Using ATLAS.ti 7 For Researching The Socio-Legal Implications Of ICT Adoption In The Justice System Of The High Courts Of Malaysia

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Abstract

The paper describes the use of ATLAS.ti 7 in the research undertaken to examine the socio-legal implications of the adoption of information and communication technologies (ICT) in the justice system of the High Courts of Malaysia. Engaging a qualitative method, the research comprises of the collection of secondary data involving library-based research, and primary data generated from a case study of four High Courts of West and East Malaysia. The paper discusses steps in preparing the data, coding the data and finally analysing the data. In deriving the findings of the research, the ATLAS.ti was used throughout the research process to manage both the secondary and primary data, properly build up the code list inductively and deductively, track the relevant quotations from time to time, explore the data using the built-in feature Query Tool, connect ideas and notes to the existing objects and visually arrange the objects to iteratively make sense of the data.

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Keywords

Socio-legal implications, information communication technology, ATLAS.ti, e-court, e-justice

Introduction

The research began by obtaining an overview of the emergence of information communication technologies (ICT) in different disciplines. It was found that in many jurisdictions, numerous intelligent systems embody ICT such as telecommunication networks and the Internet, in devices such as mobile telephones and PCs, and in services such as banking, digital television, social networking and e-government (Amal, 2009). This is rightly so that Nwagwu (2006) stresses that ICT is increasingly being adopted by nations in many parts of the world. In addition, it is admitted that ICT have connected people around the world in a way never before envisaged (Bhatt, 2005) and recently have made its way to the courtrooms.

Within the context of the courts, there are currently six technology applications which the High Courts of Malaysia are adopting, namely the e-filing system (Hamidah, 2011), case management system (Anonymous, 2010), queue management system (Hamin, et. al., 2011), court recording and transcription, audio and video conference system (Azmi, 2010) and finally the integrated community and advocates' portal (Anonymous, 2010b). Each of these applications is designed for different kinds of users.

Past researches have shown that the ICT adoption at the courts has led to a more efficient and effective judicial system, improved transparency of the way the judiciary works, increase in the citizen's level of access to the courts and increase in the confidence of the citizens and business in the judicial system

(Cerrillo & Fabra, 2009; Carnevali, 2009; Velicogna, 2007). However, at the same time such technologies potentially generate novel uncertainties and insecurities (Hamin, 2011).

Based on this premise, the researcher decided to examine the socio-legal implications of the adoption of ICT in the justice system of the High Courts of Malaysia. This paper highlights the use of ATLAS.ti to facilitate the research process throughout.

Research Method

Adopting a qualitative method, the research engages in both primary and secondary data. During the first stage of the research, secondary data was generated for the purpose of obtaining general overview of the subject matter, to find out about previous methodologies and most importantly to find the research gap in the subject matter. The secondary data include the written laws and decided cases of the Malaysian courts, reports of the government, the state and the judiciary, the rulings of the Malaysian Bar Council and the state bars, practice directions and journal article literatures extracted from online databases such as Lexis.com, Ebscohost, CLJ Legal, Lawnet, Springer Link and ProQuest.

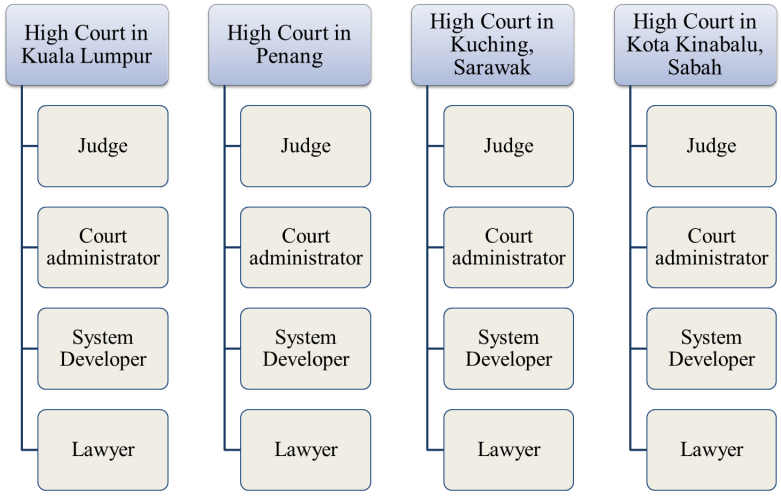

Figure 1: Units of analysis for the case study

The second stage of the research involves the collection of the primary data through field work from a case study that focuses on four units of analysis representing the High Courts, namely the High Court in West Malaysia i.e. High Court in Kuala Lumpur and High Court in Penang, and the High Court in East Malaysia i.e. High Court in Kuching, Sarawak and High Court of Kota Kinabalu, Sabah. Figure 1 and Figure 2 respectively explain these units of analysis for the case study and the purposive sampling for such units.

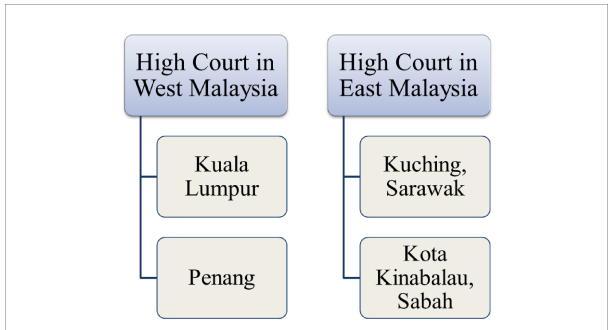

Figure 2: The purposive sampling for the units of analysis

The instrument used was face-to-face semi-structured interview with sixteen respondents as it gives the researcher the opportunity to explore the respondent's opinion of an issue in depth, rather than to test knowledge or simply

categorise (Stroh, 2000). The respondents are individuals involved directly with the application of ICT at each of the courts, being the judge, the court administrative officer, the system developer and the lawyer.

The interviews enquired into the respondents' perception and experience using ICT at the respective courts, focusing on the numerous issues and challenges associated with the use of such ICT applications. The interviewer used an electronic voice recorder throughout the interview sessions, with the consent of the respondents.

Use Of ATLAS.ti 7 In The Research Process

After considering a few computer aided qualitative data analysis software packages, by referring to previous reports and literatures (such as Barry, 1998; Muhr, 1991; Lewis, 2004; Konopasek, 2007), the researcher decided that ATLAS.ti 7 was the most appropriate software which fulfilled her needs and purpose in the subject matter to generate the findings from both the secondary and primary data. This part describes how ATLAS.ti 7 was used in the research process to finally generate findings for the research

Manage Both The Secondary And Primary Data

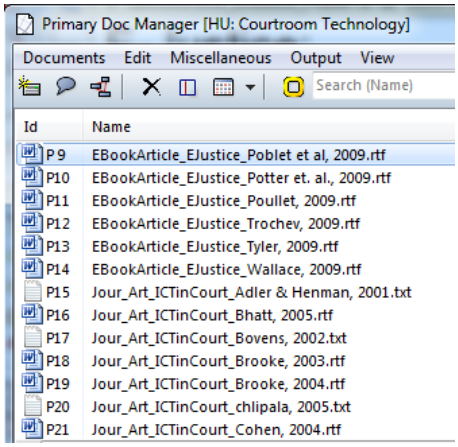

Figure 3: Naming the secondary data in the format of {Type_Author_Year}

Given that the research involves considerable amount of data, both primary and secondary, in the form of lengthy interview transcripts, observations and field notes, written laws, cases, journal articles, government reports and state bar rulings and practice directions, it is important to have a proper management system for all the data (Mclellan-Lemal, 2008; Huberman & Miles, 1994).

For this purpose, the feature of 'primary document manager' in ATLAS.ti was found to be highly useful. The significance of maximizing the use of the 'primary document manager' is that the entire data was stored in 'My Library' a designated folder in the computer and accessible by the ATLAS.ti project known as 'Hermeneutic Unit'. The researcher could then access the data anytime she needed to by only choosing the 'primary document manager' function which essentially helped to manage all her data.

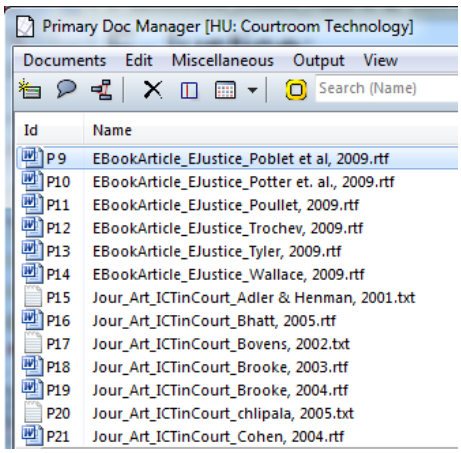

Figure 4: Naming the secondary data in the format of {Type_Author_Year}

In the 'primary document manager', the data are named according to the affiliations of the type of data for ease of access later, for example the type of data, author, year, names of respondent, date, etc.

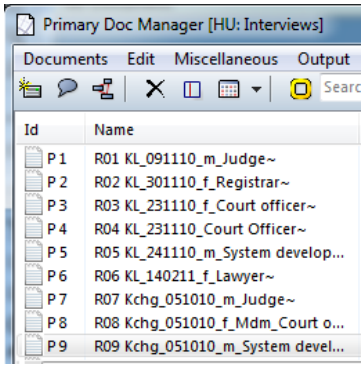

Figure 5: Naming the primary data in the format {Number_Case_Date_Gender_Role}

Properly Build Up The Code List Inductively And Deductively

Another feature in ATLAS.ti which was used extensively in the research process was the 'code manager'. The 'code manager' manages all the codes in the list, based on thematic coding (Fereday & Muir-Cochrane, 2008; Joffe & Yardley, 2003). Segments of the data are coded based on the respective themes using the constant comparative analysis method. During this process, the researchers began to look at what makes a piece of data different and/or similar to other pieces of data (Boeije, 2002). This method of analysis is inductive as the researchers examine the data critically and draw new meaning from the data (Glaser, 1965).

The coding feature in ATLAS.ti allows the researcher to properly build up the code list either way inductively or deductively. When the researcher had a framework to begin with, the pre-conceived codes were added to the 'code manager' hence allowing the coding process to be done deductively. The code list was first built using themes at the higher order classifications or categories, such as definition, concept, issues, and risk. Each of these themes were then broken up into smaller codes to fit into each of the bigger classifications (Denzin & Lincoln, 2000; Richards & Richards, 1994). Among the smaller codes derived from the framework are concept of risks, privacy risks, security risks, legal risks and policy risks.

As the researcher went through the data, new codes came up as emergent codes. These codes were easily added on inductively into the 'code manager' by comparing and checking with the existing codes in the list (Thomas, 2006; Wolcott, 1994).

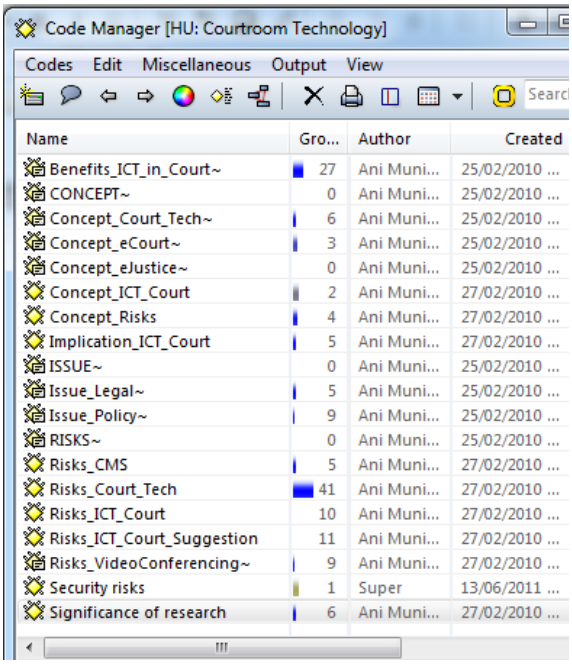

Figure 6: The 'code manager'

Track The Relevant 'quotations' From Time To Time

When segments of the text were highlighted and linked to the code(s), the highlighted segments become 'quotations' and hence shown in context of the 'code manager' under the heading 'groundedness' (Please see Figure 7). Additionally, the 'quotations' were also given a unique identification number in the 'quotation manager' which made it easy for the researcher to track each and every one of the relevant 'quotations' from time to time when the need arose. This eliminated the problem faced in the manual analysis i.e. keeping track of relevant segments from the data.

The features of 'code manager' and 'quotation manager' in ATLAS.ti made it easy for the researcher to double and even triple check the quotations for reporting purposes. A double click of the code name in the 'code manager' opened up a dialog box containing the list of 'quotations' linked to that particular code. A single click of the quotation in the dialog box would automatically take the researcher to the highlighted segment with ease (Friese, 2012).

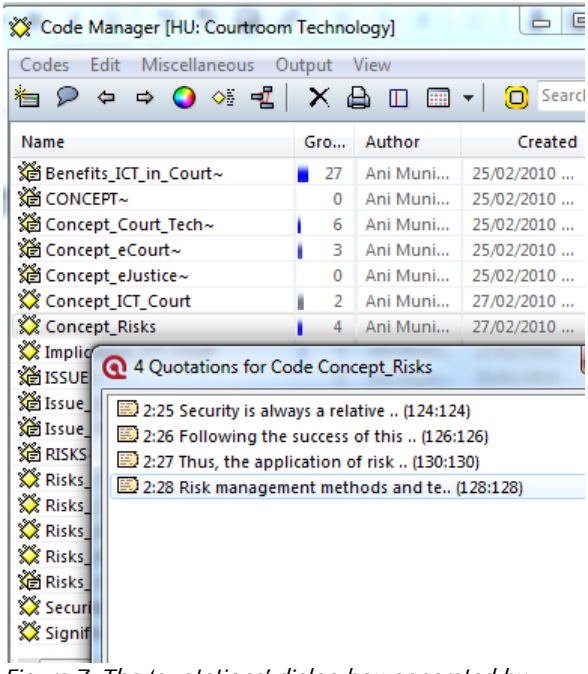

Figure 7: The 'quotations' dialog box generated by double clicking on the code name in the 'code manager'

Explore The Data Using The Built-in Feature Query Tool

The researcher also made use of the 'query tool' feature in ATLAS.ti to explore the data being analysed. Essentially, the query tool provided features for retrieving quotations for specific codes or set of codes identified by different operators such as boolean operators, semantic and proximity operators.

Apart from that, the researcher also frequently explored the data by using the co-occurrence tool to generate the matrices of quotations which co-occur across all the data, both primary and secondary.

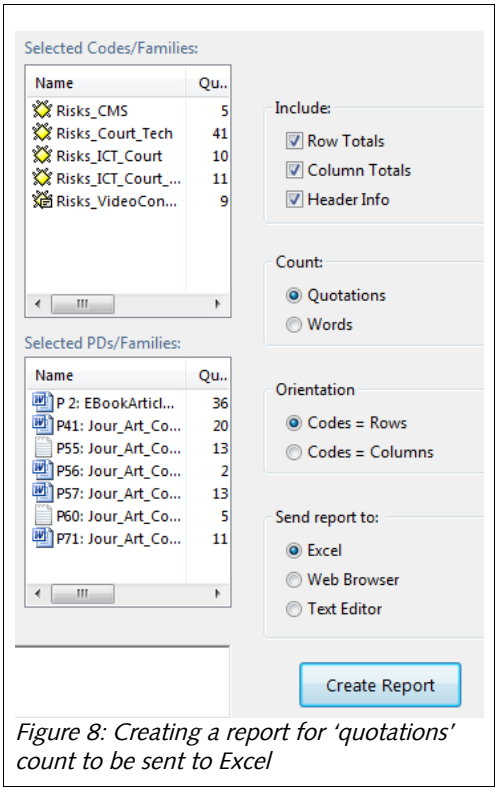

Figure 8: Creating a report for 'quotations' count to be sent to Excel

Numerically Explore Word/quotation Count In The Data

When the researcher needed to explore the word or quotation count for the 'codes' against the data, the function in ATLAS.ti which was used was the 'output' and 'codes-primary documents table'. Therefore, instead of finding out the total number of quotations for a specific code in the 'code manager' under the heading 'groundedness', the researcher was able to explore the quotation count for the specific code(s) for each of the data documents. The table is sent for output in Excel format. This table of 'quotations' count further allowed the researcher to automatically create a figure hosing the numerical output of the quotations counts in Excel itself.

Visually Arrange The Objects To Iteratively Make Sense Of The Data

In respect of the primary data, to begin with, the interviews were transcribed and cleaned as part of the data preparation steps. Thereafter, the data was read through for the obtaining of the general sense of the data. This process is consistent to the suggestion by Bogdan and Biklen (2003) as part of the qualitative process of data analysis.

	A	B	C	D	E	F	G	H	I
1	CODES-PRIMARY-DOCUMENTS-TABLE								
2	Report created by Admin - 06/11/2013 02:39:14								
3	HU: [C:\Users\Ani Munirah\Ani's PhD Folder\Ani_Atlas HUs\2.4 Cou...\Courtroom Technology.hpr7]								
4									
5	Code-Filter: All [26]								
6	PD-Filter: All [89]								
7	Quotation-Filter: All [171]								
8									
9									
10		P 2: EBook	P41: Jour_	P55: Jour_	P56: Jour_	P57: Jour_	P60: Jour_	P71: Jour_	TOTALS:
11	Risks_CMS	5	0	0	0	0	0	0	5
12	Risks_Court_Tech	0	7	11	0	1	0	6	25
13	Risks_ICT_Court	7	0	0	0	0	0	0	7
14	Risks_ICT_Court_Su	7	2	0	0	0	2	0	11
15	Risks_VideoConfer	0	0	0	0	9	0	0	9
16	TOTALS:	19	9	11	0	10	2	6	57

Figure 9: The output in Excel generated and sent from ATLAS.ti

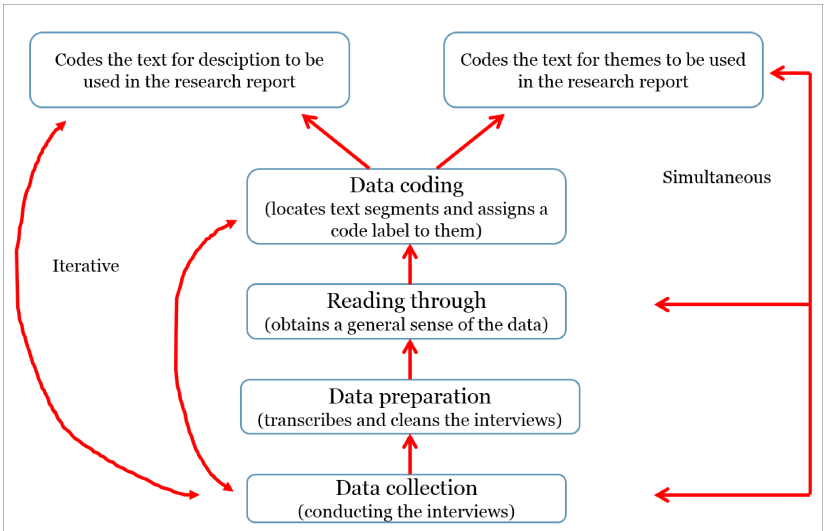

Figure 10: Qualitative process of data analysis (Bogdan and Bicklen, 2003)

Due to the simultaneous and iterative natures of the data analysis of this type undertaken in the research, the researcher found the features in ATLAS.ti to be very helpful in providing the tools needed. For instance, had the researcher conducted manual analysis of the research, she would have hundreds of stick-on-notes on various parts of the data ('quotations') to provide further perception, understanding or clarification of the data. Instead, she decided to adopt the ATLAS.ti software to make sense of her data. In the place of the traditional stick-on-notes, she used the 'memos' function in ATLAS.ti identified by the shorthand book icon. Such memos were virtually linked to segments of the text of the data or the codes itself thus replacing the traditional stick-on-notes (Konopásek, 2007).

Apart from that, the 'network view' feature in ATLAS.ti allowed for visual exploration of the primary and secondary data in making a general sense of the data for the purpose of generating findings of the research (Hwang, 2008; Friese, 2012). Both weak links and strong links were created to show the meanings drawn from the data for reporting purposes.

At the end of the analysis process, three higher-level codes were created in ATLAS.ti representing the three major findings of the socio-legal implications of ICT adoption by the Malaysian courts. The codes were: (1) Benefits of ICT adoption, (2) Drawbacks of ICT adoption, and (3) Risks of ICT adoption.

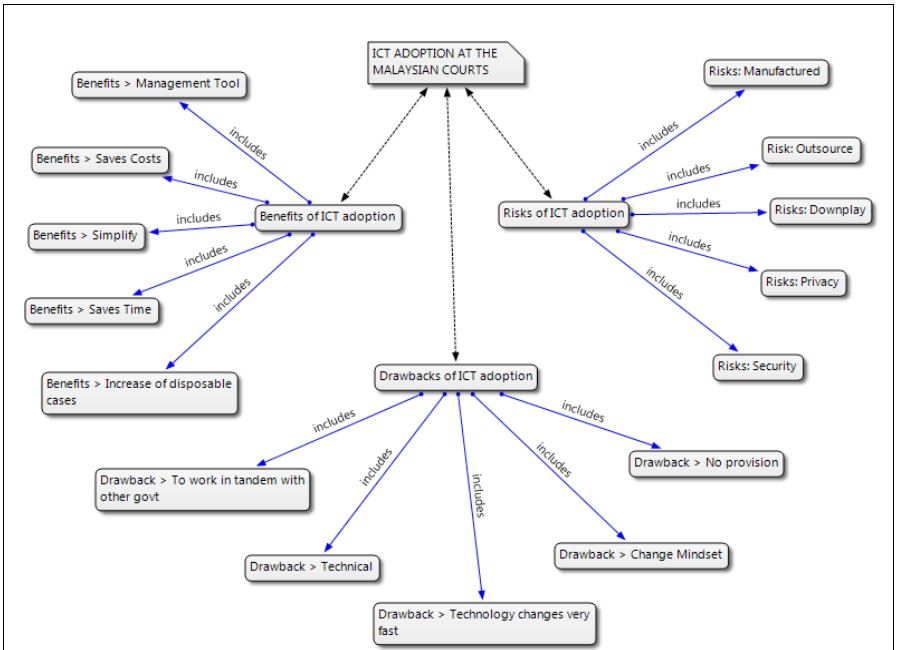

Figure 11: The preliminary findings of the research shown in 'network view' feature of ATLAS.ti

Conclusion

In conclusion, ATLAS.ti was used extensively by the researcher in deriving the preliminary findings of the research, i. e. the adoption of ICT by the courts of Malaysia is shown to have raised a number of social and legal implications. The research found that a number of implications arise from such adoption, including both advantages and disadvantages. By adopting the technologies, the disposal rate of proceedings has sped up compared to prior the adoption, as well as the backlog of cases has significantly reduced with the help of ICT. On the other hand, ICT also raised some drawbacks and risks associated with its adoption by the Malaysian courts. This finding could be a catalyst for future research on the evidence of these socio-legal implications of ICT adoption within the court settings.

The features of ATLAS.ti which were utilized extensively include the 'primary documents manager', the 'code manager' the 'quotation manager', the 'query tool', the 'memo manager' and the 'network views'. The experience in doing the qualitative analysis using a computer aided software such as ATLAS.ti proved to be a significant decision by the researcher in making her work more systematic and eliminate problems associated with traditional manual analysis.

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