CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

In this chapter, other research related to Web-based financial and business reporting will be reviewed. The review is divided into three main sections. The first section summarises research that reported general descriptive statistics on the percentages of companies that had Web sites and specifically, those that have financial and business reporting Web sites. The second section summarises studies that have attempted to explore whether the differences in Web sites are associated with various company characteristics such as firm size, financial leverage, proportion of assets-in-place, audit firm and so forth. Lastly a review of the local related literature is conducted.

2.2 Descriptive Statistics

Presently, the biggest focus of electronic dissemination research has been on collecting and reporting descriptive statistics on Web-based financial and business reporting [Petravick and Gillet (1996), Louwers, Pasewark and Typpo (1996), Gray and Debreceny (1997) etc.]. In this section, the discussion will focus on statistics from the largest U.S corporations, followed by U.K corporations and then companies from other part of the world. In addition, comparative studies of multiple countries have also been included.

2.2.1 U.S Based Fortune 500 Companies

In one of the earlier study by Petravick and Gillet (1996) that reviewed the top 150 Fortune 500 companies, reported that 69 percent had Web sites and only 54 percent had some form of financial information on that site. Out of the 54 percent, only 31 percent had full financial reporting and 23 percent had partial reporting. However in the same year, another study conducted by Louwers, Pasewark and Typpo (1996) on the same population reported that 65 percent had Web sites and 46 percent had financial information. Even though these two studies referred to the same population, the differing results could reflect the exact timing of when the evaluation of Web sites was conducted. Hence

Web sites can be changing so quickly that minor differences can result in different statistics. Those differences could reflect the difficulty in locating specific items on company Web sites (FASB 2000).

At the same year as quoted in FASB (2000), Gray and Debreceny (1997) reported that in December 1996, of the top 50 Fortune 500 companies, 98 percent had Web sites. In addition, 68 percent distributed their annual reports on their Web sites and only 36 percent include auditors' report. A similar study was conducted by looking at 1997 top 100 Fortune 500 companies. First, looking at just the top 50 companies and compare to 1996 study, again 98 percent had Web sites, 70 percent included their annual reports and 40 percent had included the auditors' report. By looking at the complete 1997 top 100 Fortune 500 companies, they reported that 96 percent had Web sites, with 71 percent including annual reports and 34 percent including the auditors' report.

In another study conducted by FASB (2000) on 1998 top 100 Fortune 500 companies, 99 percent had Web sites, with 93 percent including annual reports and 60 percent include the auditors' reports.

Although the composition of the top 50 or 100 Fortune 500 companies change each year, it does appear to be an upward trend in the usage of Internet to disseminate some form of financial information (refer table 2.1). Now 99 percent of the companies had Web sites, the percentage of Web sites including annual reports and auditors' reports are also rapidly increasing.

Table 2.1: Prior Empirical Research on U.S Fortune 500 Companies

Year of study	Companies had Web sites	Include annual report on Web sites	Include auditors' report on the Web sites	Study
1996	69%	45%	NA	Petravick and Gillett (1996)
1996	69%	70%	40%	Gray and Debreceny (1997)
1997	98%	71%	40%	Gray and Debreceny (1997)
1998	99%	93%	60%	FASB (2000)

2.2.2 U.K Based Public Listed Companies

Similar work has also been carried out in Europe. Marston and Leow (1998) surveyed the U.K. FTSE-100 companies and found that 63 companies (63 percent) had Web sites. However only 45 companies disclose financial information at their Web sites. Of these 45 companies, 34 (76 percent) disclosed detailed annual reports and 11 (24 percent) disclosed only parts or summaries of their annual reports.

Lymer (1997) analysed the 50 largest U.K. listed companies and reported that 46 companies (92 percent) had Web sites. Of these 46 companies, 30 (60 percent) had accounts or report on the Web but only 16 (32 percent) had full accounts.

Hussey, Gulliford and Lymer (1998) tracked disclosure by FTSE 100 companies in August 1997 and March 1998. They reported considerable growth in disclosure over only six months. Not only there are more companies on the Internet (63 in March 1998 compared to 54 in August 1997), but many of them disclosed more financial information. Out of the 63 companies in March 1998, 54 companies (85.7 percent) disclosed detailed accounts as compared to only 55.6% in August 1997 (Please refer table 2.2).

Table 2.2: Financial Information Disclosed – UK FTSE 100 Companies

	August 1997		March 1998	
Type of information	**Number**	**Percent**	**Number**	**Percent**
Detailed accounts	30	55.6	54	85.7
Interim Statement	22	40.7	45	71.4
Preliminary statement	12	22.2	17	27.0
Summary statement	5	9.3	12	19.0
Financial highlights	15	27.8	26	41.3
Total	**54**		**63**	

2.2.3 Other Countries Study

Lymer and Tallberg (1997) study corporate reporting on the Internet for UK and Finnish corporation by looking at the top 50 corporations on the UK Stock Exchange (by market capitalization) and all 72 corporations traded on the Helsinki Stock Exchange. They found of the 72 corporations listed on the Helsinki Stock Exchange, 65 companies (90 percent) had Web sites, with 63 companies (82 percent) include financial reports – 7 companies (11 percent)

had full reporting and 55 companies (71 percent) had summarized financial information.

Deller, Stubenrath and Weber (1998) analysed the 30 largest companies in Germany (DAX 30). The main findings of their research are that 26 out of 30 corporation (87 percent) had Web site. Within this group, 96 percent of the companies had some form financial reporting (56 percent include annual reports, 48 percent include interim reports).

2.2.4 International Comparative Studies

Some researchers have analysed companies from more than one country in the same report. Flynn and Gowthorpe (1997) surveyed the top 100 Fortune Global 500 companies with the view of drawing inferences about the nature of information flow to stakeholders in very different culture. They classified corporations into monistic, dualistic and pluralistic according to Yoshimura (1995) classification[7]. They found that monistic companies are more likely to present decision useful information such as share prices and share prices history than pluralistic companies (57 percent monistic companies provide share price and 39 percent provide share price history compared to none in pluralistic companies). They observed that although many of the Japanese sites have a distinctly American bias in presentation style, the content is very limited when compared to that of American companies.

Many monistic companies present full set of financial statements for at least one year. Many also make available their annual and quarterly filing available on the Web sites. About 80 percent of the monistic companies provide financial statements compared to only about half (52 percent) of the pluralistic companies. 85 percent and 69 percent of the monistic companies provide notes to the accounts and auditors' report respectively compared to only 46 precent of the pluralistic companies provide notes to the accounts and 35 precent on the auditors' report.

[7] The monistic outlook is oriented principally towards shareholders, and the most striking examples of companies with monistic outlook are found in the United States. Pluralistic companies assume a broader range of stakeholders, of which the shareholder is just one; such companies are likely to place a particular emphasis on employees; typically such companies are Japanese. Dualistic companies will tend to recognize responsibilities towards investors and lenders whilst taking into account employee interests; the classic example of a dualistic company would be Germany.

Deller *et al.* (1998) compare the investor relations activities of U.S., UK and German corporations. They found that 91 percent of US corporations had Web sites with investor relations information, compared to 72 percent for U.K corporations and 71 percent for German corporations. They also reported that at least 90 precent of the U.S corporations provide financial statements as compared to at least 60 percent and 30 percent for U.K and German corporations (please refer table 2.3 for more information). The result of this study is consistent to the study by Flynn and Gowthrope (1997).

Table 2.3: Scope of Reported Accounting Information

	Balance Sheet	Profit and Loss Account	Cash Flow Statement	Notes to the Accounts
U.S	95%	95%	92%	92%
U.K	74%	75%	54%	60%
German	65%	63%	30%	42%

2.3 Web-Based Reporting

Thus far majority of the electronic dissemination research as explained above, primarily provided descriptive statistics. Very few research studies have treated the reporting statistics as dependent variables and explored a variety of independent variables that might influence those results. Marston and Leow (1998) is one of the earlier researchers who have gone beyond descriptive statistics and attempted to find the relationship between Web based reporting and firm's specific characteristics. They examined the extent of financial disclosure on the Internet by FTSE 100 companies. They found positive relationship between firm size and Web based reporting. However there is no significant relationship between industry classification and Web based reporting.

Ashbaugh *et al.* (1999) explored the Web activities of 290 firms included in Association of Investment Management and Research (AIMR) 1994/95 and 1995/96 Annual Review of Corporate Reporting Practices. They define companies as engaging in Internet financial reporting (IFR) if they provide in their Web sites:

(1) a comprehensive set of financial statements (including footnotes and the auditors' report),

(2) a link to their annual report elsewhere on the Internet, or

(3) a link to the U.S. Security and Exchange Commission's (SEC) Electronic Data Gathering, Analysis and Retrieval (EDGAR) system.

They use a dichotomous variable to define if the firm is engage in IFR. They have proposed five incentives for engaging in Web-based distribution of financial reports. The incentives identified are as follows:

(i) IFR can reduce firms' information dissemination cost

(ii) IFR can be the vehicle by which firms can communicate with previously unidentifiable information users

(iii) IFR can facilitate the dissemination of firms' financial disclosure via Internet tools that facilitate information retrieval and analysis by diverse decision makers

(iv) IFR can improve firms' financial disclosures by supplementary firms' traditional information dissemination practices and finally

(v) IFR potentially allows firms to increase their financial disclosures if firms disclose disaggregated and incremental financial data in their Web sites (e.g. weekly vs. quarterly sales)

Based on the descriptive analysis, they conclude that firms will be more likely to have Web sites if they had been previously recognised by the AIMR for their excellence in paper-based reporting, were larger firms and more profitable and were manufacturing firms. They also sought to explain the relationship between Web based reporting and firm's characteristics such as firm size, performance, number of shareholders and firm's rating. They have reported positive association between Web based reporting and the firm size, but not with the firm performance, number of shareholders and firm's rating. In their studies, they make reference to extant literature on voluntary reporting on traditional media in arriving at their hypotheses.

On the other hand, Ettredge *et al.* (2000a) based on the same samples as of Ashbaugh *et al.* conducted a similar study. However instead of using a dichotomous variable to define IFR, they attempt to explain Web-based distribution of voluntary financial disclosures based on an index which comprises of required and voluntary disclosed financial reports. They report

that there is a statistically significant relationship between Web-based financial reporting and the firm size, the need to access capital market and the quality of the firm's corporate reporting practices. In another study conducted by Ettredge *et al*. (2000b) examined whether there are relationship between the financial information on the Web sites and the sophistication of Web site users. Analysts are considered to be sophisticated and retail investors are less likely. They have discovered the companies with higher level of analysts following tend to provide more extensive data while higher levels of retail ownership are associated with relatively subjective, more abbreviated information.

Debreceny, Gray and Rahman (1999) introduce a theory of voluntary Internet financial reporting based on transaction cost economics. The theory predict that the level and depth of reporting will be influenced by corporate factors such as the size, level of equity funding, the quality signals emanating from the choice of auditors, the leverage level and the firm's access to international capital markets, the level of securities market regulation and the penetration of Internet usage in the society. Their study covers the largest thirty companies on eight Pacific Rim stock exchanges, for a total sample size of 240 firms. The results of their study indicate that only the firm size and the extent of Internet penetration are significantly related to the stage and depth of voluntary Internet disclosure. Other factors are not significant.

Deller *et al.* (1998) study the use of Internet as a medium for investor relations in the U.S, U.K and German. They found that the comprehensive communication options offer by Internet technology cover nearly all aspects of traditional investor relations activities. Apart from being a low cost alternative distribution channel for corporate information, additional technology-specific features are identified that enable corporations to better reach individual investor groups. They have reported that the usage of Internet as medium investor activities is related to the number of private shareholders. In U.S where the number of private shareholders is the highest at 51.2 percent, follows by U.K and German at 20.3 percent and 14.8 percent respectively have shown the highest level of investor relations activities at 91 percent, compared to U.K at 72 percent and German at 71 percent.

On the issues of timeliness of financial disclosures, Petravick and Gillet (1998) reported that 99 (79 percent) of the top 125 of the Fortune 500 companies posted their earnings announcements on their Web sites by the day following the earnings announcements. Ettredge *et al.* (2000d) in another studies reveal that there is an additional and significant time lag before companies publish their annual reports at the Web sites. They discovered that firms that are more profitable (net income/revenue) update their Web sites more rapidly. Moreover, companies that provide annual report in Adobe's Acrobat format (files end with the suffix 'pdf') and HTML (Hyper Text Markup Language) update their information more quickly.

Next section will discuss the extant literature on voluntary disclosure specifically the firm characteristics such as firm size, financial leverage, assets-in-place, type of audit firms and the number of shareholders.

2.4 Analysis of Determinants of Financial Reporting

The present study focuses on the firms' incentives to disseminate financial information at their corporate Web sites. Presently the dissemination of financial information over the Internet is still unregulated as such it extends prior studies of voluntary disclosure via traditional media such as printed annual reports. The derivation of the hypothesis and the independent variables is based on the extant academic literature on Web-based reporting and also traditional voluntary financial disclosure. The following sections discuss these variables.

2.4.1 Firm Size

Jensen and Meckling (1976) have shown analytically that agency costs increase with the amount of outside capital, while Leftwich, Watts and Zimmerman (1981) have suggested that the proportion of outside capital tends to be higher for larger firms. These imply that larger companies will disclose more information in their published annual reports to reduce information asymmetries among manager, shareholders and debtholders.

Various empirical studies (example, Chow and Wong-Boren 1987, Cooke 1991, Lang and Lundholm 1993) support the notion that size is an

important determinant of the extent of corporate voluntary disclosure. Various reasons have been put forward to explain this phenomenon. Singhvi and Desai (1971) and Buzby (1975) opine that collecting and disseminating information is a costly exercise, hence only larger firms can afford such expenses. Large firms are more likely to collect the information needed for corporate reporting disclosure for their internal management. The existence of this data for internal decisions making may lower the cost of supplying it to the public.

In addition, the cost of disseminating disclosures may be higher for small firms because the news media are more likely to carry stories about large firms and analysts are more likely to attend their meeting (Lang and Lundholm 1993). Therefore it is said that larger companies have market based incentives to disclosure more information voluntarily, such as a desire to reduce incentives for private acquisition of information or a wish to protect firm value since non-disclosure could be perceived by financial analyst as bad news.

The second reason is that larger firms tend to be listed on the stock exchange. They are more likely to go to the stock market for finance than smaller firms. Hence adequate and proper disclosure secures investor confidence. Increased investor confidence might improve the marketability of securities and make external financing through the securities market both easier and cheaper (Firth 1979).

Buzby (1975) and Firth (1979) suggest that smaller firms may feel that fuller disclosure will put them at a competitive disadvantage position with larger firms in their industry. Finally, it is believed that larger companies are more closely watched by various government agencies. Therefore better reporting will tend to lessen undesired pressures from the Government (Buzby 1975).

In the study of electronic dissemination of financial information, Ashbaugh *et al.* (1999) and Ettredge *et al.* (2000) has shown significant relationship between firm size and Web based reporting.

2.4.2 Financial Leverage

Jensen and Meckling (1976) observe that agency costs are higher for firms with proportionally more debt in their debt structures, suggesting a positive relationship between voluntary financial disclosure and financial leverage. Schipper (1981) in his study of restrictive covenants that was written into the debt contracts suggests positive impact on the voluntary financial disclosure. Extensive disclosure of more information assures debtholders that the firm is complying with such debt covenants. It is also to signal that their claims are not diluted.

Empirical evidence supporting the relation between the extent of voluntary disclosure and financial leverage however are mixed. Hossain and Adams (1995) and Chow and Wong-Boren (1987) confirm no significant relationship between these items. However Bradbury (1992) found significant relationship between financial leverage and the extent of voluntary segment disclosures among diversified New Zealand companies.

2.4.3 Proportion of Asset in Place

Myers (1977) considers that the value of a firm is made of two elements that are assets-in-place (assets already acquired) and growth opportunities (assets not yet acquired). He proposes that if a firm has risky debt outstanding, managers acting on behalf of the shareholders will not undertake investment that will increase the value of the firms in the long run. This is because the return from the investment will go to debtholders instead of shareholders. Therefore firms whose values comprise mainly of growth opportunities could alleviate this problem by going for equity rather than debt financing. In other words, he implies that firm with more assets in place likely to have high leverage. Conflicts of interest between manager and shareholders will arise if firms use equity to finance growth opportunities. In order to reduce such agency cost is to increase disclosure about the firm's performance.

On the other hand, firms with high assets in place could support more debt through debt covenants to restrict managerial discretion over the use of assets. This reduces the need for extensive voluntary disclosure. In summary

the extent of voluntary disclosure is inversely related to the proportion of assets in place in a firm. This is contrary to the proposition that highly levered company is more likely to have extensive disclosure in order to reduce agency cost (Jensen and Meckling, 1976). Empirical studies conducted by Leftwith *et al.* (1981) Chow and Wong-Boren (1987) on voluntary disclosure does not support this proposition.

2.4.4 Audit Firm

The appointment of an external auditor is the primary mechanism for controlling the incentive conflict between principals and agents (Watt and Zimmerman 1986). Singhvi and Desai (1971), Firth (1979) and DeAngelo (1981) as quoted by Hossain and Adams (1995) suggest that larger and well-known audit firms tend to associate to higher quality audit services in order to enhance their public reputation as credible monitors. It follows that they will encourage their clients to disclose comprehensive information in their annual reports and accounts. This suggests positive relationship between type of audit firm and the level of information disclosure.

Empirical evidence concerning the relationship between the type of audit firm and the extent of voluntary disclosure is mixed. Singhvi and Desai (1971) found a positive relationship between the size of audit firm and the extent of voluntary disclosure. More recent studies by Craswell and Taylor (1992) also reported a statistically significant relationship between audit firm size and the level of disclosure in the Australian oil and gas industry and so does Hossain and Adams (1995). However, Firth (1979) found that the auditor factor had no impact on the extent of voluntary disclosure and so does Malone, Fries and Jones (1993).

2.4.5 Number of Shareholders

The owner distribution has a significant influence on the quality of financial disclosure. Singhvi and Desai (1971) hypothesise a positive relationship between the number of shareholders and voluntary disclosure because companies with a large number of shareholders tend to catch more public attention and therefore subject to shareholders and analysts' pressure for

better disclosure. They may also disclose more information to minimize pressure from regulator agencies. Third reason provided by them is that in order to increase marketability of their shares, companies with larger number of shareholders willingly disclose more information.

Ashbaugh *et al.* (1999) suggests one of the benefits of engaging Web-based reporting is to allow firms to disseminate financial information to a broader audience than what is reached via traditional reporting method. Therefore they hypothesise firms that involved in Web-based reporting to have larger portion of their shares held by individual shareholders. However the empirical evidence from their studies does not support this notion.

Ettredge *et al.* (2000b) in their studies of the type of information disclose at the Web sites vary with at least three information clientele namely individual investors, press representatives and financial analyst basing on the consumer knowledge and information content theories. They have discovered that Web information with higher levels of individual shareholders tend to be subjective and benefit oriented, suited to users who are relatively low level of financial information expertise. On the other hand, companies that have great number of financial analyst followings are generally more objective, attribute-related data.

Deller *et al.* (1998) contend that given the goal of investor relations is to provide target groups with decision useful information, added value of Internet activities can be expected especially for private shareholders. Taking into the account of the cost of information dissemination over the Internet is invariable regarding the number of users, the level of utility corporations derived from Internet as a communication tool increases with the level of Internet access by this group of private shareholders. They hypothesise that country with more private shareholders, the use of Internet as a medium for investor relations will be more pronounce. In their comparative studies of three countries namely U.S, U.K and German, they report that U.S companies having the largest number private shareholders have the highest level of usage on Internet as a medium for investor relations. U.K and German are following closely from behind.

2.5 Local Related Literature

At the local scene, not many studies have been conducted on Web-based reporting. Nik Salleh and Mohamed (2000) survey a random sample of 100 companies that have linked pages to their home page at KLSE web site. They assess the financial information that are made available on line based on the criteria as follows:

(i) Quality of information
  - ✓ Breadth – quantity and comprehensiveness of information at a particular point in time
  - ✓ Depth – the number of periods of historical information the site covers
  - ✓ Frequency – the number of times a company relays data in a given period
  - ✓ Timeliness – how up-to-date is the data

(ii) Ease of access

(iii) Presentation of information – colours, graphics, motion and sounds

(iv) The ability to meet user needs – presentation of accounting information in formats that meet user needs.

Based on their study, only 35 (35 percent) companies disclose financial information on their Web sites. Of the 35 companies, 17 companies allow users to download their annual reports (in Adobe Acrobat format) from the Web sites. The other 18 companies publish their annual reports on the Web sites. The Web sites are used mainly to market their products and services, online transactions, recruitment, contacts and general corporate information. On the breadth of financial information, 32 companies present financial highlights, 14 companies show their earnings and 9 companies disclose financial forecast. The survey also reveal that only 18 companies provide full annual reports of which only 11 companies update their financial information up to year 2000. One company has not updated the financial information since 1997. This shows a lack of awareness of the importance of Web sites to assist in disseminating timely financial information. In order for financial information to be relevance, it is important that the result can be compared

against previous. In this, they discover that 20 companies disclose financial highlights or annual reports for more than 5 years. There are 12 companies, which disclose the information for less than 5 years. In terms of ease of accessibility (which is determined by the number of mouse click), they find that most companies only need to click twice to obtain financial information. This demonstrates that the companies that provide financial information on the Web sites understand the need of Internet users.

In another studies conducted by Atan *et al.* (2000) on the top 50 companies listed on the main board of KLSE reveal that 31 companies (62 percent) had Web sites that are active in promoting the business in some way. These 31 companies mainly come from trading/services sector (12 companies, 70 percent) and finance (9 companies, 90 percent) sector. Of these 31 companies, 14 companies (45 percent) disclose detailed accounts, 3 companies (10 percent) disclose interim statements, 11 companies (35 percent) present quarterly statements and 16 companies (52 percent) show financial highlights. The most frequently shown financial highlights items are profit before tax (79 percent), shareholders funds (79 percent), earnings per share (79 percent) and turnover (64 percent).

Ismail and Tayib (2000) conducted a more comprehensive study on Web based reporting on public listed companies at KLSE. A total of 237 samples companies are selected based on the companies that have link pages at KLSE homepage. Of these only 218 companies Web sites can be accessed. They classified information into three categories that are non-financial information, supplementary financial information and financial statements. Non-financial information mainly consists of corporate profile, information and structure, chairman statement, dividend announcement, analysis of shareholding, audit committee and so forth. Supplementary financial information consists of operations review, financial highlights and interim report. Finally the financial statement consists of the balance sheet, profit and loss account and cash flow statement. Of the 218 companies, 135 companies (62 percent) are listed on the first board while the balance is from second board.

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On the disclosure of non-financial information, it is reported that corporate profile is the most frequent published information on the Internet (89 percent) this is follows by corporate information (52 percent) and corporate structure (37 percent). The least published information is notice of AGM, list of properties, statutory declaration, auditors' report, term of reference of Audit Committee and proxy form.

On the supplementary financial information, it is reported the most frequent information disclosed is financial highlights, followed by review of operation and interim reports. They have showed significant relationship between listing status and financial highlights, review of operations and interim reports. The disclosure of financial highlights and interim reports are statistically significant against industry sector while review of operations and industry type are not related.

They have also reveal the disclosure of balance sheet, profit and loss account and cash flow statement are statistically significant to the listing status and industry type. However, they have shown no significant relationship between annual reports and listing status and so does industry sector.

The above analysis has shown that there are very limited studies in the areas of corporate reporting on the Internet. The most extensive study conducted by Ismail and Tayib has only looked at independent variables, namely listing status and industry classification. They have only used Chi-Square tests of independence to examine the influence of each of the corporate characteristics and financial reporting on the Internet. They have only reviewed two independent variables namely the listing status and the industry sector, which in my opinion insufficient to derive at any concrete observation. It is the intent of this research to extend the study of Ismail and Tayib by looking at other independent variables such as firm size, financial leverage, assets-in-place, number of shareholders and auditors and to find out if corporate reporting on the Internet are significantly related to these variables. It is also timely to revisit this area of Internet reporting because similar studies overseas has reported that Web-based reporting on the Internet is increasing from time to time [see Petravick and Gillet (1996), Gray

and Debreceny (1997), FASB (2000), Lymer (1997) Hussey, Gulliford and Lymer (1998)]. Therefore it is the also the intention of this study to see if similar trend is observed here.

2.6 Conclusion

Various prior studies have reported the economic incentives for firms to disclosure information voluntary in both the traditional medium and also via Internet. The economics variables that have found in the literature as potential factors motivating such disclosures are firm size, financial leverage, proportion of assets-in-place, audit firm and number of shareholding. This chapter provides a review of related accounting literature, both overseas and local. Chapter 3 will outline and justify the methodological framework.