Abstract:
The purpose of any type of research is to record and demonstrate what is important about the story of an event, people or place. In research, a visual method covers all uses of images such as photograph, with or without accompanying words, as a part of the research process. Though most sociologists are ‘visually illiterate’ and show little sign of considering the use of visual images, in the last decade there has been a considerable renewal of interest in this method. Using photographs as a ‘true-nature’ representation of the surroundings of care homes for the elderly, this paper seeks to explore and elucidate the application of visual method using NVivo 7.0 software in the PhD thesis entitled ‘Opportunities for the Transfer of United Kingdom (UK) Best Practices for the Provision of Residential Care Homes for the Elderly’. This research is particularly seeking to understand how the operational care practices are being delivered at both the Residential Care Home for the Elderly (RCHE) in the UK and Malaysia. The relevencies, techniques and steps of using this visual method and software will be explained accordingly.

Keywords:
Visual method, care practices, NVivo 7.0

1. Introduction

“If I could tell the story in words, I wouldn’t need to lug a camera...”. Lewis Hine in Noderman (2007). “People believe that the camera doesn’t lie. Have you not ever said the words “I will believe it when I see it” or “seeing is believing. If the enter photography (still photography that is) is a research method, it seems that your problems are solved”(Nordeman, 2007). Both citations indicate that visual images could bring something that really can not be solely told by words. Something could be different if it can be portrayed in the form of images to the people who see it. Hence, the theme of this paper centres on the discussion starting from the definition and context of visual method as a research method, how it can be related to case study methodology and other methods, why the method is used to answer the developed research questions and how CAQDAS can help in analysing the qualitative visual data. As computers are useful for administrative functions and at arranging and sorting data, hence the discussion integrates what computers can do using the application of the NVivo 7.0 and this visual method. The steps for applying the software show that the application of this software is truly beneficial to be undertaken as NVivo has been a powerful tool in allowing the management of data and the recording of ideas as well as visual images of the RCHE.
2. Definition and Context of Visual Method

Pictures were accepted in Western society as a ‘true-nature’ representation of the surrounding world during the Italian Renaissance, when Leonardo da Vinci and his colleagues proclaimed that central perspective was the only legitimate way to construct a pictorial representation. They visualised a painting as a window, opening on a view of perspective space as seen from one central point; in geometrical terms, the picture is a cross section of the cone shaped visual field, the apex of which is the observer’s eye (De Haas, 1979). In research, visual method covers all uses of images, with or without accompanying words, such as photographs, video, film, television, or hand-drawn artwork, whether pre-existing or generated as part of the research process, as data for social research purposes (Payne & Payne, 2004). It can also take the form of film or still photos, maps or diagrams (Latham 2003; Young and Barrett, 2001) or drawings (Guillemin, 2004; Kearney and Hyle, 2004). Photographs that people have taken are likely to record what was new, noteworthy, difficult, memorable and/or out of the ordinary (Titus, 1976). However, over the last century, the use of photographs as data for social purposes has waxed and waned (Hurworth, 2004). Payne & Payne (2004) added most sociologists are also “visually illiterate”, showing little sign of considering use of visual images. Hurworth (2004) supported this claim as identified in comparison with other data collection method. Only a relatively small amount has been written concerning the use of the visual medium for research and even less about how photographs can also be integrated into the interviewing process. It has swung from being popular to being ignored but in the last decade there has been a considerable renewal of interest in this method (Hurworth, 1995; Hurworth & Sweeney, 1995). Interestingly, it has been shown that various researchers suggested that photography can be powerful evidence in collecting research data especially qualitatively.

3. The Research Inquiry

Creswell (2004) simplified research questions to those that the data collection will attempt to answer. Realising the importance of transferring of best practice in the provision of RCHE, within the specific boundaries, the research questions in this research have been identified as the following;

1. Which strategic, tactical and operational practices within the context of public sector Facilities Management (FM) are applied in the provision of RCHE in the United Kingdom?
2. What are the current strategic, tactical and operational practices within the context of public sector FM currently being delivered in the provision of RCHE in Malaysia?
3. To what extent has a best practice approach at strategic, tactical and operational public sector FM functions been established or has empirically emerged in the context of United Kingdom?
4. To what extent has a best practice approach at strategic, tactical and operational public sector FM functions been established or has empirically emerged in the context of Malaysia?
5. Which enablers, barriers and benefits will Malaysia face if the Best Practice Transfer Process takes place?
6. What lessons could be learned for the improvement of the provision of RCHE in Malaysia?
7. What are the transferable strategic, tactical and operational practices needed for the provision of RCHE to be transferred to Malaysia?

4. Research Methodology & Method

Methods are tools of the trade for social scientists and are chosen on the basis of criteria related to or even dictated by the major elements of the methodology in which they are embedded, such as perception of reality, perception of human beings, purpose of research,
type of research units and so on (Sarantakos, 1997). Subsequently, a researcher could use as many sources as possible that can be called “multiple sources of evidence” to increase the validity of data collection. In order to conduct a good case study, Yin (2003) suggested that a researcher should immediately note that no single source has a complete advantage over all the others. As a case study approach is an umbrella term for a family of research methods, the “method of triangulation” is employed by which visual method is used as one of the methods. Prosser and Schwartz (2003) agreed, stating that “A case study perhaps, in which the photographs, presented in the form of visual quotes, will be used in conjunction with other evidence to support a particular theory or working hypothesis”. Using the “multiple embedded case study design”, the primary concern of this research is to study the strategic, tactical and operational FM practices delivered for the provision of RCHE in both countries United Kingdom and Malaysia. However, this visual method is only trying to obtain the data on operational practice delivery at the RCHE for both countries. The application of case study using Multiple Case Embedded Matrix and the employment of a visual method can be seen in Figure 1.

![Fig. 1. Case Study Matrix Design-Multiple Case Embedded; for UK and Malaysia](image)

5. Why Visual Method?

Payne & Payne (2004) argued that the social sciences have always been disciplines that deal in word and numbers. Also, they produce descriptive data based upon spoken or written words and observable behaviour (Sherman and Reid, 1994). However, little use has been made of visual images, either moving or still, though it could extend the field of perception of reality. However, since 1980s, interest seems to have increased somewhat in conjunction with a growing interest in qualitative methods where photographs and videos are viewed as an extension of other methods of research (Dowdall and Garden, 1989, Tucker and Demsey, 1991). This means researchers have used the visual images actively in the research setting, alongside other forms of evidence generated from the fieldwork. The question as to why this method is employed should clearly, be explained before it can be undertaken. For this reason, the following discussion will rationalise several relevancies identified from previous researchers regarding the strengths of this method. First and foremost, this research involves
two different countries, suggesting that the comparison between recent photos collected from different countries could show marked differences. On top of that, many of the classical anthropological ethnographies use photographs to economically show the visual differences of alien culture (Ball & Smith, 1992). In terms of culture in the research settings and social phenomena, the photographs serve essentially presentational and illustrative purposes rather than providing a focus for a more sustained analysis of the visual dimensions culture (Ball and Smith, 1992). Also, the extensive use of photographs can illustrate among other things, ritual practices, everyday life and material culture (Ball and Smith 1992). Grady (2004) stated, pictures are also valuable because they encode an enormous amount of information even in a single representation. For an example Figure 2 shows the images taken by satellite photos for RCHE in the UK and Malaysia. Based on the images, immediately some points of view can be construed from the observer’s eye. Then, language can do the work of eyes based on the interpretation made by the person who saw it as well as the researcher.

Fig. 2. Satellite Photos for RCHE in the UK and Malaysia

Visual information of what people and their world looks like provides harder and more immediate evidence than the written word; photographs can authenticate a research report in a way that words alone cannot (Ball & Smith, 1992). Photography identifies and displays the results of research, or renders visible what is already known and adds it to that part of the world we perceive and understand. In other words, photography ‘socialises’ newly acquired knowledge by integrating in into a system of familiar representations. It is the architect of a constructed reality which we assimilate into our extended field of perception: the reality that is displayed at first becomes the reality we observe (Jacobi and Schiele, 1989). Additionally, as the research philosophical stance is based on interpretivism, through photographs a researcher can communicate the feeling or suggest the emotion imparted by activities, environments, and interactions (Prosser and Schwartz, 2003). In terms of research findings, Payne & Payne, (2004) stated a researcher can make his own images to record what is taking place during his research (fieldwork) and images also can be used as an addition to words in communicating his findings. Also, rhetoric espoused the idea that data in the form of the visual image would be beneficial for research evaluation generally (Hurworth and Seeney, 1995). This is supported by Sontag (1978) with saying that “The photographer was thought to be an acute but non interfering observer, a scribe not a poet. But as people quickly discovered that nobody takes the same picture of the same thing, the supposition that cameras furnish an impersonal, objective image yielded to the fact that photographs are evidence not only of
what’s there but of what an individual sees, not just a record but an evaluation of the world”. Definitely, this signifies that if participant observation is being used, photographs are able to validate all of the information collected on observation as more accurate. Simultaneously, photographs can be ‘a more transparent representation of the life experiences of participants in a study’ (Dodman, 2003). In summary, Sontag (1978) concluded that “You may not agree with his/her (subjective) evaluation, but thanks to the objective nature of photographs you can not deny its truthfulness; photographic images do not seem to be statements about the world so much as pieces of it. Importantly, the pieces serve as pieces of evidence. Evidence, of course, is what every one is looking for in the research setting”.

6. **Sampling Frame & Unit of Analysis**

A researcher employs a sampling procedure that corresponds to the philosophy of the type of research but if it is qualitative, it will be is less structured, less quantitative, and less strict than the techniques of quantitative research. In visual method, Rose (2007) explained that “There are no hard and fast rules for deciding what size your sample should be. Sample size depends on the amount of variation among all the relevant images. If there is absolutely no variation, a sample of one will be representative...”. This method was specifically chosen to gather the data on operational care practice at the RCHE. To conduct the method, time-based sampling was used in which 3 hours were allocated for each care home to engage the participant observation. While conducting the participant observation, the photographs on operational care practice delivery and the condition of RCHE were being taken at the same time. Altogether, about 18 hours were spent taking photographs at the 6 RCHE both in UK and Malaysia along with the tour of the building for participant observation. The shooting script and the UK’s National Minimum Standard for the Care Home for the Elderly 2000 were used as a guide to capture the photos driven by the developed research questions. This conceptually-driven sequential sampling is also known as theoretical sampling where it is associated with theory and also known as theory-driven ‘up-front’ sampling (Miles & Huberman, 1997). It is selective, not representative (Payne and Payne, 2004). In total, 150 photos were captured in Malaysia and the same quantities of sampling frame were shot in the UK respectively. The total of 300 photographs have been documented and then reasonably reduced for the categorising process. Then, 50 photographs were selected to represent each residential care home. At the end of the process, only 10 representative and significant photographs were chosen for each care home for the elderly totaling 30 photographs for each country. See Table 1. Considering this as a support method, this sample was sufficient to represent visually standard of RCHE ranging from choice of home, health and personal care, daily life and social activities, complaints and protection, environment, staffing and management and administration. Interestingly, there were also certain events which took place during the researcher’s visit. So, the senses of event, culture and social value were also recorded during the visit.

| Table 1: The Criteria of selected RCHE and the number of selected images |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Description | UNITED KINGDOM | MALAYSIA |
| RCHEs | A | B | C | X | Y | Z |
| Participant Observation + Taking Pictures | 1 hour x 3 | 1 hour x 3 | 1 hour x 3 | 1 hour x 3 | 1 hour x 3 | 1 hour x 3 |
| Time Spent | 3 hours | 3 hours | 3 hours | 3 hours | 3 hours | 3 hours |
| Total Time | 9 hours | 9 hours |
| Total Time Spent | 18 hours |
| No. of Shots | 50 | 50 | 50 | 50 | 50 | 50 |
| Total shots | 150 | 150 |
| Selected Images | 10 | 10 | 10 | 10 | 10 | 10 |
| Most Compliance Photos | 60 |
7. **Computer Assisted Qualitative Data Analysis (CAQDAS): The Application of NVIVO 7.0**

“Computers are useful for administrative functions and at arranging and sorting data. What computers can't do is think like a qualitative researcher. But the fact that computers don't think is not a limitation at all; in fact, it leaves the researcher doing what they most want to do - the thinking” (Gibbs, 2004).

Nowadays, almost every qualitative researcher uses word processors to transcribe their interviews, theoretical ideas, write up their field notes and the final thesis while undertaking a piece of research. In a way to understand the world or to imbue with meaning in research settings, CAQDAS has transformed the traditional way of managing and the analysis of the data such as paper management techniques, indexing, photocopiers, filing cards, mind mapping charts, coloured pens, etc to the more efficient and systematic ways. As qualitative data requires an understanding of the meaning of the texts which are commonly iterative, bulky, dense, recursive, complex and dynamic, the continuous modification and enhancement of CAQDAS are necessary to assist the interpretive philosophers to interpret the world they live better. The key development in CAQDAS was the introduction of software that could manage the coding and retrieval of texts of the transcribed data. Furthermore, some of the software features can also provide a variety of facilities to help the analyst examine features and relationships in the texts to develop the theoretical ideas. Weitzman and Miles (1995) summarised the categories of CAQDAS as in Table 2.

<table>
<thead>
<tr>
<th>Type of CAQDAS</th>
<th>Function of CAQDAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text retrievers</td>
<td>search for words or phrases</td>
</tr>
<tr>
<td>Textbase manager</td>
<td>Sort and organise data</td>
</tr>
<tr>
<td>Code and retrieve</td>
<td>Support coding and reporting by codes</td>
</tr>
<tr>
<td>Code-based theory builders</td>
<td>Coding and the ability to build conceptual structures and test hypotheses</td>
</tr>
<tr>
<td>Conceptual network builders</td>
<td>Diagrams, concept mapping, charts</td>
</tr>
</tbody>
</table>

Source: Sarantakos (1997)

NVivo has been developed, supported and distributed by QSR International Ptd Ltd, a largest privately owned qualitative research software developer in the world headquartered in Melbourne, Australia. It was formally established in 1995 and originated in 1981 – when the first software product, NUD•IST, was developed. With the development of the NUD•IST (1980s) and NVivo (1990s) software lines, QSR has long enjoyed a reputation as a front-line innovator in qualitative computing. This software is suitable for those with backgrounds in sociology, psychology, health, nursing, social work, social policy, geography, anthropology, economics, criminology, politics, cultural studies and community studies. Therefore, considering the benefits of the software, this research is trying to utilize the benefits of CAQDAS using a visual method.

8. **Techniques for Applying the Method**

First and foremost, any discussion of using photographs in the research process should begin by considering researchers’ underlying epistemological and methodological assumptions, since they orientate the way studies are conducted (Prosser and Schwartz, 2003). According to Nordeman (2007), the photographer is not merely an objective recorder, but a subjective evaluator; it is still believed that the camera does not lie. Thus, philosophically the camera is capable of two capacities at the same time: it can objectify reality and subjectify it. In this dual function lies the value of using photography as a research method. Though till today, there is no standard or clearly established methodological framework discussing the uses of photography in social science research as stated by Becker (2004) and Glowski (1998). In order to conduct the method this researcher has followed the subsequent steps:
8.1 Selection of Research Topic

To start with, the research topic was identified and was aimed to identify the “Opportunities for the Transfer of United Kingdom (UK) Best Practices for the Provision of Residential Care Homes for the Elderly in Malaysia to Meet Emerging and Changing Social Needs”. Research materials to store visual data are a digital camera and a notebook computer to store the captured images.

8.2 Operationalising Research Questions

The research questions stemmed from a particular issue, that is the lack of awareness on learning and improving the current practice in the provision of RCHE in Malaysia. The problems were identified and explained in previous papers prepared by Sulaiman et. al, (2006a, 2006b, 2006c, 2006d and 2008a). These have raised numerous questions suitable for research as described in 3.0. Wilkinson and Birmingham (2003) argued that in research a well developed research questions can certainly limit the themes and issues, and their types, to be explored, making the whole process more manageable. The questions should be relevant to the topic area, able to be answered by observable evidence, feasible for the researcher to answer, and should have more than one possible answer. In this regard, a photo documentation technique was used to answer the research question on the operational practice delivered at the RCHE for both countries. It has been defined as “the precise recording of, among other things, art, text, architecture, ritual, or a physical location”(Glowski, 1998). Suchar (1997) used this technique to study the detailed physical, social, and cultural changes that gentrification brought to the urban environment and neighbourhoods in Chicago and Amsterdam. Rieger (1996) said the key to the successful use of photo documentation is the careful conceptualisation of the link between the research topics. In this case, those 50 pictures containing the activities associated with operational practices at the RCHE were captured and shooting scripts were used based on the developed research questions addressed. Rose (2007) described that the shooting scripts are a list of sub questions, generated by that overall question and they guide the taking photographs relevant to the research questions. A shooting script guides what photographs a researcher is going to capture and more importantly, why they are taken. Suchar (1997) claimed that to serve as evidence for social science research, the photos must be clearly connected to a research question. He emphasised by using the scripts, the information within (a photo) can be argued as putative facts that are answers to particular questions. The crafted research questions on operational practice at the RCHE finally guided and limited the number of captured photos as finally only 10 photos represented each RCHE.

8.3 Identification of Research Settings & Gathering Fieldwork’s Permission

Fieldwork means the data collection stage of a project (particularly in the qualitative tradition); or how a researcher goes about collecting data; or more narrowly, data collection in a social setting that tries to reflect the naturally occurring order of events and subjective qualitative meanings of those being studied (Payne and Payne, 2004). In terms of the number of research settings, King et. al (2004), suggested that studying more than one case or setting almost always strengthen the causal conclusions and makes findings more generalisable.
Table 3: The Criteria of selected RCHE and the number of selected images

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>UNITED KINGDOM</th>
<th>MALAYSIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>State</td>
<td>England</td>
<td>Malaysia</td>
</tr>
<tr>
<td>Service Users</td>
<td>44</td>
<td>320</td>
</tr>
<tr>
<td>Provider</td>
<td>Council Care Home</td>
<td>Department of Social Welfare</td>
</tr>
<tr>
<td>Type of Provision</td>
<td>Residential Care Home</td>
<td>Residential Care Home</td>
</tr>
<tr>
<td>Location</td>
<td>City Centre</td>
<td>North of the City</td>
</tr>
</tbody>
</table>

In order to commence the fieldwork activities, Table 3 shows that 6 RCHEs provided by the government have been selected. It has been managed by the local authorities in the UK and Department of Social Welfare in Malaysia. The alphabets A, B, and C represented the 3 RCHEs in the UK and the X, Y, and Z represented the 3 RCHEs in Malaysia. In order to obtain permission for entering the research settings, according to the Research Ethic Framework (REC), in cases where research involves vulnerable groups every effort should be made to secure their informed consent (ESRC, 2008). Gray (2004) suggested informing people in the research setting of what you are doing, and eliciting their consent, is seen as good practice by most researchers. Payne & Payne (2004) reminded that before using cameras a researcher must, of course, ensure that everyone is agreeable. Hence, an Informed Consent (IC) was presented to the research participants for addressing this issue as recommended by Frachtling and Sharp (1997), stating that an IC must be obtained from participants before any observational data are gathered. In effect, the benefit such as ethical dilemmas can also be reduced by using an inform consent while conducting a visual method (Hurworth & Sweeney, 1995). Considering this, official letters were sent to the RCHE managers to seek their permission. When they have agreed the researcher then brought the IC to be signed in the presence of the researcher before the fieldwork activities could take place. Instead of taking pictures, Mack et. al., (2005) commented that if the researcher involvement with an individual appears to be progressing beyond participant observation to a formal interview, it is necessary to obtain IC before beginning an in depth interview. Furthermore, Diener and Crandall (1978) suggested that fully informed consent should include (1) describing the overall purpose of the research; (2) telling the participants about their role in the study; (3) stating why they have been chosen; and (4) explaining the procedures of the fieldwork being undertaken. In this case, the developed IC covers the method of participant observation, a visual method as well as an interview. In summary, the importance of IC is to obtain official permission from the research participants, giving brief explanation on the research aim and objectives, to recognise the privacy and confidentiality of the data to be collected, the benefit of the research project, the contribution of the research participants to the production of new and potentially illuminating knowledge about the sector in which they are working, and finally the section to enable the RCHE managers to sign for their consent to be a participant in the presence of the researcher. In this regard, as agreed in the IC, the names of selected RCHEs were not be revealed due to confidentiality and privacy of the service users and the research settings.

8.4 Collection of Data: Capturing Images at the Research Settings

The procedure of data collection began when the researcher visited the 3 RCHEs in both countries several times for undertaking the participant observation method. This participant observation was taking place to obtain the social reality particularly on the operational care practice being delivered at the RCHEs. It was first started with the UK and later on the data
collection was done for Malaysian cases. According to Payne & Payne, (2004), in a way to ensure the social phenomena are being well delivered, it should be observed systematically and for this reason, this method was used as a ‘supporting’ method for the recording of overt observations by video and photography and can provide very rich data to supplement note taking of participant observation or as data in its own right. In total, 18 hours were spent on participant observation and photos were being taken at the same time of observation activities. The photos were taken by announced and unannounced ways within the time given, bound by the IC and within the permitted area. Certain ethics needed to be followed as agreed such as the elderly faces should not be photographed, the location and the name of RCHE will not be revealed and the non permitted area were not allowed to be entered. Altogether, about 50 pictures were taken at each RCHE, but finally only 10 will be considered to be analysed using the CAQDAS. The researcher was also able to note activities and repetitive behaviour on operational practices such as meal times, leisure activities, religious activities, etc. Additionally, in order to capture the images, Dakin (1960) advised the subject should dominate the photograph, but its surrounding should also be included to some extent. The photographs can be taken to capture a distinctive type of situational process in the field setting. Despite the importance of research questions, the images were captured to spot the similarities, differences, and the level of operational practice delivered ranging from choice of home, health and personal care, daily life and social activities, complaints and protection, environment, staffing and management and administration visually. As the operational practices also concerned about the care home environment, including physical indoor and outdoor facilities, this advice was taken into action. At the same time as photographs were being taken, the researcher also recorded on the observation sheet details concerning the dates, times, weather conditions etc as suggested by Fielding et. al (2005). Some field notes were also added to each photo as suggested by Suchar (1997). This included factual information (date, time, location for example), but also a paragraph or two of commentary on how each photo related to the shooting scripts. Some labels could also be attached to each photo which can be described as a kind of jotted coding to make the transcribing process easier.
8.5 Application of CAQDAS: Word Processor and NVivo 7.0

For each RCHE, the 50 images repetitiously portrayed the delivered operational practices, therefore, only the 10 pieces most compliance photographs were taken for analysis. At this stage the application of CAQDAS was started to be applied as a tool for qualitative analysis. The first stage involved the transcription of 60 photos for 6 RHCEs. It was first transcribed into the word processor software known as Microsoft Office. Then these textual transcription files were imported into the NVivo software to be analysed further. Figure 3 shows the transcribed documents for 10 photos for the “RCHE A” in the UK. The bottom of Figure 3 shows the appearance of the file in NVivo.

8.6 Recording & Manipulating Data: Categorising and Coding Process

Fundamentally, NVivo does two things: it supports the storing and manipulation of texts or documents, and it supports the creation and manipulation of codes, known as nodes. After being imported into the NVivo project, the images transcribed then underwent the coding process. “Coding…is an essential procedure. Any researcher who wishes to become proficient at doing qualitative analysis must learn to code well and easily” (Gibbs, 2004). He defined coding as the process of identifying and recording one or more discrete passages of text or other data items (e.g. parts of a picture) that, in some sense exemplify the same theoretical or descriptive idea. Researcher coding in qualitative research often creates categories, “down” from their research questions and designs, before they start exploring the data (Richards, 2006). Coding also means the assignment of codes to units identified in the study. Unit of analysis can be, for instance, words, symbols, items, sentences, characters and
themes, as well as messages, meanings and symbols which indicate the presence of one of the categories (Sarantakos, 1997). In NVivo, those categories and the coding are stored at “nodes”. Nodes are containers for categories in the project, ideas or topics you are interested in (Richards, 2006). Figure 4 shows in the Navigation View, Nodes or categories can be represented by Free Nodes, Tree Nodes, Cases and Relationships. Free Nodes contain free codes from the textual sentences while Tree Nodes contain the developed categories. These two folders help to develop and record the coded texts. In this case, a category was defined as a set of criteria integrated around a theme or value in operational practice at the RCHE in both UK and Malaysia.

According to Richards (2005) “The researcher discovers themes, or threads in the data, by good exploration, good inquiry. By handling the data records sensitively, managing them carefully and exploring them skillfully, the researcher ‘emerges’ ideas, categories, concepts, themes, hunches and ways of relating them’. Therefore, the code used in photographic transcripts must depend on a theorised connection between the image and the broader cultural context in which its meaning is made. The categories emerged from the transcribed photos were identified as on the right of the Figure 4. Interestingly, the coding process can also be automated using this software.

8.7 Working with the Data: Handling Ideas with Links, Relationship, Query

Qualitative research does much of linking as in most interpretative work. Using ‘Links’, data records are becoming richer with researcher’s own ideas. The researcher may wish to place a link to particular words or images in existing data items or in a file that is on the computer (in any other software) or a website. Exploring relations of ideas always requires finding nodes and seeing their associations, ‘Relationships’ folder helps to store relationships in the data and codes the evidence for those relationships within the coded text or sources such as Documents, Externals or Memos, Nodes (Free, Tree and Query results) or Set of coded text. It can bring data and ideas together, and create new understandings, so data management is necessary. For instance, while interpreting the photos it has been found that there are certain elements of standards that can not be adopted in Malaysia; hence, these elements will be considered as one of the barriers for the best practice transfer process. Then the NVivo will help to search the elements which can be considered as barriers such as the physical building, the equipment, technology etc. within the phrases in the transcribed document. Figure 5 below shows the direction of the Relationship in this study. As the project grows, NVivo can also explore patterns, test hunches of data as well as validate theories using ‘Queries’. Queries can help to find the specific text, create the text as a new node as well as combining it with the existing node. Figure 6 shows that Query can help to search for the word ‘room’ or ‘personal room’ within the project data. The results can be coded, or items saved, for further querying later.
8.8 Model Development

While handling the data, the researcher also needs the ability to draw and show models of what is going on and what is aimed for as stated in the research questions. Using the “Model” folder, a research model can be easily developed by searching the sources of coded text in the project document. The associated items will be searched throughout the project document and it will be appear in the form of a research model automatically. As this research is in a stage of analysis the process of model development can not be processed at the moment. However, from the NVivo Tutorial session, it has shown that NVivo is able to do this function. The results can also be modeled by segregating the positive as well as negative value of the model. The appearance of the model will be portrayed in the form of shapes and can be easily understood.

9. Summary

Though there are various benefits of the visual method in social research such as the ability to deal with qualitative data there has been a lack of interest to engage this method in wider research areas such as in the sphere of built and human environment researches. It can be said that this method has been less efficiently used by the researcher especially to those interpretivists in qualitative social research and less to the positivist scholars. Though there may be the case for scholars who do not rely heavily on visual method this method can be altered with various research techniques which can add more significant variables into the social meanings of the world of inquiry in the researcher’s mind which sometime can not be able to be found by other methods. To date, the enhancements of data-storage gadgets as well as digital photography make the application of this method easier. The more storage can be done, the more variables can be captured and the more meanings of social phenomena can be constructed for the analysis. So, the researcher has to discover the best possible technology and accurate ways to make the research findings more reliable using this photographic technology and the suitable research method. Instead of the efficient method, the combination with the latest CAQDAS such as NVivo 7.0 can also make the research more trustworthy. The ability to manipulate the textual phrases can interpret the social world based on what is required by the developed research questions more accurate, faster etc. Undeniably, a good qualitative research still relies on good analytical work by a careful human researcher; therefore importantly, a researcher has to have a comprehensive review of literature to gain important insight and knowledge about the topic of interest to enable him/her to interpret the
interaction between subjects and objects of the research. Also, the real heart of the analysis requires an understanding of the meaning of the texts, and that is something that computers are still a long way from being able to do. With regards to visual method, photos and other semiotics are among the many approaches used in qualitative research to gain insight into people's attitudes, behaviours, value systems, concerns, motivations, aspirations, culture or lifestyles. The information that is collected and transcripts document are unstructured and often text-based. This information can be messy and time consuming to analyze using manual methods. As the interpretivism has a close link with the constructivism epistemology, NVivo has been helping in many ways to store, manipulate, construct and link the ideas as well as producing a research model and the project report in one “software package”. As a result the process of finding themes and extracting social meaning would be very more effective and reliable.

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