Chapter 3

METHODOLOGICAL DESIGN

AND FRAMEWORK
3.1. Introduction

This chapter presents the methodological foundations and issues that are pertinent to this study. The derived hypotheses are listed in order to draw focus on the effect of the independent variables that have been considered in this study. Independent variables have been chosen on the basis of their actionability and usefulness for e-marketing interventions in future. Some variables (such as parameters of marketing evaluation of SMTE websites) have been studied for the first time in order to bring out new insights.

The research design has been presented and the methodological issues have been analyzed. The procedures for construction of the research instruments for this study, analysis of the demand- and supply-side factors of e-marketing and marketing evaluation of SMTE websites have been described. The sampling framework and inclusion and exclusion criteria, data sources and methods of statistical analysis have been presented.

3.2. Research hypotheses

Derived from the research objectives, the following 7 sets of hypotheses were proposed and tested. Hypotheses 1 to 4 deal with the SMTEs (that is, the supply-side) and hypotheses 5, 6 and 7 deal with the SMTE tourists (that is, the demand-side).

1. Level of e-marketing involvement and type of tourism product (Objective #1)

   \textbf{H1: There is a difference in the level of e-marketing involvement among the SMTEs representing different tourism product categories.}

   There is a difference between the SMTEs’ level of involvement in different e-marketing activities and their product categories (that is, accommodation, access, attractions and auxiliary products/services).
2. E-marketing tenure and its perceived criticality and pay-off
   (Objective #1b)

   **H2a:** *There is an association between a SMTE’s e-marketing tenure and its perceived criticality of e-marketing.*

   There is an association between the e-marketing tenure (in number of years) of an SMTE and its perception of criticality of e-marketing to its business.

   **H2b:** *There is an association between a SMTE’s e-marketing tenure and its e-marketing pay-off.*

   There is an association between the e-marketing tenure (in number of years) of an SMTE and its e-marketing pay-off (as a percentage of sales directly attributed to e-marketing initiatives).

3. Importance and incidence of critical success factors of e-marketing (Objective #2b)

   **H3:** *There is a difference between the importance and incidence of critical success factors of e-marketing.*

   There is a difference between the perceived importance and the actual incidence (performance) of critical success factors of e-marketing.

4. SMTE websites and type of tourism product (Objective #3a)

   **H4:** *There is a difference in the online customer interface design elements of SMTEs among the different tourism product categories.*

   There is a difference in the SMTEs’ website design elements and their product categories (that is, accommodation, access, attractions and auxiliary products/services).

5. Tourist-related factor: demographic and behavioural characteristics (Objective #1)
H5: *There is a difference in the characteristics between Internet and non-Internet users among the SMTE tourists.*

There is a difference in the demographic and behavioural characteristics between Internet and non-Internet users among the SMTE tourists.

6. Tourist-related factor: online search/purchase satisfaction and intention to buy

**H6a:** *There is an association between online search satisfaction and future intention to purchase online.*

There is an association between the tourists’ level of online search satisfaction and their future intention to purchase tourism products online.

**H6b:** *There is an association between online purchase satisfaction and future intention to purchase online.*

There is an association between the tourists’ level of online purchase satisfaction and their future intention to purchase tourism products online.

7. Tourist-related factor: destinations and tourism product bought online

**H7:** *There is an association between the tourists’ destinations and the type of tourism product purchased online.*

There is an association between the tourists’ destinations (in this study, Mauritius or Andaman islands, India) and their online purchase of tourism products (such as accommodation, access, attractions and auxiliary products/services).
3.3. Research design

This is a descriptive research aimed at studying three sets of respondents, namely the SMTE e-marketing decision makers, SMTE websites and SMTE customers to meet the above stated research objectives. This study was conducted using the survey and observation methods.

The study was carried out in three parts:

Part I: Statistical study using the survey method to find out the (supply-side) motivators, inhibitors and critical success factors of e-marketing from the e-marketing practices of the SMTEs.

Part II: Descriptive study using the observation method to perform a marketing evaluation of SMTE websites using the Rayport-Jaworski’s 7Cs framework by identifying the indicators that make up each of the seven dimensions of online customer interface.

Part III: Statistical study using the survey method to find out the (demand-side) online search and shopping motivators and inhibitors of the SMTE customers from their Internet usage and online navigational and purchase behaviour.

3.4. Sources of data

The study was based mainly on primary data collected from the respondents and the websites. Secondary sources were used as background material. The websites and promotional literature (such as brochures and newsletters) of the SMTEs and DMOs were the secondary sources scrutinized for collecting the background data for conducting the study.

Active primary data was collected from two groups of respondents, namely the SMTE e-marketing decision makers (to study the e-marketing supply-side factors) and the international tourists or customers of these
SMTEs (to study the e-marketing demand-side factors). Passive primary data was gathered from the websites of the SMTEs (to perform a marketing evaluation of the online customer interfaces).

The following sections present the methodology adopted for carrying out the three parts of the research study.

3.5. Methodology for Part I

Part I of the study is concerned with using the survey method to find out the demand-side factors such as demographic characteristics and motivators, inhibitors and critical success factors of e-marketing from the perspectives and practices of the SMTE e-marketing decision makers.

3.5.1. Research instrument

Other than the most commonly used self-completed questionnaires, instruments like in-depth interviews, focus groups and observation of e-marketing initiatives have also been adopted to study the demand-side factors of e-marketing. In this study, in-depth interviews in combination with guided tours of the SMTE facilities have been used for obtaining information. This approach allowed the respondents to offer unsolicited evaluations and responses that were taken note of. In-depth interviews yielded information that was quantified using a Likert scale and interactions during guided tours gave many qualitative insights of SMTE’s e-marketing experiences. For scale construction, the response categories were chosen after an extensive review of the relevant literature. Several open-ended questions were also included in the questionnaire with a view to obtain comprehensive information from the respondents and also because of the newness of the research area.

The questionnaire (Appendix II-A) consisted of six sections that asked the respondents about their:

- level of involvement in e-marketing activities,
- perceived criticality of e-marketing to their success,
• e-marketing motivators,
• e-marketing inhibitors,
• e-marketing critical success factors and
demographic information for profiling purpose.

A pre-test of the questionnaire was carried out. The pre-test did not indicate any problems except the difficulty with English language in the case of a few Mauritian SMTE managers. Following this, a French translation (Appendix II-B) of the questionnaire was made available on request.

A 5-point Likert scale was used with ‘5’ indicating strong agreement, ‘1’ indicating strong disagreement and ‘3’ indicating neutrality. A 3-point scale would have given inadequate options, while a 7-point scale would have demanded a high level of sensitivity and discrimination that would have been difficult given the qualification and e-marketing experience of the respondent group. Unless experts with a high degree of awareness and sophistication are addressed, the sensitivity provided for by a 5-point scale is sufficient and meaningful enough for this situation.

3.5.2. Survey of SMTE e-marketing decision makers

1. The 50-item questionnaire was administered by the personal interview method to 40 SMTE e-marketing decision makers representing tourism product categories such as accommodation, access, attraction and auxiliary products. The inclusion and exclusion criteria for selecting respondents are presented under the sampling plan.

2. Demographic background details such as tourism product category of operation, number of employees, annual sales turnover, e-marketing tenure and pay-off were obtained. In addition to the demographic background of the SMTEs surveyed, details regarding their level of involvement in the various e-marketing activities, their perception of e-marketing criticality to the success of SMTEs,
importance of the various e-marketing benefits, importance of and performance (incidence) on the critical success factors, barriers to adopting or implementing e-marketing and description of any e-marketing success stories were also obtained so as to get a complete picture of the situation. They also provided more value as actionable independent variables as compared to a descriptive demographic profile alone.

3. The importance and performance (incidence) scores given by the respondents were analyzed to assess the critical success factors and their relative position.

4. For this survey, 20 Andaman SMTEs and an equal number of Mauritian SMTEs were approached and their e-marketing decision makers participated in the survey.

3.5.3. Duration of the study
The study of SMTEs in Mauritius was carried out over a period of 12 months from August 2003 to July 2004. The study of SMTEs and tourists in Andaman Islands was conducted during a 12-month period from March 2005 to February 2006. The study periods account for all seasonality factors. Interestingly, in both the destinations, the period from November to January is the peak season.

3.5.4. Sampling plan
The SMTEs were identified through a disproportionate stratified random sampling strategy. Stratification was done using the tourism product category (for example, accommodation). Since the research focus was on the entire SMTE sector and not on any of the product categories, a disproportionate stratified sampling was chosen. Situational factors such as fulfilment of inclusion and exclusion criteria also supported the choice of disproportionate stratified sampling.
3.5.5. Inclusion and exclusion criteria
The sample inclusion criteria of ‘SMTEs having an own website’ and ‘respondent to be an e-marketing decision maker’ were followed. SMTEs (such as tourism/travel portals) with a ‘pure click’ or ‘aggregator’ models of e-commerce were excluded since the study focussed on the supplier’s e-marketing practices rather than the intermediary’s or the infomediary’s e-marketing practices. SMTEs with an over-reliance on their channel partners for marketing (for example, a hotel depending extensively on tour operators to bring in business) were also excluded.

3.5.6. Sample size
The sample size was fixed as 20 per cent of the sampling frame (directory provided by the DMO served as the sampling frame) and it translated to 40 SMTEs (20 in Mauritius and 20 in Andaman Islands) in four diverse tourism product categories, namely accommodation (hotels, villas and bungalows), access (tour operators, travel companies and car/bike rentals), attractions (places of interest and leisure/adventure activities like SCUBA diving and game fishing) and auxiliary products (video/photo services, souvenirs and specialty restaurants).

3.5.7. Data analysis and statistical tools
Factor analysis was applied to identify the underlying dimensions of the critical success factors of e-marketing and also of the benefits of e-marketing. Correlation and regression analysis was used to verify the first-mover advantage in SMTEs with a longer e-marketing tenure. Friedman test determined if mean rankings differed across the e-marketing inhibitors. Percentages, measures of central tendency and dispersion, the paired sample ‘t’-tests, Pearson chi-square test and one-way analysis of variance (ANOVA) were used for testing of hypotheses. SPSS package (Version 12) was used to perform the statistical analysis.
3.6. Methodology for Part II

Part II of the study is a descriptive exploratory study using the structured observation method to perform a marketing evaluation of SMTE websites using the Rayport-Jaworski’s 7Cs framework by identifying the indicators that make up each of the seven dimensions of online customer interface.

The objects of observation were the websites of the SMTEs identified through a disproportionate stratified random sampling strategy as done for Part I. The sample size was fixed as 20 percent of the sampling frame and it translated to 40 SMTEs (20 in Mauritius and 20 in Andaman Islands) in four diverse tourism product categories, namely accommodation, access, attractions and auxiliary products. The inclusion criteria of ‘SMTEs having their own URL’ or ‘SMTEs having websites with their own domain name’ was applied. Aliases (that is, multiple domain names for a single website) were also considered, but as a single website only. Plug-in websites (for example, a travel portal providing a plug-in site for an SMTE) were excluded from the study.

3.6.1. Research instrument

To record the passive primary data collected through observation method, a structured data entry table (Appendix II-E) was designed based on the Rayport-Jaworski’s (2002) 7Cs framework of website evaluation from a marketing perspective. The dimensions described in the 7Cs framework are:

- Content (representing all the text, pictures, sound and video that the site contains)
- Community (how the site enables user-to-user communication)
- Customization (the site’s ability to self-tailor to different users or to allow users to personalize the site)
- Communication (how the site enables site-to-user communication or two-way communication)
• Connection (degree to which the site is linked to other sites for affiliate marketing purposes or just for the visitor’s navigational convenience)

• Commerce (the site’s capabilities to enable commercial transactions like online booking and payment)

• Context (the site’s layout and design that capture its aesthetics and functional look-and-feel)

Review of literature on website design and customer interface dimensions and a pilot observation helped compile the appropriate indicators (as described in Table 3.1) under each of the 7Cs. Research on the efficacy of websites is extensive. However, specifics of website effectiveness such as technical design and performance are outside the purview of this study. Each cell in the table represents a dichotomous scale measurement describing the presence or the absence of a particular indicator.

Table 3.1. 7Cs and their indicators for website evaluation

<table>
<thead>
<tr>
<th>Dimension (C1)</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content (C1)</td>
<td>• Essential information</td>
</tr>
<tr>
<td></td>
<td>• Itineraries/tour/product information</td>
</tr>
<tr>
<td></td>
<td>• Maps</td>
</tr>
<tr>
<td></td>
<td>• Security/privacy statement</td>
</tr>
<tr>
<td></td>
<td>• Click-through content</td>
</tr>
<tr>
<td></td>
<td>• Quality assurance</td>
</tr>
<tr>
<td></td>
<td>• Price information</td>
</tr>
<tr>
<td>Community (C2)</td>
<td>• Customer postings</td>
</tr>
<tr>
<td></td>
<td>• User-to-user interaction</td>
</tr>
<tr>
<td>Customization (C3)</td>
<td>• Multi-language service</td>
</tr>
<tr>
<td></td>
<td>• Personalized service</td>
</tr>
<tr>
<td></td>
<td>• Loading specifications</td>
</tr>
<tr>
<td></td>
<td>• Search function</td>
</tr>
<tr>
<td>Communication (C4)</td>
<td>• FAQs</td>
</tr>
<tr>
<td></td>
<td>• Email form</td>
</tr>
<tr>
<td></td>
<td>• Online registration</td>
</tr>
<tr>
<td></td>
<td>• Call centre</td>
</tr>
<tr>
<td></td>
<td>• Offline contact details</td>
</tr>
</tbody>
</table>
### 3.6.2. Observation of SMTE websites

Observation method was chosen to gather passive primary data for this research. Observational studies can provide rich data and insights into the nature of the phenomena observed. The data obtained through observation of events as they normally occur are generally more reliable and free from respondent bias (Sekaran, 2003). The SMTE websites were observed using the browser Internet Explorer 6. Some of the observed websites had multiple language translations of the websites. Only the English language content on a website was observed for the research purpose.

### 3.6.3. Duration of study

The websites of SMTEs in Mauritius were observed over a span of 12 months from August 2003 to July 2004. Similarly, the websites of SMTEs in Andaman Islands were observed during a 12-month period from March 2005 to February 2006. A snapshot observation of a website may miss out on the updated content depending on the observation timings and generally undermine the dynamic nature of tourism websites. Hence continual, periodic observation was used.
3.6.4. Data analysis and statistical tools

A multiple correspondence analysis was used to map the association between the e-marketing pay-off and the 7Cs. Though it is an exploratory and not a confirmatory technique, the correspondence map gives a powerful representation of association between categorical variables by giving a comprehensive view of the data for effective interpretation (Beldona et al., 2005). In tourism marketing literature too, correspondence analysis is becoming a much used technique (Gursoy and Chen, 2000). An intercorrelation matrix was constructed to test for correlation among the seven dimensions of website evaluation. One-way analysis of variance (ANOVA) was performed to look for any group differences among the marketing evaluations of the SMTE websites representing the four tourism product categories, namely accommodation, access, attractions and auxiliary products. SPSS package (Version 12) was used to perform the statistical analysis.

3.7. Methodology for Part III

Part III of the study is a statistical study using the survey method to find out the (demand-side) online search and shopping motivators and inhibitors of the SMTE customers (that is, international tourists) from their Internet usage and online navigational and purchase behaviour.

3.7.1. Research instrument

Other than the most commonly used self-completed questionnaires, primary data collection methods like in-depth interviews and focus groups have also been adopted to study the customer-related factors of e-marketing. Even passive primary data collection methods like observation of real-time click-stream data have been used to study the online consumer behaviour. Secondary data such as website traffic data and online users’ demographic and click-o-graphic information are useful to study the demand-side factors
of e-marketing. In this study, in-depth interviews were employed for obtaining information from the tourists about their online behaviour and e-marketing experiences. Apart from 5-point Likert scale, dichotomous scale, category scale and five-point balanced rating scale have also been used. Several open-ended questions were also administered with a view not to restrict the response categories but to obtain comprehensive information from the respondents and also because of the newness of the research area. From the in-depth interviews, the relevant information was quantified using a Likert scale. For scale construction, the response categories were chosen after an extensive review of the relevant literature on B2C e-commerce, online consumer behaviour and Internet usage.

The questionnaire (Appendix II-C) consisted of seven sections that asked the respondents about their:

- Demographic and Internet usage characteristics for profiling purpose;
- Top-of-the-mind awareness of tourism- and travel-related websites;
- Sources of information/awareness about tourism websites;
- Online purchase of tourism products and the future intention to buy;
- Level of satisfaction with online search for and online purchase of tourism products;
- Motivators and inhibitors for online search for and online purchase of tourism products; and
- On-site navigational behaviour at the tourism websites to identify the website features/activities that are noticed and used by the tourists.

A pretest of the questionnaire was carried out with 20 respondents for clarity, practicability and reliability. The pretest did not indicate any problems except the difficulty with English language in the case of a few international tourists from French-speaking countries visiting Mauritius. Following this, a French translation (Appendix II-D) of the questionnaire was made available on request.
A 5-point Likert scale was used with ‘5’ indicating strong agreement, ‘1’ indicating strong disagreement and ‘3’ indicating neutrality. A 3-point scale would have given inadequate options, while a 7-point scale would have demanded a high level of sensitivity and discrimination that would have been difficult given the qualification and e-marketing experience of the respondent group. Unless respondents with a high degree of awareness and sophistication are addressed as in a survey of experts’ opinion, the sensitivity provided for by a 5-point scale is sufficient and meaningful enough for this situation.

3.7.2. Survey of SMTE tourists

1. The 26-item questionnaire was administered by the personal interview method to international tourists who were also customers to the SMTEs in the chosen destinations – Mauritius and Andaman Islands, India. The inclusion and exclusion criteria for selecting respondents are presented under the sampling plan.

2. Demographic details such as the respondent age, level of education, nationality, living area, purpose of visit to the island destination and tourism-related spending information were gathered. In addition to the demographic characteristics of the tourists surveyed, details regarding their Internet usage such as weekly time spent online (on non-work related purposes), product(s) purchased on online (if any) and levels of satisfaction and dissatisfaction with online search for and online purchase of tourism products were obtained.

3. The online shopping benefits cited by the SMTE tourists and the tourism products bought by them online were analyzed to assess the online shopping motivations for different tourism product categories, namely accommodation, access, attractions and auxiliary products.

4. The on-site navigational behaviour of the tourists indicated the website features noticed and used by them.
5. In this survey, 20 Andaman SMTEs and an equal number of Mauritian SMTEs were chosen as the data collection spots and their sampled customers participated.

3.7.3. Duration of the study
The study of international tourists in Mauritius was carried out over a period of 12 months from August 2003 to July 2004. The study of international tourists in Andaman Islands was conducted during a 12-month period from March 2005 to February 2006. The study periods account for all seasonality factors. Interestingly, in both the destinations, the period from November to January is the peak season.

3.7.4. Sampling plan
The data collection spots (that is, the SMTEs) were identified through a disproportionate stratified random sampling strategy as outlined in Part I of the study. Stratification was done using the tourism product category (for example, accommodation). The tourists were identified through a judgmental sampling at the SMTE locations. Sufficient and necessary precautions were taken to avoid sample bias. For example, in SMTEs representing accommodation, attractions and auxiliary product sectors, the independent travellers were preferred as compared to group travellers coordinated by a tour operator. Moreover, not more than five tourists in a particular enterprise were interviewed.

3.7.5. Inclusion and exclusion criteria
The SMTEs sampled in the Part I of the study were chosen as the data collection spots. To identify the respondents, the sample inclusion criteria of ‘the tourist currently being an SMTE customer’ and ‘the tourist currently being an independent traveller’ were applied. Only in the case of access sector (specifically, the small and medium tour operators), group customers (that is, those who are part of a package tour as assembled by a tour operator) were interviewed. Tourists who themselves were working in tourism/travel sector were excluded since they might be on a
complementary tour or a destination familiarization trip. Their views may not truly reflect those of an international tourist visiting these destinations.

3.7.6. Sample size

The sampling plan had two stages. First, the data collection spots have to be sampled for which the sample size was fixed as 20 per cent of the sampling frame (directory provided by the DMO served as the sampling frame) and it translated to 40 SMTEs (20 in Mauritius and 20 in Andaman Islands) in four diverse tourism product categories, namely accommodation (hotels, villas and bungalows), access (tour operators, travel companies and car/bike rentals), attractions (places of interest and leisure/adventure activities like SCUBA diving and game fishing) and auxiliary products (video/photo services, souvenirs and specialty restaurants). At each of these SMTEs, respondents were identified. In total, 200 international tourists were approached and 190 complete responses were collected. The sample size is justified since the study focuses on the e-marketing experiences of the actual decider or the online buyer. Consumer behaviour literature (Kotler, 1997; Hoyer and McInnis, 1999) points out that there are different roles – initiator, influencer, gatekeeper, decider, buyer and user - played by different individuals in a buying decision. Therefore, for this study only the key decision maker is interviewed.

3.7.7. Data analysis and statistical tools

Descriptive analysis using statistical measures like arithmetic mean, standard deviation and percentages were used and the results are presented in the form of graphs and tables. Pearson chi-square test was used for testing of hypotheses. Pearson chi-square test was used to examine if any significant differences existed between Internet and non-Internet users among the respondents and also if there was any association between (i) online search satisfaction and future intention to buy online, and (ii) online purchase satisfaction and future intention to buy online. A multiple correspondence analysis was performed on a 3-way table (Internet user skill level – high or low; type of online tourism purchase – accommodation/
access/ attraction/ auxiliary; and online buying motivations – represented by different informational uses and transactional objectives). Since correspondence analysis is only an exploratory and not a confirmatory technique, significance testing is not supported. Yet it gives a powerful representation of association between categorical variables by giving a comprehensive view of the data in the contingency table for effective interpretation (Beldona et al., 2005). SPSS package (Version 12) was used to perform the statistical analysis.

3.8. Chapter conclusion
The methodology for this study has been evolved as a descriptive research aimed at studying three sets of respondents to present a unified view of e-marketing of SMTEs. Parts I and II analyze the supply-side factors of e-marketing from the SMTEs and their online customer interfaces. Part I studies the motivators, inhibitors and critical success factors of SMTEs’ e-marketing from the perspectives and practices of SMTEs e-marketing decision makers. Part II performs a marketing evaluation of the websites of these SMTEs with an emphasis to identify the website design elements and to see how they correlate among themselves and with the e-marketing performance of the SMTEs. Part III studies the demand-side factors of e-marketing. It investigates the online search and shopping motivators and inhibitors of the SMTE customers from their Internet usage and online navigational and purchase behaviour. For Parts I and III, the methodological issues in the design of the research instruments and other issues in the research design have been examined. Part II uses an existing framework that identifies the design elements of a website, compiles a comprehensive list of indicators that make up these elements and constructs an instrument for performing a marketing evaluation of the SMTE websites. Statistical tools used were factor analysis, correspondence analysis, correlation and regression analysis, reliability analysis, Pearson chi-square tests, paired sample ‘t’ tests, ANOVA and measures of central tendency.