly alter subject responses. RepGrid minimises this risk as the researcher does not ask questions that in any way suggest or lean towards a given answer. The researcher simply presents the element cards and asks the subject to consider them and provide any constructs they can think of. Obtaining the contrast pole and laddering is a similarly neutral process.

Subjects provide answers based on actual experience.

The information elicited was, to a large degree, based on the users actual experiences. The initial element elicitation focused their attention to specific experiences – experiences that they then had in mind when providing constructs and during laddering. This contrasts with asking them a general question such as: "Please list the things that satisfy or don't satisfy you about KMS?". In such a case they may be tempted to give answers based on opinions other than their own; opinions they had heard others express, or opinions they had read somewhere for example.

CONCLUSION

The central question of this paper is whether or not RepGrid is a suitable method for information systems researchers to use in gathering qualitative data. Based on the research described, and the strengths noted above, the authors arrived at the conclusion that it is suitable. The method allowed the successful gathering of qualitative data in relation to the research question and provided the additional benefits cited above.

The method has some limitations however, within the context of this particular research project, these were not insurmountable and were overcome using the methods described.

A researcher considering the use of RepGrid should consider these strengths and limitations against the context of their own research. If the strengths meet one's research objectives and the research is such that the limitations can be overcome, then RepGrid may prove beneficial.

This basic conclusion concurs with Hunter (1997) and Moynihan (1996), two information systems studies that used RepGrid in a qualitative manner. Whilst arriving at the same basic conclusion, both studies had research questions and objectives different than the research described herein. By demonstrating how RepGrid was applied successfully in a different research context, this paper adds further weight to their findings.

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