CHAPTER 7

E-GOVERNANCE WEBSITE ACCESSIBILITY EVALUATION BY END USER’S PERSPECTIVE

7.1 Introduction

The Findings presented in previous chapter which was focused on the views of professionals in charge of managing and maintaining E-Governance project in India pointed out that there are number of problems facing the E-Governance websites in India should overcome to be more accessible for disabled people.

However, before moving into focusing on building a roadmap or proposing any solution for improving the accessibility of E-Governance websites in India, it is important to investigate the status of the accessibility of existing E-Governance websites in India from the perspective of the end users. Therefore the research presented in this chapter has tested nine websites which were selected to provide a cross-section of typical E-Governance public services in India. The study measurement includes the WCAG 2.0 principles of operable, perceivable, understandable, robust and about the overall satisfaction of websites.

The results of the study are believed to add to the existing body of knowledge by identifying some main points that could help in improving the accessibility of websites in India for future websites.

This chapter started with the introduction of this chapter, then the methodology, it is followed by outcomes of the study, finally discussion of findings and ends with summary and conclusion.
7.2 Methodology

Since the objective of this study is to investigate the status of the accessibility of the existing E-Governance websites in India from the perspective of end-users, the approach was based on user testing.

Automated testing tools have mainly been used in studies of E-Governance websites. These tools identify known problems and potentially problematic errors. Despite their utility in identifying whether websites are accessible or inaccessible, the issues of functionality and accessibility remain undetected and unaddressed by non-human systems because there are many problems cannot be identified without real users (Al-Soud & Nakata 2010).

The end-user experience is considered one of the most important factors affecting the success or failure of E-Governance websites accessibility (Huang 2010). Hence, in investigating the status of accessibility of the existing E-Governance websites in India, this study focused on the end-user perspective and assessed WCAG 2.0 principles and overall satisfaction of the selected websites:

- **Perceivable:** Information and user interface components must be presentable to users in ways they can perceive
- **Operable:** the user’s ability to move through the website and find their way easily in order to get services and information with the ability of users to identify their location at any moment of the navigation.
- **Understandable:** Information and the operation of user interface on websites must be understandable.
- **Robust:** Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.
- **Overall satisfaction:** How much does the user like or dislike using the website? (was it good or bad experience) does user recommend it to others? The aim is to find out what people think and feel about using a website.
According to W3C and Web AIM, these principles or requirements which affect websites accessibility, if the websites are developed based on these principles or requirements that will get greater accessibility level for disabled people.

Kumar et al. (2007) stated that paying more attention to such requirements helps attract users to visit the websites frequently. Therefore, such issues can help increase the accessibility of government websites.

The participants were asked to carry out a number of pre-selected tasks on a given website and a questionnaire was administered accordingly to gather their experience regarding the operable, perceivable, understandable, robust and overall satisfaction.

### 7.2.1 Data Collection Method

Accessibility testing refers to collecting data about users when they perform tasks. Data collection should be after allowing participants try the website and obtain their feedback at the end of the testing (Cooper et al. 2012).

Several methods have been suggested in order to measure accessibility of websites. The measurements here need to find out the accessibility level of the E-Governance websites from the user’s point of view.
The user testing methods are useful such as questionnaires to collect data whilst users use the system in order to achieve selected tasks. Federici et al. (2005) stated that user testing method is considered as an important and helpful way of measuring the websites accessibility because it gives direct information about end-user’s interaction with the interfaces (Federici et al. 2005).

The aim of test questionnaire is to collect user’s point of views, previous experience and demographic data from the users in the accessibility testing. According to Harfoushi et al. (2012) questionnaire is an easy, flexible, effective, and efficient ways to investigate the accessibility problems. In this study, the questionnaire was used to collect user’s views and about their experience after they use the websites in order to achieve selected tasks.

7.2.2 Questionnaire Structure

The questionnaire was organized into two parts: pre-test questionnaire, which covered the demographics and background information of the participants in addition to their experience with the technology usage (9 questions); and post-test questionnaire, investigating Operable Principle (8 questions), Perceivable (10 questions), Understandable (5 questions), Robust (5 questions) and overall satisfaction (6 questions). The questionnaire items have been measured using a standard five-point Likert scale.

7.2.3 Pilot Study

Due to the questionnaire being distributed just once, it should be designed carefully. The pilot study is mean that ask a group of people the questionnaire questions before distribute it to the sample. Pilot study allows the potential problems to be identified in order to be avoided and corrected (Sharp et al. 2007).

Questionnaires must be designed to allow for all possible participant responses and should be easily comprehensible, direct and engaging (Freire 2012). Feedback from reviewers should be taken into consideration to make changes and improvements to questionnaire (such as wording and question order) in order to form a final copy of the questionnaire. Several changes were made to the questionnaire based on the
recommendations and feedback of the reviewers such as changing the wording of some items to facilitate comprehension and altering the order of some questions to improve clarity. It is worth mentioning that the pilot study assists in improving the data reliability and validity of the study.

7.2.4 Sample

As stated earlier, since the objective of this study is to investigate the status of accessibility level of E-Governance websites in India from end-user’s perspective, the participants were selected randomly to reflect the Indian society make-up in terms of different age, experience, background and educational qualifications.

The research considers that end-users side is one of the most important parts affecting the success or failure of E-Governance websites accessibility. From this point the research will focus on the accessibility of E-Governance websites from the end-users perspective.

Many researchers suggest that the suitable sample size to test the website accessibility or usability to get reliable data is 20 (Nielsen, 2001). However, Faulknar (2003) recommended using the largest cohort of participants possible (within budgetary and logistic limitations) in order to get optimum data. This study involved 22 participants for each website; therefore, 198 participants in total were recruited to participate in testing the nine websites. The selected websites were: Union Public Service Commission (UPSC) website, Tamil Nadu Public Service Commission (TNPSC) website, Indian banking Details (IBD) website, Bharat Sanchar Nigam Limited (BSNL) website, Indian Railways (IR) website, Income Tax Department (ITD) website, Tamil Nadu Electricity Board (TNEB) website, Tamil Nadu Government website (TNGW) and Anna University Website.

7.2.5 Procedure

Studying the previous literature and related projects helped to formulate a draft questionnaire which has been piloted (as mentioned earlier) then refine into final
questionnaire. During the questionnaire drafting, the questions were concentrated on the main issues with short and simple wording, avoiding unclear phrases.

The questionnaire was originally designed in English and it was then translated into Tamil orally, the mother tongue of the participants, in order to achieve the full understanding of the questions. Moreover, the test was conducted in different places with face-to-face setting and oral translation of questions. Hence, the back translation technique is not required according to Pizzuto (2010).

The pre-test questionnaire was completed at the beginning of the session by the participants, then (without time limitations) they navigated through nine Indian E-Governance websites after they were given specific tasks. Table 7.1 shows the websites and the selected tasks for the testing. The nine websites were selected based on the literature (Chander & Kush 2011), these categories of websites providing services directly to citizens, including information for research, government forms and services, public policy information, employment and business opportunities, voting information, tax filing, license registration or renewal, payment of fines, and submission of comments to government officials. The task were assigned for each website based on the WCAG 2.0 principles (Operable, Perceivable, Understandable, Robust).

Table 7.1 Selected websites and participants tasks

<table>
<thead>
<tr>
<th>Departments With Their Web Address</th>
<th>Participants Task in corresponding websites</th>
</tr>
</thead>
</table>
| Union Public Service Commission (www.upsc.gov.in) | • Checking the documents for obtaining exemption of age relaxation for central Government Exams  
• Finding procedures for registration |
| Tamil Nadu Public Service Commission (www.tnpsc.gov.in) | • Checking the documents for obtaining exemption of age relaxation state Government Exams  
• Finding procedures for one time registration |
| India Banking Details (www.bank-india.com) | • Accessing contact address and the telephone number for SBI, Chennai branch  
• Finding information about account opening |
| Bharat Sanchar Nigam Limited (www.bsnl.co.in) | • Access the nearest BSNL branch office details  
• Get the document for getting connection |
| Indian Railways (www.indianrailways.gov.in) | • Access the train detail from Chennai to Delhi  
• Find any train details |
| Income Tax Department (www.incometaxindia.gov.in) | • Access the registration details  
• Find the tax details |
7.2.6 Ethical Considerations

Ethical research requires having permission from people in order to conduct the research before it starts. The researcher should explain to all participants what the research is about and their role, in order to agree to participate in the research voluntarily.

Besides the fact that the importance of the study has been explained, all participants in this study were informed that their participation is voluntary and they are free to decline answering any question, they can also withdraw at any time if they feel it is necessary.

Furthermore, a cover sheet was attached to the questionnaire explaining the aim of the research plus a clear declaration that all the gathered information will be kept entirely confidential and will only be used for this research and will not be shared with any people not directly connected with this research project.

7.3 Analysis and Outcomes

7.3.1 Demographic and Background Information

As shown in figure 7.2, 63 percent of the study participants were male, while 37 percent were female. The highest percentage age group was 18-30 years old, with a percentage of 36 percent, followed by the age group (31-40) years old, with a percentage of 27 percent. The age group (51-65) years old and the age group (41-50) years old had percentages of 14 percent and 18 percent respectively. Finally the age group over 65 years old had percentage of 5 percent. As for the disabilities 59 percent of them had visual impairments ranging from reduced vision (i.e., legally blind but still have usable vision, inability to focus, or double vision) to complete blindness and 41 percent of them had mobility impairments (lack of control of limbs, poor control of limbs, coordination problems, or physical loses).
As for the position level of the participants, 27 percent of the sample was employees in the public sector same as 27 percent employees in private sector. Studying or in training came second with a percentage of 23 percent followed by self-employed with 14 percent and at the final place, retired users came up with a percentage of 9 percent. 45 percent of the participants had bachelor’s degrees followed by diploma, postgraduate and higher secondary options with percentages of 27 percent, 14 percent, 14 percent respectively.

Figure 7.2 Demographics and Background Information

7.3.2 Technology usage

As for the technology usage frequency figure 7.3 shows, using the Internet daily is 27 percent, weekly 32 percent, monthly and rarely 32 percent and 9 percent respectively. In addition, the self-declared level of the Internet expertise was 32 percent excellent, 36 percent good while fair and poor experience comprised 27 percent and 5 percent respectively. Regarding the level of using E-Governance websites, the results indicated
that, often 27 percent, sometimes 55 percent, rarely 18 percent. As the users feeling were gathered when using the E-Governance websites, none of them responded excellent on comfortable to use E-Governance websites, 14 percent were responded good, 50 percent were fair and 36 percent were poor respectively.

<table>
<thead>
<tr>
<th>1. Internet use</th>
<th>2. Internet Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily 9%</td>
<td>Excellent 5%</td>
</tr>
<tr>
<td>Weekly 32%</td>
<td>Good 27%</td>
</tr>
<tr>
<td>Monthly 32%</td>
<td>Fair 32%</td>
</tr>
<tr>
<td>Rarely 27%</td>
<td>Poor 36%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Use of E-Governance Websites</th>
<th>4. Comfortable to use E-Governance Websites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Often 18%</td>
<td>Excellent 0%</td>
</tr>
<tr>
<td>Sometimes 27%</td>
<td>Good 14%</td>
</tr>
<tr>
<td>Rarely 55%</td>
<td>Fair 36%</td>
</tr>
<tr>
<td></td>
<td>Poor 50%</td>
</tr>
</tbody>
</table>

Figure 7.3 Experience with the Technology Usage

7.3.3 Reliability Analysis

As mentioned in chapter 6, the level of consistency between multiple variables is data reliability (Hair et al. 2006; Sekaran & Roger 2010). High reliability is determined if variables in the same measuring group are correlated within others. The commonest test for data reliability is Cronbach Alpha which determines how closely each variable is related to the remaining variable’s sum, using a multi-point scale for measuring consistency among individual items.

In this study, to ensure high data reliability, as stated earlier, a pilot study was run and several changes to the draft questionnaires were made based on the feedback. Then,
Cronbach Alpha Test was used to assess the data reliability. As shown in figure 7.4, the Cronbach Alpha value for perceivable principles was 0.82; operable was 0.76; understandable was 0.85; robust was 0.72 and for overall satisfaction 0.83. These alpha values are found to be above 0.70 and 0.80; such values are considered as acceptable and good according to Hair et al. (2006).

![Reliability Analysis](image_url)

Figure 7.4 Reliability Analysis of WCAG 2.0 principles on user study

7.3.4 The Outcomes

7.3.4.1 Operable

The operable principle provides the guidelines about user’s ability to move through the website and find their way easily in order to get services and information with the ability of users to identify their location at any moment of the navigation.

As shown in figure 7.5, all the questions for operable features on Indian E-Governance websites scored above 3 mean (varying in between 3.33 to 3.82). These values are greater than the mean scale in five scale likert questionnaires form (1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree). Hence we can conclude the Indian E-Governance websites should improve the operable principle on websites.
7.3.4.2 Perceivable

Perceivable principle provides guidelines about information and user interface components of websites must be presentable to users in any ways they can perceive.

Figure 7.6 shows the mean and standard deviation score for the perceivable feature related questions, all the questions for perceivable features on Indian E-Governance websites scored above 3 mean (varying in between 3.14 to 3.96). As stated earlier in operable features, the values are greater than the mean scale in five scale likert questionnaires. This shows the presentation of Indian E-Governance websites should be improved to facilitate the disabled people to access them and the need for all people’s participation in E-Governance growth.
7.3.4.3 Understandable

Understandable provides guidelines about the information and the operation of user interface on websites must be understandable to all types of peoples including people with disabilities.

Figure 7.7 shows the mean and standard deviation score for the understandable features related questions, all the questions for understandable features on Indian E-Governance websites scored above 3 mean (varying in between 3.23 to 3.75). As stated earlier in operable features and perceivable features, the values are greater than the mean scale in five scale likert questionnaires. This shows the lack of user friendly design on Indian E-Governance websites for disabled people access.
7.3.4.4 Robust

Robust principle provides guidelines about the website compatibility to meet the direct needs and allow users to access the website with different user agents without losing any contents and flexibility of the website or in simple way the websites should support current and incoming technology based access.

Figure 7.8 shows the mean and standard deviation score for the robust features related questions, all the questions for robust features on Indian E-Governance websites scored above 3 mean (varying in between 3.21 to 3.73). As discussed on previous sections, the values are greater than the mean scale in five scale likert questionnaires. This shows that the lack of robust principle on Indian E-Governance websites for disabled people access. Because in India most of the people are using different thin clients to access the websites, thin clients is the affordable one in Indian economic environment. The thin clients don’t have features to customize server based application that is websites; so the E-
Governance websites should be designed to customize the websites based on user’s requirements.

**Robust Features**

![Robust Features Chart]

<table>
<thead>
<tr>
<th>Feature</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>The website supported thin client access</td>
<td>3.78</td>
<td>1.172</td>
</tr>
<tr>
<td>The website functionality is good when accessing thin clients</td>
<td>3.32</td>
<td>1.168</td>
</tr>
<tr>
<td>The website supported screen reader access</td>
<td>3.21</td>
<td>1.128</td>
</tr>
<tr>
<td>The website supported to navigate through voice commands</td>
<td>3.24</td>
<td>1.109</td>
</tr>
<tr>
<td>The website supported by more than one language</td>
<td>3.29</td>
<td>1.169</td>
</tr>
</tbody>
</table>

Figure 7.8 Robust Feature Questions and Their Scores

### 7.3.4.5 Overall Satisfaction

This section of questions are relating to the disabled peoples satisfaction about the selected E-Governance websites after completing the operable, perceivable, understandable and robust features questions. This includes how much the user like or dislikes using the website? (was it good or bad experience) does user recommend these websites to others? The aim is to find out what people think and feel about using a website.

Figure 7.9 shows the mean and standard deviation score for the overall satisfaction questions, all the questions for overall satisfaction about selected Indian E-Governance websites scored above 3 mean (varying in between 3.3 to 3.56). As discussed on previous sections, the values are greater than the mean scale in five scale likert questionnaires. This shows the participants of this study are not satisfied with the current designing of selected Indian E-Governance websites.
Selected Website’s Accessibility Principle Scores

Figure 7.10 presents the obtained means for the tested E-Governance websites in terms of the W3C’s accessibility principles; Perceivable, Operable, understandable, Robust and Overall Satisfaction about the tested website.

Based on the response of users on E-Governance websites, the UPSC and TNPSC website’s perceivable features was good; they scored the values of 2.17 and 2.94 respectively. Other principles scored above 3, this indicates lack of principles on UPSC and TNPSC websites. On the other hand all other website’s scores in terms of accessibility principles is greater than 3, this shows the websites are not getting accessible for disabled people.
As presented in figure 7.11, the TNPSC (Tamil Nadu Public Service Commission) website’s accessibility score is 3.284 and it is in the first place of accessibility mean score compared with other selected E-Governance websites based on the end-users responses about the accessibility level. The AU (Anna University) website’s accessibility mean score is 3.82 and it is in the last place in accessibility level.

The UPSC website’s accessibility mean score is 3.446, IBD (Indian banking Details website’s accessibility mean score is 3.43, BSNL (Bharat Sanchar Nigam Limited) website’s accessibility mean score is 3.6, IR (Indian Railways) Website’s accessibility mean score is 3.4, ITD (Income Tax Department) website’s accessibility mean score is 3.6, TNEB (Tamil Nadu Electricity Board) websites accessibility mean score is 3.598, and
TNGW (Tamil Nadu Government Website) website’s accessibility score is 3.522 respectively.

![Comparison of Mean](image)

Figure 7.11 Accessibility score of E-Governance websites from User’s perspective

### 7.4 Discussion

With reference to website’s accessibility for disable people access, it seems that a lack of awareness on web page developers and lack of clear accessibility guidelines for E-Governance websites has negatively affected the accessibility of E-Governance Government websites. Based on some signs from the outcomes, some examples in different websites have been identified.

- Regarding the perceivable principle on the tested websites, the research revealed that headings of some tested websites in India do not clearly identify their target pages (around the half of the participants at ITD and TNGW website), although the WCAG 2.0 stated that the information contained in any category should be reflected by descriptive and meaningful headings, that will help the disable people to quickly understand the concept, perform their work easily and saves the time of users by not diverting them to pointless destinations.

- In addition for better perusal of web interfaces the non text contents should have alternate text contents. Unfortunately almost all of the tested websites have images without alt text contents in all pages.
In terms of the Operable principle, moving around the website, it was noticed that there is a need to improve the navigation system in order to let the users know where their locations are throughout the websites. The need comes as most of the participants felt confused about their location during the navigation. This was more obvious with the AU website, due to the navigation bar not appearing on some pages. It is worth mentioning that using the breadcrumb trail is one of the recommended techniques that help users keep track of where they are.

Moreover the link back to the homepage, BSNL, AU, UPSC websites have option to go to the home page directly but all other websites (TNEB, IB, IR,TNPSC, TNGW and ITD) do not have the option to go to the home page. The AU website provided Navigation menu to go to the home page but in BSNL and UPSC website provided link to go to the home page.

Appropriate use of fonts gives the website more advantages and builds a positive impression. However, it was noticed that the fonts used in websites (TNEB, AU, IB, ITD, TNGW and IR) varied between 8.5 -10 points. This does not meet W3C’s (2005) recommendations for the default font size, which is at least 10-point (and 12-point if the website is used by elderly people), nor W3C’s (2008) recommendation of at least 12-point on all web pages (and 14-point if the website is used by elderly users, to avoid eye strain and fatigue). This may be one of the reasons why users prefer to customize their individual preferences and needs. The TNPSC, BSNL and UPSC websites used the font size of 10-point and greater point values for texts, links and menus.

On the other hand, despite Rodrigo & Barbosa (2013) pointed out that the characteristics of websites users must initially be identified and analyzed in order to meet their needs and expectations. However, it seems that one of the problems of Government websites in India is a failure to lack of meet user’s needs and expectations (Shi 2007; Sharma et al. 2008). Based on the outcomes, some signs have been revealed, such as:

E-Governance websites in India should provide the users with the ability to customize some services without needing to ask for them. By giving this ability, users will meet their direct needs and preferences and facilitate their visiting to the websites in order to reach what they want as fast as they can. Although the IB
websites have color contrast option, IR website have option for changing the text font size and TNGW website have both color contrast option and text font size option. But all other tested websites UPSC, TNEB, AU, ITD, BSNL and TNPSC, do not have a single option to customize the pages based on user needs. However, the majority who participated in the study pointed out that the websites should allow users to customize individual preferences and needs such as color, font, layout and background. This will helpful for improving the scannability and readability of E-Governance websites in order to accommodate every person (including people with special visual requirements).

- Next the different language support; the IR and UPSC websites have the option to change the contents in Hindi language, when choosing Hindi language half of the contents are displaying in English balance half of the contents are getting changed. The TNPSC website have the option to change the language as Tamil other tested websites do not have the option to change the language based on user needs.

- In addition, the Indian E-Governance websites having the problem of unannounced pop-up windows appearing when accessing the websites. Undoubtedly this will affect the disabled people access on Indian E-Governance websites.

- Moreover the research reveals that the need for help contents for better accessibility, if the help contents is available as a means so that the disabled people can easily access the information services.

- Furthermore, despite the fact that advanced search helps users to find what they are looking for quickly and saves time and effort, none of the Government websites offered an advanced search facility on their websites, although some websites pointed out that the accuracy of the internal search results was not good enough.

- Additionally, it can be identified that the accessibility of E-Governance websites in India has problems related to lack of testing and monitoring. This can be seen for example from the lack of accuracy of internal search results, as the study results revealed that the search accuracy in some websites was not good enough (and advanced search was unavailable). In addition, it can be seen that the non-availability of the navigation bar in some pages at BSNL and TNGW websites is due to lack of monitoring.
Another main important principle is compatibility of websites, and unfortunately none of the websites was supported for different thin client access. But in PCs and Laptops this tested websites are giving little flexibility based on the interfacing applications used.

Another problem can be identified that there is a lack of involvement of end-users. Besides involving end-users from the inception of establishing websites, they can be effectively developed by getting and considering feedback from end-users (visitors of the websites) from functioning websites. Unfortunately, the entire tested website do not offered the opportunity for users to leave feedback. This is another example of ignoring end-users even after the websites were established.

Interfaces play an important role in generating a positive reaction from the user (Malik et al. 2014). However, some of the users who participated in the study did not like much the interfaces of the websites. It seems that the interfaces and layout in Indian E-Governance websites have been affected by poor standardization. The failure of India’s E-Governance project to achieve this could be due to the lack of a clear framework of collaboration and coordination between governmental agencies. This is confirmed by each of the tested websites having a different interface and layout.

Accessibility and usability has a significant effect on the degree of trust and satisfaction directly (Weerakkody & Choudire 2005; Malik et al. 2014). A lack of trust/satisfaction might be involved in Indian E-Governance websites. This was noticed as there is a bit of hesitation among users to use the websites frequently, as well as to recommend the websites to others.

The E-Governance project management in India should focus on website’s accessibility and usability in order to improve user’s trust and satisfaction, because if websites fail to achieve that, the situation of E-Governance will be threatened with failure. The low quality and not meeting user’s needs in the websites play an important role in widening the gap in terms of trust and satisfaction between government websites and its users mainly disabled people in India.
In addition, it is worth mentioning that there is a lack of trust sometimes between end-users and E-Governance projects due to lack of participation. As stated earlier in chapter 6, this is sometimes considered as an encouraging reason for the users to be uncooperative in participation, because they believe that their views will not be considered by the government seriously.

Finally, because of the awareness and experience of the Internet, Indian E-Governance websites are considered unsatisfactory to people with disabilities who participated in the study. It was noticed that the level of using Internet among the participants is good. This leads to the assumption that users have visited lots of websites; therefore, E-Governance management in India should pay more attention to designing its websites in the accessible form for the whole citizens.

7.5 Summary and Conclusion

The importance of the accessibility of E-Governance websites has been raised increasingly over recent years. This chapter presents the existing situation of the accessibility of E-Governance websites in India from some aspects related to the design of website interfaces.

The study has concluded that lack of experience in developing accessible E-Governance websites in India reflects limited knowledge about user interfaces and lack of clear understanding about accessibility guidelines within the team responsible for the E-Governance project. This undoubtedly has a negative impact on the accessibility of Indian E-Governance websites.

The findings indicate that there are some barriers to the improvement of the accessibility of E-Governance websites in India such as lack of testing and monitoring, lack of involvement of end-users, lack of a clear framework of collaboration and coordination, poor standardization, lack of trust and lack of satisfaction.

It is very important that E-Governance should pay more attention to those points to be addressed in order to ensure the provision of accessible E-Governance websites in India.
This study adds to the existing body of knowledge by identifying some main points that could help in improving the accessibility of E-Governance websites in India for future websites as well as it is useful not only from the perspective of improving Indian E-Governance services, but also to those of other developing countries which may share the same culture and situation.

The next chapter describes about the requirements that are identified by the previous three types of studies, model variable derivation based on the identified requirements and proposed AESD model for the accessible E-Governance website development in India.