TOURISM DEMAND FORECASTING AS APPLIED IN SOUTH AFRICA: A THEORETICAL AND PRACTICAL PERSPECTIVE

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Thesis presented in partial fulfillment of the requirements for the degree of Master of Commerce at the University of Stellenbosch

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DECLARATION

I the undersigned hereby declare that the work contained in this thesis is my own original work and has not previously in its entirety or in part been submitted at any university for a degree

J. BLOOM

21/11/92

DATE

ABSTRACT

Decisions regarding the tourism infrastructure and superstructure of a country are usually based on some perception of the future. Tourism organisations and businesses who contribute to the tourism infrastructure base decisions regarding the future on anticipated environmental changes and the expected level of demand for their products and/or services, amongst others.

The forecasting of tourism demand is generally seen as one of the most complex aspects of tourism management. It may be defined and measured in a variety of ways on a range of scales. Due to the concept having various connotations, including potential, actual and deferred demand, it is generally seen as a broad and imprecise term.

The changes and challenges associated with the development taking place in tourism markets have resulted in attempts by industry participants to convert latent and negative demand into effective demand.

Inadequate forecasting of tourism demand in the past and present has become a serious constraint to the efficiency of operators in the tourism industry on both the domestic and international front. Due to this limitation, the study aims to provide a practical insight into the tourism demand forecasting procedures in the South African context, complemented by international comparisons.

The need for an orientation regarding forecasting skills of the numerous firms and organizations composing the tourism industry made it important to evaluate the South African situation. This resulted in an empirical research project undertaken on a national and regional basis in South Africa. The ability to accurately forecast demand in its entirety makes it imperative to grasp the principle that forecasting, as a tool, provides the predictive edge to potential direct revenues for the national economy and tourism businesses.

Appropriate forecasts will not only provide the concerned parties with valuable information, but could have positive effects on tourism organisational planning, tourism management and effective resource allocation.

The study also outlines certain international approaches to more effective and efficient forecasting of tourism demand by emphasising the challenges associated with the use of forecasting, the research being done on the national and international level and the contribution forecasting can make to proficient planning and policy decision-making at all levels in industry. Domestic approaches in comparison the to the international perspective indicate the increased complexity and dependence of the elements composing the tourism industry and the challenges facing tourism management in the dynamic South African environment.

SAMEVATTING

Besluite aangaande die toerismestruktuur van 'n land word normaalweg op toekomspersepsies gebaseer. Die belangrikste bydraers tot die toerisme-infrastruktuur, naamlik toerisme organisasies en -besighede, baseer hulle besluite dan ook op omgewingsveranderinge en die verwagte vraag na hulle produkte en/of dienste.

Om die toerisme-vraag vooruit te skat word algemeen beskou as 'n uiters komplekse aktiwiteit van toerismebestuur. Hierdie vraag kan op 'n verskeidenheid van wyses gedefinieer word asook op 'n verskillende skale gemeet word. Vanweë die verskillende konnektasies - wat beide potensiële, werklike en uitgestelde vraag insluit - word dit as 'n vae en onvoldoende begrip beskou.

Die veranderinge en uitdagings wat gewoonlik met ontwikkelende toerisme-markte geassosieer word, het tot gevolg dat daar in die praktyk gepoog word om negatiewe en latente vraag in effektiewe vraag om te skakel.

Ontoereikende vooruitskattings hou 'n ernstige beperking vir die doeltreffendheid van operateurs – beide nasionaal en internasionaal – in. Dit is dan ook in die lig van hierdie beperkinge dat dié studie poog om praktiese insigte aangaande toerismevooruitskattingsprosedures in 'n Suid-Afrikaanse konteks, en met verwysing na die internasionale praktyke te gee.

Die behoefte aan 'n basiese oriëntering ten opsigte van vooruitskattings-vaardighede van die onderskeie ondernemings en organisasies binne die toerismebedryf, het die ondersoeker genoodsaak om die Suid-Afrikaanse situasie te evalueer. Dit het op sy beurt tot 'n navorsingsprojek gelei wat op nasionale- en streeksgrondslag gegrond was. Kennis en vaardighede op hierdie terrein vergemaklik nie alleenlik die kompleksiteit van vooruitskatting nie, maar bied ook 'n voorsprong in dié sin dat dit direkte inkomste vir die ekonomie en toerismebesignede genereer.

Benewens die waardevolle inligting wat deur vooruitskattings aan die betrokke partye voorsien word, sal dit ook 'n uitwerking op die prosesse van organisasiebeplanning, bestuur en doeltreffende verdeling van bronne hê.

Hierdie studie verskaf ook 'n oorsig van internasionale benaderings tot meer effektiewe en doeltreffende vooruitskatting van toerismevraag. Dit word gedoen deur onder meer aandag te gee aan vooruitskattingsuitdagings, navorsing op beide nasionale en internasionale vlak, asook die bydrae wat vooruitskatting tot doeltreffende beplanning en beleidsformulering lewer. Die dinamiek van die Suid-Afrikaanse omgewing tesame met die mate van ooreenstemming tussen plaaslike en internasionale benaderings, beklemtoon die kompleksiteit en afhanklikheid van die elemente waaruit die toerismebedryf bestaan. Financial assistance provided by the Institute for Research Development is hereby acknowledged. Opinions expressed and recommendations proffered are those of the author and should not be considered those of the Institute for Research Development or the University of Stellenbosch

DEDICATION

This thesis is dedicated to my parents Aubery and Grace Bloom

A WORD OF THANKS

Prof M Leibold for his suggestions and guidance Mandy Bloom for typing the thesis Liza Bloom for her support and encouragement Elmarie van Zyl for her comfort and inspiration Sandy Young for his assistance in printing the final copy

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SECTION 1

A GENERAL DISCUSSION OF ISSUES RELATING TO TOURISM DEMAND, TOURISM FORECASTING AND THE DETERMINANTS INFLUENCING DEMAND

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The thought of being able to partake in tourism conjures a number of visions: adventure, curiosity and excitement. Tourism is a way in which the individual can savour the unknown, acquire understanding, and experience the world in its fullness. The industry enables citizens of the world to travel, and is one in which they can be wholeheartedly proud to participate.

Tourism is unfortunately one of the most misunderstood industries in the world. All people take part in it at some or other time, mostly as active participants. Tourism is in fact a vastly complex system that impacts upon many facets of individuals lives, making the undertaking of any study of the industry and its phenomena very challenging.

The tourism industry is presently growing at such an exorbitant rate (Financial Mail, July 1992:47) in relation to the past, that it stands out as a positive and everpresent factor in promoting mutual knowledge and understanding. The present importance of world tourism and its economic future potential is undoubtedly of interest, as is indicated by the following facts (Van Zyl, 1990:2):-

- * Total expenditure on domestic and international tourism (including air fares) is currently estimated to represent 12 percent of total world Gross National Product.
- * Some 1,5 billion domestic and international tourist trips were made in 1990 involving one-third of the world's population.

- * International tourism accounted for 6 percent of total world exports and 25-30 percent of world trade in services in 1990.
- * International tourism is expected to increase at an annual rate of approximately 4 percent up to the year 2000, by which time it will be the world's largest export industry.

Tourism has evidently become an identifiable sector in wost developed countries' export portfolios. Those developed countries who generally have healthy tourism industries, contributes an average of nine to twelve percent to the Gross National Product of their economies (Financial Mail, 17 July 1992:47).

The growth in international tourism makes it important to evaluate the impact and implications for the South African situation. Considering the recent past (1990-1991), the tourism industry in South Africa is booming - though off a low base in international terms - as improved political perceptions overseas and the "curiosity factor" attract increasing numbers of foreign visitors.

Both the Board of Trade and Industry's "Investigation into the Tourism Industry", (which is one leg of a strategy to develop a master plan for tourism development) and the "Strategic Framework for Tourism Development in South and Southern Africa" by the Development Bank of Southern Africa and Satour, establish the importance and implications of an increasing boom in South African Tourism of which tourism stakeholders should take note. (Board of Trade and Industry Report 1990 and Satour and The Development Bank of Southern Africa Report 1991).

The potential impact of the international growth in tourism on the economies of the world, its environment and its people, is of such magnitude that some observers refer to it as the "Tourism Revolution" (Van Zyl, 1990 :3).

These facts and trends provided the inspiration to undertake a

study of how countries and operators in the tourism industry such as hotels, airlines and catering services may be able to provide the needs with which to cope with phenomenal tourism expansion.

The ability to accurately forecast future demand for tourism has become of increasing significance, not only to countries but also to the operators in the various sectors of the tourism industry, enabling them to determine the impact of usage and carrying capacity to make strategic decisions. These include the accommodation, attractions, transport, travel organisation and destination organisation sectors.

It is imperative that tourism forecasting in its entirety be utilized correctly as the economic potential for tourism development is vast. Forecasting, as a tool, provides the predictive edge to potential direct revenues, which may percolate down through many levels of the economy. This creates not only direct, but also indirect employment opportunities and other benefits to destination areas.

Appropriate tourism forecasting would not only provide the concerned parties with valuable information, but would have effects on tourism organisational planning, tourism management, effective resource allocation and many other potential necessities for destinations, attractions, accommodations and others.

Without effective forecasting of tourism demand and trends, a large irreplaceable void in the analysis and planning of tourism in all its facets could result.

1.2 OBJECTIVES OF THE STUDY

The objectives of the study were divided into two categories:

1.2.1 PRIMARY OBJECTIVE

The primary objective was to provide a practical insight into demand forecasting in the South African tourism industry. This would enable tourism stakeholders to utilize the forecasting procedure properly within the framework of planning and strategic decision making.

1.2.2 SECONDARY OBJECTIVES

The secondary objectives of the study were: -

- * To provide an in depth explanation of the various fore-casting techniques available and applicable in forecasting tourism demand. This was done by creating an understanding of the underlying principles of each technique and its correct application in the appropriate situation.
- * To indicate the relationship between forecasting and demand by referring to them in a tourism context.

1.3 <u>HYPOTHESES</u>

The following hypotheses regarding tourism demand forecasting were postulated:-

- Tourism organisations have a general lack of knowledge concerning the value of scientifically based forecasting methods in tourism planning.
- * The need for effective demand forecasting and the choice and use of the appropriate forecasting model or technique in forecasting demand, differs between associated businesses in the various sectors of the tourism industry.

1.4 SCOPE OF THE STUDY

For the purposes of this study the inquiry was conducted on a regional (the Western Cape region of South Africa) and national (other regions of South Africa) level. The reason for this extensiveness was the fact that tourism demand forecasting is generally assumed to be an unexplored field in the tourism industry in South Africa. It may be concluded that the study was representative of the South African tourism industry as a whole.

Due to the above mentioned situation, most of the secondary sources were of international origin complemented by statistical sources of domestic foundation. Where possible a comparison regarding various aspects on a international and national basis were made. For the purposes of the study it was essential to investigate the practical forecasting orientation of businesses in the tourism industry in South Africa.

1.5 METHODOLOGY USED IN THE STUDY

The investigation made use of both primary and secondary sources of information.

1.5.1 SOURCES OF INFORMATION

A number of publications and articles emanating from international published and unpublished sources were used as extremely few sources on the particular subject under scrutiny are available in South Africa.

1.5.2 EMPIRICAL RESEARCH

An empirical study regarding forecasting undertaken by different tourism organisations in the various sectors of the tourism industry in South Africa was conducted to support the analysis of secondary information. A total number of 100 respondents representing the various sectors of the industry were carefully selected to form part of the research. An indication of the categories and types of respondents approached are provided in appendix B (see also section 6.4)

1.6 FACTORS WHICH INHIBITED THE INVESTIGATION

During the course of the study a number of factors which inhibited the research process were identified:

- * Literature sources concerning the subject in South Africa were non-existent. This resulted in an international search for literature pertaining to the subject under review.
- * Through the empirical research it was ascertained that may of the respondents could not complete certain questions due their limited knowledge of the subject.
- * The disadvantages of mail surveys were highlighted, as only
 50 percent of the 100 respondents returned questionnaires.
- * Co-operation from the selected entities was generally satisfactory. However, certain respondents in follow-up telephone interviews were unwilling to give full cooperation.

1.7 IMPORTANT DEFINITIONS AND TERMINOLOGY

For the purposes of the study the following definitions of major terms were provided:-

- Leisure Is essentially the time available to the individual when the requirements of work, sleep and other basic needs have been met.
- Recreation Covers, broadly, any pursuits taken during leisure time other than those pursuits such as overtime, secondary work, child care, homework and various maintenance jobs about the house.

Tourism - A widely accepted definition is proposed by the United Kingdom Tourism Society (Middleton, 1989:7):-

> "Tourism is deemed to include any activity concerned with the temporary short-term movement of people to destinations outside the places where they normally live and work, and their activities during the stay at these destinations".

Demand forecasting - Is the art of projecting the level of demand which might occur at some future point or period in time (Archer, 1987:77).

1.8 STRUCTURE OF THE STUDY

The structure of the study consists of four sections comprising eight interrelated but logically following chapters.

Section 1 encompasses the background to the study and outlines the problems concerning of demand forecasting. Specific attention is given to a broader perspective of demand forecasting by seeing it in the light of a futures research procedure. Demand in a tourism context is assessed by addressing issues like the nature, elasticity, instability and seasonality of demand. The determinants affecting tourism demand are further clarified by appraising the environments affecting demand through a conceptual framework compiled for the purpose.

Section 2 concentrates on the essence of demand forecasting in tourism by elaborating certain forecasting techniques and models with special reference to tourism demand forecasting. Attention is given to the link between the techniques and models and the approaches used. Finally a number of concluding observations are made concerning the forecasting techniques and models discussed.

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Section 3 considers the assessment of tourism demand forecasting by evaluating the results of an empirical investigation. A conceptual framework and a number of evaluative criteria to judge and verify forecasts are considered. The relationship between the preparer and user of the forecast are stressed and potential problems are emphasised. The contribution of demand forecasting in strategy formulation and decision making processes with the aim of realising the enterprise's objectives and goals also receives attention. An "ideal" planning and decision making situation applicable to most types of businesses in the tourism industry is evaluated together with the contribution forecasting can make in compiling a framework of guidelines to be used in the planning process.

Section 4 comprises a number of findings, after which conclusions and recommendations concerning not only forecasting practice as to tourism demand but forecasting in general, are drawn.

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CHAPTER 2

TOURISM DEMAND FORECASTING: ITS NATURE AND ROLE AS A FUTURES RESEARCH PROCEDURE

2.1 INTRODUCTION

A forecast is a product of the future. Tourism demand forecasting, placed in this context, needs examination of its nature and place in futures research. Issues to be discussed begin with a section which includes some essential theory. This will enable the objective of the chapter to be satisfied. Attention is given to underlying premises and laws governing futures research and forecasting, the nature of demand forecasting and underlying principles of forecasting.

The following sub-sections examine the development of techniques and models and the forecasting process, including the presentation of an expansionistic approach for the selection of a model. The final section debates the subject of data and the way in which it influences tourism analysis. The major shortcomings, availability and major problems pertaining to data and its use in the forecasting procedure are discussed.

2.2 PREMISES AND FUNDAMENTAL 'LAWS' UNDERLYING FUTURES RESEARCH AND FORECASTING

Certain fundamental laws regarding forecasting become apparent when examining the premise underlying futures research. Three distinct premises upon which the futures field is based are provided by Amara (1981(a):25):

* The future is not predictable - The degree of uncertainty varies with the domain being examined. Certain physical systems such as the sea and the tides which play a part in certain recreational activities can be determined relatively accurately, resulting in a very low uncertainty. The inherent uncertainty of complex phenomena facing the totolom industry is usually very large, like the social, political and economic systems.

- * The future is not pre-determined It is not fixed or inevitable, even less so in the tourism industry mainly due to tourism managements shortcomings, inadequate orientation and the complexities of the tourism industry. This does not necessarily mean that alternative futures can be formulated.
- * Future outcomes can be influenced by individual choices -Each sector and individual business, big or small in the tourism industry would have to recognize their role in bringing about the desired future state. There are no guarantee however, that exercising their choice will produce the desired outcome or even increase or decrease its likelihood. The first premise would otherwise be violated.

A number of fundamental 'laws' underlying the above premises now need be examined. Research conducted by Flores and Whybark (1985:48) shows that however good the forecast it can only reduce part of the uncertainty that management faces. The future can be partially known by way of scientific methods and techniques. The result being that forecasting should be seen as nothing more than a planning aid. Tourism managers should realize that forecasts should stretch into the future in time for a reaction to the forecast implications. Essentially forecasts and improving them is a continuous process thereby linking it to the amount of uncertainty faced by the tourism organisation.

Subsequent 'laws' only mentioned here but analysed in this chapter and future chapters as indicated by Flores and Whybark (1985:48-52) are:

- * Forecasting should not be done unnecessarily.
- Management flexibility and response to forecast errors are more important than the forecast itself.

- * The benefit to cost ratio of a forecasting technique should be at least one.
- * Simple methods work just as well (or poorly) as ones that are sophisticated.
- * The optimum forecasting method is one that works.
- * Tailor the forecasting method to the problem.
- * The way a forecasting method reacts to unexpected changes is more important than accuracy.
- * There should be a systematic follow-up and evaluation of the forecast produced.

2.3 NATURE OF TOURISM DEMAND FORECASTING

Forecasting is a judgement concerning the future of a variable based upon thoughtful analysis of influential factors on that variable in the past and those expected to influence it in the future. The concern is not only explaining past patterns or analysing existing situations but the planning of a path future tourism development might take is as important. The awareness of future patterns of demand is essential (Pearce, 1989:147).

These future levels of demand may be different commodities, travel volumes and the market share of various destinations or businesses.

Forecasting influences nearly all aspects of planning and decision making process forming an important part of the management function. A tourism business like any other needs accurate and timely information for proper decision making. The business is left to the uncertainties of the future without the information provided by forecasting (Kroon, 1990:86). Forecasting makes it possible for strategic planners to ask the question, "What are we going to do **if** it happens" not "What are we going to do **when** it happens". Forecasting must be seen as a tool which facilitates logical thinking in the tourism industry, aiding and not substituting the judgement of the planner or expert.

Demand forecasting helps managers to assess if future demand and resources can be brought into reasonable balance. For example, the construction of airports, hotels, the provision of transport and other utilities take time and are costly. Demand forecasts therefore provide some indication of the potential demand to be realized, thus preventing a precious waste of resources.

2.4 PRINCIPLES AND APPROACHES UNDERLYING THE DEMAND FORECASTING PROCEDURE

The point of departure for any inquiry into the future is the acceptance of the interconnectedness of reality, the crucial importance of time and the importance of ideas together with mans ability to influence the future (Spies, 1980:3).

Harman (1976:10) identifies six principles underlying forecasting. The discussion of these principles are in no particular order.

- * Holistic trending and cause-effect relationships These principles reflect the integrated nature of tourism demand and the logico-casual relationship between the determinants affecting demand. Harman (1976:11) sees future methodologies such as cross-impact analysis, scenario building and the Delphi technique as deriving their appropriateness from these two principles.
- * continuity Harman (1976:11) implies, that through continuity, social systems change smoothly and not in discontinuous jumps. For example, even though a sea-side village may seemingly experience discontinuous periods of tourist numbers such as a festival being held, much of the

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culture, social roles and institutional framework of that society persists without fundamental change. This principle manifests in trend analysis and extrapolative studies.

- * Internal self-consistency This principle suggests the behaviour of one sector of society does not generally contradict that of another. This principle is basic to scenario writing. Basic tourism research is not likely to flourishing when the economy is depressed.
- * similarities among social systems It is assumed that systems under review can be compared in terms of some fundamental characteristics. Accordingly, one group will tend to behave somewhat like another, under similar circumstances. Analogical forecasting is inherent to this principle.
- * social goal seeking According to Spies (1980:4) possible futures are distinguished by the way society seeks resolution of its dilemmas and new goals that emerge. Normative forecasting is dependent on achieving this goal.

The importance in forecasting is in ascertaining the specific principle or principles which are basic to the models and techniques under consideration. These principles generally serve as implicit assumptions in the construction of a forecast. The appropriateness of the assumptions is central to judging the realism of the forecast.

A short note on primary, secondary and tertiary forecasting is appropriate at this stage.

- Primary forecasting refers to the type of forecast resulting from, amongst others, trend alysis and depicts challenges (or opportunities) to a dual or organisation.
- Secondary forecasts rev. cernative future possibilities depending on action, in other words it presents conditional forecasting.

- Tertiary forecasting incorporates a forecast on the expected action which may result from primary and secondary forecasting (Spies, 1980:6).

The approach to forecasting is essential in deciding the ultimate combination of techniques necessary to make reliable estimates of demand. Many of these approaches relate directly to the principles underlying forecasting and will be discussed in chapter 5.

2.5 FACTORS TO BE CONSIDERED IN DEVELOPING A MODEL

The challenges of successful forecasting are more than just the technical difficulties of developing an accurate model. According to Smith (1989:96) forecasting models and techniques must be developed with a clear understanding of both the nature of the problem for which forecasts are desired and of the resources available to the analyst charged with making the forecast. Stynes (1983:90) identifies four factors that should be considered when developing a forecasting model:

- * The organisational environment
- * The decision-making situation
- * Existing knowledge, and
- * The nature of the phenomenon being studied

2.5.1 THE ORGANISATIONAL ENVIRONMENT

The resources, structures, ways of operating and objectives are unique to each particular tourism organisation. One factor, however, which is common to all organisations is the changing organisational environment from one of control in the 1960s to less control today. According to Beck (1983:7) a series of reasons ranging from a more competitive world, more international trade and active environmental movements, to changes in the proportion of factors which are truly under corporate control. A subjective assessment by Beck is illustrated in figure 2.1.

FIGURE 2.1: THE TOURISM BUSINESS ENVIRONMENT

	IN THE 1960	1983
UNDER CORPORATE CONTROL	80%	40%
EXTERNAL/ UNCONTROLLABLE FORCES	20%	60%

SOURCE: Beck P.W. 1983. Forecasts: opiates for decision makers. A Lecture to the third International Symposium on Forecasting. Philadelphia.

These characteristics influence the goals and types of forecasting the decision-makers in that organisation may The availability of resources such as data banks, undertake. computers, software, statisticians and other technical experts will also influence the type of forecast that can be developed. The forecaster should be aware of all of these aspects of the organisational environment in order to design a model that will function effectively within that environment. This will enable management to act with reference to changes in the organisational environment before the event of a crisis (Beck, 1983: 5).

2.5.2 THE DECISION-MAKING SITUATION

At present the decision maker's dilemma is complicated by the organisational environment in which he/she functions. Some organisations need to make decisions quickly for their immediate future (for example, how to handle the expected influx of tourists to their resort), while others work with a more distant planning horizon and have longer periods available for developing their model (for example, the potential of a tourism boom in the next two to three years).

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Business decisions in the past automatically adjusted themselves to the limitations of the available data and depended on the judgement of the decision-makers. Tourism businesses are now facing the dilemma faced by business decision-makers of the past.

Throughout this century, data collection became easier making it possible to manage more complicated systems which provided the ability to develop more complex structures. The converse is true in tourism business as will be seen in a later section. The level of precision required for a decision is also important is selecting the appropriate forecasting technology. According to Smith (1989:96) the greater the precision required the more complex the model and the longer the lead time.

Figure 2.2 indicates the decision makers dilemma in the present and the past, as applicable to general business decisions and adapted for the tourism business.

FIGURE 2.2:	THE DECISION MAKERS DILEMMA AND THE PRESENT	IN THE PAST
	DECISION MAKERS DILEMMA	
PAST		PRESENT
Simple	SYSTEM	Complex
Short	LEAD TIME	Long
Limited ——	INFORMATION	Limited
Judgement		Confusion
Decision		Indecision

SOURCE: Adapted from Beck, P.W.. 1983. Forecasts: opiates for decision makers. A Lecture to the third International Symposium on Forecasting, Philadelphia.
The level of accuracy required is another aspect directly related to decision making. Precision refers to the amount of detail, while accuracy is a measure of the correctness of the forecast. A forecast showing demand for international air travel between South Africa and the Far East increasing by 80 per ce : is precise but probably not accurate. Simply saying that demand will increase on the other hand may well be accurate but .ot precise.

2.5.3 EXISTING KNOWLEDGE (DATA AND THEORY)

All forecasts are extrapolations of past and present conditions. According to Stynes (1983:88) some types of models, such as trend extrapolation or simulation models, require significant amounts of historical data.

Smith (1989:97) feels that the issue of existing knowledge refers to the forecasters' understanding of and familiarity with forecasting technology and theoretical issues associated with the phenomenon being forecast. The complexity and detail of a given forecasting problem is linked both to the complexity and detail required regarding any decision, and our understanding of the phenomenon being forecast. The forecasting problem must be tailored both to the management problem to be solved and the decision which has to be made.

2.5.4 NATURE OF THE PHENOMENON BEING FORECAST

Numerous phenomena within the tourism industry show a high degree of complexity. Other phenomena, however show high degrees of stability, especially the long-term tourism determinants. For example the percentage of occupancy rates in South African Hotels has remained virtually stable, averaging 42 percent since 1970 (Trends, 1992:81). Figure 2.3 illustrates examples of a number of phenomena. FIGURE 2.3: EXAMPLES OF STABILITY AND INSTABILITY IN SYSTEMS



SOURCE: Follows from the discussion.

Considering graph (A) and (B) the deduction can be made that the discriptor variable is being kept under control. For example, graph (A) could represent the occupancy rates in hotels as described above, while graph (B) could represent an increase in the number of tourists visiting a historical site, some variation in visiting patterns also occur at certain times of the year. The first two graphs show some form of underlying stability.

Other phenomena (local crisis, violence/unrest) and other forces, exhibit dramatic changes from year to year in response to fads. Graph (C) represents instability due to the above-mentioned reasons. Deduced from this, phenomena which show stability are much easier to forecast than ones showing instability.

The forecaster, according to Stynes (1983:88), must take into account the decision to use either: (a) a stogastic model (estimates percentages or probabilities) or (b) a deterministic model (estimates absolute runbers) or (c) a linear (relationship expressed in a straight line) versus a non linear model. The choice between a static or dynamic model will depend on the nature of the phenomenon. According to Smith (1989:97) increased general knowledge of forces that have affected the past behaviour of a phenomenon (bad publicity) can assist in the selection the most useful variables and perhaps even the "best model structure".

2.6 THE EXPANSIONISTIC APPROACH

Managers and forecasters have had to cope with an increasing variety and complexity of forecasting techniques developed in recent years, to deal with managerial forecasting problems. Each technique or model has specific application and must be carefully considered in selecting the correct technique.

The planner is well as the forecaster's role lies in selecting a technique and should see general forecasting as part of the wider system in which it is to be applied: the complex tourism environment. The better the understanding of the range of forecasting possibilities, the more successful will be the tourism business's forecasting efforts.

The author aims to provide an "alternative" methodology (characterised by a search for appropriate knowledge), of inquiring into and ultimately providing the basis for selecting the appropriate model or technique.

2.6.1 GENERAL PERSPECTIVE

All forecasting methods and models make up a joint focused system, compiled from various models and techniques (be it qualitative, quantitative, structural or otherwise). This must be taken into account by forecasters who make reference to the selection of a forecasting model or technique.

According to Strümpfer (in Spies 1988:7), in understanding the above, it is necessary to take cognisance of the fact that a forecasting system is seen in terms of a network of models and techniques. Strümpfer discerns other characteristics regarding the basic premise underlying this methodology, namely:

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- * Systems thinking develops an understanding of structures (models, techniques, methodologies) by paying attention to the regulatory mechanisms of stabilizing relationships (interpretation, utilization, way it is managed).
- * Systems thinking focuses on the essential characteristics and properties of the total forecasting system, (a tool aiding planning, reducing uncertainty).
- * Systems thinking is both holistic (expansionistic for example, understanding the tourism forecasting environment) and reductionistic (for example, analysing the particular processes underlying the particular model or technique).
- * Systems thinking gives equal legitimacy to multiple choice factors in the inquiry process (accuracy, cost, time, data)

2.6.2 ANALYSIS VERSUS SYNTHESIS

To understand a phenomenon, such as a forecasting model, it is necessary to "take it apart", either conceptually or physically, to see how it works.

To understand the Census Decomposition Method, for example, it would be necessary to examine each component, that is, the trend, cyclical, seasonal and residual components separately.

This method of inquiry is termed analysis, a three stage process, which includes:

- 1. Taking apart the technique or model to be used.
- Trying to understand the behaviour of the cyclical and seasonal movements.
- Trying to "assemble" this understanding (obtained from (2)) into an understanding of the application of the forecasting ' technique.

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This belief in the elements is a fundamental underpinning of this view known as reductionism (Ackoff 1981:9).

According to Strümpfer (1990:4), the dilemma is that analysis cannot explain the dynamics of a model, but can help identify and explain static relationships, that is, the way the model or technique is structured. Emphasis is placed on a technique or model which forms part of the forecasting system. The result is, analysis yields nothing more than information.

Synthesis, as analysis is also a three part process which encompasses the following steps:

- To identify the forecasting system as a whole of which the techniques or models to be chosen are a part.
- To explain the properties or characteristics of the general forecasting system.
- 3. To explain the properties of the model in terms of its role(s) or function(s) within the total forecasting system. The technique or model should be seen as a tool which facilitates logical thinking in the tourism industry, thereby aiding and not substituting the judgement of the planner or expert.

The concept of synthesis does not replace analysis but serves merely to expand the focus of the forecaster in his choice of a technique. Therefore synthesis is holistic (expansionistic) in nature.

This sequence shows that synthesis precedes analysis in providing understanding (knowledge about the forecasting systems external relationships that is, how it fits into the wider tourism environment). This gives meaning to the function or purpose the forecasting system serves.

Synthesis occupies itself with the interactions of the technique with other elements in the forecasting environment and with the general forecasting system itself.

2.6.3 MULTIPLE CHOICE FACTORS

Several authors (Chambers, et.al., 1971; Georgoff and Murdick, 1986) have gone only as far as taking the factors such as cost, time and data into consideration in the choice of a model. This approach does not detract from their method of selection, although, through this approach, equal legitimacy is given to multiple choice factors in the process of selecting a model. However, this approach supplements their choice, enabling a more satisfying and logical choice of a model or technique.

These factors, although appearing independent, are formed into a process of interaction, as not one but several are responsible for the choice of a particular technique or model. The factors that need to be considered will shortly be discussed.

2.6.3.1 PURPOSE OF THE FORECAST

The objective of a forecast varies widely. Selecting of a suitable method means that forecasters need to know the <u>amount of detail</u>, (also a consideration which is not examined in detail) and in what form it will be useful in meeting the requirements of managers. Tourism demand may be forecast by market area, by market segment, by region, by monthly season or by some combination of these, enabling individual projections to be combined into an overall picture. One relevant point as indicated by Foster (1987:110) is that the "futuree" (the person for whom the forecast is made) should not try and push the projections beyond the (limited) objectives of the analysis.

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2.6.3.2 TIME HORIZONS

Time horizons over which a forecast has to be made are a significant factor in any planning departments future analysis. Chambers et.al., (1971:49) states "How important is the past in estimating the future?".

The time consideration has two basic dimensions Firstly, the time span for which the forecast has be to made: short term, medium term or long term. Secondly, the time available to produce the forecast.

Wich regard to the first criteria, authors differ on how long the short, medium and long term are. Van Doorn (1982:151) regards the short term to be from naught to three months, the medium term from three months to two years and the long term from two years onwards.

It must be realized that certain techniques lend themselves to better forecasts over certain time horizons. For example, exponential smoothing is definitely not suited to long term projections and can be regarded as providing very poor results, while the Delphi technique provides fair to very good results (Georgoff and Murdick, 1986:122).

One of the operational "laws" of forecasting as proposed by Flores and Whybark (1985:52) is, the shorter the forecasting horizon the less probable a large error.

The second criteria of time can be broken down into development and execution time. Georgoff and Murdick (1986:112) conclude that development time includes the gathering and entry of data as well as the modification of programs to the businesses specific requirements and the start up of the system. The basis is that a forecast should be produced in time to be used.

Execution time is the time it takes to produce the forecast, using a particular technique. Flores and Whybark (1985:J3) conclude: one forecasting method is better than another if it requires less time to implement. Tourism managers, however, will want forecasts to extend as far into the future as possible. The result is that the horizon chosen will undoubtedly depend on management requirements and related factors.

2.6.3.3 TECHNICAL SOPHISTICATION

Models and techniques used in forecasting differ from simple to complex. The complexity lies in the form of integrated computer or mathematical models. The technical sophistication, which depends on the information wanted, detail required and the ability to operate the model or technique has to be considered.

Firstly, Flores and Whybark (1985.50) believe that the defence (or attack) of a forecasting system depends on peoples differing experiences with it. This view is complemented by Moriarty and Adams (1984:241) in that planners and forecasters accumulated experience should be considered in the selection of a forecasting method.

Secondly, the needs of the user must be taken into consideration when deciding upon which forecasting system to implement. Therefore the method selected must be well understood. The interpretation of the results produced by the computer will enable forecasters and planners to strengthen their quantitative skills.

2.6.3.4 COST ISSUES

The cost of establishing and operating different forecasting methods varies widely. The simplest and cheapest method can provide adequate results for some purposes. To meet other needs, highly sophisticated computer models where market research plays a significant role may have an exhaustive appetite for expensiveness (Archer 1987:78). Flores and Whybark (1985:53) add

that one forecasting method is better than another if it is less costly to use. Techniques such as Delphi and market research, for example are qualitative methods which seem to be of the most expensive that tourism analysts may use (Georgoff and Murdick, 1986:122). Other techniques like panel consensus and morphological methods seem to exhibit parity regarding their implementation costs.

2.6.3.5 DATA AND RELATED ISSUES

A section dealing solely with the problems, consistency, variability and other aspects of data will be considered as the author views this problem in a serious light. At this stage a short analysis of the general situation in South Africa is appropriate.

A National Research Coordinator was appointed to establish various research priorities, although only limited and uncoordinated tourism research data existed in South Africa until 1986. The Unit for Marketing Studies at Stellenbosch University is in the process of establishing an elaborate tourism data bank in a further attempt to bridge this "data gap".

Certain techniques, such as time series in the case of trend projection techniques, may require data over a period of time. Casual methods, such as regression models need several years quarterly history to obtain good, meaningful relationships (Georgoff and Murdick, 1986:121-123).

It must be stipulated that data collected should be analysed and filtered before use in forecasting techniques. Many analysts are aware of the maximum 'garbage in' and 'garbage out'. The result being, that if data or information used in forecasting models or techniques is inaccurate or inadequate the exercise would indeed be a waste of effort. According to Kaynak and Macaulay (1984:91) the data sources in tourism however, are not only difficult and costly to reach but the results obtained are quastionable at times.

2.6.3.6 ACCURACY

It is widely accepted that accuracy represents an appropriate criteria for the choice of a forecasting technique. Accuracy is a phenomenon directly related to cost and time considerations.

The use of accuracy in evaluating forecasting performance will be examined in Chapter 7. Short term forecasts have time horizons enabling higher levels of accuracy and consists of forecasts built up from available data. The accuracy in long-term forecasts may be less while according to Archer (1987:78) the emphasis is often placed on forecasting overall levels of tourism demand and then breaking these down into main segments.

The relationship between cost and accuracy increases with sophistication causing the corresponding costs of forecasting errors to be large. Techniques vary in their cost, as well as in scope and accuracy. According to Chambers et.al., (1971:47) this allows the forecaster to trade off cost against the value of accuracy in technique selection. Thus the economic and accuracy justification of the most sophisticated technique should be optimised.

The opinion of Georgoff and Murdick (1986:119) is that accuracy is not necessarily the most important selection criterion. The forecaster may want to forego some accuracy in favour of, for example, a technique that signals turning points or provides good supplemental information.

2.6.3.7 TURNING POINTS

Turning points represent points of exceptional opportunity (for example, improved political conditions) or caution (unrest and friction). Forecasters will want to know which techniques anticipate fundamental shifts. According to Georgoff and Murdick (1986:120) some techniques give false signals. The forecaster must bear in mind, not only a technique's ability to anticipate changes but also its propensity to give erroneous information. Qualitative techniques such as Delphi, for example provide fair to very good indications of possible changes (Chambers, et.al., 1971:48). Alternatively, certain time series analysis techniques, such as decomposition, together with causal methods such as regression, provide very good indications of turning points.

2.6.3.8 FGRECASTING ENVIRONMENT

Difficulty in analysis exists due to the multivariate nature and complexity of the factors affecting tourism demand. Forecasts are thus liable to various forms of error. Important, is to adapt the approach, taking into account the economic, social, political, technological and other factors affecting future demand.

2.6.4 IMPLEMENTING THE EXPANSIONISTIC APPROACH

To explain how this approach may be implemented, an example will be used to provide a clearer perspective of the process. For this purpose the regression-technique is selected.

The first important consideration is the realization that regression is not just a technique independent of other techniques. It is part of a sub-system of casual techniques forming part of a system entailing general forecasting techniques and models.

Necessary to understand in selecting a technique, is the importance of firstly, acknowledging and identifying the total forecasting system, including that of regression. The properties of the total forecasting system should be explained in terms of its goals and aims. An explanation of the characteristics of regression as a forecasting technique in terms of its function within the total forecasting system should follow and is essential. It is necessary to give multiple choice factors, including time, cost and data, etcetera, consideration in conjunction with the latter. Important to realize, however, is that these factors interact with one another in aiding the choice of a model. They are not independent.

2.6.5 CONCLUDING REMARKS

The idea of an expansionist approach is not to replace any form of model selection but to complement and supplement the approaches being used by planners and forecasters. This considers the fact that forecasting techniques are not loose standing but form part of an integral forecasting system. The concept is conceived as an aid in trying to reduce the uncertainty of choosing a forecasting technique or model by acquiring understanding. This approach is diagrammatically shown in figure 2.4. Therefore, "If you cannot handle the problem you are faced with, make the problem bigger" (J.P. Strumpfer, 1988).

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FIGURE 2.4: A DIAGRAMMATIC REPRESENTÀTION OF A EXPANSIONISTIC APPROACH TO SELECTING A FORECASTING TECHNIQUE



2.7 STEPS IN TOURISM DEMAND FORECASTING

The forecasting process begins with a need to make one or more decisions that depend, at least in part, on the future occurrence of some event. The steps to be applied in bringing the act of forecasting to life, is applying the model or technique to a given problem. These steps, which show similarities with market research processes consist of the following steps: (Stynes, 1983; Lucas, 1986; Wilson and Keating, 1990).

- Determining the objectives
- * Defining the forecasting problem
- * Selecting the unit of analysis
- Data considerations
- Selecting the forecasting method(s)
- * Model or technique testing
- * Applying the model(s)
- * Evaluating the forecast
- Forecast Presentation
- * Monitoring and following up results

2.7.1 DETERMINING THE OBJECTIVES

Tourism Managers decisions regarding the importance of the forecast, should be stated clearly. Management should articulate the forecasters role in the decision making process (Wilson and Keating, 1990:352). Any effort devoted to preparing the forecast constitutes a waste of effort, if a decision is taken disregarding the forecast. This problem is created by managers who do not understand or have faith in the forecast. To overcome this problem a rapport must be created between the preparer and user of the forecast.

2.7.2 DEFINING THE FORECASTING PROBLEM

Description of the problem follows the identification of the objectives of the forecast. Proposing what must be forecast is important. "Is a forecast needed of tourists visiting an

attraction?" and "Must the period of the forecast be annually guarterly, monthly or weekly?"

Always keep in mind that a futures or a forecasting problem is almost the direct opposite of a problem regarding the normal science. Simmonds (1977:14) sees these problems as not being aptly-defined, nor precisely-structured. The probabilities of success or failure do not add up to unity. The measurements may or may not be accepted and since there is not normally general agreement on the basic assumptions, communication requires the establishment of a basis and agreed language between the forecaster and the planner.

There must also be decided on whether in relation to the above decisions, this is an ad hoc forecasting problem or a continuous forecasting problem (Middleton, 1989:110).

2.7.3 SELECTING THE UNIT OF ANALYSIS

A further decision which has to be taken is on the aggregation level of the model. This will determine the data considerations or requirements (the following step) (Stynes 1983:92). Forecasting models or techniques may use the individual as the unit of analysis or may forecast from data, about population aggregates. This decision depends on the type of data most readily available.

2.7.4 DATA CONSIDERATIONS

It is necessary in relation to the above to consider the aggregation of the data. According to Wilson and Keating (1990:354) data is often aggregated across both variable and time. It is best however to use disaggregated data. For example, data may be kept for tourists to a particular attraction in total but not where they are from, (province region, or country), or what motivates them to visit: uniqueness, curiosity, heritage and so forth. The data maintained may be kept in quarterly or monthly form for a few years and annually

thereafter. Such aggregation limits what may be forecast in the tourism industry which in turn limits the appropriate sub-system of forecasting techniques to be used.

2.7.5 SELECTING THE FORECASTING TECHNIQUE(S) OR MODEL(S)

There are many techniques or models to select from when making a forecast. Deciding which methods are most appropriate for a particular situation has to be considered. This step is included here to provide perspective to the forecasting process. The topic of selecting the appropriate model or technique has already been discussed in a previous section (see section 2.6).

2.7.6 MODEL TESTING

Wilson and Keating (1990:355), are of the opinion that a pre-test of the chosen model or technique is needed to provide some initial evaluation of how well they work. If a sufficient amount of historical data is available a good approach to test the model is to use a "hold out" period for evaluation. For example, suppose data on bednights sold to tourists is available for ten years on a monthly basis. It is possible to use only the earliest nine years (108 data points) and make a forecast for the 10th year. If the model performs well, the forecast values are compared to the known values for the 12 months of year ten. There is reason to believe that the technique may also work well when the forecast period is indeed unknown.

Stynes (1983:93) elaborates on this view by indicating the best test for any model is an evaluation of how well it performs, based on time. A further dimension added to Wilson and Keating is the importance of evaluating the model in terms of its utility in decision making.

2.7.7 APPLYING THE MODEL OR TECHNIQUE

After pre-testing, the model is ready to be applied to the forecasting problem of some future time period (Stynes, 1983:92). Wilson and Keating (1990:356) recommend using more than one forecasting technique or model where possible. It is desirable for these to be of different types, such as regression model and exponential smoothing technique, rather than two different regression models. The techniques or models chosen should be used to prepare a range of forecasts. It could be possible, for example, to prepare a worst-case forecast, bestcase forecast and a most-likely forecast based along the lines of scenario building.

2.7.8 EVALUATING THE FORECAST

Although the most 'correct' model is chosen through pre-testing, further evaluation of the forecast is needed to ensure that all aspects considered are taken into account: All assumptions made must be reasonable, all calculations and methodology used must be correct and the "solution" to the forecasting problem must be provided.

Various criteria exist in evaluating a forecast. One aspect of significance in the evaluation is the forecasters bias which creeps into the forecast. Certain measures can be used to measure the extent of this bias. Moriarty (1985:354) mentions three criteria, MSE (Mean square error), MAPE (Mean absolute percentage error) and Theil's U- Statistic.

2.7.9 THE FORECAST PRESENTATION

For a forecast to be used as originally intended (an aid to the planning process) it must be presented to management clearly. It must provide an understanding of how the numbers were obtained and that elicits confidence in the forecast (Wilson and Keating 1990:356).

The forecast should be communicated to management both in writing and in oral presentation. According to Nel (et.al., 1988:100) a forecasting project has little value unless its findings are conveyed accurately and effectively to management. Reporting is a communication problem and to be effective it has to meet certain requirements. The structure of the report should follow a logical line of thought from the point of view of the "futuror" and more especially the "futuree".

Managers who read the forecast document generally have little interest in technical matters. They need just enough information to have a general understanding of the technique or model used. They do not need the amount of background and detail enabling them to prepare the forecast themselves. Wilson and Keating (1990:386) propose that tables should be kept relatively short as it would not be desirable to include an entire history of the data used in the forecast. The most recent observations are usually sufficient. The oral presentation should follow the same level as the written document where elaborate use is made of over-heads, slides and others. One important aspect of oral presentations, is the excellent opportunity for discussions and clarification, which provides the manager with a more complete understanding of the forecast and confidence in its usefulness.

Beck (1983:8) indicates:

"....the, use of forecasts does, of course, make the decision makers role so much easier. Complicated analysis have been done, the experts have looked at it all, they have provided the decision-makers with neat summaries, tables, graphs. If the decision-maker uses them, without necessarily being able to understand or comprehend them, he has in effect abdicated much of his power".

2.7.10 MONITORING AND FOLLOW UP OF RESULTS

The work of the preparer and the user of the forecast is not complete after the presentation and incorporation of results into relevant decisions. The process continues. Deviations from the forecast and the actual events should be discussed in an open, objective and positive manner. The objectives of such discussions are to understand why errors occurred and to determine whether the magnitude of the errors was sufficient to have made a difference in the decision aided by the forecast and then re-evaluate the entire process with the intent of improving performance in the next round of forecasting. Input from both managers and technicians is important for the continual refinement of the forecasting process.

From this it is possible to see that the forecasting process forms an integrated whole starting with the formulation of the forecasting objectives and ending with the inference of monitoring and updating results. It is necessary to define the forecasting objectives precisely, for they run like a golden thread through the entire process.

2.8 DATA IN TOURISM DEMAND FORECASTING

There can be little doubt that consensus exists between various authors (Archer, 1987; Martin and Witt, 1989; Allard, 1989) over the question of data in tourism. Be it the availability, consistency, variability or reliability thereof.

2.8.1 PROBLEMS WHICH COMPLICATE DATA ANALYSIS IN THE TOURISM INDUSTRY

Smith (1989:8) stipulates five main considerations regarding the analysis of data, and the author a sixth. The six considerations deserve elaborate description as a result of the complexity of the problem facing the tourism industry in this field. They are:

- Lack of credible measures;
- * Diverse industry;
- Geographical phenomenon;
- * Unorganized industry;
- * Uncertainty.
- * Tourism management and Goverrment "support"

2.8.1.1 LACK OF CREDIBLE MEASURES

Smith (1989:9) indicates various situations which result in the lack of credibility. There are amongst others, the inadequacies of data in the industry brought about by firstly, potential double-counting brought about by, for example, an hotel with a restaurant and bar.

Secondly, the data collection problem is compounded by omissions of data. This stems from the classification of businesses into one category under the Standard Industrial Classification codes (Nel, et.al., 1988:278).

Thirdly, further omissions occur when an establishment conducts a significant volume of tourism business but most of its revenue is earned from other sources.

Lastly, the simple counting of tourists in an area is not as simple as it may seem because of the various types of tourists which exist.

2.8.1.2 DIVERSE INDUSTRY

The diversity of tourism organisations in the industry makes it difficult to conduct precise data counts. Besides the direct providers, support services, and tourism development agencies, other businesses also contribute to tourism activity such as accounting and insurance entities which may be ignored.

2.8.1.3 GEOGRAPHICAL PHENOMENON

Tourism data is complicated by the fact that tourism exists differently in a city than in a town. This results in a lack of precision, rendering forecasts undertaken using that data, useless. Disparity in the data collected from various places is the result of no uniform data collection methodology being available, mainly because of the geographical situation of the industry.

2.8.1.4 UNORGANISED INDUSTRY

One of the major factors affecting coordinated data research and collection is the lack of co-operation which exists within the industry. For example, Esterhuyse and Spies (1990:38) indicate that in the Western Cape the following tourism weaknesses concerning this problem, may be highlighted:

- * The bureaucratic orientation and lack of initiative displayed by some tourism institutions.
- * A lack of co-ordination and co-operation between the public and private concerns.
- * Disharmony between members of tourism organisations.

The result being, co-operative data collection and data sharing agreements are especially rare as parties fail to see the advantages. A possible reason may be that the majority of tourism businesses are small to medium sized firms. Thus they ignore the value of co-operation due to the lack of organisation in the industry itself.

The author is of the opinion that in a South African context these problems may be further complicated due to lack of interest, funding, manpower and various socioeconomic determinants which make a joint effort unrealistic.

2.8.1.5 UNCERTAINTY

It is generally believed that tourism is about to become the worlds largest industry and the need for data and information will continue and increase as the decision-making environment within these businesses becomes more complex. The need for anticipating future levels of demand will undoubtedly lead to an encompassment of the complex forces affecting the evaluation of the tourism industry.

2.8.1.6 LACK OF TOURISM MANAGEMENT AND GOVERNMENT SUPPORT

A factor not considered by Smith (1989), are the inadequacies in tourism management and government "intervention". The author is of the opinion that tourism managements inability to coordinated the previous shortcomings by providing an integrated structure, is a direct result of not coordinating their own research activities. Should they do so, they would aid not only their own businesses, but the industry as a whole.

The governments lack of understanding, concerning the potential of the tourism industry, has further inhibited structured data collection. What is needed is for the government through national bodies like Satour to channel funds to tourism research units such as at the Cape Technikon. This would enable these units, by carrying out the necessary research and data collection, to provide a valuable support base for the various tourism businesses wishing to undertake forecasting exercises within their planning framework.

2.8.2 A POSSIBLE REASON FOR FAILURES IN FORECASTING IN THE TOURISM INDUSTRY.

2.8.2.1 DATA AVAILABILITY

The forecaster must consider the extensiveness, currency, accuracy and representativeness of the available data before choosing a technique. The difficulties inherent in the above is compounded by the lack of adequate data in forecasting tourism demand (Archer, 1987:84). Tourism data is in general far inferior to those of other sectors. Despite the efforts made by several international bodies, no unifying data system exists and data from different countries and regions are difficult to compare.

2.8.2.2 VARIABILITY AND CONSISTENCY OF DATA

Difficulty in specifying a comprehensive model is complicated further by the inadequacies of data. It is the opinion of Gunadhi and Boey (1986:240) that much of the data is either inaccurate or unsuitable for the desired purposes. This is endorsed by Archer (1976:15) from the point of view that forecasts may be unsuccessful if based upon poor quality or insufficient data. Published tourism data frequently fails on both counts and in such cases, forecasters are often compelled to carry out expensive surveys to gather data to calibrate the models or techniques. It is essential that sufficient funds be made available to support the necessary data collection.

The consistency of data in various forecasting models, such as regression, may be observed by looking at the kind of stable relationships that the models independent variables (represented by the external stability dimension) display. While most trend based quantitative forecasts might use expected levels of urbanisation as a basis in determining tourism demand for a particular region (the Western Cape for example), the forecast model may not reflect changes in the average number of people who participate in tourism over time.

These relationships sometimes do change but any variation according to Georgoff and Murdick (1986:112) is usually so gradual that it will not affect a short-term forecast. A qualitative method (Delphi, for example) may be more suited to long term forecasts where substantial change may be expected (Kaynak and Macaulay, 1984:92).

2.8.3 DATA NEEDS IN TOURISM DEMAND FORECASTS

Leibold (1992:39) is of the opinion that the numerous problems and challenges associated with market measurement in tourism are not insurmountable. It seems that market measurement of the domestic tourism market is still desperately inadequate. This could have major consequences for tourism businesses and organisations at national, regional and local level, were data requirements vary.

2.8.3.1 NATURE OF DATA REQUIRED IN TOURISM DEMAND FORECASTING

Data collection needs to be largely quantitative for use in forecasting models and techniques (in other words, "how many", how much spent", "when", "where"). This will facilitate the collection of data with reference to: (a) the volume of tourism traffic to different destinations; (b) tourism expenditure en route and at the destination; (c) other characteristics such as: length of stay, time of visit, purpose of visit or mode of travel.

Holloway (1989:18) indicates the emphasis in tourism research has shifted to include the more qualitative aspects of tourism - for example, why people travel. The incorporation of qualitative factors into a model or technique provides some difficulty for forecasters. This subject is being addressed by modelers.

2.8.3.2 SOURCES OF DATA: INTERNATIONAL AND NATIONAL

Sources of data, for those persons wanting to undertake forecasting are available on an international and national level. Global tourism statistics dealing with tourism traffic flows, expenditure and trends over time are produced and collated annually by the World Tourism Organisation (WTO) and the Organisation for Economic Co-operation and Development (OECD). These statistics are published in the WTO's World Tourism

Statistics Annual Report and Tourism Compendium and in the OECD's Annual Tourism Policy and International Tourism (Holloway, 1989:17).

Allard (1989:422) provides numerous examples of how various countries collect tourism data and the type which needed to serve as input in making tourism demand projections. Britain employs the British Tourism Survey Yearly and British Home Tourism Survey in obtaining statistics on a national level (Holloway, 1989:17). South African tourism data is made available through the Central Statistical Services and other government bodies (for example, Satour and Fedhasa). Surveys of any repute regarding domestic tourism are desperately lacking (Leibold, 1992:38-39). Any survey undertaken is usually on a ad hoc basis. See chapter 6 for an evaluation of data sources used by tourism businesses and organisations in South Africa.

2.8.3.3 CATEGORIES OF TOURISM DATA REQUIRED

Leibold (1992:32) identifies three main categories of tourism data requirements.

- * Volume traffic flow enumeration such as number of arrivals and length of visits and stays.
- Expenditure measuring spending at the destination and during the journey, in total and category of expenditure (aggregation a fundamental decision in forecasting).
- Characteristics providing information on the profiles and behaviour of tourist to be determined as far as possible on a quantitative basis for use in forecasting models.

2.8.3.2.1 VOLUME

Data or statistics which fall within this category can be classified. Firstly, by the number of tourists visiting a destination or an attraction over a required period. (For example, a year, season or an event). Secondly, the average length of stay: (measured by day, night, week or some other unit of analysis falling within this category).

For example, accommodation records are useful if operated efficiently, however, in terms of most tourism data collection requirements a destorted view is given as not all types of accommodation are catered for, (for example, small guest houses, camping/caravan sites a d private houses) providing tourist accommodation.

2.8.3.2.2 TOURISM EXPENDITURE

Tourism expenditure data is usually available on a national level (mostly only estimates) with the result that they may only be of use to National Tourist Organisations. Individual tourism businesses may obtain data from tourist services (which are only estimates of actual tourist spending). The use of primary data is most desirable in forecasting but may result in a need for expensive surveys. This would only be possible if the necessary funds were available.

2.8.3.2.3 TOURIST CHARACTERISTICS

Types of characteristics become important to forecasters when they are able to be quantified. Efforts to incorporate qualitative data into forecasting is being made by the use of expert systems (Wilson and Keating, 1990:364). These characteristics concerning geographic, psychographic, demographic and need traits are all factors needing consideration when compiling expert systems. Allard (1989:420) indicates the following major characteristics.

- * Nationality, sex, age, place of residence.
- * Socioeconomic and demographic characteristics
- * Image of the country or area visited as a place of tourism
- * Reasons for taking the trip.

- Travel preferences, for example,. alone or in groups independent or inclusive tours.
- Accommodation and activity behaviour at the destination.
- Their opinion on prices, quality of service, tourism facilities
- * Benefits sought and expectations.
- * Degree of satisfaction after the trip.

Tourism operators, planners, analysts and decision-makers need to recognize the fore-going issues, problems and challenges and prepare to confront them. The tourism industry in South Africa is moving into times of change, necessitating the need for new skills and new ideas to meet the forecasting challenges and take advantage of opportunity, by appropriate forecasting.

2.9 SUMMARY

This chapter was an attempt to provide some essential and important underlying principles and methodology as basis for further discussion. Three sections were distinguished in which important issues in tourism demand forecasting were addressed.

The first section made it apparent that forecasting should be seen as an aid to assist systematic and logical planning in tourism businesses and never to ignore the so-called "self fulfilling prophesies". Attention was given to basic principles of futures research of which forecasting is a product. The second section concerned the factors to be considered in developing and choosing a model or technique and a description of the forecasting process. The latter emphasised the importance of pre-testing and evaluating the chosen model. To complement the choice of the "right" model under various circumstances the author proposed an expansionistic approach to expand the present method of selection and thought.

The final section reviewed the question of data in tourism were aspects such as the availability, consistency and variability thereof were examined. This could be regarded as one reason for the numerous forecasting failures which occur in tourism analysis. Attention was given to factors which inhibit coordinated data collection. Data needed to forecast demand successfully and categories of data available to forecast was further stressed. By debating these issues a basis was laid for the discussion in chapter 3 of the nature of demand and how it fits into the tourism forecasting context.

CHAPTER 3

THE NATURE OF TOURISM DEMAND IN A FORECASTING CONTEXT

3.1 INTRODUCTION

To understand the concept of demand and its various connotations including potential, actual and deferred demand, the discussion in this chapter focuses on placing demand in a tourism forecasting context. As demand is generally seen to be a broad and imprecise term it is necessary to examine the nature of demand from a tourism point of view and how demand is affected by instability and seasonality.

The following sections focus on portraying the link between demand and supply. From this it is possible to explain a systematic, geographical and systemic interaction. When forecasting demand some form of quantitative data is required. For this reason it is necessary to examine the measuring of effective demand on a propensity and frequency basis through an international and domestic comparison of the process.

A factor generally concerning many planners and which could be described as unpredictable is the various forms of demand. Situations in which tourism businesses frequently find themselves regarding the under-demand or over-demand for their facilities and/or services are addressed. The final section of the chapter concertrates on a international and domestic perspective of the evolution of demand over the past three decades. This explains the growth being experienced in tourism and the importance of forecasting future potential demand.

3.1.1 THE COMPLEXITY OF THE TOURISM INDUSTRY: A SYSTEMS PERSPECTIVE

At this stage it would be appropriate to provide certain characteristics which apply to complex systems enabling a better understanding of its functioning through a systems perspective.

The complexity of the tourism industry and other complex systems according to Spies (1980:48) is the biggest constraint facing forecasting in the social field.

The following characteristics can be seen as applicable to complex systems:

- * They are of high order, that is, a large number of variables are needed to describe the condition of the system, as is the case with the tourism industry.
- Social processes are predominantly non-linear. This together with the multiple feedback loops make complex systems so highly insensitive to most systems parameters.
- * Systems like the tourism system are often counter-intuitive, that is, cause and effect are no longer closely related in time or space. Causes of a symptom may actually lie far back in time or in some distant sector of the tourism system. For example, the system of segregation in South Africa as applied over the last 40 years has had enormous implications for the tourism industry.
- * The sensitivity of system parameters vary considerably. An example may be the opening of facilities such as hotels, resorts and five star restaurants to all races.

3.2 THE NATURE OF TOURISM DEMAND

Demand is one of the more complex aspects of tourism, defined and measured in a variety of ways, at a range of scales. According to Smith (1989:99) demand is an ambiguous word with several definitions used by tourism analysts.

The most traditional definition, is that of the neoclassical economics: Demand is the quantity of a good buyers wish to purchase at each conceivable price (Begg et.al., 1984:45). Pearce (1989:109) believes, in standard economic terms, demand is generally taken to mean the quantity of goods or services that consumers, in this case tourists, are willing to buy at a specific price in a given period at a particular place. The above situations support the statement that demand can be seen to be a very broad and imprecise term.

It is however, necessary to distinguish between demand and quantity demanded, for example, the number of bednights in a hotel. The first instance of demand describes the behaviour of buyers or tourists at every price, on the other hand, the term quantity demanded makes sense only in relation to a particular price.

The conclusion can be drawn that considering other things equal, the lower the price of an airline ticket, for example, the higher the quantity of seats demanded, with the converse also being true. Demand in this sense, can be shown graphically. Figure 3.1, the demand curve shows the relationship between price and quantity demanded.

The example, shows the price of hotel rooms or the price of entry to an attraction. For example, price of a historical sight is measured on the vertical axis with corresponding numbers of rooms or people measured on the horizontal axis.

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SOURCE: Adapted from Archer, B.H., 1976. Demand Forecasting in Tourism. Bangor Occasional Papers in Economics, No 9. Wales: University of Wales Press: 3

The points A and B indicate that at a price of R60 and R50 respectively, a quantity or 80 rooms is demanded at a price of R60 per room, but at R50 per room, ten more rooms are demanded each day, therefore 90 rooms. By plotting a number of points and linking them together, the demand curve is portrayed. As expected it has a negative slope indicating that larger quantities are demanded at lower prices. The result is an inverse relationship between price and consumption.

According to Wahab (1975:91) this relationship is seen as follows:

" Because of the difficulty involved in relating the volume of demand to so many variables at once, economists attempt to isolate what they consider to be the most influential variable or few variables and to relate the demand

volume to changes in them, assuming all other elements constant. In this way, for example, demand is usually expressed in relation to price.

While this might be accepted in certain commodities where prices are the most pervading factor, in tourism the functional relationship involved in demand is not that simple. The multitude of factors that intervene to induce consumers (tourists) to travel to certain destinations or to refrain from doing so operates in such a complex manner as to justify a different concept of demand".

It appears that tourism demand is seen as a function of not just price but numerous factors which influence it in a number of different ways. An elaborate discussion of the factors generally seen to influencing demand and their effect is provided in chapter four.

Pearce (1987:21) sees demand more generally, in the light of the relationship between the individual tourists desires or motivations to travel and their ability to partake in tourism activities. Motivation as a factor for tourism participation and factors which inhibit tourists from participation will receive extensive coverage in chapter 4.

Wahab (1975:92) expresses a 'different concept' of demand mathematically in the form of the following equation:

DA _{ij} =		M.T.F.W
	-	R

Where:

DA = actual demand

ij = from point (i) to destination (j)

M.T.F.W = man-time-finance-will

R = resistance for various reasons amongst which are distance, cost, competition, political instability, bad image and lack of appropriate facilities.

Wahab's and Pearce agree that the relationship between the individuals desires or motivations to travel and their ability to do so is largely a function of time, cost and the resistance factors mentioned in the above equation).

Smith (1989:99) agrees with Pearce and Wahab by discerning that demand can be used to refer directly to a forecast of future consumption, (tourists motivations and ability to travel during some future period).

Demand in the sense of future participation is seen as a function of many variables, not just price. It also refers to the anticipated mix and values of those variables that affect demand. Demand as future consumption is thus both broader and narrower than the neoclassical definition by including more variables.

As mentioned before the tourism industry is very complex which makes the analysing of demand important. According to Barnett (1988:28) demand analysis encompasses four steps:

- * Define the market or field
- * Divide total industry demand into its main components
- * Forecast the drivers of tourism demand
- * Conduct sensitivity analysis

Firstly, it is necessary to define the market or field. The problem is compounded by the fact that the tourism field, although complex, is very poorly defined (Smith, 1989:9). Secondly, it is necessary to divide total industry demand into its main components: "What are the dynamics and components of the system for which the forecast has to be made?" Demand for South African tourism, for example, could be divided into demand for her game parks, resorts, and attractions.

Thirdly, it is necessary to forecast the drivers of tourism demand in each segment and how they are likely to change. It will be necessary for example, not only to forecast potential

tourist demand for a resort but to make econometric forecasts of the economy in general. Other relevant drivers which fall within this category, for example factors directly influenced by the economy, such as the price of entry to the resort and inflationary expectations which affects the tourists disposable income must also be forecast.

Lastly, to understand the critical assumptions implicit in any form of forecasting, it is necessary to conduct a sensitivity analysis investigating the causes which may bring about changes in future demand. It is possible, for this purpose to use techniques such as relevance trees and cross impact analysis (see chapter 5) to asses and gauge the potential risks.

The analysis taken further, it may be possible in a tourism context to focus on either the individual tourist or tour party. The patterns for individuals tend to be more complex and have a higher degree of variance according to Smith (1989:102). The main reason for this is that large numbers of individuals tend to average out the idiosyncratic behaviour of single individuals. Larger groups on the other hand, tend to display more stable patterns that cluster around a mean value.

3.3 THE ELASTICITY OF TOURISM DEMAND

Elasticity is a concept closely tied to the neoclassical definition of demand (Smith, 1989:102). Economists express the relationships between tourist demand and the determinants of demand (see chapter 4) in terms of elasticity, that is the degree of demand responsiveness to changes in price structures or changes in various economic conditions of the market (Pearce, 1989:126).

The measure used, is the coefficient of elasticity which measures changes in demand (number of arrivals, bednights sold) resulting from the same change in the determinant, (income, air fares, ground costs).

The elasticity coefficient can be obtained from the formula:

Elasticity coefficient

Percentage change in demand Percentage change in determinant

According to Foster (1987:106) the elasticity of demand in tourism is due to income and price elasticity.

3.3.1 PRICE ELASTICITY

Price elasticity of demand is the percentage change in the quantity of goods demanded, divided by the corresponding percentage change in its price (Begg, et.al., 1984:70). Figure 3.2 illustrates the nature of price elasticity.

At a price per unit of R50 the quantity of tourism demanded is 75 rooms. A rise in price to R100 per unit creates a fall in demand from 75 to 50 rooms. For this change the price elasticity is (100 - 50) / 100 divided by (R50 - R75) / R50. If the demand curve is not a straight line, as is almost always the case in tourism, price elasticity is expressed as:

$$\frac{dQ}{Q} \quad \frac{dP}{P}$$

where price elasticity varies at each point along the demand curve. It is unwise to measure elasticity over large price changes, since the resultant average may conceal small but important variations.
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FIGURE 3.2: THE PRICE ELASTICITY OF DEMAND FOR TOURISM



SOURCE: Adapted from Archer, B.H., 1976. Demand Forecasting in Tourism. Bangor Occasional Papers in Economics, No 9. Wales: University of Wales Press: 9

Another important concept in demand analysis is the crosselasticity of demand between different products. Reference has already been made to the part played by competing and substitute goods and services in influencing the demand for a particular tourism product or service. Cross-elasticity is a measure of the degree of influence which they exert (Archer, 1976:7). The actual calculation of cross-elasticity involves dividing the proportional change in the price of an airline ticket into the proportional change which takes place in the demand for South African tourism. According to Archer (1976:8) few demand forecasters consider tourism data accurate enough in practice to attempt to measure cross-elasticities.

Generally, elasticity typically falls as one moves down the demand curve to an important dividing line which occurs at the demand elasticity of negative one. Demand is elastic if the price elasticity is more negative than negative one (Samualson

and Nordhaus, 1989:424). Lucas (1986:519) adds that demand is elastic if the price elasticity is greater thar one.

Demand is inelastic when the price elasticity lies with in the range of negative one and naught and conversely between naught and one. When demand elasticity is exactly negative one it is referred to unitary elasticity (Begg, et.al., 1984:73).

Figure 3.3 provides a graphic illustration and a better understanding with regard to the distinction between demand being elastic and inelastic. The steep demand curve in figure 3.3 (a) indicates that a large change in price has relatively little effect on the consumption. The conclusion drawn is that if the consumption changes at a percentage rate lower than that of a price change (a steep line) the commodity is inelastic.

The flatter line in figure 3.3 (b) reflects large changes in consumption associated with a modest change in prices. Conversely, if the consumption changes at a rate faster than changes in the price (a flatter line), the commodity is elastic.

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FIGURE 3.3: THE EFFECT OF TOURISM DEMAND ON THE EQUILIBRIUM PRICE OF HOTEL ROOMS AND THE FLUCTUATIONS IN THE NUMBER OF ROOMS



SOURCE: Adapted from Lucas, G.H.G. (ed.), 1986. Die Taak van die Bemarkingsbestuur. Kaapstad: Nasionale Boe':drukkery: 520.

Wahab (1975:94) considers tourism demand to be highly elastic, that is, it has a high co-efficient value.

However, there are a number of factors which influence the elasticity of demand for tourism products and services. Lucas (1986:519) mentions the following four factors:

- * Availability of substitute tourism products
- * Price relative to the consumers purchasing power
- * Perishability of the product
- * Importance of the product from the consumers viewpoint

Firstly, the availability of substitute tourism products and services. Hotel accommodation for example may be substituted for a caravaning experience. Secondly, the ability of the tourist to buy a package tour, in addition to other important products and services having higher purchasing priorities in their lifestyle indicates the importance of price of products relative to their consumers available purchasing power. Thirdly, the perishability of the product due to the inconsistency of demand due to variations and seasonal fluctuations. Lastly the degree of importance with which the tourist regards that product further influences elasticity.

Two major characteristics of commodities influence their degree of elasticity. Necessities tend to be inelastic, for example, food staples, like bread, show relatively little short term variation in consumption due to changes in price The purchase of luxury goods in contrast which include many tourism products and services, according to Smith (1989:103), tends to be elastic. This is endorsed by Wahab (1975) and Gunadhi and Boey (1986).

3.3.2 ELASTICITY OF INCOME AND ITS REPERCUSSION FOR TOURISM DEMAND

Elasticity may also be examined from the perspective of Income. Income elasticity describes the change that takes place in the (incremental) volume of demand because of (incremental) changes in income of the potential tourists (Foster, 1987:106). According to Smith (1989:103) this shift is of special value to tourism analysts because of the close relationship between the ability to pay for the tourism experience (measured by income) and the willingness to pay for them (measured by demand).

Nel et.al., (1988:535) indicates the following addition to the definition proposed by Foster: that income elasticities can be seen as the relative (or proportional) change in real amount spent, expressed as a proportion of a relative (or proportional) change in real income. Income elasticities are a measure of the influence of a given change in income on the demand for a product. The income elasticity of demand in figure 3.4 at any particular income level, say R100, is the proportional change in demand, (R50 - R120)/R50, or D/D, divided by the proportional change in income, that is, (R100-R400)/R100, or R/R. It can be seen that, if the demand line were drawn as a curve rather than as a straight line, (as is the case in South Africa due to the unequal distribution of income per capita), the measure of income elasticity would be:

dD		dR
D	Ŧ	R

The income elasticity of demand changes at each point along the curve except in the case of a straight line. Consequently it is rather meaningless to measure income elasticities for large changes in income since the resultant figures are the averages of many small changes and may conceal some wide variations from the mean.



FIGURE 3.4: THE INCOME ELASTICITY OF DEMAND FOR TOURISM

SOURCE: Adapted from Archer, B.H., 1976. Demand Forecasting in Tourism. Bangor Occasional Papers in Economics, No 9. Wales: University of Wales Press: 9.

An income elasticity of 1 indicates that demand for a product will rise by the same percentage as income (Beg<u>ent.al.</u>, 1984:83). A 10 percent increase in real income for instance, will cause a 10 percent increase in the demand for that product. Smith (1989:103) describes this as unitary elasticity.

An income elasticity of less than one will give rise to a less than proportionate increase in the demand for that product as income rises. These goods are referred to as normal goods. Referring to table 2.1: food has a weighted average income elasticity of 0,62 for all population groups with the general population having an increase of 10 percent in their real income, the demand for food would only rise by 6,2 percent.

A normal good has a positive income elasticity of demand, therefore commodities that are purchased at only slightly elevated levels as income rises have low elasticity. Luxury goods are goods that have an income elasticity of greater than one (Begg, et.al., 1984:83). Expenditure on these types of goods, rise at a rate faster than income does. Tourism products fall into this class.

Average income elasticity has been weighted in table 3.1 for recreation, entertainment and holidays of 1,36 and 1,70 respectively. Assuming a 10 percent increase in real income, demand for recreation, entertainment and holidays will increase by 13,6 percent and 17,0 percent respectively.

Finally, inferior goods are goods that have negative income elasticities regarding demand (Nel, et.al., 1988:535). This indicates a decrease in the absolute sum of money spent on the product when income rises.

TABLE	3.1:	THE INCOM	E ELASTICITIES	OF	DEMAND	FOR	CONSUMER
		GOODS AND	SERVICES		- statute	- 04	CONSUMER

CATEGORY	Average for the population			
Food	0.62			
Transport	1.34			
Holidays	1.70			
Recreation/Entertainment	1.36			
Insurance/Funds	1.75			

SOURCE: An extract from Farguhar, J. (ed.). 1991. BMR's identification of markets. Market Place 13 (5). 18 March 1991:24.

The tourism industry, being complex, requires further analysis of income and price components in determining the demand elasticity of tourism for a particular country. It is essential to divide these components into sub-components, enabling a more meaningful analysis of the income and price coefficients of elasticity. According to Gunadhi and Boey (1986:242), where prices are concerned it would be necessary to take hotel prices, shopping prices and exchange rates into account when analysing the price coefficient.

3.4 THE INSTABILITY OF TOURISM DEMAND

Instability is a phenomenon affecting large, medium and small tourism businesses alike. It is apparent that there are various factors which cause tourism to be subject to the instability of The resulting problems effect planning as well as demand. increasing the business risk. According to Foster (1987:105) several reasons can be embroidered on. Firstly, the pronounced seasonal variations and high elasticity of demand, as described in the previous section are very profound. Further factors affecting businesses are the sudden and often unpredictable impacts of external and environmental factors. Numerous examples can be sighted including a possible economic recession or boom which may depress or increase demand. Certain destinations go out of favour for political reasons and boycotts, as has been the case in South Africa in the middle 1980s. Sudden political

changes in host countries may result in the opening or closing of frontiers and the possibility of health hazards has required a new attitude by many tourists.

Another factor is the quantitative and qualitative changes in the demand structure, sometimes for no apparent reason. It is possible that tourists tastes and preferences may change for predictable or unpredictable reasons. Often it may be just a fashionable occurrence to move from one holidaying country to another or from one resort to another. This instability is compounded by the fact that little customer loyalty to destinations or to modes of transport, type of accommodation and travel trade intermediaries is shown by the tourist.

The instability of demand or demand fluctuations can be placed in perspective by inquiring into demand on a weekly or daily basis. It is possible that on a weekly basis, wine estates may fluctuate from 20 percent of their normal quota of visitors during the week to 80 percent at weekends. However, on a daily basis, seats on a scheduled air flight may be 95 percent full at 08:00 hours, while seats on flights at midday may be only 45 percent full.

These demand variations are acute because of the perishable nature of tourism products (Middleton, 1989:26). A fact which has to be considered carefully when doing strategic planning and the forecasting of potential demand.

3.5 THE SEASONALITY OF DEMAND: A SOUTH AFRICAN PERSPECTIVE

As a result of the seasonality to which the tourism industry is subject, a situation arises that at certain times of the year the industry experiences a larger than normal demand than at other times.

This, in South Africa could be attributed to the weather and climatic conditions. There can be no doubt that sectors of the industry which concentrate on summer activities experience a decline in visitors during winter months.

The seasonal movements or seasonal variations refer to the identical or almost identical patterns, which appear to occur during corresponding months of successive years (Ward, 1978:124). These movements may be due to recurring events which take place annually, for instance due to habit, climate or tradition.

Seasonal variations in demand may be caused by institutional factors not under control of the tourist. These would include events such as school holidays, and factory or office annual vacation periods. It is further possible that it may be geared to a specific event such as carnival time in Rio, the Cape Festival in Cape Town or the Durban Tattoo.

However, the length of seasonality differs from business to business. According to Middleton (1989:28), many tourism businesses fluctuate from peaks of 90 to 100 per cent capacity utilization for sixteen weeks of the year to troughs of 30 percent or less for twenty weeks of the year.

An attempt to understand seasonal fluctuations makes it appropriate to quantify the 'seasonal factor' by the use of indices, thereby giving a clear indication of seasonal variations.

For this purpose, it was decided to use the data of bednights sold to all tourists in South African hotels on a monthly basis over an eleven year period (1980-1990) as an example.

The seascral factors applicable to each month are plotted in figure 3.5 (see APPENDIX A for calculations). It can be derived that three distinct periods of seasonality prevail. A seasonal factor of above 12 for the ten year period is recorded for March and April and in December a seasonal factor of above 13. However, in June a seasonal factor of less than 10 is observed.

The possible reasons for the tuations from a domestic viewpoint vary, for example 1 holidays in March and April, the farmers at seasons en . Easter vacation. However

in December the hight of the summer season, school and company vacations causes the demand for hotel beds to rise substantially.

The occupancy rate of hotels is substantially lower at the height of the winter season in June, which could be the result of unfavourable weather conditions.



SOURCE: Compiled from information listed in Appendix A

Seasonality is a factor which tourism planners and forecasters cannot afford to ignore as the under utilization or overutilization of tourism facilities could spell disaster not only for a particular business but the region as a whole.

3.6 DEMAND SITUATIONS WHICH AFFECT INTEGRATED PLANNING IN TOURISM BUSINESSES

The approach as to how demand is managed is unique to every size of tourism business. The appropriate measures on how to handle demand needs to be undertaken with caution. To this end, for many tourism businesses the ideal situation originates when demand for that businesses product (air line seat, hotel room) is created and maintained.

Significant to tourism planners, are situations of underdemand and overdemand (Kotler, 1973:42). Four specific demand states make up underdemand: negative demand, no demand, latent demand and faltering demand. Overdemand is made up of a further two states namely, overfull and unwholesome demand.

3.6.1 UNDERDEMAND

3.6.1.1 NEGATIVE DEMAND

Kotler (1991:12-13) defines this state as the situation where all or most of the important segments of the potential market, dislike the product and may conceivably pay a price to avoid it. Examples pertaining to tourism and travel may include a large number of travellers that have a negative demand for air travel, while others may be negative toward rail travel. Places such as the North Pole and desert wastelands are perceived negatively by most travellers.

3.6.1.2 NO DEMAND

This is a state in which all or important segments of a potential market are uninterested or indifferent to a particular object. Due to the inadequate marketing and promotion by destinations, no demand is experienced as the relevant market has no knowledge of the destinations presentations.

3.6.1.3 LATENT DEMAND

This particular state of demand is of significant interest to tourism planners and exists when a substantial number of people share a strong need for something which does not exist in the form of an actual product. An example: a package tour to some unexplored destination. Smith (1989:99) describes latent demand in a different context, as a measure of the difference between the potential level of consumption and the observed level.

The difference could be due to shortage of supply, excessively high prices, scheduling problems, uncrowded national parks or other barriers. Latent demand is of special interest because it represents the potential for the opportunity to expand the market.

3.6.1.4 FALTERING DEMAND

The reasons for this occurrence is of significance to tourism analysts and planners. It can be seen as a situation where demand for a product is less than its former level and where further decline is expected. Hotels, for example, have seen their clientele thin out in the face of competition from bright new hotels with modern, though somewhat aseptic facilities.

3.6.2 OVERDEMAND

Overdemand is a further headache for tourism organisation and planners, especially if this phenomenon occurs in environmentally and ecologically sensitive areas. This state can be categorized into two demand situations.

3.6.2.1 OVERFULL DEMAND

When demand for a product begins to outpace the supply a situation is created where the supplying of facilities and services is overextended . An example in South Africa, is the

concern over the possible over-utilization of the Kruger National Park and in America, the same applies to Yellow Stone National Park.

3.6.2.2 UNWHOLESOME DEMAND

This demand state is not so common although it is of interest to South African tourism businesses. However, there are many products for which the demand may be judged unwholesome from the viewpoint of the tourists' welfare, the publics' welfare, or the suppliers' welfare. South Africa and a number of other countries serve as examples in this respect as over the past few years certain countries have been forced to discourage their tourists and public from visiting this country by implementing sanctions.

Tourism organisations need to adhere to these demand states in supplying or curtailing the resources needed to cope with tourism demand at present and in the future. Through adequate forecasting an idea of the future increase and decline in demand can be obtained.

3.7 THE LINK BETWEEN DEMAND AND SUPPLY

The link between demand and supply may not be ignored although the investigation concerns mainly the analysis of tourism demand.

As stated previously, the demand for tourism is highly elastic. The supply components in tourism (accommodation units, airports, railways, roads) in contrast are very rigid and inelastic according to Foster (1987:104). This makes the supplying of tourism facilities or the capacity to satisfy demand, a very dynamic process which requires constant growth and change together with the static provision of a range of facilities, services and attractions (Lea, 1988:22).

The relationship between demand and supply is focussed on from three different perspectives. Firstly, in the context of the various parties and intermediaries the systematic relationship will be described. Secondly, from the point of view of the time and distance available for tourism, a geographic link will be investigated. Lastly the systemic link between demand and the capacity to satisfy demand will be examined.

3.7.1 THE SYSTEMATIC LINK

The systematic link between demand and supply can be observed in figure 3.6. It is evident that there is a continual interaction between the various parties. We find in the center pillar the various tourism industry intermediaries which form the corner stone of the linkage. Flanking the main pillar is the tourism demand component at the origin which consists of visitors, travellers and excursionists. The supply component is found on the other flank which, together with the demand component, continually interacts with the various travel intermediaries. Although not a major component in the overall linkage, the destination organization sector provides the necessary assistance to the demand, supply and industry intermediaries in an interactive way.

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SOURCE: Compiled from Lea, J. 1988. Touring and development in the Third World. New York: Routledge: 6; Middleton, V.T.C. 1989. Marketing in Travel and Tourism. London: Heinemann: 8; and Foster, D. 1987. Tourism Management. London: McMillan: 53.

3.7.2 THE GEOGRAPHIC LINK

It is possible to view demand and supply from the time and distance available for tourism participation. The demand for recreation and supply of facilities is viewed in terms of a geographical perspective in figure 3.7 (Pearce, 1987:7).

Domestic travel is typically seen in terms of concentric zones defined on the basis of available leisure time. It is possible to distinguish between a day trip zone, a weekend zone and a holiday or vacation zone.



FIGURE 3.7: THE GEOGRAPHIC LINK BETWEEN DEMAND AND SUPPLY

SCURCE: Pearce, D.G., 1987. Tourism Today: A Geographical Analysis. New York: John Wiley: 7.

Theoretically, Greer and Wall (1979:230) argue that the interaction of supply and demand would produce a cone of visitation peaking at some distance from the generating center. The exact form of the cone would depend on the nature of the activity and its sensitivity to distance. Pearce (1987:8) says, international demand and supply might be expected to interact in a similar manner to produce large-scale cones of visitation.

The significance of the link between demand and supply is further considered in respect of a possible overestimation and underestimation of demand.

3.7.3 THE SYSTEMIC LINK

The systemic link can be established when considering the self reinforcing positive feedback that links demand for a tourist organisations products or services its resources to create further demand and the ability compply the services or products needed to satisfy the demand. Figure 3.8 portrays this systemic link simply by means of positive feedback loops* (Senge 1986:136).

Relative to an over-estimation if growing demand outstrips the enterprise's capacity to satisfy demand, adverse changes in the competitive variables (price, service), will limit growth (Senge 1986:136). For example, in a service industry, such as tourism, firms may experience demand in excess of capacity to deliver that service, leading to a lowering in service quality. There is no loyalty shown by tourists in competitive markets, such as the one in which the tourism business functions. The result being a lowering in availability or quality, relative to competitors performance, which will cause loss of demand.

Foster (1987:105) echoes similar thoughts, in that if demand has been over-estimated or has fallen drastically since development started, a resort, for example, will find itself with substantial under-utilized assets, placing a strain on its receipts and income from tourism.

^{*} Positive and negative feedback loops are the basic structural building block processes in all dynamic systems. Positive loops amplify change through self-reinforcing pressures like those in loop 1 in figure 3.8. Negative feedback loops are balancing structures that respond to change by creating offsetting pressures to restore variables to their former values.

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SOURCE: Adapted from Senge, P.M. 1986. Systems principles for leadership In Adams, J.D. (ed.). <u>Transforming Leadership: From vision to results</u>. Alexandria Virginia: Miles River Press: 136.

A more complex indication of the interaction of demand and the capacity to satisfy demand is displayed in figure 3.9 The positive feedback loop and reinforcing growth of demand generating activities, is coupled with a balancing feedback process. This shows how inadequate capacity by tourism businesses to satisfy demand eventually limits growth (such balancing feedback processes are called negative feedback loops). Capacity, if fixed, will cause rising demand to eventually outstrip capacity to satisfy demand. Capacity will become inadequate and an erosion in competitive variables will reduce marketing effectiveness and future demand.

Marketing effectiveness may not decline immediately in response to a decline in competitive variables however, due to delays in tourist perception and reaction. For example, the ability to complete a tourist attraction may take several months, while the tourist waits until the promised delivery time before becoming interested. Dissatisfaction may build even after tourists become aware that completion is behind schedule, when word gets out to potential tourists, that the enterprise is over-extended (Senge 1986:137).





SOURCE: Adapted from Senge, P.M. 1986. Systems principles for leadership. <u>In</u> Adams, J.D. (ed.). <u>Transforming Leadership</u>: From vision to results. Alexandria Virginia: Miles River Press: 137.

This interaction if displayed over time should show a familiar pattern of growth in demand and supply, to be followed by a decline and stabilization in demand (Senge 1986:138). An overshoot of demand and the oscillation thereof may be due to delays in customer perception of the resort. The conclusion drawn is demand will not continue to grow if the capacity to satisfy demand is fixed.

Foster (1987:106) is of the opinion that demand, if underestimated, may cause potential tourists to be turned away which could damage the goodwill and image of the resort However, since it takes years to create additional facilities, by the time they are available for use, it will be difficult to regain the business lost.

It is necessary, through careful projections and consideration of all relevant variables, that tourism businesses ensure their capacity to satisfy the required level of demand. For instance the provision of an adequate infrastructure, product availability or service quality. This is necessary in order to reinforce growth in demand and secure loyalty and respectability from tourists and the industry alike.

3.8 THE MEASUREMENT OF TOURISM DEMAND BY PROPENSITY AND FREQUENCY

Although the measurement of tourism demand is of importance, this section deals only with an overview of demand measurement from a propensity and frequency viewpoint. This is used in the supplying of statistics and other relevant data in forecasting tourism demand.

Demand for tourism is expressed and measured in different ways. According to Pearce (1987:29) demand may be expressed in terms of effective demand, that is, the number of people who actually participate in a tourist activity or visit a given area or attraction. Differed demand may be seen as those who could participate but do not, either through lack of knowledge, lack of facilities or both. Potential demand on the other hand refers to those who cannot at present participate and require improvement in their social and economic circumstances.

Effective demand, which forms the basis of the discussion, is characteristically measured in terms of the number of tourists visiting or leaving a country or region, the number of tourists visiting an attraction or the number of bed nights sold to tourists, thereby measuring demand on a quantitative basis. This form of demand may further be expressed in expenditure by tourists according to population group, region and a particular activity.

Middleton (1989:42) indicates that the influence of the determinants which affect tourism demand may be expressed in a scale of propensity for travel. Propensity, according to Middleton (Ibid:42), is a useful term frequently used in the study of travel and tourism to define the extent of participation in tourism activity in a given population. The use of tourism surveys of trips taken, the number of people travelling and population figures provide the basis for the calculation of propensity.

It is possible to distinguish between Gross and Net travel propensity.

Middleton (Ibid:42) provides the following definitions of the terms:

Net travel propensity may be described as the proportion of a population which takes at least one holiday in a twelve month period.

Gross travel propensity is seen as the total number of holidays taken, expressed as a proportion of a population.

In mathematical terms, Pearce (1989:111) expresses the above definitions in terms of the following formula:

Net travel propensity (as %) = $\frac{P \times 100}{p}$

where:

- p =the number of persons in a country or in a particular population group who have made at least one trip away from home in the given period.
- P = total population of the country or group.

Gross travel propensity (as %) = $\frac{Tp}{P \times 100}$

where:

Tp = total number of trips undertaken by the population in question.

P = total population of the country or group.

Pearce (1987:29) discusses a further concept in measuring effective demand: the concept of travel frequency. This refers to the average number of trips taken by participating in tourism over a given period.

The mathematical formula for the calculation of the above is as follows:

Travel frequ	frequency	=	Тр	-	gross travel propensity
			Р		net travel propensity

where Tp and P have the same meaning as the above.

Measured over a decade, it is possible to assess the extent to which a market for travel and tourism is increasing in size due to increased penetration (more of a population taking trips away from home). This increased penetration, according to Pearce (1987:29), is directly linked to the net cravel propensity of a low percentage.

3.8.1 AN INTERNATIONAL PERSPECTIVE

Table 3.2 applies the above theory to a practical example. Using international travel by Australian residents over the period 1978 to 1983, compiled from data drawn from Australia's major international air carrier by Leiper (1984:78), both the net and gross travel propensity and frequency are calculated.

The table shows the importance of multiple trips with the 1,259,000 departures in 1982/83 being generated by half the number of individuals who made an average of two trips each during a given year. Leiper points out that the gross and net travel propensity provide clues as to why changes occur in the

total volume of traffic. The total departures in 1981/82 increased by 53 000 or 4,4 percent over the previous year and the net travel propensity and travel frequency figures show that fewer, not more, people travelled during this period. According to Leiper (1984:79) a smaller number of individual travellers making more trips on average than the previous year appears to have constituted the basis for the growth.

	1978-79	1979-80	1980-81	1981-82	1982-83
Population ('000) 14.516	14.726	14.925	25.134	15.346
Departures ('000) 1.132	1.205	1.195	1.248	1.259
Gross Travel Propensity (%)	7.80	8.18	8.01	8.25	8.20
No of Persons Travelling ('000) 605	666	695	564	621
Net Travel Propensity (%)	4.17	4.52	4.66	3.73	4.05
Average travel frequency	1.87	1.81	1.79	2.21	2.03

TABLE 3.2: PROPENSITIES AND FREQUENCIES OF INTERNATIONAL TRAVEL BY AUSTRALIAN RESIDENTS (1978-1983)

SOURCE: Leiper, N. 1984 International travel by Australians: 1946-1983: Travel propensities and travel frequencies. In O'Rourke, B. (ed.), Contemporary issues in Australian Tourism. Sydney: University of Sydney. Department of Geography: 78.

It is important to note that data such as that used by Leiper is not widely available, which constitutes a challenge to the various sectors of the tourism industry in the collection and processing of the necessary statistics. However, Pearce (1987:29) points out that none of these variables lends itself very readily to measurement and data problems continue to besat most areas of tourism forecasting and analysis.

3.8.2 A DOMESTIC PERSPECTIVE

When calculating the gross, net travel propensity and travel frequency there is a certain requirement to be considered, namely, the availability of information or data from official statistical sources to be able to make the calculations. However, in the case of South Africa no such information is collected and processed by means of surveys or otherwise (Uken, 1989).

In determining the above variables for the population who travel in South Africa, it was decided to use forecasts concerning domestic travel patterns obtained from a co-operative inqui y regarding the South African holiday market now [1985] and in the next decade [2000]. Experts were made use of in the assessment of the various respondents to the questions, providing an even distribution over the inquiry period (Ferrario, 1985:1).

Table 3.3 is constructed in a very conservative manner with little mention of economic social and political factors which could affect the assessment of future growth in the propensities and frequency, although these experts may have taken these factors into consideration in their forecasts.

Table 3.3 shows the average constant growth per year calculated for 1985 through 1990 with the growth percentages in brackets. From the table it may be deduced that the net travel propensity of 16,9 per- cent for 1985 could be expected to grow at a growth percentage of 3,195 percent per annum reaching a possible propensity of 19,6 percent in 1990 barring any upheaval which is of course totally unpredictable. The number of persons travelling may have increased at a rate of 6,183 percent over the same period with a population growth of 2,540 percent per annum to 1990. This indicates that the number of travellers taking hclidays would be growing at a faster rate than the population. This would infer that a large portion of the population are moving into an income bracket which permits the taking of at least one vacation per year.

The gross travel propensity, on average, is slightly less than the net travel propensity. The difference being only 0,367 percent, the conclusion drawn is that although the number of trips may increase it is evident that more people will travel in groups, hence the lower average growth for the gross travel propensity. The travel frequency average shows slight increases from 1985 to 1990. This could be attributed to the slight increases per annum of both the net and gross travel propensity.

TABLE 3.3: CALCULATION OF TRAVEL PROPENSITY AND TRAVEL FREQUENCY: A SOUTH AFRICAN PERSPECTIVE

	1985	1986	1987	1988	1989	1990
Population ('000) Av G 2.540%	32200	33018	33836	34654	35472	36290
Departures ('000) Av G 5.816% *	8478	9198	9974	10808	11705	12668
Gross Travel Propensity (%)	26.33	27.86	29.48	31.19	33.21	**34.91
No of Persons Travelling ('000) Av G 6.83%	5434	5770	6106	6442	6778	7114
Net Travel Propens.	16.9	17.4	17.9	18.5	19.0	19.6
Average travel frequency	1.55	1.59	1.63	1.68	1.73	1.78

* A percentage of 5.8 percent average growth is based on the assumption that the number of trips taken is a function of Time (T), Income (I) and Expenditure (E) while qualitative factors such as the political situation is included by means of a probability (P), therefore: No of trips = f(T, I, E, P)

** A figure of 33 percent is obtained from a survey conducted in 1989 by E.A. Uken of the Tourism Research Unit at the Cape Technikon, on the frequency of weekend visits of domestic tourists. According to Uken it is possible that this could be drawn through for holiday travel purposes. The figure includes 1 and 2 trips a year which provides the highest percentages of the number of trips taken per year.

SCURCE: Compiled from information taken from Ferrario, FF. (1985). The South African holiday market now and in the next decade: A co-operative inquiry. Cape Town: University of Cape Town. Department of Geography: 3,7; and Uken, A.E., 1989. Frequency of Weekend visits by Domestic tourists. Cape Town: Tourism Research Unit. Cape Technikon.

It is important to note that these calculations are based on various forecasts and mathematical manipulation, as no hard data is available to compile such a table with complete accuracy. The idea is to provide an example of an application of the net and gross travel propensity and average travel frequency based on a domestic dimension.

2.9 THE EVOLUTION OF DEMAND

Herman Kahn forecasts that by the year 2000, tourism may be the world's single most important activity (Kaynak and Macaulay, 1984:87). There can be little doubt that tourism demand has increased dramatically in the post war period, particularly since 1960. The travel booms of the 1960s and the 1970s facilitated by rising incomes and rising expectations, have given way to the travellers of the 1980s and 1990s who continue to place a high priority on tourism participation.

3.9.1 THE INTERNATIONAL SITUATION

Looking at the international tourism market, tourist arrivals have more than trebled over the last two decades passing from 93 million in 1963 (Pearce, 1987:30) to 2,6 billion in 1982 (Foster, 1987:8). This figure grew to in the region of ±40 billion in 1988.*

Variations in this period have occurred, dropping from 11,6 percent to 4,8 percent with 1974 experiencing an absolute decrease (Ibid, 1987:30). Growth worldwide in the mid 1970s was tempered by the dramatic increase in the price of oil initiated by OPEC in 1973. The price of aviation fuel quadrupled between March 1973 and March 1974, contributing to the decline in international tourist arrivals. Current figures regarding international tourism are supplied in the background to the study.

^{*} Calculated from the premise that internationally tourist arrivals increased by 4,2 per cent a year on average over the 10 years from 1978 to 1988 (Argus, 6 October 1990:4)

International tourism in many developed countries also appears to have expanded dramatically over the past two decades. South Africa which is classified as a developing country, has however lagged behind the world in so far as international tourist arrivals are concerned. In table 3.4 the above situation is depicted as it presented itself in 1989.

TABLE	3.4:	DEMAND FO	R SOUTH AI	RICAN TOURISM	AS COMPARED TO
		A NUMBER	OF SELECTI	D COUNTRIES I	N 1989

Bali (part of Indonesia)	lm	
Bermuda	0.5m	
Botswana	0.7m	
Canary Islands	3.5m	
Israel (1988)	1.5m	
Kenya	0.7m	
Madeira	0.3m	
Malta	0.8m	
Mauritius	0.25m	
Portugal	18m	
Spain	4 O m	
South Africa	0.93m	
The Caribbean	3.4m	
United Kingdom	18m	

SOURCE: Pincus, D. 1991. A Tale of Two Studies. Financial Mail. 121(8): 68.

According to Van Staden (1987:29) in the period up to 1975 tourist arrivals to South Africa grew at an average of 14 percent since 1969. A dramatic decrease in tourist arrivals from the beginning of 1976 because of the 1976 riots, coupled with a decline internationally caused tourism to drop by 12 percent (Ibid, 1987:29). From 1977 tourist flows to South Africa summered along at 1,9 per cent to 1988 (Argus, 6 October 1990:4).

It is evident from table 3.5 that the number of foreigners visiting South Africa decreased significantly in the period 1985/6. The reason could be attributed to the political instability during this period coupled with an attempt by governments' to discourage their nationals to visit South Africa.

However, since 1987 foreign tourists visiting South Africa flourished despite tourism boycotts and embargo's. If the total percentage change in this period is taken into account, demand

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for South African tourism grew by approximately 44 percent evident in table 3.5.

	SOUTH AFRICA IN	TOTAL (1979 - 1991)
Year	Number	Percentage change
1979	682198	
1980	702794	+3.02
1981	708716	40.01
1982	659913	-6.89
1983	704444	+1.07
1984	792387	+12.48
1985	727552	-8.18
1986	644502	-11.41
1987	703351	+9.13
1988	804985	+14 45
1989	930393	+15.58
1990	1029000	+10.59
1991	1710000	+66.18

TABLE 3.5: THE NUMBER OF FOREIGN TOURISTS VISITING

SOURCE: Compiled from: Dept of Foreign Affairs. 1989. South Africa 1988-89. Pretoria: Government Printer: 707; Central Statistical Services 1989: Statistical Newsletter: Tourism and Migration. Pretoria: Government Printer. June, December 1989; and Bureau for Economic Research. 1992. Trends. 15(2). Stellenbosch: University of Stellenbosch: 81.

Figure 3.10 and 3.11 provide a further dimension by indicating the tourist arrivals to South Africa on the basis of continent or region. It is evident that African countries contributed by far the largest portion of foreigners to South Africa over the last 30 years with Europe second. A significant aspect is that European travellers were responsible for the steep rise in foreign arrivals from 1987 onwards despite a sharp drop from African countries which is implicit in the graph.



SOURCES: Compiled from. South African Tourist Corporation. Annual Report. various. Government Pretoria: Government Printer; Central Statistical Services. Tourism and Migration. various. Pretoria: Government Printer; and South Africa. South African Tourism Board. 1989. Annual Report. Pretoria: Government Printer.



SOURCES: Compiled from: South African Tourist Corporation. Annual Report. various. Government Pretoria: Government Printer; Central Statistical Services. Tourism and Migration. various. Pretoria: Government Printer; and South Africa. South African Tourism Board. 1989. Annual Report. Pretoria: Government Printer.

3.9.1 THE DOMESTIC SITUATION

Van Staden applied the elasticities of demand (taken from Nel 1975) to the increase in private consumption expenditure compiled by De Lange (1984) in determining the growth in domestic holiday demand as indicated in table 3.6.

It is evident that a significant decrease in holiday expenditure from 1975 to the year 2000 under a low growth and high growth scenario is expected for Whites. A definite increase is expected for Blacks while Asian and Coloured expenditure is expected to increase only moderately to the year 2000. This is in contrast to the findings of Ferarrio (1985) where he found that expenditure by whites is expected to increase but at a reduced rate (see table 4.8). Van Staden and Ferarrio are still in agreement regarding a substantial expected increase in demand for holidays by the Black population group.

TABLE 3.6: GROWTH IN DOMESTIC HOLIDAY DEMAND: A SCENARIO FOR 2000 (Values given in R-millions at 1975 prices)

GROUP 1975			UP 1975 20			
		LOW GROWTH		OWTH	HIGH GROWTH	
	Value	96	Value	8	Value	8
White	243.8	89.6	155.3	75.3	337.4	80.4
Coloured	12.1	1.8	14.9	7.2	20.7	4.4
Asian	2.6	0.8	4.5	2.1	6.9	1.5
Black	18.7	7.8	31.7	15.4	64.5	13.7
Total	277.2	100	206.4	100	469.5	100.0

SOURCE: Van Staden, M. 1987. Tourism: International and National Trends. A Research Handbook for the Regional Development Advisory Committee-A. Bellville: Institute for Futures Research. University of Stellenbosch: 45.

Many inter-related factors have contributed to this increase in demand. Extensive coverage will be given to the determinants affecting tourism demand in the following chapter. Several should however be mentioned here. Pearce (1987:30) indicates absolute population growth and rising standards of living have resulted in more leisure time and greater discretionary spending. This has greatly boosted the numbers able to travel both domestically and internationally.

Although in many countries the public and private sector have contributed actively in fostering this demand and encouraged the expansion of the industry, in South Africa, it is only now

becoming evident that a determined effort to boost tourism demand is being made. At present tourism accounts for only one percent of South Africa's Gross Domestic Product (Financial Mail, 1992:47).

According to Kaynak and Macaulay (1984:93) the new travellers emerging are more diverse in their interests, more discriminating, demanding and value conscious. As the tourism market changes with these new attitudes toward travel, the various sectors in the industry are encouraged to examine their policy toward tourists needs, wants and expectations. As the socio-demographic, economic, the governmental and the technological environments change, so will each of these new developments in these areas have an impact on the tourism outlook for the 1990s and beyond, contributing to the evolution of demand in tourism.

3.10 SUMMARY

The main aim of this chapter was to provide an analysis of demand in the context of viewing it as a tourism concept. Three sections were distinguished in this chapter in which the overall picture of demand was portrayed. Firstly, analysing the economic viewpoint, regarding price alone, it became clear that there is much more to the concept of demand in a tourism sense as many factors influence it in a variety of ways.

Of these factors, instability and seasonality were evaluated indicating the extent to which demand is effected. To compliment this, different situations of demand affecting integrated planning in tourism businesses were provided with, overall discuss on of categories covering over- and under demand. Secondly supplying products to satisfy demand enabled three levels of interaction between demand and supply to be established. The aim being to provide an indication of the varying degrees of complexity through the systematic, geographical and systemic link. The final section explained two aspects of demand, indicating the importance of frequency and propensity in measuring demand and the contribution made to forecasting. The growth of international and domestic demand over the past three decades portrayed substantial growth in tourism numbers. Numerous factors have contributed to this positive and negative growth. Chapter four examines a conceptual framework of the various determinants affecting demand by elaborating the South African perspective complimented by international comparisons.

CHAPTER 4

DETERMINANTS AFFECTING DEMAND IN SOUTH AFRICA, WITH INTERNATIONAL COMPARISONS

4.1 INTRODUCTION

A large measure of confusion exists over the way tourism demand is treated and affected by the various influences in the macroand micro environment. This confusion is exacerbated by the various literature sources regarding which determinants are responsible for influencing demand. The aim of this chapter is to provide, through a synthesis of these sources, a conceptual framework (see figure 4.1) of the various factors.

The focus is centered around the influence exerted by six determinant factors: social, economic, political-legal, demographic, physical and technological. The chapter is divided into six categories in which each determinant and factors falling within its encompassment are discussed. Where possible, an international and domestic comparison regarding the issues is provided.

It is generally accepted that not one but several determinants are responsible for influencing tourism demand. Besides interacting with demand there is an inter-locking effect between the determinants themselves. To portray this, two concepts are proposed: linear and systems causality.

4.2 THE SOCIAL ENVIRONMENT

There can be little doubt that tourism demand is part of the changes taking place in the social environment. It influences social change on the one hand and on the other, it is itself influenced by social change. This includes motivation, culture, health, values, habits, the emergence of a leisure ethic and so forth.



These factors will be examined in some detail enabling an indication of the relative complexity of their influences on demand.

4.2.1 THE EMERGENCE OF A LEISURE ETHIC

There is a significant trend toward the emergence of a leisure ethic as exemplified by reductions in hours of work, the lengthening of paid holidays and peoples concerns with themselves and their health. Foster (1987:105) believes that the higher the status, lifestyle, attitudes and expectations, the more people are likely to indulge in tourism for at least part of their vacation. The stresses and strains of daily life have directly led to more people seeking relaxation, recuperation, recreation or orientation through some form of tourism, domestic or international.

According to Kaynak and Macaulay (1984:93) this "new leisure ethic" has not only resulted in a change of attitude towards work and wealth but has also influenced the role women play.

Martin and Mason (1987:115) are of the opinion that the amount of leisure time people have available is growing slowly but steadily and it seems that this trend will be maintained throughout the 1990s. The key word here is flexibility, in that working patterns are becoming more flexible, resulting in a greater variety in the timing and nature of tourist patterns. These changes include not only more flexible hours for those in fulltime employment, but also a growth in part-time working and shared jobs, with more periods spent outside formal employment.

The consequences for tourism demand will not only be influenced by the time available in a year but also by the distribution of that time (Pearce, 1989:122). This may include demand for different types of tourist destinations and activities, as well as more tourist business outside the conventional peak seasons, for example: the Cape Green Season.
4.2.2 MOTIVATIONS

A wide range of possible travel and tourism motivations exist. As a result, a wide range of literature sources may be consulted in providing an illustration. There is however, a misconception of the real meaning behind motivation to travel. Pearce (1989:113) defines it as "the set of needs and attitudes which predispose a person to act in a specific touristic goal-directed way".

Fundamental to a full appreciation of tourist demand, is understanding why people travel, engage in particular forms of vacation behaviour, or select specific tourism products and services. An attempt must be made to try and analyse and define the purpose behind these journeys which net millions each year (Financial Mail, 17 July 1992:47).

Burkart and Medlik (1981:56) are of the opinion that motivations may be examined by distinguishing between two broad groups of travellers. The first group comprises those who have to visit a particular place and includes business - common interest travellers and visiting friends and relatives. The second group are holiday tourists who have a freedom of choice in deciding where to go and, to a greater or lesser extent when to go. Table 4.1 provides a possible classification of tourist motivations.

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TABLE 4.1: TOURISM: MOTIVATIONAL FACTORS PER CATEGORY

RECREATIONAL/PLEASURE

1. Rest - to escape from daily routine 2. For an enjoyable time 3. To obtain an adventurous or romantic experience CULTURAL AND EDUCATIONAL 1. To see other countries - the people and culture 2. To see places of special interest - historical sites, museums, art galleries, etc. 3. To visit places featured in current events 4. To attend special events including concerts, exhibitions 5. To learn more about one's hobbies and other interests ETHNIC 1. To visit the family's country of origin 2. To see places visited by relatives or friends 3. To see unusual or quaint cultures/customs in remote regions MISCELLANEOUS 1. Sporting events 2. Change of weather or climate 3. Adventure 4. Sociological - to get to know other parts of the world

5. Business/conference/congress travel

SOURCE: De Bruyn, F. 1989. Tourism Marketing, -Techniques and Behaviour. Unpublished notes for the diploma course. Tourism and Related aspects. Cape Town: Cape Technikon. School of Secretarial Training.

It is significant that these primary motives of tourists blend in infinite combinations.

The above provides basic premises to the underlying motivations. While it seems that certain tourism determinants show a high degree of stability over a long period of time, motivations to partake in tourism are less precise and tend to change more frequently. Trying to estimate, understand and forecast demand is made more complex due to unpredictable motivational changes.

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4.2.3 CULTURE/VALUES/HABITS AND ATTITUDES

The satisfying of internal needs and wants are heavily influenced by forces external to the individual. The result being that individuals are part of larger social groups and are influenced by surrounding cultures.

According to Mill and Morrison (1985:41) culture patterns also change by virtue of external forces. The result may be changes of attitude and behaviour by coming into contact with other environments, for example, being stimulated by a desire for cuisine from a particular country.

These changes in attitude will result in different types of people making new and varied demands on tourism products. Martin and Mason (1987:113) feel that older people, for example, will look for better quality and more secure surroundings while single people seek more social contact, experiencing the culture of other countries through tourism.

Culture is felt by the individual in three ways, indirectly affecting demand. Mill and Morrison (1985:42) discern that culture affects the daily life patterns of individuals in society. Concepts of time for example, vary from culture to culture, like the habit of taking one weekend vacation a month and the various values associated with that. Secondly, culture affects the way emotions are expressed. Lastly, there is an indication that certain cultures have a predominance of certain personality types. An example being, that decisions regarding an annual vacation are primarily made by the male in the family.

Culture, especially the values and habits which comprise it, affect demand in various ways. Fouchè and Esterhuysen (1987:6) provide examples of how a countrie's culture could affect demand. Comparatively wealthy tourists fall victim to petty criminals as is evident by increases in theft and muggings, especially in the Mediterranean and to an ever increasing degree in South Africa

(The Argus, 19 July 1991:1). This would directly affect a group or individuals values, habits and attitudes towards that country or region.

The interaction between tourists and hosts could give rise to problems of superficial contact which leads to misunderstanding enhanced by language difficulties. A further problem is that a tourist could demand "instant culture" as he has limited time and wants to condense his experience.

The positive benefits of a countries culture may be seen as leading to a regeneration in awareness and pride in their culture and traditions among the population, enabling the stimulation of demand.

There can be little doubt that culture, although not always beneficial to tourism demand, does create mysticism, introspection novelty and change amongst many individuals and groups. South Africa is a classic example, in that "curiosity" is playing an ever increasing role in affecting tourism demand to this country.

4.2.4 COMMUNICATION

Making potential tourists aware of what is available has a strong influence on demand. This is endorsed by Burkart and Medlik (1981), Foster (1987) and Esterhuyse and Spies (1990).

Burkart and Medlik (1981:57) feel that tourism promotion may be instrumental in creating and fostering a tradition of travel generally, as well as to particular destinations not considered before.

Successful marketing and promotional activities and the facilitation of appropriate tourist information are the cornerstones for stimulating demand and creating awareness of the various tour packages, resorts and destinations which exist in a particular country or region. Poor marketing has led to waning

demand in many instances. According to Esterhuyse and Spies (1990:38), the Western Cape for example, has less than sufficient demand for her wide variety of facilities, because of the lack of knowledge of tourist target markets and poor tourism marketing. One of the underlying causes directly affecting this problem, is the lack of funds in promoting successful marketing endevours.

A further inhibiting factor which is affecting demand is the lack of adequately trained personnel to undertake much needed marketing actions (Esterhuyse and Spies, 1990:38). What is needed in this respect is a positive, innovative and highly commendable attitude toward the conduct of stimulating demand through a good understanding of each segment of demand.

It can be concluded that although problems still exist in marketing and related activities, there is light at the end of the tunnel in so far as the problem has been identified. A number of co-producing factors have been responsible for the lack of demand in South Africa and its various regions especially the Western Cape and surrounding areas. An attempt to promote the industry is being made locally by the Tourism Indaba which is held annually, providing the opportunity to industry participants to display their products and services. It is imperative that promotion which is encompassed in marketing be viewed as a separate set of determinants which may enhance the natural growth of tourism in many respects.

4.3 TECHNOLOGICAL ENVIRONMENT

Changes that take place in this environment are largely due to technological progress and innovation. Technological renewal also influences other environments, which in turn, affect technology. This is clearly evident in tourism, as technology influences amongst others, the transport sector, the social sector, demographic sector. If reversed, the same applies.

It is however, important to see technology in terms of long-term horizons within the tourism context. The possibility is that the means of travel are expected to change greatly in the future due to technological change and possible limitations of the supply of transportable fuel.

Arguably, in the short term one of the most important changes in tourism operations, (according to Lawson (1987:146)), has been the development of micro-computer technology. It is expected that this technology, developing networks linked through tourism offices via the public telephone system to a variety of tourist accommodations and services, will enable individual tourists to choose, reserve and organize their own holiday arrangements without recourse to the present structures.

According to Holloway (1989:182), some forecasters have prophesied the coming of revolutionary forms of travel such as monorails operated by magnetism and floating on cushions of air. These are already being put to the test in Japan. This will result in a shrinking world which will undoubtedly affect demand.

Technological innovation may result in more luxurious travel as well as improvement in the safety aspect, thereby renouncing fears people have of using certain types of transport which has negatively influenced demand. At the onset, technology could transform differed and potential demand into effective demand by providing the base of bringing travel into the reach of potential tourists who have been unable to travel in the past.

For tourist attractions, the latest technology has opened up new opportunities for museums, theme parks and others enabling them to utilize their display and interpretation of the resources which they have at their disposal. According to Middleton (1989:323), the use of lighting, sound, film, lasers and new materials involved in displays has been utilized by the Disney Organization in their accomplishments. The result is curiosity on the part of the tourist, excursionists and others, thus enabling the stimulation of demand through technological success.

It is imperative that technology be continually developed providing the necessary service, facilities and activities catering for a more sophisticated and adventurous tourist, thereby not only creating the demand but stimulating it too.

4.4 THE POLITICAL ENVIRONMENT

There can be little doubt that cognizance is to be taken of political developments in a country and their effect on tourism.

The political environment is full of complicated variables, making it very complex. The various ways in which it affects the other components of tourism demand probabl, makes it the most unpredictable environment and therefore the most difficult to delineate.

Government and regulatory factors are rather different from other factors in determining the likelihood of persons to participate in travel and tourism. The influence over demand by government policy and legislation is usually highly significant in the tourism industry (Middleton, 1989:40).

Many factors may be contemplated which relate directly to the political recourse and policy of the government of the day. The result on the negative side may be an increase in tension, political strife and/or pressure. instability and uncertainty. However, the opposite may also have a positive effect. It will be more suitable to describe these various negative and positive influences through a number of examples. By dividing these cofactors into sub-groups a more comprehensive understanding of their effects on demand can be achieved.

Firstly, in a direct way, it is possible to look at government policy and legislation directly linked to tourism and indirectly link to the consequences of these decisions, factors such as riots, terrorism, war, foreign policy of other governments, sanctions and boycotts. Mass media communication making a further contribution through negative publicity. Secondly, a distinction may be made by analysing the effect on domestic and international tourism demand.

4.4.1 POSITIVE EFFECTS

Through policy it may be possible for the government to give increased recognition to the impact of tourism and its potential revenues for the economy and other sectors. It may however, be possible to turn a negative situation into a positive one. An example of the recent past may be cited. The Gulf War had its effects on tourism where cruise liners were diverted from the Suez Canal around the tip of Africa stopping at South Africa's major ports, boosting the industry.

A further positive effect, in the opinion of Fouché and Esterhuysen (1987:7), lies in tourism being seen as an "isolation buster". People are thus able to see circumstances for themselves in the face of sanctions and adverse publicity.

4.4.2 NEGATIVE EFFECTS

The negative aspects for tourism outweigh the positive outcomes. Firstly, it may be possible to investigate legislation and other legal requirements that affect tourism. Foster (1987:113), indicates that although not all is applicable to South Africa, legislative factors which include new legislation on visas, movements of foreign nationals or foreign exchange and currency controls, and legislation designed to restrict or control tourism may also affect demand.

Esterhuyse and Spies (1990:40) indicate three constraints of a political or legal nature affecting tourism in the Western Cape. Although the first constraint has become obsolete in the light of legislation authorising the opening of public amenities to all races, it is included to give perspective to the structure.

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The three constraints are:

- * The legal constraints imposed on certain population groups
- * The closure of tourist attractions over weekends (museums, parts of wine routes)
- The bureaucratic and divided control of harbours and scenic sites which hamper tourism development

A further factor to consider on a regional level would be the political organisation of that area. Leibold (1990(b):8) points out a few characteristics which could influence tourism demand in a certain area or region. These include the political structure of the host area and particular resorts; capitalistic versus socialistic principles and practices; planning regulations, incentives and constraints and the roles of national, regional and local tourist organisations.

Included in attempts to boost demand is the deregulation of travel agents and the air travel industry (already in effect), as well as a lifting of airline tariffs and a reduction in the control imposed on air traffic by the Directorate of Civil Aviation.

A factor extremely detrimental to tourism in South Africa, has been the negative image portrayed overseas. This image has been strengthened by mass media communication. Banner headings such as, "UK tourists urged to give S.A. a miss" (The Argus, 18 September 1990) and "City risky tourists told" (The Argus, 19 July 1991), have all contributed to the dilemma facing tourism businesses. Until such a perception is changed, which seems to be happening at present, only a small percentage of foreign visitors will be generated.

Although terrorism has not featured significantly in South African tourism it has had an effect on international tourism. It is possible to mention two significant incidents in recent times: the Lockerby air disaster and the Gulf War. Generaly security at international airports were increased threefold because of the terrorist threat. Demand to Middle Eastern countries waned due to people either being prevented from travelling or choosing not to, fearing for their health, security and safety.

The United States and its citizens has been the target for many terrorist attacks in the past. Fretchling (1987:109) however, sees two possible scenarios unfolding regarding terrorism. The first is the U.S.A. will not adopt major protectionist programmes and secondly the impact of terrorism on international travel will wane.

Boycotts and sanctions implemented by foreign governments' policies which included a cultural and tourism boycott, greatly affected the tourism industry. However, due to changes taking place in South Africa at such a rapid rate it is almost impossible to speak of a boycott of tourism and tourism promotion any longer.

As seen, political changes have both a negative and positive effect on tourism. Of more significance however, is the time horizons within which political changes take place. It is important to note that changes that have taken place in South Africa in the early nineties are significant in that the image or perception of the country and therefore every tourism industry individual has been positively influenced.

As mentioned in the opening paragraph, the unpredictability of political events could make what has been mentioned here obsolete by the time this study is completed. Therefore forecasters and planners should not underestimate future political changes but allow for them in the development of models or as a certain unquantifiable effect in model calibration.

4.5 THE PHYSICAL ENVIRONMENT

The physical environment of the tourism industry in relation to other industries is relatively more complex, although there is a mutual effect on each other. It may be possible to divide the wide array of factors comprising the physical environment into a number of sub-groups which include ecological, infrastructural and mobility considerations. It is important to note that the elements which fall within these sub-groups have an impact on each other, for example the choice of whether to drive fly or go by train to a destination.

4.5.1 ECOLOGICAL CONSIDERATIONS

The rapid escalation of tourism demand (Financial Mail, 17 July 1992:67) has brought both opportunity and problems within its development. Tourism generates income and provides employment but can be a contributing factor to pollution and the ecological imbalance of an area or destination. South Africa's industrial activity, especially in the Eastern Transvaal with its many power stations, has, and will inevitably damage the quality of the natural environment. This includes the various national and private game parks in the area.

Disposing of waste and affluent leads to the pollution of streams, rivers and the sea which will undoubtedly make those places less attractive for potential visitors, thus influencing potential demand. Oil pollution from disasters and conflict may cause major pollution of beaches, drastically influencing demand to that tourist destination. Further problems may be caused by congestion at resorts and attractions which may result in a ecological imbalance thereby destroying the natural environment and depriving tourists of the scenic beauty and serene surroundings. The problems of the potential impact of large numbers of tourists on the sensitive flora of the Western Cape are pointed out by Esterhuyse and Spies (1990:40).

4.5.2 INFRASTRUCTURE CONSIDERATIONS

The significance of tourism demand is profoundly influenced by factors which affect the infrastructure dimension of the physical environment. Attention will be given to accessibility, image, uniqueness and carrying capacity. The provision of facilities and congestion at resorts and attractions will also be addressed.

Accessibility, according to Foster (1987:112) has a distinct influence on demand for a particular product. Inadequate access to vast stretches of coastline in the Western Cape is just one of the environmental implications that large scale tourism will have to address in the future (Esterhuyse and Spies, 1990:40). Leibold (1990:60) indicates four factors which influence the accessibility to a destination or attraction. These are:

- * Infrastructure: roads, airports, railways, seaports
- * Equipment: size, speed and range of public transport
- * Operational factors: routes operated, frequency of service
- * Government regulations: controls over transport, for example

Congestion, which relates directly to the impact of carrying capacity is a major constraint affecting tourism demand. Burkart and Medlik (1975:188) are of the opinion that traditional sites cause problems because of their popularity at certain times of the year. Little is known about the capacity of most tourist attractions and therefore the scale of the problem. According to Leibold (1930:11) few attempts have been made to measure carrying capacity. Looking at the Western Cape, Esterhuyse and Spies (1990:40) indicate a major constraint regarding the problem of congestion, namely, physical constraints and insufficiently attractive ervironments in some parts of the area. This will leading to increasingly over-crowded and congested facilities in other areas in the long term.

It is appropriate at this stage to shed some light on the image and uniqueness of resorts and attractions. Foster (1987:113) is of the opinion that image and uniqueness have an influential

positive and negative impact on demand and may be a powerful motivational factor in influencing a decision to visit a particular destination. A destination may be perceived as cold, unfriendly, expensive, lifeless, backward, unsafe or even unknown or it may be seen as vibrant, stimulating, exhilarating, friendly, progressive and safe.

The image of a fragile attraction such as an historic site, and other areas of natural beauty may, if allowed to be congested detract from the pleasure of visiting that particular site. The problem, in the opinion of Burkart and Medlik (1975:73), will be how to provide the gregarious experience sought by tourists and still keep the image of a resort or attraction intact.

The uniqueness of a resort invariably creates curiosity in the minds of potential tourists. This could lead to demand exceeding the capacity to satisfy that demand. Inability to address the above could be catastrophic. This potential growth leads to a need to manage that demand. Without demand management these unique tourist attractions may risk saturation and as important, destruction.

Possibly one of the most important attributes of the infrastructural dimension is the adequate supply of facilities in catering for demand. Problems which exist in the Western Cape regarding this supply from the point of view of accommodation is considered. Esterhuyse and Spies (1990:41) have established three major constraints which exist. They are:

- * The quality of accommodation in rural areas is inadequate
- * The lack of affordable accommodation, specifically caravan parks for especially the black and coloured tourist
- * The short supply of tourist amenities, for example man made entertainment and activities

4.5.3. THE TRANSPORT DIMENSION

Demand for transport is not homogeneous. Burkart and Medlik (1981:115) provide for the identification of three major categories of demand for transport. These include holiday travel, business travel and common interest travel. Because of the varying transcort necessities for these types of tourists, numerous factors may be cited forming an integral part of the transport dimension of the physical environment. The first and foremost factor taken into consideration is the level of carownership. Burkart and Medlik (1975:33) feel that car ownership has a considerable effect on the size and type of tourist flow which is an influential factor in the choice of holiday. According to Lawson (1987:144), the proximity of the European tourism generating and receiving countries, has resulted in over 80 percent of European tourists travelling by private car.

Invariably, the overall use of surface transport declines as car ownership increases. These personal mobility factors have become a prime determinant in the value and nature of demand and their effect on tourism growth would be particularly significant.

However, apart from non-leisure travel such as much of inter-city transport by road, rail and air, in the opinion of Middleton (1989:40), there remains some segments of the travel and tourism market which use public transport on longer journeys for economic reasons or through preference. An example is Israel, where major use is made of public transport for tourism purposes. Problems however, may exist in being able to accommodate increasing demand.

The issue of cost is fundamental to any potential traveller. It is important that attention be given to the cost of transport which makes up a substantial element of total holidaying cost. Burkart and Medlik (1975:75) make mention of five factors which in all forms of transport are fundamentally important in influencing tourism demand. These factors include vehicle size,

the utilization of vehicles, load factor, utilization of terminal facilities and road traffic density.

The development of fuel efficient, wide bodied Hovercraft for long-haul routes has brought many remote and exotic destinations within the cost range of tourists (Lawson, 1987:144). The hovercraft and motor car enable the more adventurous, more flexible and less formal tourist to choose the type of holiday where the cost factor is slightly less significant.

From an infrastructural point of view, various problems exist which need to be addressed. These can be seen as applicable to the Western Cape. Esterhuyse and Spies (1990:41) provide the following factors, amongst others:

- * Distances from main tourist markets is a restrictive factor;
- * Public transport in various areas are inadequate;
- * Gravel roads along the West coast are not suitable for modern modes of transport

The United States is experiencing similar problems as those described above. Regarding the road conditions, Fretchling (1987:107) indicates that motor vehicle travellers have to contend with roads that are in a poor condition and bridges that are structurally deficient or functionally obsolete.

These problems and weaknesses need to be addressed from a physical and managerial point of view with particular attention to strategy and policy. The increasing prominence given to tourism will make the need for adequate provisioning of the essential facilities a necessity in realising the challenges which lie ahead in creating and maintaining demand.

4.6 THE ECONOMIC ENVIRONMENT

The ability to partake in tourism and travel lies undoubtedly in the hands of the economic environment. Being able to purchase a package tour for example, may be seen as a function of factors

which can be divided into two broad categories. Firstly, attention will be given to general economic trends which include inflation, economic growth, recessions, interest rates, exchange rates and taxation. Secondly, there are the factors which relate to the individual himself and includes income levels, prices of travel, prices of other goods, credit availability and savings.

4.6.1 GENERAL ECONOMIC TRENDS

Inflation, which is considered to be a continuous rise in the general level of prices, has a significant influence on the price of tourism products and the income of the individual. The effect of inflation is widespread. Attention is limited to the purchasing power of the rand and the real income of the individual.

4.6.1.1 INFLATION

The effect of inflation will become apparent through a number of illustrations. From table 4.2 it is evident that South Africa's inflation rate has been double digit for a period of more than 15 years which has set up a psychological conditioning in which these levels of inflation have come to be expected and have become self-fulfilling.

TABLE 4.2: A COMPARISON OF THE AVERAGE ANNUAL PERCENTAGE INCREASE IN CONSUMER PRICES, SOUTH AFRICA AND ITS MOST IMPORTANT TRADING PARTNERS, 1960-1964 TO 1989.

YEAR	SOUTH AFRICA	MAJOR TRADING PARTNERS
1960-1964	1.7	3.1
1965-1969	3.3	3.8
1970-1974	7.5	7.9
1975-1979	11.8	9.0
1980-1984	13.9	7.1
1985-1989	15.7	3.0
1985	16.2	4.2
1986	18.6	1.6
1987	16.1	2.0
1988	12.9	2.6
1989	14.7	4.4

Note: Average taken over the UK, Germany, France, Japan and the United States

SOURCES: Bureau for Economic Research. 1990. Trends. 13 (3): 8-12; Central Statistical Services. Various publications. Pretoria: Government Printer.

The purchasing power of the rand brings the following evidence to the fore. Foster (1987:112) discerns that the purchasing power of a currency measures the ability to buy holidays, in addition to other important products and services having higher purchasing priorities. It is interesting to note that the World Tourism Organisation (1981:64) is of the opinion that in industrialised countries any downturn in purchasing power reflecting the general movement of the economy will not change the quantity of tourism demand generated. However the quality of the tourism supply cons med will have the result that income will be distributed differently with respect to:

- * Length of stay
- * Transport costs
- * Places visited
- * Nature of tourism products and services
- * Quality of tourism products and services

Purchasing power depends on income levels and taxation. From table 4.3 it is possible to view the buying power of the South African rand over a 79 year period. It is noted that in 1980 the buying power of the rand was 29 percent for a 1980 rand. Where in 1910 R1 (10 shillings) could buy 'the same' consumer goods as R13.00 in 1980.

YEAR	THE VALUE OF R1.00 IN A SPECIFIC YEAR, COMPARED TO R1.00 IN 1980
1989	0.29
1988	0.34
1987	0.38
1986	0.44
1985	0.52
1980	1.00
1970	2.77
1960	3.46
1950	4.40
1940	6.60
1930	8.25
1920	6.00
1910	13.00

TABLE 4.3: THE PURCHASING POWER OF THE RAND, 1910-1989 WITH 1980 TAKEN TO EQUAL 1

SOURCE: Institute for futures Research. Business Futures. 1990. Stellenbosch: University of Stellenbosch: 622.

A further detrimental effect of inflation is the decrease it has on the nominal income of persons. From table 4.4 it is evident that although nominal income rose slightly over a five year period, a distinct reduction in real income over the same period led to a negative value in the period from 1985-1989. A direct result of inflation. The effect is that the money earned over that period has little or no value.

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TABLE 4.4:	AVERAGE PERCENTAGE RISE IN RATE IN NOMINAL AND REAL TE	THE ANNUAL WAGE RMS, 1960-1989	
YEAR	NOMINAL	REAL*	
1960-1964	5.8	4.0	
1965-1969	7.2	4.1	
1970-1974	12.2	4.1	
1975-1979	12.5	0.6	
1980-1984	17.5	3.3	
1985-1989	13.2	-1.5	

* Nominal rates deflated by increases in the consumer price index

SOURCE: South African Reserve Bank. Quarterly Bulletin. various Pretoria: Government Printer.

4.6.1.2 A RECESSION

Before inquiring into the effect of a recession on tourism demand, it will be of interest to look at basic characteristics of recessionary periods. Firstly, a distinct decline in real income of the consumer occurs. Secondly, there is an increase in unemployment in the total population and thirdly a general feeling of insecurity among the entire population is experienced (Kruger, in Du Plessis, 1986:115). One significant value adjustment that consumers make which directly influences tourism, is that discretionary purchases (includes tourism products) are made earlier in an attempt to beat inflation.

A recessionary period has two possible influences on tourism demand. The one is advantageous, the other less so. For many tourism intermediaries the possibility of a recession may be problematic. To keep head above water, intermediaries may be forced to provide discounts in an attempt to persuade the traveller to at least travel somewhere. This would lead to intense competition which may help travellers who can afford to take a holiday to get value for their money (Van Wyk, 1991(a):30).

According to Burkart and Medlik (1975:208) tourists will generally respond to price incentives. The reason being that tourists have demonstrated strong price consciousness not only about accommodation and other services offered but also in choosing modes of transport and travel distances.

The second cause is a direct result of this economic feature. Van Wyk (1991 (b):26) believes that a worldwide recessionary condition has become apparent. The effect thereof can place a damper on travel and tourist activities. This was the case over the 1991/92 holiday period in South Africa.

4.6.1.3 ECONOMIC GROWTH AND INTEREST RATES

Economic growth and interest rates are a further significant influence on travel and the ability to do so. Economic growth, which is directly correlated to the per capita income of the individual, will determine the position of an individual to undertake a vacation. The negative economic growth in South Africa over the last few years has resulted in the economy being negatively charged. This may be directly related to interest rates and their fluctuations. The concept of "fly now pay later" is directly influenced by this phenomenon. The idea of taking a holiday and paying for it later appeals, as hire purchase seems to be the ideal situation at the time. However, the high interest rates which exist may make people think twice about paying for a holiday in this manner. When interest rates are low this method is a more viable proposition. The reason being, if interest rates are lower than the inflation rate, paying at a later stage would result in a winning situation as the individual will be saving in the long run.

4.6.2 ECONOMIC FACTORS AFFECTING THE INDIVIDUAL

4.6.2.1 THE PRICE OF TRAVEL

The issue of price entails many aspects and is generally regarded as a major element of the economic environment which influences demand. Martin and Witt (1987:233) discern two elements of price in tourism:

- * the cost of travel to the destination
- * the cost of living for the tourist in the destination

As the cost of travel has been described in a previous section only certain aspects which relate to its interaction with other variables falling under the economic environment are discussed. Numerous studies have been undertaken to ascertain the effect of the travel cost variable on various dependent variables such as tourist income and expenditure. Several writers such as [Askari (1971); Bechdolt (1973); Gray (1966) in Archer, 1976:38] and others have regarded cost of travel as an important explanatory variable when considering the effects on demand.

According to Archer (1976:49), the cost of travel is usually found to be strongly and negatively correlated to the level of income of the tourist. According to Burkart and Medlik (1981:56), the cost of transport has the ability to restrict tourism volumes but can also positively stimulate tourism growth. This is portrayed in the limited significance thereof over short distances but of primary importance over long distances where air transport plays an ever increasing role in travel.

The question of data in tourism is always a contentious issue. Due to lack of suitable data, Martin and Witt (1987:233) propose the use of the consumer price or retail price index of a country as a proxy for the cost of tourism in that country. The application thereof falls beyond the scope of this study.

According to Archer (1976:50), a further factor which researchers have taken into account is a relative price variable which plays a significant part in influencing both tourism expenditure and tourism receipts for organisations.

Martin and Witt (1987:233) suggest the use of a tourist service price index may be appropriate. Unfortunately, no such index is available and to compile a reliable one requires more completed data than is at present available. Kliman (1981:489) discerns that:

"the data do not represent the underlying variables as accurately as one would like....there are some instances in which only rough approximations to the theoretically correct constructs are possible. For example, in measuring relative movements ofprice levels it would be desirable to have indices defined over a basket of goods purchased by tcurists, rather than over the usual typical consumer basket."

The cost of living for the tourist in the destination is of further significance. Martin and Witt (1987:234) discern that exchange rates are also sometimes used to represent tourist living costs. Although they usually appear in addition to either specific cost-of-tourism variable or a consumer price index proxy they may be the sole representation of tourists buying costs.

For international tourism, Middleton (1989:39) concludes that price is complicated by the combined effects of exchange rates on holiday prices between countries of origin and countries of destination.

A look at the South African situation depicted in table 4.5 shows a distinct depreciation of the South African rand against other major foreign currencies. However, Holloway (1989:44) is of the opinion that sometimes exchange rates may be so low in a destination country compared with the generating country that even unfavourable exchange rates will not discourage travel. This has been the case in South Africa where tourists flocking

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overseas are faced by a daunting exchange rate of R5 to the pound and R2.50 to the dollar. According to various intermediaries (S.A. tourist are flocking overseas, 1990:19) no one seems to be worried about the exchange rates as people are going abroad in droves. The contrary is also true in that many people are taking advantage of the lower exchange rates to visit the country even though instability is the order of the day.

TABLE 4.5	EXCHANGE OF THE SC MARKETS 1	EXCHANGE RATE VALUE OF THE RAND EXPRESSED IN TERMS OF THE SOUTH AFRICAN RAND IN THE FOREIGN EXCHANGE MARKETS 1980-1989.					
YEAR	US DOLLAR	UK POUND	DEUTCH MARK	JAPANESE YEN	FRENCH FRANC		
1980	1.28	0.55	2.33	294	5.44		
1981	1.13	0.57	2.58	256	6.14		
1982	0.92	0.53	2.23	227	6.04		
1983	0.90	0.59	2.29	212	6.84		
1984	0.68	0.51	.1.96	164	6.02		
1985	0.46	0.34	1.35	109	4.11		
1986	0.44	0.30	0.95	73	3.03		
1987	0.49	0.30	0.88	71	2.95		
1988	0.44	0.25	0.77	56	2.62		
1989	0.38	0.23	0.72	53	2.43		

SOURCE: Bureau for Economic Research. Trends. various. Stellenbosch: University of Stellenbosch.

Fretchling (1987:107) believes the United States dollar will weaken further in exchange markets. The implication thereof means that travel abroad will become less competitive with domestic destinations on the basis of price.

A final aspect relating to the choice of a holiday or not is the price of tourism products relative to other products being a key factor in tourism demand (Archer, 1987:84).

This can be seen as the choice potential tourists have on how to spend their discretionary income. Holloway (1989:44) says, that for an individual, tourism competes with other items, such as a car or home improvements, for a share of the budget. Thus, if someone is debating whether to take a holiday or buy a new car a

special offer on cars coupled with a threat of later price rises will probably stop them from being a tourist. Middleton (1989:39) feels that in conjunction with this comparative prices are a concept of high complexity in practice. The effects are far from easy to predict with any precision, partly because customers perception may differ from reality.

It can be said with some certainty, that in the short term at least, price appears to be the strongest single influence on many forms of market demand in the tourism sector.

4.6.2.2 TAXATION

It is possible to distinguish between "two types" of taxation: taxation levied on income and taxation directly associated with travel and tourism. The first form determines the amount of disposable income an individual has left at his disposal. Disposable income does not directly affect the ability to travel, although it is a facet which needs consideration.

Of equal significance is the taxation levied on travel related activities. Although this may not have a phenomenal impact on people travelling, it is important to address this subject. Various questions concerning taxation of travel and tourism activities may be of concern. For example, should South Africa impose a tax on its visitors from overseas as a means of raising revenue to support marketing efforts overseas? If so, how should this tax he imposed?- either on hotel beds, departing or entering tourists or some other way. Attention is at present being given to imposing a nominal tax on people leaving the Republic together with a levy on hotel beds. One reason: the infrastructural improvement of South Africa's major airports. Israel, for example, has a 10 dollar tax imposed on all visitors entering the country with a further tax imposed on Israeli Nationals wanting to travel abroad.

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Fretchling (1987:107) believes the United States state and local governments will increase tax levies on travel related activities. While being of the opinion that estimates indicate that domestic (U.S.A.) tourism expenditure taxes have increased 25 percent over the period 1982-1987.

One further factor regarding taxation which is of significance according to Holloway (1989:43), is taxation policy. If governments permit all business tourism spending to be allowed as a business expense, companies may be willing to spend as much on tourism as on stationery and communications. Sometimes a limit is placed on the deductibility of tourism expenses, so forcing businesses to provide from profits the necessary funding. Over the last few years the United States government policy has fluctuated and business travel has changed accordingly. Tourism expenses of companies in South Africa will be taxed in some or other way. It may be directly against the companies taxable income or as a taxable benefit to those persons undertaking the holiday.

4.6.2.3 SAVINGS

Savings is an aspect which competes with tourism and other discretionary purchases and a subject closely associated with inflation. From figure 4.1 it is evident that people are saving less and less on average, directly caused by inflationary pressures. This could indicate that people may be using their discretionary income for purchasing holidays or other discretionary purchases instead of investing it.

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SOURCE: Institute for Futures Research. Business Futures. 1990. Stellenbosch: University of Stellenbosch: 622.

4.6.2.4 INCOME

Income may be seen as the main factor governing and inhibiting the growth of tourism demand. Since most individuals make purchases out of their incomes, the size of those incomes is likely to be very important for tourism demand. Surveys conducted in France and Spain indicate that the lack of money is the most important factor hampering tourism participation (Pearce, 1987:25). Attention will be given to the importance and degree of influence the income variable exerts in relation to the above. From studies (Foster, 1987; Smith, 1989) conducted there was general agreement that in most cases the income elasticity figure was above unity: a small percentage increase in incomes in the origin country led to a more than proportional rise in tourism demand. Further attention is given to the income distribution in South Africa amongst all population groups, as well as the disposable income distribution. Notes on travel expenditure provided by discretionary income is also provided.

It may be appropriate to review in the light of personal income how funds become available to spend on tourist and travel activities. Figure 4.3 provides a presentation of the distribution of an individual's personal income. It is possible to distinguish between "three types" of income. As seen, personal income is the income earned mostly from salaries and wages. Disposable income on the other hand is seen as the amount of income left after taxes have been paid. Lastly discretionary income; the income left after personal outlays to maintain basic living needs and standards.



FIGURE 4.3: A DIAGRAM OF PERSONAL INCOME DISTRIBUTION

SOURCE: Adapted from Mill, R.C. and Morrison, A.M., 1985. The Tourism System, An Introductory text. London: Prentice-Hall: 54

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These incomes will now be looked at in more detail with reference to the South African situation. Table 4.6 gives an indication of the per capita income distribution within the various population groups in 1985.

TABLE	4.6: PER CAP VALUES	ITA CURRENT DISTRIBUTED	IN INCOME	NCOME IN QUANTILES	1985 RAN FOR 198
QAIN- TILE	PERCENTAGE OF POPULATIO	N WH7	LOURED	ASIAN	BLACK
Q1	0 - 20	3748	520	960	230
Q2	20 - 40	5634	935	1440	568
Q3	40 - 60	7804	1429	2120	1315
Q4	60 - 80	11696	2514	2349	3286
Q5a	80 - 90	16275	3735	4956	6.114
Q5b	90 - 95	21909	5095	6677	9640
Q5c	95 -100	>21909	>5095	>6677	>9640

SOURCE: Institute for Futures Research. Business Futures. 1990. Stellenbosch: University of Stellenbosch: 617

According to Holloway (1989:43) the distribution of income within a country, as seen in South Africa is important if incomes are concentrated in the hands of a few people. The result is the "have's" will travel but with so many "have nots" there will be no mass domestic tourism generation.

According to Burkart and Medlik (1975:73) a broad generalization is made when one says that expenditure on holiday travel is functionally related to income levels: as personal income increases so does the amount of travel expenditure.

From disposable per capita income per population group depicted in table 4.7 it is evident that the same pattern as described above is portrayed. For tourism analysts discretionary income indicates the potential to partake in tourism activities. Data in this regard is limited with the result analysts rely on disposable income data to draw conclusions.

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TABLE 4	LE 4.7: DISPOSABLE INCOME PER CAPITA IN 1985 BY POPULATION GROUP, 1960 - 1987							
	WHITES	COLOUREDS	ASIANS	BLACKS				
1960	5921	972	1058	503				
1965	6966	1191	1354	565				
1970	8521	1499	1816	707				
1975	9033	1897	2432	904				
1980	9134	2007	2774	984				
1985	9079	2138	3046	1006				
1987	8116	2066	2892	996				

SOURCE: Bureau for Market Research. 1989. Personal income of the RSA/TBVC countries by population group and magisterial district. Pretoria: University of South Africa: Research Report No 163.

Mill and Morrison (1985:54) discern that many attempts have been made to determine the percentage of income (discretionary income) spent on tourism as a whole. It appears (Ibid, 55) that at lower levels of income, approximately two percent of the income is spent on recreation. As income rises the proportion spent on tourism increases to between five and six percent for all education levels. The highest recreational expenditure, seven percent, is found where people posses certain demographic features (to be discussed later).

The conclusion drawn by looking at holiday expenditure in a study conducted by Ferrario (1985:19), is that a distinct pattern is emerging concerning the holiday expenditure of the population groups. From table 4.8 it is distinctly visible that a reduction in the growth of White holiday expenditure is expected to the year 2000 with a dramatic increase in Black expenditure over the same period. From what has been discerned with regard to the positive correlation between income and tourism expenditure, the deduction can be made that personal income and therefore discretionary income will increase dramatically, especially with regard to the Black population.

TABLE 4.8: EXPECTED OVERALL HOLIDAY EXPENDITURE IN SOUTH AFRICA IN 1985 and 1990 WITH FORECASTS TO THE YEAR 2000

	EXPENDITURE IN MILLION RANDS				
	HOLIDAYS	LONG WEEKENDS	TOTAL EXPENDITURE		
1985					
White	1852.9	911.2	2764.2		
Asians	106.3	34.1	140.4		
Coloured	170.5	30.6	201.1		
Blacks	330.9	59.4	390.3		
1990			Will a be at de-		
White	1893.3	983.8	2877.1		
Asians	139.3	44.7	184.0		
Coloured	240.5	43.9	288.4		
Blacks	516.8	91.2	608.0		
2000					
White	2145.9	1360.4	3506.3		
Asians	210.4	99.0	309.4		
Coloured	507.0	205.3	712.3		
Blacks	1474.9	445.4	1992.7		
TOTAL	4338.2	2182.5	6520.7		

SOURCE: Adapted from Ferrario, FF. 1985. The South African Holiday Market Now and in the Next Decade - A co-operative inquiry- Cape Town: University of Cape Town. Department of Geography. 19.

4.7 THE DEMOGRAPHIC ENVIRONMENT

The demographic factors which affect demand for travel and tourism are those which pertain to the main characteristics of the population and individual. After a thorough literature search, it was decided to concentrate on the following elements: the population size in the origin country, the age structure of the population, education levels, sex, family size and lifestyles.

A further sub-element of the demographic determinant is the geographical distribution of the population in South Africa. Analysis of factors such as urbanization, proximity, distance, climate/weather, size of communities and location of large urban areas are addressed.

4.7.1 POPULATION SIZE

Some confusion exists amongst authors over the importance of the population size in the origin area as a determinant affecting demand. Archer (1987:84) believes that this element is a principle factor affecting demand. Burkart and Medlik (1981:287) complement this by adding that demand occurs particularly in the case of those countries with high propensity to tourism. However, Foster (1987:112) is of the opinion that population growth and size as such appear to have little effect on tourism demand. (Crampon (1973) in Archer, 1976:89) has included population size as a explanatory variable when forecasting demand.

From the South African situations depicted in table 4.9 the following deductions are made. The 1990 population of South Africa (within the 1910 boundaries), is estimated at approximately 37,4 million, of which 76 percent is black, 13 percent white, 8 percent coloured and 3 percent is Asian. The total population is expected to increase to approximately 47,2 million by the year 2000 and approximately 70,8 million by the year 2020. The proportion of whites is expected to decrease to 11 percent by the turn of the century - a decrease of nine percent from the proportion of whites in the late 1950s (20 percent). TABLE 4.9: THE POPULATION IN THE VARIOUS CENSUS YEARS FOR THE PERIOD 1951 - 1985 AND FORECASTS TO 2020

		POPULATION :	IN THOUSANDS	
YEAR	BLACKS	WHITES	COLOUKEDS	ASIANS
1951	8560	2642	1103	367
1960	10928	3088	1509	477
1970	15340	3773	2051	630
1980	20800	4528	2686	821
1985	24549	4819	2918	894
1990	28244	4972	3189	972
2000	37048	5283	3732	1111
2010	47596	5516	4166	1225
2020	59195	5658	4583	1329

SOURCES: Grobbelaar, J.A. 1990. Forecasts of the South African population for the period 1985-2020. Stellenbosch: Institute for Futures Research, University of Stellenbosch; Spies, PH. (ed.). 1983. Urban-rural interaction in South Africa. Stellenbosch: Unit for Futures Research, University of Stellenbosch: 11.

Coupled with an increase in the purchasing power of Blacks, as described earlier, it would seem that population growth is fundamental to providing an indication of population growth movements, especially in the light of the above. Spies (1989:4) is optimistic that South Africa is in a position to solve its growth problems, which if not solved, could put more pressure on the existing tourism infrastructure and superstructure.

4.7.2 AGE COMPOSITION

The relationship between tourism and age comprises two co ponents according to Mill and Morrison (1985:52) - the amount of leisure time available relative to age and the type and extent available, changes curve linearly with the younger and older age groups. This section is addressed from these extremes. Firstly, general demographic occurrences as they occur internationally and in South Africa will be discerned with emphasis on the tourism aspect.

The demographic changes in the Western world affecting Europe are equally evident in the United States and Japan (Lawson 1987:143), which is endorsed by Fretchling (1987:108). The distribution of the population according to age in South Africa is provided in table 4.10 enabling the following conclusions to be made. The age structure of the White and Black population groups differ significantly. According to the Institute for Futures Research (1990:85) the white population is ageing in accordance with the first world (at present 2,2 percent (20 percent by 2000) of the population is currently below 15 years of age and 9 percent older than 65 (10 percent by 2000). Among the black population 43 percent are below 15 years of age (41 percent by 2000) and three percent above 65 (3 percent by 2000)). For the other population groups the age structure has changed significantly since the early 1970s with proportionate declines being experienced in the various age groups. These declines are expected to continue beyond the year 2000.

TABLE 4.10: DISTRIBUTION OF THE SOUTH AFRICAN POPULATION (INCLUDING TBVC) ACCORDING TO THREE AGE GROUPS FOR THE PERIOD 1960-1980 WITH FORECASTS TO 2020

	1960	1980	1990	3000	2020
0-14	988	1223	1094	1057	1075
15-64	1884	2943	3431	3698	3734
65+	216	362	447	528	849
Total	3088	4528	4972	5283	5658
0-14	679	1047	1052	1157	1054
15-64	785	1558	2009	2426	3208
65+	45	81	128	149	321
Total	1509	2686	3189	3732	4583
0-14	215	304	301	300	306
15-64	253	492	642	755	890
65+	9	25	29	56	133
Total	477	821	972	1111	1329
0-14	4480	8944	12142	15190	20718
15-64	6120	11232	15252	20747	36109
65+	328	624	847	1111	2368
Total	10928	20800	28244	37048	59195
	0-14 15-64 65+ Total 0-14 15-64 65+ Total 0-14 15-64 65+ Total 0-14 15-64 65+ Total	1960 0-14 988 15-64 1884 65+ 216 Total 3088 0-14 679 15-64 785 65+ 45 Total 1509 0-14 215 15-64 253 65+ 9 Total 477 0-14 4480 15-64 6120 65+ 328 Total 10928	1960 1980 0-14 988 1223 15-64 1884 2943 65+ 216 362 Total 3088 4528 0-14 679 1047 15-64 785 1558 65+ 45 81 0-14 679 1047 15-64 785 1558 65+ 45 81 Total 1509 2686 0-14 215 304 15-64 253 492 65+ 9 25 Total 477 821 0-14 4480 8944 15-64 6120 11232 65+ 328 624 Total 10928 20800	1960198019900-149881223109415-6418842943343165+216362447Total3088452849720-146791047105215-647851558200965+4581128Total1509268631890-1421530430115-6425349264265+92529Total4778219720-14448089441214215-646120112321525265+328624847Total109282080028244	1960 1980 1990 3000 0-14 988 1223 1094 1057 15-64 1884 2943 3431 3698 65+ 216 362 447 528 Total 3088 4528 4972 5283 0-14 679 1047 1052 1157 15-64 785 1558 2009 2426 65+ 45 81 128 149 Total 1509 2686 3189 3732 0-14 215 304 301 300 15-64 253 492 642 755 65+ 9 25 29 56 Total 477 821 972 1111 0-14 4480 8944 12142 15190 15-64 6120 11232 15252 20747 65+ 328 624 847 1111

SOURCE: Institute for Futures Research. Business Futures. 1990. Stellenbosch: University of Stellenbosch: 84.

As far as could be ascertained no particular study has been undertaken in South Africa up to now regarding the distribution of tourist age, it was decided to examine the effect on tourism by means of the following profile of British holiday takers and non-holiday-takers surveyed in 1980. The results are compiled in table 4.11 and can be regarded to larger or lesser degree to be an adequate representation of holiday makers in the Western World. According to Pearce (1987:26) it is evident that not only does the proportion of British adults taking holidays vary with age, but that marked differences occur in the extent to which different classes holiday at home or abroad. Those aged 45-54 for example, are proportionally under-represented in the non-

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holiday takers and markedly over-represented in those holidaying abroad when compared to the total adult population in Britain.

TABLE 4.11: A AGE PROFILE OF BRITISH HOLIDAY-TAKERS AND NON HOLIDAY TAKERS PER AGE GROUP (Percentage)							
GROUP	Adult Population	Adults taking no holiday	Holidays in Britain	Holidays abroad			
16-24	17	18	13	20			
25-34	19	18	19	19			
35-44	17	14	19	18			
45-54	14	12	14	20			
55-64	15	14	18	14			
65+	18	24	18	9			

SOURCE: Pearce, D.G. 1987. Tourism Today: A Geographical Analysis. New York: Wiley: 28.

Middleton (1989:43) believes that older people (70+) will have a low propensity in engaging in travel and tourism, younger people having a higher propensity. Foster (1987:112) feels that as the age medium rises so more people should move into income levels that permit participation in tourism. Some degree of contradiction exists between Middleton and Foster regarding the Fretchling (1987:108) indicates that surveys 65+ group. conducted conclude that the 65 + age group do not take as many trips away from home as other age groups, however, when they do, they tend to stay away 50 percent longer and travel 10 percent further than their younger counterparts. Mill and Morrison (1985:53) believe that tourism participation time decreases with age until children leave the home. The amount of tourism participation then increases and continues to do so with retirement, although participation in the gentler forms of tourism such as interest levels in activities take preference.

4.7.3 EDUCATION

The role of education and its effect on tourism demand is significant. Mill and Morrison (1985:55) beli ve there can be little doubt about the strong correlation between ducation and its relation to income. This statement is endorsed by many
authors including Lawson (1987), Burkart and Medlik (1981) and Middleton (1989). For example, those adults in the United States who have completed college tend to average twice as many trips a year as those who have only completed high school (Fretchling, 1987:109).

Further, the type of activity, destination and mobility factors are indirectly influenced by education levels. Burkart and Medlik (1975:32) indicate the relationship between education standards and the desire to travel.

Researchers have found that participation in outdoor recreation tends to increase as the amount of education increases. From this premise by Mill and Morrison (1985:56) it may be possible to investigate an international and South African situation.

Fretchling (1987:109) is of the opinion that in the United States the population will be better educated in the years to come. This is encouraging as the percentage of those attending United States colleges grows with each successive generation. The college attendance level of people aged 25 years or older indicated 36 percent in the United States in 1987. By the end of the century this proportion is expected to reach 40 percent. Table 4.12 gives an indication of the South African situation. The following deductions may be made concerning specifically the White and Black population education standards. It is expected that the white populations education levels will drop eight percentage points to the year 2000 with a drastic decline to the year 2020. The opposite effect is expected to occur regarding the black population, where dramatic enrollment at Universities is forecast from the turn of the century, as indicated in the table.

	1960		1980		1988		2000		2020	
	1000	0¢	'000	8	'000	*	1000	*	1000) %
Whites	38.1	90	120.6	75	151.1	55	132	47	144	29
Coloureds	1.0	2	8.4	5	17.6	6	23	8	44	9
Asians	1.6	4	11.5	7	17.9	6	20	7	32	6
Blacks	1.8	4	20.3	13	89.9	33	108	38	275	56
TOTAL	42.5	100	160.5	100	276.5	100	283	100	495	100

TABLE 4.12: ACTUAL AND PROJECTED UNIVERSITY ENROLLMENT, 1960-2020 ACCORDING TO POPULATION GROUP

SOURCE: Institute for Futures Research. Business Futures. 1990. Stellenbosch: University of Stellenbosch: 142.

It appears that the more educated people are, the broader their horizons and the more options they can consider. The more educated traveller being more sophisticated in their tastes. The converse suggests that less educated travellers may equate having fun with spending money.

4.7.4 FAMILY SIZE/LIFE STYLES AND GENDER

The characteristics of the family at various stages of the life cycle offer certain opportunities or exert various pressures that affect purchase behaviour. It has been noted in various studies by Burkart and Medlik (1975:32) that variations in financial commitments at different stages in the life cycle of a family have a marked influence on the amount spent on tourism.

In Britain, for example, smaller households have emerged as the norm with fewer young children, which could affect demand for travel and tourism (Middleton, 1989:37). Fretchling (1987:109) believes that the singles market is growing stronger in the United States. The rate of divorce and non-family households has led to projections of individuals living alone or not related, increasing at a rate 2.5 percent as fast as family households providing a lucrative market to increase tourism

demand. Middleton (1989:37) believes that household composition cannot be separated easily from education and income.

Directly coupled with family life cycles are their life styles. Some people prefer to take holidays as families while others prefer friends or even being alone. There can be little doubt that young people prefer adventure filled holidays while older people and those with families prefer holidays which include participation by all in the recreational activities decided upon. This trend exhibited by life cycles gives an indication of the maturity of the tourism market according to the World Tourism Organisation (1981:28).

Where the issue of sex is concerned there are more similarities than differences between the sexes in terms of tourism participation rates. According to Mill and Morrison (1985:55) overall, participation rates in tourism activities do not differ between men and women. However, there is a clear difference between the sexes in terms of preferred activities.

4.7.5 THE GEOGRAPHICAL DISTRIBUTION OF POPULATION IN SOUTH AFRICE

Urbanization has resulted in an unprecedented flood of people moving from rural to urban areas. Archer (1987:84), feels that the level of urbanization in the origin area has a significant influence on demand. While rural densities in South Africa are likely to decrease over the next decade, the pace of urbanization will bring extensive changes to patterns of human settlement according to Sunter (1989:51).

The following figures may give some indication of this extreme change where South Africa's urban population is expected to grow from 16,2 million in 1985 to 35,7 million by the end of the century (Sunter, 1989:52). The consequences for the tourism industry could be dramatic. This trend may lead to changes in tourist behaviour with pressure being placed on the tourism infrastructure causing problems, especially in the immediate vicinity of these urban areas.

The potential consequences of these problems may result in the rich diversity of landscapes and wild life that are concentrated within a few hundred kilometers of large urban areas, a prime drawcard of the tourism industry, being damaged beyond repair.

Invariably, climate and weather conditions may further influence the geographical distribution of tourists and resorts. Middleton (1989:38) explains that the geography of a resort is explained by a combination of weather factors and location of large urban areas. South Africa enjoys one of the most pleasant and healthiest climates in the world, resulting in more pressure being placed on the tourism infrastructure of resorts such as seaside resorts where air transport journeys of up to around 1600 kilometers can be accomplished in two hours flying time or a few hours driving time as between Johannesburg and the Eastern Transvaal.

Directly related to the above are the factors of proximity and distance which can be seen as a function of various factors such as foreign exchange rates, price increases and so on. The main control exercised by these constraints is on the distance a tourist travels. From a international perspective, South Africa is a considerable distance from the main tourist centers of the United States and Europe. Holloway (1989:48) believes that distance in this instances, is a combination of time and cost coupled with proximity and may influence demand. This is graphically illustrated in figure 4.4

It is evident that the number of tourists decrease quite dramatically as distances increase with an "average" travel time indicated by the peak of the distribution.

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FIGURE 4.4: THE RELATIONSHIP BETWEEN DISTANCE/COST AND THE NUMBER OF TOURISTS TRAVELLING



SOURCE: Holloway, J.C.. 1989. The Business of Tourism. Third edition. London: Pitman: 48

According to Kaynak and Macaulay (1984:92), the shrinking world owing to transportation improvements, may further influence demand to and in South Africa, thereby affecting the time and cost in reaching the destination. There can be little doubt that the infrastructural capabilities will be directly affected by tourist flows owing to changes in demographic trends of the population and numerous other factors resulting in a booming tourism industry.

As a direct result of increased tourist flows, the detrimental effects of mismanagement and the challenges facing each business individually could become insurmountable if an attempt is not made by all to assist in balancing the prosperity among regions and businesses.

4.8 LINEAR VERSUS SYSTEMS CAUSALITY

The determinants and subdeterminants analysed in this chapter provide the basis for the discussion of causality. Many of the determinants reviewed have a complex inter-locking effect on each other which makes the forecasting of tourism demand a difficult task (Foster 1987:113). For this reason it is appropriate to inquire into linear and systems causality: a way of describing this complex, interlocking effect. Linear causality as depicted in the figure 4.5 provides for a single determinant which needs to be necessary and sufficient to bring about some effect on demand. It is quite clear that more than a single determinant is necessary to bring about some future state of demand. What is needed is a richer concept of causality that provides for all possible determinants.



SOURCE: Adapted from Strümpfer J.P., 1988. Systems thinking: conceptual tools. Unpublished notes for the short course: Measuring and making the future. Cape Town: Institute for Futures Research. University of Stellenbosch.

Systems causality may be seen as a concept providing some explanation of the complexity of the various tourism demand determinants and how they affect each other and the tourism industry as a whole. The systems approach is depicted in figure 4.6. The comprehensiveness of the concept results in linear causality not being ignored but enclosed by the thought of systems thinking. As a result of the complexity, systems causality succeeds in bringing the determinants together in order to produce the effect it has on demand. Because of the emphasis placed on the process of production, each co-determinant is not only necessary to "produce" the level of demand, but also the sufficiency condition derives from the process of interaction between the co-determinants (Strümpfer, 1990:14-16).



SOURCE: Adapted from Strümpfer, J.P., 1988. <u>Systems thinking: conceptual</u> tools. Unpublished notes for the short course: Measuring and making the future. Cape Town: Institute for Futures Research. University of Stellenbosch.

Fortunately however, many of these determinants change relatively slowly. The time for short and medium term forecasting effocts can be largely ignored according to Archer (1987:84). Their influence in the long run may be important and should be taken into account when making forecasts. Examples of how these determinants are used in technique and model calibration are provided in chapter 5. Only people with relevant knowledge and experience should undertake demand forecasting. Practitioners and academics being cited as examples.

4.9 SUMMARY

The comprehensiveness of the various tourism demand variables became clear in the discussion and evaluation of each during the course of this chapter. Six main determinants were anlysed together with the sub-determinants of each:

Social environment: Here an attempt was made to indicate movements of future importance to analysts together with an idea of instability and trend changes shown by tourists. For example their behaviour, motivations, habits and attitudes change for no apparent reason. Regarding communication, which includes marketing and promotion, certain challenges and problems being experienced were highlighted.

Technological environment: The need for continuous innovation to keep the interest of the tourist and cater for the more sophisticated traveller through theme parks and other attractions were accentuated as potential challenges. Issues of safety and luxury pertaining to travel in the present and future context received attention.

Political environment: The influence on demand by political activity could be described as totally unpredictable. Factors such as boycotts, embargoes and sanctions were debated indicating a number of shortfalls as a negative impact of a political situation. On the positive side, governmental laws and

regulations pertaining to the adequate use, supply and needs of the population were mentioned.

environment: This environment through "adequate Physical provisioning", provides the cregarious experience sought by Besides explaining the necessity of an adequate tourists. image, congestion infrastructure, factors such as and ecological accessibility were considered. Transport and considerations were highlighted by indicating a number of challenges and shortcomings in this area.

Economic environment: Numerous factors which inhibit or promote tourism participation were discussed. In broad terms two categories were distinguished: general economic trends, were it was found that inflation and a recession definitely impact on the willingness to travel. Secondly, economic factors which affect the individual, for example, the price of tourism, taxation and savings influences the ability to travel.

Demographic environment: The characteristics of people and households were discussed where it was found that age, population growth and education are factors which determine the type of holiday, distance to be travelled and the frequency of holidays taken. The geographical distribution factors, like urbanisation, proximity and location were considered in conjunction with the demographic profile of the population and individual. It was found that proximity and distance, if it be from large urban areas, or South Africa's position in a world context has an influence on demand.

In conclusion the concept of systems causality was considered by not only indicating the effect of the determinants on each other but also the effect on demand and the tourism industry. Tourism complicated by the compound demand forecasting is influences. The interrelatedness portrayed by the various availability and selection of the appropriate forecasting models or technique to be discussed in chapter 5, has to be accomplished with the utmost care when forecasting future demand.

SECTION 2

THE USE OF MODELS AND TECHNIQUES IN GENERATING FORECASTS OF TOURISM DEMAND

CHAPTER 5

MODELS AND TECHNIQUES USED IN TOURISM DEMAND FORECASTING

5.1 INTRODUCTION

The essence of forecasting is the use of some form of model or technique which incorporates a certain amount of individual judgement and expertise. Many forms of forecasting are available, but only certain are applicable to demand forecasting in tourism. This chapter evaluates the merits (strengths and weaknesses) and applicability of the techniques or models in various sizes of tourism businesses. Firstly by elaborating the basic premise on which each technique or model is based and secondly providing examples as applied in the tourism field continuity in the discussion is achieved. The chapter is presented by means of a diagrammatic representation (figure 5.1) which depicts the various techniques to be discussed in conjunction with the forecasting approach to be used.

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FIGURE 5.1: THE LINK BETWEEN THE FORECASTING SYSTEM AND APFROACHES USED TO FORECAST TOURISM DEMAND



SOURCE: Significantly adapted from Van Doorn, J.W.M. 1982. Can futures research contribute to tourism policy? Tourism Management. September 1982: 153.

5.1.1 FORECASTING PERSPECTIVES

A broad range of techniques and models are available for demand forecasting in tourism. Overviews of possible forecasting methods (of varying degrees of detail) are provided by various authors like Archer (1976, 1980, 1987), Sheldon and Var (1985), Uysal and Crompton (1985), Van Doorn (1984, 1986), the World Tourism Organization (1981) and Witt and Martin (1989). It is understandable that all the techniques applicable cannot be discussed, but this review will, as far as possible - discuss those forecasting techniques and models which are most commonly used in the tourism and recreation fields.

To provide continuity to the discussion the following topics regarding the majority of the techniques are discussed after providing a broad description of the classification in which the techniques are noted. The following issues are addressed: a short description of the technique, its strengths and weaknesses (advantages and disadvantages), its applicability to certain types of tourism businesses and situations in which the technique has been applied in the tourism industry or explicit examples of how the technique may be applied.

5.2 QUANTITATIVE METHODS

Three types of quantitative techniques are available - time series, causal and systems models - although some of the more sophisticated models incorporate elements of each.

5.2.1 UNIVARIATE TIME SERIES MODELS

These models are based upon the premise that what has happened in the past has some relevance for the future. They ignore the determinants of demand per se and assume that the effects of causal factors are already implicit in the past data of the variable to be forecast. Forecasts are obtained by analysing trends in the data and extrapolating these into the future (Archer, 1987:78).

5.2.1.1 MOVING AVERAGE

The basic premise of the method enables a future value of a particular time series to be estimated by adding the data from previous periods together and dividing that by the number of observations to give an average figure. As a new data point becomes available this is included in the set, while the oldest observation is removed and a new average is calculated (Witt and Martin, 1989:5).

The formula for the moving average is as follows:

 $Y_{t+1} = 1/n Y_t + 1/n Y_{t-1} + \dots + 1/n Y_{t-n+1}$

Where:

Y	=	past values of time series									
Y++1	=	estimated (future) value									
n	=	number of terms to be included in the									
		calculation									

From this method, one future value for one particular variable is forecast. A time series with a number of data points containing at least as many is needed to determine the average, is necessary.

(a) Strengths and weaknesses

The method is easy to handle as costs are limited due to the unsophistication of the method. The development time is also short.

The method is very mechanistic. The only decision which the forecaster has to make is how many terms to include in determining the average.

Secondly, the method is not applicable to series containing steps or trends (as is often the case with tourism data), as these would cause the moving average to lag behind the movement in the data.

(b) Applicability of the method in tourism businesses

Although the method is very easy and cheap to compute, the method cannot, for example, be applied if tourism demand were increasing, because it would underforecast. The technique is not, in its simplest form, accurate enough to produce reliable demand forecasts. This method is not frequently used in practice as an independent method, but is mostly applied to a time series in an attempt to smooth it. However, in a survey of tourism practitioners and academics, Martin and Witt (1988:329) found that this method was the most widely used univariate time series technique.

(c) Example

If bednights sold to tourists over a ten year period on a yearly basis, where a forecast is being made for 1991, the basic formula is:

5.2.1.2 EXPONENTIAL SMOOTHING

Exponential models provide a relatively simple set of forecasting methods. These include single exponential smoothing, the simplest smoothing method, and more complicated methods which include adaptive smoothing, Brown's double exponential smoothing and Holt-Winters double exponential smoothing.

(a) Single exponential smoothing

The singe exponential smoothing model in effect, attempts to reduce forecast error by correcting the last period's forecast by a proportion of the last period's error. Stellenbosch University https://scholar.sun.ac.za

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The formula used is:

$$Y_{t+1} = AY_t + A(1-A)Y_{t-1} + ---- + A(1-A)NY_{t-n}$$

Where:

 Y_{t+1} is the single exponential forecast Y is the values of the time series A is a constant

Of note, single methods are only applicable to stationary series, that is, data without steps, trends or seasonality components. If a trend were present it would be necessary to transform the data by differencing, to make it applicable. If seasonality were present in the time series (as is almost certainly the case if monthly or quarterly tourism data is considered), it is necessary to apply the same transformation prior to forecasting.

(c) Double exponential smoothing methods

The Holt-Winters method in consequence to Brown's method makes provision for series containing seasonality. This method produces forecasts containing a constant level term, a linear trend term and seasonal factors (Witt and Martin, 1989:6).

(a) Strengths and weaknesses

They perform well in practice and apart from the fact they are easy to handle and cheap to compute, they are well suited to high-volume applications.

The method is very mechanistic which together with a subjective choice on the part of the forecaster of a value for A makes the method not suitable for medium to long term forecasting (Archer 1987:79).

(b) Applicability of the method in tourism businesses

Due to the double exponential method being very practical together with cost advantages and low development time, the

method can be recommended for all tourism businesses especially those with limited research resources. Large amounts of sophistication are not needed as forecasters have found the method to be reliable due to seasonality being catered for. Of particular interest is that exponential methods are widely used, as indicated by a survey of tourism practitioners and academics undertaken by Martin and Witt, (1988:329) placing it on level par with the moving average method.

(c) Examples

In many instances exponential smoothing forms an intrinsic element of the Box Jenkins approach (to be discussed later). Uysal and Crompton (1985:10) mention that these approaches were applied to tourism arrival data for Hawaii as two separate methods. The main aim of the study was to compare the two techniques where the exponential method was preferred due to its lower costs although its accuracy was not as superior.

Guerts (in Calantone et.al., 1987:32) believes that there is evidence that double exponential smoothing, when carefully applied, can be a particularly good way of obtaining longer term forecasts. He re-examined the Hawaii data mentioned before, and compared both Box Jenkins and exponential smoothing to the "data modified exponential double smoothing" method where the latter was found to be the superior forecasting method.

5.2.1 3 TREND CURVE ANALYSIS

The premise underlying trend curve analysis provides a forecaster with the opportunity to describe the behaviour of a time series by means of mathematical functions. The forecaster uses the formula Y = f(t) to describe the function. where:

- Y = the dependent variable
- t = time periods which apply to the Y this is the independent variable.

In cases where data exhibits great regularity, forecasts can be obtained merely by extrapolating the principle trends (Archer, 1987:79). Trend curve analysis using transformation can be employed to produce forecasts of data showing a wide range of patterns, for example, straight line projections, exponential growth or patterns that display a gradual approach to a saturation level. A variety of trend expressions are shown below:

Linear	Y = a + bT
Constrained hyperbola	Y = T/(a+bT)
Exponential	$Y = ae^{b}T$
Log-log	$Y = aT^b$
Semi-log	$Y = a + b \log T$
Modified exponential	$Y = ae^{b/T}$
Hyperbola	Y = a + b/T
Modified hyperbola	Y = 1/(a + bT)
Quadratic	$Y = a + bT + cT^2$
Log quadratic	Y = e (a + bT + cT2)

Where:

У	is the forecast variable
т	is the time period
e =	2.718 and
a,b,c	are coefficients to be estimated using regression analysis

Curve fitting methods should not be used blindly. Forecasters should choose the shape of the curve to be projected before using the analytical methods to find the best fit, as several curves may yield a reasonable fit to the data series but do not produce the same shape or forecast. Consequently forecasters should be aware of the various characteristics of each curve (Witt and Martin, 1989:8).

Trend Analysis can be seen as a three part process. Firstly examine the time series and decide on the basis of intuition which form of mathematical equation best describes the path of the time series. Secondly, fit the chosen function to the time series by using transformations or by a process of integration. The quality of the fit should be checked by visual comparison of the time series and the forecast. Finally, after the parameters

of the function have been determined, forecasts can be made by extrapolating the trend equation.

(a) Strengths and weaknesses

The use of mathematical functions forces the forecaster to be more careful in his approach. Assumptions have to be clearly expressed regarding the future directions of the time series.

The whole calculation processes can be viewed while the application is known. A number of statistical criteria can be calculated to indicate the success of the application to the data and provide the forecaster with an inherent distribution of the variable which is being forecast. These include the standard error of the forecast, a T- test, a F-test and other criteria.

This approach is sometimes criticized because it does not take into account the impact of "other" variables on the variable to be forecast (Uysal and Crompton, 1985:9). The possibility of using mathematical procedures may further indicate the over emphasising thereof while the forecast may be given a "status" which it does not deserve. The possibility of a communication gap between the forecaster and "client" as a result of computer application should not be ignored

(b) Application of the method in tourism businesses

The method is useful for any type of tourism business due to its relatively low cost and easy interpretation. According to Uysal and Crompton (1985:9) it provides very good short term forecasts. However, due to the assumptions which have to be made, Archer (1987:79) is of the opinion that the technique should be regarded as no more than a useful aid to forecasting and its results in isolation should be treated with extreme caution. It can be used, however, as an adjunct to several qualitative methods to be discussed later, as well as providing the basis for refinement of the following technique (decomposition).

(C) Examples

Tie-Sheng and Li-Cheng (1985) provides an example of the use of trend curve analysis in the area of tourism forecasting. They examine domestic tourism in China; their study focuses on the number of tourists visits to Hongshou and the exponential trend model is employed to generate forecasts.

Another example of a time series forecast for tourist demand is provided by Calantone (et.al., 1987:32) where a distributed-lag approach to forecast wilderness use in the state of California was used. This method is useful for businesses such as coach operators and others, in determining a basic trend in their tourist demand.

5.2.1.4 DECOMPOSITION METHODS

The observed values of a time series are usually the result of several influences. Here they focus on the isolating and measuring of those parts of the time series that can be attributed to each of the components. This entails the so-called classical decomposition of which the components may be seen below (Matin and Witt, 1989:23). The Census X11 method developed by the census bureau in the United States enables the trend term to be non linear.

The decomposition approach may be indicated in the following way:

$$Y_t = T_t \times S_t \times C_t \times W_t$$

T = represents the trend value for period t
S = seasonal factor in period t
C = cyclical factor in period t
W = irregular (unpredictable) component in period t

In broad terms the process involves determining the value of the trend term, T (the procedure used is a time series extrapolation). This trend term is then adjusted with the values

obtained from calculating the seasonal and cyclical components for the same time period in the future.

(a) Strengths and weaknesses

This method lends itself to relatively accurate analysis by refining the trend with seasonal and cyclical influences. According to Chambers et.al (1971:74) this method provides very good to excellent forecasts in the short term and reasonable forecasts in the medium term. Furthermore, this method enables a detailed analysis of the seasonal component by which most tourism data is affected.

The forecaster works with a manipulated formula and due to its sophistication considerably more computation is needed. The result is that it can rarely be calculated without the help of a computer. Furthermore, the method is relatively expendive to apply.

(b) Applicability of the method in tourism businesses

Businesses which show a high degree of seasonality such as hotels, airlines, coach operators and many other tourism businesses may derive benefit by using this technique especially for short term analysis of tourist flows. Although the technique requires sophistication and the costs are high, medium to large businesses may make use thereof for various applications. Examples of the following possible time series applications of this method in forecasts may include: tourists arriving and departing by air, tourists visiting an attraction or resort, estimates of foreign currency income from tourism, for residents departing abroad and the demand for bednights in hotels by tourists.

(c) Examples

The most common example of the application of the technique is Bar On (1972, 1973 in Uysal and Crompton, 1985:9) who used this technique to quantify the seasonal and cyclical component trends of several time series associated with the tourism industry in Israel and a number of other countries.

5.2.1.5 BOX JENKINS UNIVARIATE METHOD

The Box Jenkins univariate forecasting method is a highly sophisticated technique and is rather more difficult to apply than the other univariate time-series methods discussed.

It is particularly well suited to handling complex time series and other forecasting situations in which basic patterns are not readily apparent. The model usually incorporates autoregressive and moving average terms; the autoregressive component implies that the forecast variable depends on its own past values and the moving average component implies that the forecast variable depends on previous values of the error term. Furthermore, the models contain few parameters.

Describing their approach to forecasting, Box and Jenkins developed the schematic diagram shown in figure 5.2. This approach divides the forecasting problem into four stages. Initially, the person using the Box-Jenkins method postulates a of forecasting methods for his particular general class situation. A specific model that can be tentatively entertained as the forecasting method best suited to that situation is identified in stage one. Stage two consists of fitting that model to the available historical data and then running a check to determine whether it is adequate. If it is not, the approach returns to stage one and an alternative model is identified. When an adequate model has been isolated, stages three and four are pursued. Stage three being the development of a forecast for some future time period and stage four, the development of a

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control algorithm for a situation in which the forecasting method is to be used for control purposes (Wheelwright and Makridakis, 1983:129).



SOURCE: Wheelwright, S.C. and Makridakis, S. 1983. Forecasting: Methods and Application. Second edition. New York: Wiley: 130.

(a) Strengths and weaknesses

This method can be described as very powerful in that explicit information is provided. Accuracy is the ultimate aim of any technique applied in forecasting, the Box Jenkins showing greater accuracy, especially in the short term. This method may further provide some clue of the correct pattern, while the results are easy to interpret.

Numerous disadvantages exist, but should not be seen as

detrimental to the accuracy of the model. The sophistication of the technique is a limiting factor together with the cost and experience which is a mandatory requirement to be accounted for in applying the technique. Of further significance is that the development time is longer and a certain amount of subjective judgement is used by the modeler.

(b) Applicability of the method in tourism businesses

Due to the sophistication and experience required, including the cost, this method may be beyond the reach of the small tourism business. However, for businesses with the necessary resources the technique may provide the solution in analysing the complexity of time series data and selecting the appropriate forecasting technique.

(c) Examples

Of a number of applications of the Box Jenkins methods in the tourism forecasting field, two are contained in a research report produced by the Canadian Government Office of Tourism in 1983. This report contains monthly incoming tourists visit data on American travellers entering by car, plane, or other transport modes with their totals being modelled and forecast (Sheldon and Var, 1985:184). The technique was also applied to quarterly data on tourism receipts and payments for travel to and from the United States (Uysal and Crompton, 1985:10). Wander and Van Erden (in Calantone, et.al., 1987:32) used the method to project tourism demand in Pueto Rico based on tourist arrivals.

5.2.2 CAUSAL MODELS AND TECHNIQUES

These models take into account the principal factors influencing demand and analyse their separate effects upon the variable under consideration. Forecasts are made by calculating the impact on demand in forecasting changes in casual factors such as those discussed in chapter 4 (Archer, 1987:78).

5.2.2.1 MULTIPLE REGRESSION

The essence of this approach involves the use of regression analysis to estimate the quantitative relationship between the variable to be forecast and those variables which appear likely to influence the forecast variable or dependent variable (Witt and Martin, 1989:12).

The process of forecasting tourism demand by regression may be summarized as tollows:

- Select those variables which are expected to influence the forecast variable (the demand determinants) and specify the relationship in mathematical form.
- 2. Assemble data relevant to the model.
- Use the data to estimate the quantitative effects of the influencing variables on the forecast variable in the past.
- Carry out tests on the estimated model to see whether it is sufficiently realistic.
- If the tests show that the model is satisfactory, it can be used for forecasting.

The model is constructed by using the value of variable Y to be forecast with the help of a number of independent variables $X_1 - \dots - X_n$. In other words: $Y = f(X_1 - \dots - X_n)$

where:

Y is the demand for hotel occupation for example from a particular origin. $X_1 X_2 ---- X_n$ denotes the influencing variable f denotes some function

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Certain forms which are generally applied by tourism practitioners are amongst others.

Y	=	a +	$b_1 x_1$	+	$b_2 x_2$	+		+	b _n x _{r.}	(Linear)
Y	=	ax ₁	b1x2b2	2.		·x	bn (Ex	ponent	ial)

An example of the use of the linear and exponential model is provided by the World Tourism Organisation (1981:4) where an attempt was made to forecast world wide tourist arrivals for 1985 and 1990. They use World wide tourist arrivals as the dependent variable to be influenced by the evolution of the world gross domestic product index (GDP1) and the consumer price index (CPI).

Tab! 5.1 provides an indication how these formuli would look when ready to be applied.

TABLE 5.1: EXAMPL FUNCTI	ES OF DIFFERENT FORMS OF REGRESSION ONS
Type of model	Formula
Exponential	y = 0.326 . GDPI ^{1.14} . CPI ^{0.21}
Linear	y = 47.09 + 1.321GDPI + 0.36CPI

SOURCE: World Tourism Organisation, 1981. A report on tourism forecasting. Madrid. Report No 936: 4.

The first stage of any econometric forecast is the process of selecting those variables which are likely to influence demand for that particular variable (for example, hotel accommodation) and those which may be included in the demand function. As the various determinants have been evaluated in chapter 4. nothing further will be contributed here.

As has been demonstrated, no technique or model is without its pitfalls, which may lead the unwary into severe biases in the given results. For this reason attention is given to problems encountered when applying this technique. Archer (1976:27) identifies three such problems with Parker and Segura (1971:107)

indicating a fourth. The use of dummy variables in forecasting is further discussed as an issue:

- * Two-way causation
- Multicollinearity
- * Autocorrelation
- * Homoscedasticity and heteroscedasticity
- * Dummy variables and their use in forecasting

(i) Two way causation

A single equation assumes a one-way direction of influence, that is, demand is presumed to be influenced by income costs and other independent variables but not vice versa. This is overcome by looking at factors which directly influence tourism demand and in turn demand will influence these variables (Parker and Segura 1971:107).

(ii) Multicollinearity

This is the most frequently encountered problem (Archer, 1976:27). This condition arises when the actions of some or all of the explanatory variables in a model are so closely linked that it becomes difficult, or even impossible, to separate their individual influences and to derive a workable estimate of their relative effects.

One possible method of identifying such influences is to carry out a pre-screening of the various data series by conducting a series of simple correlations or partial correlations.

Lastly, two or more variables based upon time series data may be found to be highly correlated even though the same variables based upon cross sectional information may act independently. Income and price data series, two of the most frequently used in demand forecasting in tourism, often correlate in a time series distribution, particularly when inadequate variations occur in the income data to break this collinearity. One method of

overcoming this difficulty is to use pooled time series and cross sectional data, an aspect not elaborated on any further (Rawlings, 1988: 233).

This approach is now frequently adopted in demand forecasting, although there are still considerable problems in model and data specification and interpretation. Two other possible methods of overcoming the problem of multicollinearity are either to increase the sample size to give a wider more meaningful data base, or to add additional equations within the model itself to explain the relationships between explanatory variables possessing high degrees of collinearity (Archer, 1976:28).

(iii) Autocorrelation

In single-equation regression analysis, the residual is treated as an independent random variable and it incorporates all the explanatory effects not explicitly included in those explanatory variables $(X_1 \text{ to } X_k)$ (demand determinants) identified in the regression function. Time series data is particularly prone to produce autocorrelated results especially in cases where the values taken by one or more of the variables are a function of previous values of these variables.

Fortunately, two techniques (the Durbin-Watson test and the Von Neumann ratio) are available to give an indication of the degree of independence or autocorrelation of the data (Firth, 1977:122).

(iv) Homoscedasticity and Heteroscedasticity

It is a fundamental assumption of the linear regression expression that successive values of the residual should be independent of previous disturbances and also that the variances of the distribution of the residual should be constant - a condition known as homoscedasticity. Cases occur in research, however, where as the value of the dependent variable increases, the variances of the residual become larger or smaller. This condition, an important source of errors and biases, is called

heteroscedasticity and its effect is to reduce the accuracy of the forecasts. Tourism demand forecasting is particularly prone to suffer from this condition, since as the volume of tourism flows increase, so the variance of these flows is likely to increase (Archer, 1976:27).

(v) Dummy Variables and their use in forecasti.g

For all practical reasons dummy variables are included as independent or exploratory variables in demand functions. Provision is made for their inclusion in two instance, namely: (1) when published data is not available and empirical data cannot be obtained and (2) to allow for the impact of a one off event.

Temporal effects, such as the shift from one political regime to another or the introduction of new air routes, and qualitative variables such as social status, sex and age groupings are usually represented by dummy variables. Such variables are assigned quite arbitrary values, for example, 1 or 0, in an attempt to 'catch' the effects of sudden movements or pronounced changes in data series where the causes are identifiable. If, for example, the aim of a particular study is to analyse the demand for holidays abroad by South African residents and the time series data available covers periods during which different exchange control regulations have been in force, it becomes necessary to include dummy variables. This being an attempt to 'pick up' the effects of changes in these regulations on the number of South African nationals travelling abroad.

(a) Strengths and weaknesses

According to Calantone (et.al., 1987:31) the advantages of such models are their relatively low development- and running costs. Their simple nature (in the case of simple regression) and more complex nature (in the case of multiple regression) making them easy to learn and interpret using the ordinary least squares method. Chambers et.al (1971:77) provides a further advantage in that the approach is most suitable for short- and medium-term forecasting. However beyond four years ahead, it is no longer realistic to assume that the existing relationship between variables will remain constant.

It could be complex as computer calculations may be needed, especially in the case of multiple regression. The results in the case of simple regression are fairly difficult to interpret due to low measures of explanatory ability (Uysal and Crompton, 1985:31).

(b) Applicability of the method in tourism businesses

This method is suitable for all types of tourist businesses. Due to its "simplicity" and power in forecasting in the short term and medium term this method has found much recognition in demand forecasting. The only negative factor is the complexity in the case of multiple regression but this could be overcome by using a computer coupled with the required expertise. Regression analysis is used regularly by airlines, aircraft companies and tourism researches in forecasting demand in the field of tourism and travel (Archer, 1987:81). Applying this method enables relationships too be determined between the independent variables such as income and price.

(c) Examples

Numerous examples exist of how multiple regression has been used in demand forecasting. A good example of multivariable regression is provided by Askari (1971 in Uysal and Crompton, 1985:12) who estimated the demand for particular package tours by residents of each U.S. state.

The following model was tested:

 $I_{ij} = a + b_i Y_i + b_2 FA_{ij} + b_3 CO + b_4 A_j$

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in which:

Iii	= the number of people from state i who take tour i;	
Yi	= the income per capita in state i;	
FÅij	= the cost of travel from state i to the departure point of tour j;	f
Aj	= the number of "attractions" per day on tour j;	

By the use of the linear model, Askari was able to show that income levels, the daily cost of the tour and the number of attractions it offered were very significant determinants of the number of people taking a particular package tour.

Loeb (in Uysal and Crompton, 1985:13) developed a model to investigate the effects of real per capita income, exchange rates, and relative prices on the exports of travel services from the United States to Japan, Germany, the United Kingdom, France, Canada, Italy and Mexico. The study also evaluated the effects of real income, exchange rates and relative prices on the total level of United States receipts from foreign travel. The general model which he used for the study was:

$$T_{j,z} = f (RYPC_j, EX, RPI, D_i), i = 1, k$$

where:

^T j,z	<pre>= a measure of the demand for travel services by country j from country z, i.e., a measure of the exportation of travel services by country z to country j.</pre>
RYPCj	= a measure of real per capita income in country j.
EX	= relative exchange rate (measured as units of Z's currency/unit of j's currency)
RPI	<pre>= relative prices, i.e., the ratio of prices in the exporting or host country to prices in alternative travel locations (including the country of origin of the tourist)</pre>
Di	= variable indicating special event i.
j	= subscript denoting the country importing travel services
z	= subscript denoting the country exporting travel services.

The variables of income, exchange rates and relative prices proved to have a significant effect on the demand for travel in the U.S. All three these variables were analysed in chapter 4.

5.2.2.2 GRAVITY AND OTHER TRAVEL GENERATION MODELS

Gravity models are similar in form to regression models except they focus more on the effects of distance or travelling time as a constraint which affects travel. Other variables such as cost, tourist income is also seen as a function of tourist flows or travel demand (Calantone, et.al., 1987:33). Gravity models are based on the gravity law of spatial interaction, which states (in the tourism context) that the degree of interaction between two geographic areas varies directly with the degrees of concentration of persons in the two areas and inversely with the distance separating them (Witt and Martin, 1989:17).

Before any further analysis of spatial models is done it is important to draw a distinction between trip generation and trip distribution models, both of which fall into the framework of spatial models. Archer (1987:81) explains that trip generation models is the propensity of an area or several areas to generate travel while trip distribution models explain the flow of visitors to a particular or several destinations.

Crampon (in Smith, 1989: 111) was the first to demonstrate explicitly the usefulness of the gravity model to tourism research. Crampon's basic model, as well as that of most other researchers who have used the gravity model is:

$$T_{ij} = \frac{GP_iA_j}{Da_{ij}}$$

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where:

Tij	=	some measure of tourist travel between origin i and destination j;
G,a	=	coefficients to be estimated;
Pi	-	measure of the population size, wealth, or propensity to travel at origin i;
Aj	=	attractiveness of capacity of destination j;
Dij	=	distance between i and j.

(a) Strengths and weaknesses

Smith (1989:113) regards this model as a popular structural forecasting tool as it allows for substantial refinement and modification.

Several authors (Uysal and Crompton, 1985; Calantone et.al., 1987) have spoken out on the weaknesses of the model. Despite these inherent disadvantages, as will be seen later, the method is commonly used in demand forecasting.

Perhaps the principle weakness of the gravity model technique according to Archer (1976:64) is the absence of a sound theoretical underpinning. At the same time this could be regarded as a strength as well as a weakness of the technique, with the result that gravity models describe but do not explain the complex interactions of phenomena.

Wolf (in Uysal and Crompton, 1985:11) suggests that the following weaknesses be considered:

- * The gravity model is frequently characterized by and tourism researchers as a model of demand, yet when measured against the economic definition of demand, it is a model of use or consumption, since it does not contain an independent variable for price;
- Distance alone may not always be an accurate measure of frictional retardation. Some researchers have experimented with time and travel costs as alternative measures;

- * Lack of accuracy of basic data, and danger of multicollinearity;
- * Origin zones are usually determined arbitrarily, yet their bounds are critical to a model's performance. Often the distance between an origin and destination area is measured from the population center of a region or an urban area, but this may produce errors in measurement. Although reducing the size of an origin zone can help to locate accurately the population center, the reduced size may be too small from which to generalize about the nature of the population;
- * The difficulty of forecasting individual explanatory variables.
- (b) Applicability of the method in tourism businesses

As mentioned before this method has found wide acceptance in tourism circles and can be very useful forecasters of tourism flows. Although the method has a number of weaknesses which may not be ignored, the model may for example be used to analyse the flow of tourists between particular countries and regions to estimate the future demand for recreational and tourism facilities, and to examine how the demand for tourism is affected by highway improvements, increases in fares and so on.

This technique, besides being useful to businesses in the accommodation, attraction and transport sector, could be used by businesses in the destination organisation sector such as regional tourist offices, local tourist offices and tourist associations in ascertaining the potential flow of tourists to particular parts of the country in the luture. For example, Captour may be interested in ining the potential flow of tourists to the Cape from the lal, Orange Free State and Natal or from specific areas.

(C) Examples

The following examples are synthesised by using the following sources: Uysal and Crompton (1985: 10-11), Calantone et.al. (1987: 33-34) and Archer (1976: 77,86,88-89,91).

Armstrong (1972) for example, used his model to predict the future spatial demand for international tourism, whilst Crampon and Tan (1973) were concerned with analysing the flow of travel between the various countries of the Pacific basin. In his early work Crampon (1966) examined the relationship between advertising expenditure and tourist flows though he was not prepared to draw any firm conclusions because of the inadequacy of the data. Also, on a domestic scale, Ellis and Van Doren (1966) used their gravity model to estimate the future demand for a specific recreational activity over several different destination areas within the boundaries of a single US state, whilst in the United Kingdom, Colenutt (1973) was concerned with measuring the future demand for a single destination area by a particular category of traveller (the day tripper).

5.3 QUALITATIVE FORECASTING TECHNIQUES

Qualitative approaches to forecasting depend upon the accumulated experience of individual experts or groups of people assembled together to predict the likely outcome of events. This approach is most appropriate where data is insufficient or inadequate for processing, or where changes of a previously unexperienced dimension makes numerical analysis inappropriate and it is not possible to construct a suitable numerical model (Archer, 1980:9-10).

5.3.1 SIMPLISTIC APPROACHES

5.3.1.1 EXECUTIVE OPINION

Forecasting based on executive opinion can be regarded as the type of forecasting used mostly in practice. Also known as "seat

of the pants" forecasting, the method is based upon lengthy practical experience of the tourism business. Archer (1987:83) is of the opinion that at micro level, (for example, in deciding whether or not to construct a new restaurant at a particular resort), entrepreneurial flair can sometimes forecast demand as accurately as, or even more accurately than the most rigorous quantitative method. These forecasts are based on "gut feel" with the result that limits are placed on the human ability in presenting ideas. The forecast may be in numerical or descriptive form or may exist as a thought in the mind of the decision maker.

(a) Strengths and weaknesses

The method is usually cheap and quick to administer. If the forecaster is also the decision maker, the results are immediately known and the information is confidential.

The forecast is a mixture of personal opinion and factual ideas. There is no way to determine how changes in the data may influence the forecast. The forecast may further be clouded by the emotional condition of the forecaster. For example, an optimistic emotional condition may lead to advantageous expectations while a pessimistic condition may lead to the opposite.

(b) Applicability of the method in tourism businesses

This approach may be used by any size of tourism business but may be more applicable to small businesses who lack the expertise and recourses to undertake more sophisticated forecasting.

(c) Examples

Own intuition is not only used as a method of forecasting but is also accounted for in quantitative techniques such as trend extrapolation where a curve has to be chosen which is fitted. From the study conducted by the author this method was the most

extensively used on the long and medium term. It did appear that this technique is used as an auxiliary to the other techniques mentioned.

5.3.2 "JURY OF EXECUTIVE OPINION"

According to Chambers et.al (1971:74) this technique is based on the assumption that several experts can arrive at a better forecast than one person. There is no secrecy, and communication is encouraged. According to Wilson and Keating (1990:9), forecasts are developed by combining the subjective opinions of the managers and executives who are most likely to have the best insights about the tourism business and its environment. To provide a breadth of opinions it is useful to select these people from different functional areas. The person responsible for making a forecast may collect opinions in individual interviews or in a meeting where the participants have an opportunity to discuss various points of view.

(a) Strengths and weaknesses

More views are brought forward than a individual may be capable of, thus enabling a reduction in subjectivity by stimulating deeper insights. The costs are low and it is suitable for short to medium term forecasting.

The development time of the forecast is long while forecasts on short and medium term are poor to fair. Another potential weaknesses is that if the discussion is not structured the process can develop into a guessing game. Furthermore, if more than one strong personality dominates the group, their opinions will become disproportionately important in the final consensus that is reached. A number of other potential disadvantages is that the person who first gives direction to a discussion may be followed by the rest of the group and if two or three members of the group take a particular stand a feeling of consensus may already be decided upon.
(b) Applicability of the method in tourism businesses

This method is a very popular forecasting technique as no sophistication is required. Consensus may be reached by experts through debate and interchange of ideas using meetings, seminars and colloquia. Even though this method has cost advantages, the forecasts generated are fair to poor in the medium and short term (Georgoff and Murdick, 1986:128). Although the method is suited to all types of tourism businesses, the qualitative nature of the technique should always be borne in mind.

(c) Example

Bar On (1979 in Uysal and Crompton, 1985:9), is reported to have applied this technique to tourism in Thailand. The idea was to generate alternative assumptions regarding the environment for international tourism to that country. The field of interest was mainly concentrated on the political, economic, tourism development and promotion and air transportation.

5.3.2 TECHNOLOGICAL MODELS AND TECHNIQUES

The term technological models and techniques, attempts to define the forecast of reasibility and/or desirable characteristics of demand performance in the light of long term changes, especially future technologies. According to Archer (1987:83), these approaches attempt to address what is "probable", "possible" and "preferable".

5.3.2.1 THE DELPHI TECHNIQUE

Much has been written about the Delphi technique over the years. Some have praised it as a long term forecasting method while others have been quick to provide the well known "Delphi Critique" (Van Doorn, 1982:163,.

Moeller and Shafer (1987:419, scribe this as a method used to systematically combine expert knowledge and opinion to arrive at

an informed group consensus about the likely occurrence of future events. Usually the aim is to indicate a degree of probability that these events will take place within specified time periods.

The procedure to be followed in the application of the technique can be researched from the following sources: Moeller and Shafer (1987), Witt and Martin (1989), Taylor and Judd (1989) and Van Doorn (1984).

An idea of how the technique is structured is provided in figure 5.3. Parente and Anderson (1987:130) point out. "The characteristic phenomenon of Delphi is that the group response is typically more accurate than the average panelists projections and it is frequently more accurate than the most accurate panelist, if the individual could have been identified a priori".

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SOURCE: Taylor, RE. and Judd, LL. 1989. Delphi method applied to Tourism. In Witt, SF. and Moutinho, L. (ed.). Tourism Marketing and Management Handbook: Prentice-Hall. Hampstead: 96.

(a) Strengths and weaknesses

The principal advantage according to Archer (1976:66) is that it overcomes to some extent the main limitations inherent in the more traditional methods. Kaynak and Macaulay (1984:92) indicates the following advantages:

- * Forecasts of tourism development can be made inexpensively
- * Different points of view are accounted for
- * There maybe no alternative if basic data are sparse or lacking

There are however, a number of problems associated with the Delphi technique. These include the selection of expert participants, who are not always true experts and the choice of questions and their formulation. It is a time consuming process mainly due to geographical distribution of the panel members. Accuracy is not guaranteed although consensus is achieved. Lastly, statistical problems with the handling of qualitative forecasts such as "never" and "maybe" are provided.

(b) Applicability of this method in tourism businesses

The use of this method by touris. businesses depends on the advantages and disadvantages stipulated above. The method is applicable to all types of tourism businesses who pocess the necessary sources. However, if the technique is applied by the business it self the communication process and the way the study is structured are important considerations.

(C) Examples

Numerous examples exist where the Delphi technique has been applied. Seely et.al., (1980) used the technique to forecast tourism trends in the 1980s. Among the forecasts generated by the study were the following:

- * Natural resources will be rationed for tourism activities;
- * Border formalities will be relaxed;
- Tourism will play an important role in the economic development of most countries.

Kaynak and Macaulay (1984) applied the technique in measuring the tourism potential of Nova Scotia. Of the conclusions drawn, the following were concluded:

- * Value changes would not have major effects on Nova Scotian society and neither on tourism development
- * Little change in the structure of the tourism industry, but if this occurred it would seriously impact on tourism development

Moeller and Snafer (1987) report on the results of a delphi study into recreation forecasting and the estimates with the outcome of events to date. The secast trends seem broadly correct so far and in general imply that:

- * Action will be taken at all levels of Government to face environmental pressures brought about by increasing demands of a growing population with more time and money;
- * Rational resource planning will be coupled with rigid, enforced controls.

A South African application of the technique is provided whereby the measurement of the tourism market potential of South Africa is being undertaken. The study which commenced in 1992 will att.mpt to look at: firstly, value changes in South African society from 1992 through 2010; secondly, the changing structure of the South African tourism industry from 1992 through 2010; thirdly, events having potential impact on tourism and training in South Africa during the same time span (Bloom and Leibold, 1992:8).

5.3.2.2 SCENARIO BUILDING

According to Witt and Martin (1989:22) scenarios is a relatively underused tourism forecasting technique. Scenarios attempt to show how a particular future state (or set of alternative future states) could eventually occur, given the current situation as the starting point. Van Doorn (1986:36) suggests the following definition: "A scenario gives a description of the present situation, of one or more possible and/or desired situation(s) and of one or more sequence(s) of events which can connect the present and that future situation(s)".

Van Doorn (1986:36) is of the opinion that thoroughly written scenarios comprises at least three components.

- Baseline analysis, that is, a description of the current situation;
- At least one future image, that is, a description of a potential situation in the future;
- 3. For each future image, at least one future path which indicates how the current situation could develop into the eventual future image.

Calantone et.al (1987:35) notes, however, that much of what is classified as "scenario writing" in tourism lacks one or two of the three components.

The Scenario process is far to elaborate to discuss in detail and various processes exist in determining scenario outcomes. One example of a scenario process is provided by the International Strategic Environment Center in the United States of America.

- 1. Analyzing the decision(s)
- 2. Identifying key decision factors
- 3. Identifying key (societal) forces
- 4. Analyzing key forces separately
- 5. Selecting scenario logics
- 6. Elaborating scenarios
- Identifying and analyzing implications in terms of key decision factors
- Incorporating scenario insights into strategic decisions.

The process both begins and ends with the decisions it informs. Figure 5.4 shows this process as a loop:

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FIGURE 5.4: A DIAGRAMMATIC REPRESENTATION OF THE SCENARIO PROCESS



SOURCE: Mandel, T.F. 1982. Futures Scenarios and their use in Corporate Strategy. In Albert, K. (ed.), Business Strategy Handbook. New York: McGraw-Hill: 9.

Of further significance to tourism planners and policy makers, is the contribution scenarios make to tourism planning through the insights available to policy formulation.

Millet (1988:64) identifies six different insights which the author has adapted to make it applicable to the tourism industry. The first insight to be gained from scenarios as a tool to evaluate strategic options, is whether future tourist demand for a tour operator and existing products and services will expand remain constant or decline. Scenarios would include factors like sales trends, tourists tastes, demographics, disposable income, and exchange rates.

The second insight is whether tourism market conditions are becoming more or less favourable for existing products and services. Factors to be included are taxation, government regulation, uncertainty and tension and inflation. The third

insight should occur in conjunction with the first two. Scenarios suggest opportunities for new products and services. For example, scenarios might indicate that demand for weekly accommodation packages stay flat while demand for weekenders may increase.

The fourth insight relates to changes in modes of generating products and services. Factors relating to the processes need to be included in the scenario along with demand and market-place factors. For attractions for example, the use of new technologies may have a great influence on how products are produced and services rendered. The fifth insight deals with competition. This would focus on rival companies with similar products like hotels. Emerging threats in substitute products and services for example, would be substituting hotels for guesthouse accommodation.

The sixth insight concerns the amount of uncertainty which the tourism business may face in the future and the degree of flexibility a company needs in choosing its strategies. This statement may best be viewed in figure 5.5 in which Beck (1983:10) illustrates that it is pointless to develop a different strategy for each scenario. It would be more viable to compose a flexible strategy that may be modified without to much effort and time.

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FIGURE 5.5: A PROPOSAL ON THE FORMULATION OF STRATEGY WHEN USING MULTIPLE SCENARIOS



SOURCE: Beck, P.W. 1983. Forecasts : opiates for decision makers. A lecture to the Third International Symposium on Forecasting. Philadelphia.

(a) Strengths and weaknesses

Van Doorn (1986:48) elaborates on the above by stressing the following advantages:

- The generation of alternative policies;
- Their adaptability to the participation and involvement of various interest groups, for example, policy makers, researchers and others;
- Their ability to prepare the ground for ex-ante evaluations;
- The possibilities of developing a closer relationship between people involved in policymaking and the researchers; and
- The establishment of normative future images.

Becker and Van Doorn (1987:674) indicate a number of weaknesses regarding scenario building. Firstly, communication is a aspect which scenario researchers have not developed. They are not able to communicate the results adequately to the necessary policy makers. Secondly, the evaluation of old scenario projects is still in its infancy. The size of the project results in scenario methodology is often directed at large projects which demand more manpower. The complexity and simplicity may be a limiting factor as projects may be designed to produce either complex or simple results.

Van Doorn (1986:48) indicates special problems which are especially applicable to using scenarios in the tourism field, they include:

- The quantitative analysis of the past and present of tourism systems is mostly inadequate;
- Baseline analysis and the preparation of future paths require well developed and more detailed time series than most countries generally have at their disposal;
- The theoretical basis for tourism is weak, making tourism modelling hazardous; and
- Ways and means of optimizing the results of scenarios are still being developed and tested; the exogenous development of alternative scenarios prior to major policy decisions is limited outside the tourism field and almost non-existent within tourism.

(b) Applicability of the method in tourism businesses

The application of scenario writing to the tourism demand forecasting area involves the description of a hypothetical sequence of events showing how demand would be likely to be influenced by particular causal processes (Witt and Martin, 1989:22). As Archer (1980:10) notes, attention is focussed both on the variables which affect demand and on the decision points which occur, to indicate what actions can be taken to influence

the level of demand at each stage and what the repercussions of such actions might be.

Although complex scenarios have been developed for businesses with adequate resources, Van Doorn (in Calantone et.al., 1987:35) indicates the possible development of "mini scenarios" as a valuable contribution for smaller types of tourism business, such as beach resorts, certain attractions and other well-defined regions. This will enable the forecaster in these businesses and regions (for example, developing a mini scenario for the Western Cape) to sharpen their skills in designing "three component" scenarios and also integrating time series and Delphi forecasting procedures into the scenarios.

(c) Examples

Bar On (1979; 1983 in Van Doorn, 1986:43) provides two examples of scenario writing in the tourism area. The earlier study generated forecasts for visitor arrivals in Thailand, and the later study forecasts of:

- 1. Tourism by air to Israel,
- 2. Air-travel abroad by Israeli citizens were made.

The 1983 study is more comprehensive and contains the three components suggested earlier in this section.

The team of experts assembled comprised ministers of tourism and transport, airport authority and EL AL airline officials. They prepared optimistic, intermediate and pessimistic scenarios which were based on the following factors (Van Doorn 1986:43):

World Wide factors (the economic situation in the main touristgenerating countries; the exchange rates of the U.S. dollar compared to European currencies and increased air fares).

Specific factors (such as: the operation in the Lebanon of June 1982; the cancellation of all flights by the national air-carrier from September 1982 to January 1983 and increased charter operations of other Israeli carriers).

Additional factors (for example, tourism promotion budgets and publicity campaigns and price policies in Israel). The monthly, seasonally adjusted data on tourist arrivals in 1982 (total and from the major source countries) was studied and estimates made of the period necessary for the level of their trend to recover to the level of May 1982.

Schwaninger (1989 in Witt and Moutinho, 1989:599) has written a scenario for trends in tourism and leisure demand u: to the period 2000 to 2010, with particular emphasis on the situation in the industrialized countries of Western Europe. He takes into account the various factors - economic, political, technological, ecological and socio-cultural - as described in Chapter 3 - which are likely to influence this demand.

5.3.2.3 CROJS IMPACT ANALYSIS

A basic limitation of many forecasting techniques is that they produce only isolated forecasts. Events and trends are projected one by one without explicit reference to their possible influence on each other.

Cross Impact Analysis according to Archer (1987:83), is a method used to overcome the above limitation by studying the interdependence of the demand factors which affect forecasting. This method may use a procedure resembling that of Delphi to obtain expert opinion on:

- * The probability of events occurring in the future and;
- * How the probabilities of a number of events may be affected by the occurrence of one event (Calantone, et.al., 1987: 35).

The output of such a study is a cross impact matrix which indicates the extent of the causal relationships which exist among the events.

The following example, figure 5.6, of a cross impact matrix has been compiled by the author and applied to a specific area of tourism air travel.

	EVENT-					
	1	2	3	4		
War in the Middle East		+3	+2	+1		
Reduction in air travel	0		-2	+3		
Tightened security	0	0		-1		
Falling Revenue	0	0	0			

FIGURE 5.6: AN EXAMPLE OF A CROSS IMPACT MATRIX AS APPLIED TO THE AIRLINE INDUSTRY

The matrix in figure 5.7 indicates that the occurrence of a war in the Middle East (event 1) would greatly increase the likelihood of a reduction in air travel which will be coupled with a significant tightening of security at airports and a proportionate lowering in revenue of airline carriers. A reduction in air travel (event 2) could decrease the likelihood of tightened security at airports but significantly influence the revenue of airlines.

It is possible through this matrix to identify several chains of impact along similar lines as was done above.

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There is general consensus among authors like Calantone et.al (1987) and Archer (1987) that cross impact analysis has potential for application to tourism forecasting, although it is not often used.

A future possible direction is the combination of Delphi and cross impact analysis. After a Delphi study is carried out, cross impact analysis is used to determine the extent of causal relationships among events. The technique is not a forecasting method per se but a way of examining the issues involved.

5.3.2.4 RELEVANCE TREES

According to Archer (1987:83) this method has been used in other areas of forecasting but has yet to find wide acceptance in tourism circles.

This method entails the plotting and comparing of alternative paths to a goal and at the same time identifying areas needing research. Basically, the approach is to construct a matrix which showing alternative means by which a goal can be achieved matched against the criteria which affect its realization. Numerical weighting is applied subjectively to both the alternatives and the criteria in order to decide the most suitable path to take.

Although the technique has been used in other areas of forecasting, it has not yet found wide acceptance in tourism circles.

The latter methods are included to provide some idea of possible techniques which have not been used extensively in demand forecasting. They may find wider acceptance in the tourism field in the future as they provide auxiliary back up for some of the techniques described earlier.

5.4 THE FORECASTING LINK BETWEEN THE METHOD AND APPROACH

It is possible to elaborate on a forecasting link as depicted in figure 5.1 by shedding some light on how the broad range of qualitative and quantitative techniques comply to the approach used in forecasting. By using quantitative techniques and models, a forecaster is concerned with an exploratory approach to forecasting whereby extrapolation of trends and the search for the logical development of alternative possibilities forms the basis of this premise. This link is indicated by (1) on figure 5.1.

Apart from this, it is also scientifically sound to base a forecast on a blend of intuition, expertise and generally accepted assumptions. The above discussion sees these as qualitative techniques and models and follows a speculative approach to forecasting as indicated by (2) on figure 5.1.

Quantitative forecasting techniques and models in many instances make use of the blend described in the above paragraph. It cannot be ignored that in selecting a quantitative application some form of speculation is dependent upon the ability to validate the model or technique. A link between quantitative models and the speculative approach is apparent as depicted by peint (3).

Although the normative approach to forecasting implies constructing a series of consistent images of the future and subsequently tracing the route of attainment of (access to) these images, Van Doorn (1982:164) indicates the almost complete absence of this form of forecasting in tourism research. This approach makes use of qualitative factors drawn from a deta base of the future. According to Van Doorn (1982:153) this is the premise underlying qualitative methodology. This is indicated by (4) in figure 5.1.

Matters become more complex when dealing with integrative since its procedural capacity covers forecasting a11 the techniques and modes comprising the three preceding methodologies. (as indicated in figure 5.1.) The aim according to Van Doorn (1984(a):26) "is to set up consistent relational patterns among isolated forecasts to enhance the plausibility of pronouncements deriving from any other technique".

Although the integrative approach has been applied it is not extensively used. However, there are a few good studies that comply with some of the criteria that define integrative forecasting. For example, a study undertaken by Falani (in Van Doorn, 1982:164) where an attempt was made, through an inputoutput model, to forecast part of the air traffic between 14 US cities, may be characterized as integrative in a sense.

Taylor, Edgell and Baron (in Sheldon and Var, 1985:192) emphasize the need for integrating several techniques in one comprehensive method. The combination preferred by them, and endorsed by Van Doorn, (1982:164) is the triad "Time series - Delphi - Scenario writing", in that order.

5.5 CONCLUDING OBSERVATIONS

The author finds it necessary at this stage to draw some conclusions regarding the models and techniques discussed above.

Although relatively sophisticated statistical measures have been evaluated, forecasts of tourism demand can produce only approximations. All of the models and techniques described in this chapter have limitations. Consequently, a certain amount of error is inevitable, particularly if projections are to be made beyond a one-year time period.

For this reason it is suggested (as seen above in the case of integrative forecasting), that techniques and models be expressed in the form of a range rather than by the use of absolute values.

In addition, alternative methods of deriving a forecast could be used in order to improve confidence in the resulting forecast.

Although tourism demand forecasting models may offer only approximation, it at least suggests broad directions. The questionable accuracy of data (described in chapter 2) is still a major obstacle to reliable forecasting. However, there is no alternative to the undertaking of demand forecasting because it lies at the heart of formulating tourism policy and marketing efforts in various sizes of tourism businesses.

Further challenges in the use of tourism demand forecasting models and techniques depends on improvements in the data base and the ability to incorporate into various techniques and models, a deeper knowledge of the fundamental determinants which affect tourism demand (see chapter 4). More attention should be placed on model and technique validation especially in the case of the exploratory approaches discussed above.

5.6 JMMARY

Forecasting models and techniques may be divided into two broad categories: quantitative and qualitative. From this premise a sub-classification of quantitative and qualitative techniques/models can be made. The models/techniques evaluated are considered to be the most widely used in practical tourism demand forecasting (see Matin and Witt, (1988) and chapter 6 of this study).

Each category highlighted a description and procedural operation of the majority of the quantitative and qualitative models and techniques discussed. Cognisance was given to not only the merits of the techniques but their limitations as well. Examples of how the technique has been applied or explicit examples of how the technique may be applied were given. Planners and decision makers rely heavily on personal judgement and expertise to forecast demand in a qualitative basis. Statistically based forecasts (quantitative forecasts), however are starting to find acceptance among users.

In conclusion attention was given to the forecasting link between the broad groups of models and techniques and the forecasting approaches used to forecast demand. The author found it necessary at this stage of the study to make a few concluding remarks with reference to the general importance of certain facets indicated in this chapter. An idea of the use and application of forecasting in South Africa is provided in chapter 6 as a compliment to the international applications described in this chapter.

SECTION 3

TOURISM DEMAND FORECASTING AS APPLIED IN SOUTH AFRICA ANI ITS CONTRIBUTION TO DECISION-MAKING

CHAPTER 6

AN EMPIRICAL INVESTIGATION INTO TOURISM DEMAND FORECASTING IN THE SOUTH AFRICAN TOURISM INDUSTRY

6.1 INTRODUCTION

The future potential of the tourism industry in South Africa in terms of job creation, revenues and investment in tourism infrastructure and superstructure results in a need to investigate the forecasting practices of the numerous firms comprising the tourism industry.

Futures research has to be conducted in order to provide adequately for the future needs of domestic and international tourists in the short, medium and long term. Regarding the uses, needs and shortcomings of futures research (for example, forecasting) as practiced in these enterprises and specifically how private and public sector businesses and organisations forecast demand for their products and services, makes it important to evaluate the present situation.

This chapter is composed of three sections. Section one entails an overview of the scope and importance of this study. Section two, provides a broad description of the research design and methodology. Issues such as the size and composition of the sample of respondents and questionnaire design and administration are described. The third section involves an analysis of the results based on four categories of information sought with reference to forecasting demand in the tourism business and organisations.

6.2 SCOPE AND IMPORTANCE OF THE STUDY

Without some form of scientifically based futures research, decision- making through the logical input of forecasts will leave a void in tourism planning at all levels in the private and public tourism sectors.

Reliable information concerning the future expansion of the South African tourism industry is desperately lacking. It is therefore left to the individual business and organisation, mostly small, (95 percent)(Pysarchik, 1989:555), to attempt to obtain some indication of how their business might grow in the future in terms of demand for their products and services.

An empirical investigation was undertaken in South Africa on a regional (the Western Cape region of South Africa) and national level in order to get some feedback from tourism industry businesses and organisations regarding futures research. A group of 100 respondents were requested to provide information on a variety of questions pertaining to tourism demand forecasting. This study is offered as a supplement to a study concerning a Delphi forecast for the South African tourism market (see Bloom and Leibold, 1992). The aim is to offer practical suggestions concerning the use of forecasting approaches, methods and techniques, (of which the Delphi technique is one) in meeting the challenges facing organisations in the industry such as incorporating or improving their knowledge of statistically based forecasting in their management disciplines.

Another objective of the study is to fill the gap left in planning and decision-making by adopting good forecasting practice as an important issue in tourism planning. This study being the first undertaken in South Africa with reference to tourism, way make a contribution to the industry in this field.

6.3 <u>PREVIOUS RESEARCH IN THE FIELD OF TOURISM DEMAND</u> FORECASTING

It appears, from an international perspective, that before November 1986 no previous research in this area was published (Martin and Witt, 1988:326). A survey conducted at a conference (Tourism in the 1990s) held in London by the Department of Management studies for Tourism and Hotel Industries of Surrey University in 1986, concerned forecasting performance in the tourism industry. Although not specific to the current investigation, similarities do exist between certain of the questions asked.

The conference was attended by 125 delegates from 24 countries representing a wide array of sectors including tourist authorities, airlines, tour operators, travel agents and universities. Only 29 completed questionnaires were returned, accounting for a risponse rate of 25 percent.

Other research being conducted in the field of tourism demand forecasting is being undertaken internationally by the Unit for Tourism Studies at the University of Wales. This research is of a more technical nature and encompasses projects referring to:

- * Econometric modelling of tourism demand,
- * Comparing tourism forecasting models, and
- * Tourism forecasion and issues in tourism demand forecasting

6.4 RESEARCH DESIGN AND METHODOLOGY

The respondents were chosen by various knowledgeable people of national and international renown. This was to provide a representative spectrum of businesses and organisations comprising the tourism industry in South Africa.

6.4.1 SAMPLE OF RESPONDENTS

A total of 100 respondents were selected by way of judgmental sampling. They were classified under six different groupings, namely: policy makers, transportation, accommodation, attractions, travel organisers, consultants/academics and industry operators. The categories are of unequal magnitude due to the method of selection.

Based on a national and regional level and sometimes local level, the types of respondents included government organisations, tourism associations and publicity associations as policy makers. The transportation, accommodation and attractions sectors included businesses and governing bodies. Other categories consisted of organisers of travel, industry participants, and academics in order to obtain as wide a spectrum as possible and to include those businesses and organisations closely associated with tourism. The composition of the sample drawn is shown in Appendix B.

6.4.2 QUESTIONNAIRE DESIGN AND ADMINISTRATION

A number of questions posed by Martin and Witt (1988) in their study formed the basis of this questionnaire. Modifications based on local conditions and interests as well as inputs from a consultant in the tourism industry and an expert on research methodology, were included. (See Appendix C for an example of the questionnaire).

Before being administered, a structured four part questionnaire was pre-tested by personal interviews in the Stellenbosch area to ensure compatibility and reliability of the information. The empirical information was collected using the survey method (mail). The questionnaires were mailed to respondents together with a letter of introduction briefly explaining the objective and importance of the survey and asking respondents' co-operation in the investigation. Stamped, self-addressed envelopes were included to ensure a higher return rate. Follow-up telephone interviews were used to contact those not responding within a three week period. From the total of 100 questionnaires distributed 50 responses were registered, of which 47 were completed questionnaires. Those categories with the highest response rate included the accommodation sector and consultants/academics (75 percent), the attractions sector (73.3 percent), transportation (55.5 percent), policy makers (50 percent) and industry operators and travel organizers with 34.4 and 25 percent respectively.

Three respondents who answered but did not complete questionnaires, offered the following reasons: (a) their activities cover too wide a spectrum, (b) they were unable to help or understand and (c) the one business has been out of op ration since the end of 1991. A second questionnaire was sent to those requesting one in the telephone interview, as the original had not been received. Over half of those interviewed returned completed questionnaires. Upon receipt of the completed questionnaires, the data was tabulated. Each questionnaire was examined to determine areas of agreement and disagreement.

Elaborate statistical analysis was conducted, through the use of frequencies, percentages, cross tabulations, and contingency tables to which chi-square hypothesis tests were applied to test the significant differences which exists between certain variables. This was done to confirm assumptions and provide a reliable reflection of the state of demand foracasting in the tourism industry in South Africa. An alternative approach would be to use regression analysis to determine the importance of certain independent variables. Due to the limitations of this statistical technique, two-way and three-way cross tabulations were used to determine relationships. Elaborate use was made of Statgraphics, a statistical software package to compile the cross tables and test hypotheses.

6.5 FINDINGS OF THE STUDY

This section provides the findings of an empirical study. To facilitate analysis of the questionnaire the information obtained was analysed according to a logical and broad classification consisting of four sections. The first section deals with practical forecasting perspectives, the second with data availability, collection and related aspects. The third considers the essence of forecasting by elaborating on issues concerning forecasting models and techniques and the fourth part relays the findings of perceived notions respondents have concerning forecasting in general.

During the course of the analysis those respondents who forecast will in certain instances, be referred to as users and those who do not as non-users. The percentages of the cross-tabulations were determined either row-wise or column-wise.

6.5.1 PRACTICAL FORECASTING PERSPECTIVES

An attempt to provide some perspectives concerning demand forecasting led to an investigation of the type of business conducted by the respondent. From the completed responses an indication can be obtained of those tourism businesses who forecast and those who do not. Those who don't forecast demand were questioned on issues relating to a need for implementing forecasting and the likelihood of doing so in the future. Those who are users of forecasting procedures were questioned with respect to the time horizon(s) for which forecasts are made.

To facilitate analysis, questionnaire responses were assigned to of seven categories. These are the same as the one classification used when selecting the respondents. The results presented in figure 6.1. It is apparent that the are transportation and industry operators sectors contributed the most to those respondents who undertake forecasting. Both the transportation sector and the industry operators sector indicated a 70 percent use of demand forecasts. Some respondents indicated

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that they are active in more than one sector of the tourism industry. However it is unclear whether forecasts are made for each sector or not. Of interest is that of the 73.3 percent of the respondents in the attraction sector who returned completed questionnaires, 90.9 percent do not undertake forecasting.



Of the total number of respondents who completed questionnaires, 42,5 percent use demand forecasting in comparison to 57,5 percent who do not. This is in marked contrast to an international study undertaken by Martin and Witt (1988:328) where 86 percent of those questioned make forecasts and 14 percent forecast do not forecast. Figure 6.2 provides a general classification of respondents who forecast and those who do not.



An open question to determine how future demand is projected by respondents who do not forecast resulted in the following responses. Based on the classification of respondents used, two of the four policy makers indicated the use of distributed regional and national information and general forecasts by the tourism industry as a whole. These included the opinions of overseas operators and airlines.

The three or 30 percent of transportation sector respondents rely on articles on tourism in newspapers and information obtained from Captour publications to project demand for their products and services. One respondent in the accommodation sector felt sufficient beds for normal and extraordinary demand must be

provided at all times. The other indicated the use of information obtained from a discussion forum at local, regional and national level.

The 90 percent who do not forecast in the attractions sector, indicated the use of the previous years estimates, statistics supplied by organisations and agazines, the use of own statistics, advertising and other marketing information to determine future demand for their product or service. Travel organizers gauge their future demand from discussions with training institutes and correspondence with international agents. The consultant and academic group, which accounts for six percent of the completed returned questionnaires, estimate future demand from available data on international movements, hotel occupancy figures and figures based on company records. The industry operators who account for 19 percent of completed responses use averages of the past two years and previous figures to determine demand.

From the respondents who do not forecast it was necessary to determine whether they see a need for forecasting in their business in the future. Referring to figure 6.3 it appears that in general the majority of respondents (81,5 percent) comprising the various sectors see a need for forecasting. Only one or two respondents (18,5 percent) in specific categories felt that the need for implementing forecasting was irrelevant. Only in the attractions sector did 20 percent of the respondents not see a need for forecasting, while all the consultants and academics felt forecasting was a necessity in the future.



Of those that see a need for implementing forecasting, it is necessary to determine the likelihood of them actually using statistically based forecasting procedures in projecting demand in the future. Table 6.1 provides a cross tabulation of the results. It is evident that a large percentage (44.4) feel there is a likelihood of implementing forecasting procedures in the future. From this category (likely) all consultants and academics (100 percent) indicate the likelihood of undertaking forecasting. It appears, according to the study of Martin and Witt (1988:27), that academics and consultants are very active in

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tourism demand forecasting internationally, either being involved in research/consultancy work or relating to forecasting in other areas. What is encouraging is that only 11.1 percent feel it is highly unlikely that forecasting will be implemented, as opposed to 14,8 percent who indicate a high likelihood.

SECTOR CLASSIFICATION	IMPLEMENTING FORECASTING						
	Highly Likely	Likely	Unlikely	Highly Unlikely	Row TOTAL		
Policy Makers	1 25.0	1 25.0	2 50.0	-	4		
Transportation Sector	1 33.3	1 33.3	1 33.4	-	3 100.0%		
Accommodation Sector	-	-	2 100.0	-	2 100.0%		
Attractions Sector	2 20.0	4 40.0	3 30.0	10.0	10 100.0%		
Travel Organizers	-	2 50.0	-	1 50.0	2 100.0%		
Consultant/ Academics	-	3 100.0	-	-	3		
Industry Operators	-	2 66.6	-	1 33.4	3		
Column TOTAL	4 14.8	12 44.4	8 29.7	3 11.1	27 100.0%		

TABLE 6.1: THE LIKELIHOOD OF RESPONDENTS WHO DO NOT FORECAST OF IMPLEMENTING STATISTICALLY BASED FORECASTING

An idea of the time span for which forecasts are made is provided in table 6.2. The preferred (95.0 percent) time horizon is the medium term (3 months to 2 years). Respondents indicated that 15.0 percent and 35.0 percent make forecasts based on the short (less than 3 months) and long-term (more than 2 years) respectively. Of interest is that 100 percent of percent of industry operators use medium-term forecasts. Of the 15.0

percent using short-term forecasting horizons, 28.6 percent are part of the transportation sector. This is similar to the findings of Martin and Witt (1988:328), where long-term forecasts were more frequently used in this sector. This could be as a result of the capital intensive nature of the industry in providing an infrastructure and superstructure.

FORECASTING						
SECTOR CLASSIFICATION	FORECASTING HORIZON					
	Long term > 2 years	Medium Term 3 months-2 years	Short term < 3 months	Row TOTAL		
Policy Makers	2 66.6	3 100.0	-	5 17.3%		
Transport Sector	2 28.5	6 85.7	2 28.6	10 34.5%		
Accommodation Sector	-	100.0	-	1 3.4%		
Attractions Sector	-	100.0	-	1 3.4%		
Travel Organizers	-	100.0	-	1 3.4%		
Consultants/ Academics	-	-	-	-		
Industry Operators	3 42.8	7 100.0	1 14.2	11% 38.0		
Column TOTAL	7 35.0	19 95.0	3 15.0	29		

TABLE 6.2: TIME HORIZONS USED BY THOSE RESPONDENTS WHO USE

* More than one time horizon may be used by a respondent resulting

in a higher total value (more than 100%)

6.5.2 DATA AVAILABILITY AND COLLECTION

Due to the extensive coverage given data and related issues in the theory, it is necessary to examine how respondents who undertake demand forecasting perceive the availability, sources

of statistics and shortcomings/problems of data needed for model and technique calibration. Contrary to the secondary sources of information, where data used to forecast potential demand is either lacking or inadequate, all respondents who forecast, (with only one exception, in the industry operators sector) indicated the availability of data to undertake forecasting endeavours.

The results are presented in Figure 6.4 per sector. The respondent who indicated the unavailability of statistics provided the following reasons:

- * The diverse nature of the industry.
- * Industry members not being prepared to submit data, and
- * Travel being arranged through "unofficial" sources.

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Respondents were requested to indicate the sources of their statistics or data. The results are presented per category in table 6.3. It is evident that 75.0 percent of all the respondents undertake their own research. Government organisations like Satour, are probed by 60.0 percent. Of note is the 25.0 percent who make use of universities or technikons. It is possible that these ratio's could change, if efforts like the Unit for Marketing Studies at Stellenbosch University is successful in its endeavour to establish a tourism data base.

Further analysis indicates that 100.0 percent (policy makers) use industry organisations like Fedhasa. Universities and Technikons are used 28.6 percent of the time by businesses in the transportation sector. Interesting to note is that industry operators (42.8 percent) require primary data, hence the use of research companies and their own research (71.4), in making forecasts. This can be attributed to the inadequacies of secondary sources of data (see chapter 2).

TABLE 6.3: SOURCES OF DATA USED BY THE RESPONDENTS WHEN MAKING A FORECAST						
SECTOR CLASSIFICATION	SOURCES OF DATA					
	Govern. Satour	Indust. Organ.	Univers. Technik.	Research Company	Own Re- search	Row
Policy Makers	3 100.0	3 100.0	2 66.6	2 66.6	3 100.0	13 27.7%
Transport Sector	3 42.8	28.6	2 28.6	1 14.3	5 71.4	13 27.7%
Accommodation Sector	-	-	-	-	1 100.0	1 2.1%
Attractions Sector	1 100.0	1 100.0	1 100.0	1 100.0	1 100.0	5 10.7%
Travel Organizers	1 100.0	-	-	1 100.0	-	2 4.2%
Consultant/ Academics	-	-	-	-	-	-
Industry Operators	4 57.1	1 14.3	-	3 42.8	5 71.4	13 27.6%
Column TOTAL	12 60.0	7 35.0	5 25.0	8 40.0	15 75.0	47 100.0%

* One respondent indicated in the "other" column the use of an existing data base for their purposes and the use of the Central Statistical Services

** More than one source of data was indicated resulting in a higher than 100 percent response

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The literature study highlighted a number of problems and shortcomings associated with the data usable for forecasting purposes. Respondents were asked to express their opinion regarding the mentioned sources of data concerning shortcomings and problems which exist. Of the data used for forecasting purposes, 75.0 percent believed the data to be inadequate. The other respondents (25.0 percent) felt otherwise. The transportation sector experienced the smallest disparity with 57,1 percent feeling data had shortcomings, while 42,9 percent indicated differently. The results are presented in figure 6.5.



These inadequacies required an insightful investigation into the problems. Those who indicated that data had shortcomings were asked to convey their reasons. These are presented per category. Those in the policy makers group indicated:

- * The unavailability of up to date data, and
- * The lack of an accurate data base for domestic tourism in South Africa, as major shortcomings.

The transportation sector respondents highlighted a number of problems and shortcomings. These include:

- * Irrelevant or unreliable data
- * Structural changes that take place in the data, for example, passengers on domestic flights in South Africa do not represent the total market
- * Unsteady fluctuations in the market place and the economy, and
- * People do not complete questionnaire's faithfully.

One respondent in the attractions sector felt that the lack of reliability and co-ordination of published statistics is a major shortcoming. The respondent in the travel organizers sector indicated that collection methods are not specific enough. Industry operator's were critical regarding Government organisations statistics which do not reflect incoming figures accurately. One respondent in this sector gave a run down of problems concerning data obtained from:

- (a) research companies
- (b) own research
- (c) existing data 'ases (internal)

Lack of reliability and difficulty regarding interpretation were problems associated with research companies. Experienced from their own research efforts, are data gathering problems related to the interpretation differences of data gatherers. Their existing data bases (internal) experience problems with accuracy due to:

- * Inadequate documentation of what is available and where, and
- The absence of explanatory notes concerning apparent data nomalies.

To conclude: the lack of a national data base for domestic tourism in South Africa is stressed. However, shortcomings concerning reliability, co-ordination, interpretation and relevance are major stumbling blocks to the resourceful, adequate and reliable data needed in the tourism industry in South Africa.

6.5.3 FORECASTING MODELS AND TECHNIQUES

This section focuses on the essence of the empirical research, namely, the use of tourism demand forecasting in the business or organisation. Issues addressed in this section concern the importance of forecasting, techniques and models used, accuracy and inaccuracy, attributes of forecasting techniques and knowledge levels of respondents.

Respondents indicated without exception that demand forecasting is very significant. The importance is stressed by a chi-square value of 18,22 and p = 0,0512. Table 6.4 indicates that 70 percent of all respondents who forecast believe forecasting to be very important, while 30 percent feel forecasting is relatively important. All (100 percent) of the attractions and travel organizer respondents indicated forecasting to be very important.
TABLE 6.4: HOW RESPONDENTS WHO FORECAST RATE THE IMPORTANCE OF FORECASTING

		IMPORTANCE OF	FORECASTING	
SECTOR	Not	Relatively	Very *	Row
CLASSIFICATION	Important	Important	Important	TOTAL
Policy	-	1	2	3
Makers		33.4	66.6	100.0%
Transport	-	2	5	7
Sector		28.5	71.5	100.0%
Accommodation Sector	-	100.0	-	1 100.0%
Attractions Sector	-	-	100.0	1 100.0%
Travel Organizers	-	-	1 100.0	1 100.0%
Consultant/ Academics	-	-	-	-
Industry	-	2	5	7
Operators		28.5	71.5	100.0%
Column	-	6	14	20
TOTAL		30.0	70.0	100.0%

* Classification of categories on a scale of 0 to 10

0-4 = Not Important

5-7 = Relatively Important

8-10 = Very Important

To discover whether forecasting in the tourism field is being carried out using naive (simple) or sophisticated techniques, respondents were requested to state the techniques or models used in their organisation over three time horizons. The result of the methods listed are presented in table 6.5. Clearly, the question was not relevant to the 57,5 percent who do not use any qualitative or quantitative methods.

Own intuition and the use of expert opinion seem the most popular of the qualitative techniques. Quantitative techniques preferred by respondents are trend extrapolation and multiple regression. There is, however, a distinct difference in preference between

qualitative and quantitative methods, with qualitative methods being preferred on the long and short-term. Uysal and Crompton (1985:13) indicate a growing tendency to depend upon more quantitative models. However, in most cases these techniques and models are not widely accepted. This is evident from this study.

Quantitative techniques are preferred in the medium term (3 Months to 2 years). However, opinion of experts (qualitative) and trend extrapolation (quantitative) seem most popular and are equally preferred. It would appear that the majority of the techniques are either used in the long or medium term. This complements the findings of Calantone (et.al., 1987:31) regarding the time horizons applicable to the stipulated techniques and models.

The "other" category was composed of techniques not used as frequently as those mentioned. These include moving average, Box Jenkins and exponential smoothing. Several respondents indicated the use of their own techniques and models.

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TABLE 6.5: TECHNIQUES AND MODELS APPLIED BY RESPONDENTS IN THEIR BUSINESS OR ORGANISATION

	FOREC	ASTING	TECHNIQU	ES AND I	MODELS	USED BY	RESPONDED	TS
RESPONDENTS	Multi. Regress.	Scena - rios	Trend Extrap.	Delphi	Own Intu.	Experts	Decom- position	OTHER
LONG TERM								
Policy Makers	-	2	1	-	2	1	-	-
Transportation	-	1	1	1	-	2	-	-
Accommodation	-	-	-	-	-	-	-	-
Attractions	-	-	-	-	-	-	-	-
Travel Org.	-	-	-	-	-	-	-	-
Consult./Academ.	-	-	-	-	-	-	-	-
Industry Operators	2	1	-	2	4	3	-	-
TOTAL	2	4	2	3	6	6	0	0
MEDIUM TERM								
Policy Makers	-	1	1	-	2	1	-	-
Transportation	1	-	2	1	1	3	2	3
Accommodation	-	-	-	-	-	-	-	-
Attractions	1	-	-	1	-	1	-	-
Travel Org.	1	-	1	-	-	-	-	-
Consult./Academ.	-	-	-	-	-	-	-	-
Industry Operators	2	1	3	2	3	3	2	3
TOTAL	5	2	8	4	6	8	4	6

TABLE 6.5: TE (continued) BU	CHNIQUES SINESS OR	AND MOD	ELS APPL SATION	IED BY	RESPON	DENTS IN	THEIR	
	FOREC	ASTING	TECHNIQU	ES AND I	MODELS	USED BY	RESPONDE	NTS
RESPONDENTS	Multi. Regress.	Scena- rios	Trend Extrap.	Delphi	Own Intu.	Experts	Decom- position	OTHER
SHORT TERM								
Policy Makers	-	-	-	-	1	1	-	- ***
Transportation	-	-	-	1	1	1	1	1
Accommodation	-	-	-	-	-	-	-	-
Attractions	-	-	-	-	-	-	-	-
Travel Org.	-	-	-	-	-	-	-	-
Consult./Academ.	-	-	-	-	-	-	-	-
Industry Operators	1	-	2	1	3	2	-	-
TOTAL	1	0	2	2	5	4	1	1
GRAND TOTAL	8	6	12	9	17	18	5	7

- To facilitate analysis the "other" category was composed of techniques not used as frequently as the others :

* Three respondents indicated the use of the Moving Average, Box Jenkins and Exponential Smoothing techniques.

** Two respondents said they use the moving average and one exponential smoothing techniques.

*** One respondent indicated the use of the moving average technique

Relating to the study undertaken by Martin and Witt (1988:328) based on quantitative technique evaluation, it was found that multiple regression and moving average methods were most popular, while this study indicated multiple regression and trend extrapolation techniques being preferred.

As no mention is made of qualitative methods in Martin and Witt's study, no comparison is possible. From this study, however, naive (simple) qualitative methods are preferred in comparison to the sophisticated techniques of a qualitative nature (for example, Delphi) and the quantitative models. To satisfy the primary objective of the study (a practical insight into demand forecasting in the tourism industry), respondents were asked to provide, as examples, situations where the techniques mentioned are used in their business at present or have been applied in the past.

According to the classification of respondents used, policy makers apply the techniques and models primarily in areas of market demand forecasting. Businesses in the transportation sector use the techniques in market surveys, general market forecasts and demand forecasts of their own clients. One respondent undertakes a five year forecast for fleetplanning and a 5-7 month forecast for timetable planning. The one attraction sector business forecasts regional tourist flows across South Africa based on road traffic counts.

One travel organizer forecasts the number of travellers expected to travel within a given period. Industry operators make forecasts of resort facility requirements, the expected number of tours to be undertaken, expected number of passengers to travel, number of boat trips expected and seasonal fluctuations. Others use forecasts to streamline group tariffs and conditions to suit demand and maximise occupancies. (See chapter 5 for examples of the mentioned techniques as applied by practitioners in the international tourism industry).

To determine the effectiveness of the techniques used by tourism businesses, they were requested to rate them in terms of accuracy on the long, medium and short term. The results are presented in table 6.6. Over the long term 35.0 percent felt the technique(s) they use are very ineffective while 40.0 percent thought they were average. The industry operators (71.4 percent) were most critical. Over the medium term 60.0 percent of respondents felt that the techniques applied were average. The transportation, accommodation and attractions and industry operators sectors all agree. Respondents felt, the techniques to be average, to very effective in the short- term.

Of the 35.7 percent of respondents who felt the techniques to be effective in the short-term, four form part of the transport from sector and three form part of the industry operators sector. This coincides with the findings of Martin and Witt (1988:328) where accuracy in the short-term was found to be the most effective. They found that accuracy over the long-term was slightly better than the medium-term.

TABLE 6.6: HOW RESPONDENTS WHO FORECAST RATE FORECASTING TECHNIQUES AND MODELS IN TERMS OF ACCURACY OVER THE THREE TIME HORIZONS

			ACCI	URACY	OVER	THRE	E TIM	E HORIS	ZONS	
	1	Long t	erm	Med	ium 1	term	Sho	Short term		
CLASSIFICATION	* A	В	с	A	В	С	A	В	С	
Policy Makers	1 33.4	2 66.6	00.0	1 33.4	00.00	1 33.4	0.00	3 100.0	0.00	
Transportation Sector	0.00	4 57.1	00.0	00.0	5 71.4	2 28.6	0.00	20.0	4 57.1	
Accommodation Sector	-	-	-	00.0	00.0	0.00	-	-	-	
Attractions Sector	-	-	-	00.0	00.0	0.00	-	-	-	
Travel Organizers	1 100	0.00	00.0	1 100	0.00	0.00	1 100	0.00	0.00	
Consultant/ Academics	-	-	-	-	-	-	-	-	-	
Industry Operators	5 71.4	2 28.6	00.0	14.2	5 71.6	1 25.0	1 50.0	3 42.8	3 42.8	
Column TOTAL	7 35.0	8 40.0	00.0	3 15.0	12 60.0	4 20.0	2 10.0	7 35.0	7 35.0	

* Classification of categories on a scale of 0 to 10

- (A) 0-4 = Very ineffective
- (B) 5-7 = Average
- (C) 8-10 = Very effective

** Certain respondents did not indicate all three time horizons resulting in the totals not adding up to 100 percent

forecasting technique are important Attributes of a considerations when selecting a forecasting method. To determine the importance with which respondents view certain attributes, they were requested to indicate the importance, (from most important to least important), of four stipulated attributes. The results per criteria are presented in table 6.7. Total cost effectiveness is regarded by respondents (55,5 percent) as the most important criterion with ease of interpretation (44,4 percent) a close second. A number of respondents (44,4 percent) feel ease of application is important while 38,8 percent think ease of interpretation and total cost effectiveness is important. Speed of production is seen by respondents (33,3 percent) as being important. Of those attributes thought of as being less or least important, ease of interpretation and ease of application are indicated by 11.1 percent and 5.5 percent respectively.

TABLE 6.7: HOW RESPONDENTS WHO FORECAST VIEW THE IMPORTANCE OF A PARTICULAR ATTRIBUTE OF A FORECASTING TECHNIQUE

		ATT	RIBUTE		
CRITERIA	Ease of in- terpretation	Ease of Application	Total cost effectiveness	Speed of produc.	Row
Most	8	7	10	5	30
important	44.4	38.8	55.5	27.7	41.6%
Important	7	8	7	6	28
	38.8	44.4	38.8	33.3	38.8%
Unsure	-	-	-	3 16.6	3 4.28
Less	1	2	1	4	8
important	5.5	11.1	5.5	22.2	11.2%
Least important	2 11.1	1 5.5	-	-	3 4.2%
Column	18	18	18	18	72
TOTAL	100.0	100.0	100.0	100.0	100.0%

* Two respondents did not complete this question

Determining how the stipulated techniques and models are noted in terms of the criteria mentioned in table 6.7, respondents were asked to rate the techniques from "excellent" to "very poor" with a choice of "unsure". This question was a further attempt to test respondents knowledge of the various techniques. Table 6.8 provides a summary of the results. It is observed that 27.1 percent and 26,7 percent feel that the techniques mentioned were fair to good in terms of the criteria mentioned. Of interest is the 24.5 percent who are unsure about the mentioned techniques and models.

TABLE 6.8: HOW RESPONDENTS WHO FORECAST RATE THE FOLLOWING FORECASTING TECHNIQUES IN TERMS OF THE CRITERIA MENTIONED IN TABLE 6.7

		1	RATIN	G CRI	FERIA		
FORECASTING MODEL OR TECHNIQUE	Excellent	Good	Fair	Poor	Very Poor	Unsure	Row TOTAL
QUALITATIVE							
OWN INTUITION	1 5.2	9 47.4	6 31.6	2 10.5	-	1 5.2	19 100.0%
OPINION OF EXPERTS	-	8 42.1	5 26.3	4 21.0	1 5.2	1 5.2	19 100.0%
COMMITTEES & UN- REFINED GROUPS	-	1 5.2	6 31.6	7 36.8	2 10.5	3 15.8	19 100.0%
REFINED GROUPS (eg. DELPHI)	-	6 31.6	3 15.8	4 21.0	1 5.2	5 26.3	19 100.0%
QUANTITATIVE							
MOVING AVERAGE METHODS	-	6 31.6	7 36.8	2 10.5	1 5.2	3 15.8	19 100.0%
EXPONENTIAL SMOOTHING	-	2 10.5	7 36.8	2 10.5	1 5.2	7 36.8	19 100.0%
TREND EXTRAPOLATION MODELS	-	8 42.1	2 10.5	2 10.5	-	7 36.8	19 100.0%
SEASONAL DECOMPOSITION	1 5.2	736.8	6 31.6	2 10.5	-	3 15.8	19 100.0%
SIMULATION MODELS	-	4 21.0	4 21.0	4 21.0	1 5.2	6 31.6	19 100.0%
STRUCTURAL MODELS	-	3 15.8	3 15.8	3 15.8	1 5.2	9 47.4	19 100.0%
(MULTIPLE) REGRESSION	-	3 15.8	4 21.0	2 10.5	1 5.2	9 47.4	19 100.0%
SCENARIO BUILDING	1 5.2	5 26.3	8 42 1	3	1 5.2	1 5.2	19 100.0%
Column TOTAL	3 1.3	62 27.1	2		20	56 24.5	228 100.0%

* One respondent failed to answer this question

Although respondents knowledge concerning the techniques and 55,2 percent against 44,8 models seems to be appropriate, percent, (see table 6.9), there is some concern over the knowledge respondents have of these techniques, especially as these practitioners are believed to be forecasters. The results of table 6.9 are not convincing, and in certain cases, as will be indicated, contradict the knowledge respondents exhibit regarding the techniques and models that may be used in tourism demand forecasting. Respondents however seem to pocess appropriate knowledge of the models and techniques stated are used in their business or organisation.

To test the differences between knowledge levels presented in table 6.9 between respondents knowledge and the quantitative and qualitative techniques a hypothesis test is conducted. The tests conducted in this section may be regarded as the most important piece of information. The stipulated hypothesis is:

Ho : There is no significant difference regarding respondents knowledge of the available techniques and models used in tourism demand forecasting

When examining table 6.9, it is evident that two instances of appropriate knowledge are displayed by respondents with respect to qualitative techniques and two not. A chi-square test confirmed there is not enough reason to accept that respondents possess appropriate knowledge of the techniques and models used in tourism demand forecasting. The chi-square value obtained is 20,623 (with 4 degrees of freedom) which is larger than the critical value $(X_{4;0,05}) = 9.49$ at a 95 percent confidence level indicating rejection of the null hypothesis. This indicates that there is not enough reason to accept, that respondents knowledge regarding qualitative techniques is appropriate at the 95 percent confidence level. This confidence level (95 percent) was decided upon due to its wide accepted in practice (Nel, et.al., 1988:356).

*TABLE 6.9: A FURTHER REFINEMENT OF RESPONDENTS KNOWLEDGE IN TERMS OF QUALITATIVE AND QUANTITATIVE METHODS

	LEVE	L OF KNOWLEDGE	
FORECASTING MODEL OR TECHNIQUE	Appropriate Knowledge	Inappropriate **	Row
QUALITATIVE			
OWN	16	3	19
INTUITION	84.2	15.8	
OPINION OF	13	6	19
EXPERTS	68.4	31.6	
COMMITTEES & UNREFINED	7	12	19
GROUPS	36.8	63.2	100.0%
REFINED GROUPS	9	10	19
(eg. DELPHI)	47.4	52.6	100.0%
QUANTITATIVE			
MOVING AVERAGE	13	6	19
METHODS	68.4	31.6	100.0%
EXPONENTIAL	9	10	19
SMOOTHING	47.4	52.6	100.0%
TREND EXTRAPOLATION	10	9	19
MODELS	52.6	47.4	
SEASONAL DECOMPOSITION	14 73.7	5 26.3	19
SIMULATION	8	11	19
MODELS	42.1	57.9	100.0%
STRUCTURAL	6	13	19
MODELS	31.6	68.4	
(MULTIPLE) REGRESSION	7 36.8	12 63.2	19
SCENARIO	14	5	19
BUILDING	73.7	26.3	
Column	126 55.2	102 44.8 1	228

* This table is an extension of table 6.8

 Fair, good and excellent constitutes appropriate knowledge Poor, very poor and unsure constitutes inappropriate knowledge

Where quantitative techniques are concerned the same situation prevails, with four instances of "appropriate knowledge" and four of "inappropriate knowledge". The chi-square statistic obtained is 15,58 which is larger than the critical value of 14,07 (Å = 0,05) at a 95 percent confidence level, (with 7 degrees of freedom), indicating the there is not enough reason to accept the null hypothesis. The same reasoning is used as was the case with qualitative techniques and models. It is important to realize that rejection of the null hypothesis, (respondents poses appropriate knowledge), means that the chance is one out of twenty that respondents knowledge about the techniques and models can be indicated as being appropriate (in other words that an error was made by accepting the null hypothesis). It is further possible to apply the analysis of variance technique in this situation.

A further attempt to refine the above analysis led to a test to discover whether respondents appropriate knowledge regarding the techniques displayed in table 6.9 can be related to the techniques and models they stated are used in their business. Again a distinction is drawn between qualitative and quantitative techniques. The stipulated hypothesis is:

Ho: No difference exists between the knowledge respondents have of forecasting techniques and models used in tourism and those applied in their organisation or business.

A chi-square test is conducted to test the knowledge respondents have of the techniques used in their businesses. A chi-square value of 0.399 is obtained in the case of qualitative techniques. Compared to the critical value $(X_{2;0,05} = 5.99)$ the null hypothesis is accepted at the 95 percent confidence level. Although there was enough reason to accept the null hypothesis at the 95 percent level, a further measure to shed some light on the above findings is the contingency coefficient (r_g) (a measure of the strength of a relationship between two sets of variables). A weak relationship is indicated by a value of 0,069 between respondents knowledge and the applied qualitative techniques.

The same case applies regarding quantitative techniques. A chisquare value of 5,31 is obtained as compared to a critical value of $(X_{3;0,05} = 7.82)$ at a 95 percent confidence level. The same conclusion is drawn in respect of quantitative techniques and models, that is, appropriate knowledge of the applied techniques and models. The contingency coefficient (r_g) obtained is 0.2562. The relationship can still be regarded as weak. According to Uysal and Crompton (1985:13) there is a growing tendency to depend on more quantitative techniques and models when undertaking forecasting.

In conclusion, the above findings indicate there is not enough reason to believe that respondents overall knowledge regarding the models and techniques used in tourism demand forecasting is appropriate. However it does appear that no significant difference between respondents knowledge of the techniques used in their organisation is prevalent. However the contingency coefficient (r_g) indicated an insignificant relationship (t_b =0.069; d.f.=1) pertaining to qualitative techniques. The same case was found regarding quantitative (t_b =0.3748; d.f.=2) techniques, thereby indicating the inconclusiveness of the hypothesis test indicated above.

To obtain some idea of whether there is a perceived worse form of inaccuracy, namely: an over-estimation or under-estimation, respondents were requested to indicate their perception over three time horizons. The results are presented in table 6.10 and seem to indicate that over- and underestimates are not considered in the same light, but rather overestimates are worse than underestimates. Only policy more on the short-term and the transportation sector on the long-term indicate that underestimates are worse than over-estimates. There does seem to be some scope here for further research. The construction of accuracy criteria which incorporate this asymmetry would allow for more appropriate forecast performance evaluation. The same findings were obtained in a similar study by Martin and Witt (1988:329), that is, a general over-estimation as the worst case. TABLE 6.1C: HOW RESPONDENTS WHO FORECAST PERCEIVE THE WORST FORM OF INACCURACY: OVER - OR UNDERESTIMATE

	FORMS	OF INACC	URACY OV	ER THREE	TIME HOP	RIZON		
SECTOR	LONG	TERM	MEDIUM	TERM	SHORT	SHORT TERM		
CLASSIFICATION	Over	Under	Over	Under	Over	Under		
Policy Makers	1 50.0	1 50.0	2 100.0	0	1 33.4	2 66.6		
Transport. Sector	2 40.0	3 60.0	3 50.0	3 50.0	2 66.6	1 34.4		
Accommodation Sector	-	-	1100.0	0	-	-		
Attractions Sector	100.0	0	0	1 100.0	0	100.0		
Travel Organizers	100.0	0	1 100.0	0	0	1 100.0		
Consultant/ Academics	-	-	-	-	-	-		
Industry Operators	6 85.7	1 14.3	4 66.6	2 33.4	5 83.4	1 16.6		
Column TOTALS	11 68.7%	5 31.3%	11 64.7%	6 35.3%	3 57.1%	6 42.9%		

* In some cases only one or two of the time horizons were completed.

Only one respondent failed to answer this question

6.5.4 PERCEIVED NOTIONS OF FORECASTING IN GENERAL

Respondents were asked to indicate the degree of concurrence or unsuitability of each statement by those that are considered users and non users, to obtain some idea of how general statements concerning forecasting are perceived. Six statements were provided, three were pro-forecasting and three had a negative sentiment toward forecasting. The result, are presented per sector in table 6.11.

Considering statement one, both users (100 percent) and non-users (96.2 percent) agreed, with reference to forecasting being

of respondents (non-users) in the industry operators category disagreed. The second statement concerned the use of forecasts to reduce the uncertainty regarding future demand. Three respondents (two users and one non-user) were unsure about their response. Of the users, 90.0 percent, and non-users, 92.4 percent agreed. Only 3.8 percent of non-users in the industry operators category disagreed with the statement.

Four respondents were uncertain about statement three, (one user and three non-users). The majority of users (95 percent) and nonusers (77 percent) agreed that through forecasting it is possible to influence the future of a business. Three non-users in the accommodation, travel organisers and industry operators categories, representing 11.5 percent disagreed with this statement. Statement four encouraged a large variety of responses. Of the users, twenty percent and 19.3 percent of nonusers were unclear about their responses. Of those in 2 greed, disagreement to this statement in that it is almost impossible to provide worthwhile forecasts of vital factors in the tourism industry, is varied. Respondents who forecast (55 percent), felt it possible to forecast vital factors in the tourism industry, while 34.7 percent of non-users felt it impossible.

1			-												
						TION	IFICA	CLASS	CTOR	SE					
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]															ONE
2 20 2	2 66.6	7 100	3 100		2 100	1 100	9 100	1 100	2 100	1 100	3 100	7 100	4 100	3 100	Agree- ment
							•			-	•	•			Unsure
1 3.	1			-	-						-				Disagr ment
															TWO
2 18 2 6 90 92.	2	7 100	3 100	•	2 100	1 100	8 88.8	1 100	2 100	1 100	3 100	6 85.5	4 100	2 66.6	Agree- ment
- 2 10 3.							1 11.2					1 14.2		; 33.4	Unsure
1	1 33.4		-	-						•		-	-		Disagr ment
1															THREE
1 19 3 3 95 77	1	7 100	2		1 50 0	1 100	9	1 100		1 100	3 100	6 85.8	4	3 100	Agree- ment
1 1 3 5 11	1 33.3		1 33.4					-	1 50.0			1 14.2		-	Unsure
1 4 11	1 33.4				1 50.0			-	1			•	-	-	Disagr ment
1								-	-						FOUR
2 5 .6 25 46	66.6	14.2	66.6		50.0	1 100	33.4		1 50.0		33.4	1 14.2	2 2	2 66.6	Agree- ment
1 4 20 19	33.4	14.2					44.4	-				3 42.9			Unsure
- 11 55 34	5	71.6	33.4		50.0		22.3	100	50.0	2 100	36.0	3	50.0	33.4	Disagr

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SATE- MENT	User	Non Use	r User	Non User	User	Non User	User	Non User	Use	Non	User	Non	User	Non	TOTAL No
FIVE									-	1-		-			user Us
Agree- ment		25.0	-			2 100		3 33.4	100	2		66.6	1		1
Unsure	-		1 14.2		1 100			2 22.2			-		-		2 2
Disagr ment	3 100	3 75.0	6 85.8	3 100	-	•	1 100	44.4		1 33.4		1	6 85.8	-	16 12
SIX								-	-		-	-		-	
Agree- Ment	3 100	4 100	6 85.8	3	-	2 100	1	8 88.8	1 100	2 100		3 100	4	3	15 25
asure	-		1 14.2		1100		-	•		-	-	-			2 -
isagr ent	-					-	-	1	-	-			3		3 1

* AGREEMENT is obtained by combining "agree" and "definitely agree" DISAGREEMENT is obtained by combining "disagree" and definitely disagree"

** See appendix C for statements 1 to 6 referred to in the above table

One respondent, a non user in the industry operators sector, did not complete this question

It is definitely possible to reach decisions without having to undertake forecasts. Reaction to this statement resulted in a greater difference of opinion. Although five respondents (two users and three non-users) representing 21.5 percent were undecided, 75 percent of those that practice forecasting and 46.2 percent of those that do not, disagreed with the statement. Those who agreed consisted of 15 percent users and 42.3 percent non-users. Statement six wanted to assess the opinion of respondents concerning the problems arising from the forecasters

personal outlook. The results were more stable, the majority of the respondents agreeing. Of those, 75 percent (users) and 96.1 percent (non-users) felt that the forecasters use of intuition is problematic. Of interest is that three users (42.8 percent) of forecasts in the industry operators category indicated their disagreement with the statement.

In the context of the three pro-forecasting statements and three negative statements, users and non-users of forecasts concerning the former generally seem to agree. Statements four to six registered varying opinions, with the non-users gaining larger support for the negative sentiment forecasting statements. However, many non-users of forecasts (see statement 5) are split over the use of forecasting in decision making. A similar picture is portrayed regarding statement four. Here the division of agreement (46.1 percent) and disagreement (34.7 percent) between non-users is slightly wider.

The final section of the questionnaire requested respondents to provide any relevant comments regarding this investigation. A number of respondents, those that forecast and those that do not, felt the initiative to undertake this study commendable and welcomed it, while one non-user failed to see the value of the investigation. However, issues pertaining to data inadequacies and the difficulty of forecasting in a politically unstable environment were stressed.

Several respondents feel that forecasters mostly seek individual glory resulting in total chaos and unco-operation. One respondent in the policy makers group felt that although not undertaking forecasting, there is no substitute for experience. Any study will have to be conducted on the highest level due to the "complex" nature of forecasting in general.

6.6 SUMMARY

This chapter focussed the extent to which tourism demand forecasting is practiced by enterprises and organisations in the tourism industry. This was achieved by paying attention to a distinction between those businesses that use statistically based forecasting and those that do not. Several issues related directly to demand forecasting in tourism. Data availability consistency and other shortcomings, the use of forecasting techniques and models and perceived notions of general forecasting statements were evaluated.

Mention was made of the highly satisfactory response rate enabling significant findings to be made. From the four parts from which the questionnaire was composed, issues were addressed as to how businesses who do not forecast provide for future demand of their products and/or services, together with the likelihood and need for implementing forecasts.

Further attempts were made to discover if data was available and if so what the sources of data used in the forecasting process and whether the statistics obtained are are suited for calibration of forecasting tools. The use of naive (simple) or sophisticated techniques or models resulted in an inquiry into the type of techniques used, the accuracy of models over various time horizons and attributes of techniques considered in selection of appropriate methods. Whether forecasters feel they poses adequate knowledge in selecting and applying the appropriate technique was examined through testing a number of The final section concentrated on relationships. whether businesses that use forecasting and those that do not, have preconceived notions about forecasting in general. Interesting to note were comments passed by respondents concerning the state of this investigation in relation to the tourism industry.

This chapter has focussed on to what extent forecasting is used by tourism businesses on the one hand and on the other hand, what discrepancies exist concerning the application of forecasting procedures in the organisational environment. The following chapter (chapter 7) examines the contribution the evaluation of forecasts can make to the planning and decision making process.

CHAPTER 7

THE CONTRIBUTION OF FORECASTS TO STRATEGIC DECISION MAKING IN TOURISM THROUGH THE ADEQUATE EVALUATION OF FORECASTS

7.1 INTRODUCTION

Careful forecasts, which are as accurate as possible, are central to the successful implementation of strategic plans. Tourism demand forecasting in the face of a changing environment can be beneficial to the decision-making process. With this as a premise the chapter is divided into four sections.

Section one examines the need for forecasting by tourism businesses and organisations. Examples are provided of how forecasting can be used on the short, medium and long term. As accurate forecasts are needed in the planning process, section two considers ways of evaluating forecasts through use of a conceptual framework and certain performance criteria.

Section three addresses an issue central to the whole planning As forecasts make a contribution to the planning process. process by promoting logical thinking, the interaction between the decision makers/planners and the preparer of the forecast is described by indicating issues like credibility and communication. Tourism planning can have different connotations for different people. Some think about development planning, others of strategic planning and others of economic or some other This section reviews the current state of form of planning. forecasting in planning and decision making.

The final section addresses what could be regarded as an "ideal" planning or decision making situation and the contribution forecasting can make.

7.2 THE NEED FOR DEMAND FORECASTING

It is widely accepted that one of the most important functions of the decision-makers at all levels in an organization, region or city is planning. Planning fosters a substantial need for futures research in the form of forecasting. Reliable forecasts of tourism demand are essential for efficient planning by airlines, shipping companies, railways, coach operators, hoteliers, tour operators, food and catering establishments, providers of entertainment facilities, manufacturers producing goods primarily for sale to tourists and other industries connected with the tourism market. Such forecasts are also of great interest to governments in origin and destination countries, and to national tourist organizations.

Both the need for forecasts and the importance of reliable forecasts have been stressed by several authors working in the tourism and recreation fields. For example, Gunn (1987:5) says: "Of interest to many tourist businesses is increasing the ability to make forecasts. Decisions on the purchase of new generations of equipment, new sites, and new technology may rest on predictions of increased demand for a specific tourism service or Wandner and Van Erden (1980:381) point out that: product." "Since governments and private industry must plan for expected tourism demand and provide tourism investment goods and infrastructure, the availability of accurate estimates of interrational tourism demand important has economic consequences." Finally, Archer (1987:77) notes the key role of forecasts in the planning process and emphasizes the importance of accuracy.

Forecasting should be an essential element in the process of management. No manager can avoid the need for some form of forecasting: a manager must plan for the future in order to minimize the risk of failure or, more optimistically, to maximize the possibilities of success. In order to plan, he must use forecasts. Forecasts will always be made, whether by

guesswork, teamwork or the use of complex models, and the accuracy of the forecasts will affect the quality of the management decision.

Forecasts are needed for marketing, production, and financial planning. Top management needs demand forecasts for implementing long-term objectives; lower echelons of management require forecasts to plan their activities over a more limited horizon. In the tourism industry, in common with most other service sectors, the need to forecast accurately is especially acute because of the perishable nature of the product.

According to Calantone (et.al., 1987:28) many regions and destinations seem to succeed without appropriate for acasting. However the opportunity costs of not forecasting can be high, as problems regarding the overestimation or underestimation of demand or any form of development could result. An overestimation of demand could result in empty seats on planes and coaches, empty rooms in hotels, and unused rental cars. If forecasts are too low tourism businesses on the other hand, could lose opportunities due to insufficient hotel accommodation or too few flights being catered for or the over extension of attractions and facilities at certain times of the year.

7.2.1 EXAMPLES OF THE NEED FOR FORECASTING BY VARIOUS TYPES OF TOURISM ORGANISATIONS

Airlines, tour operators, hotel companies, and other tourism businesses and organisations require forecasts to plan their strategy, operations and tactics. Short-term forecasts of traffic flows, occupancy rates, and visitor spending are important ingredients in the planning of marketing strategies, pricing policy, revenue targets, cash flow positions, stock requirements, and labour force needs. Medium-term forecasts provide essential data for the timing of new operations and services, the planning of future budgets, and the assessment of manpower and training needs.

Long-term forecasts are needed to determine the future direction and strategy of the organisation and to plan capital expenditure in the light of any major market or supply changes revealed by the forecast (Archer, 1987:86).

Archer (1987:85) provides an example of how British Airways uses different forms of forecasting. For example, British Airways uses: (a) weekly forecasts to compare the prevailing situation with previous target figures, (b) quarterly forecasts to relate traffic flows to the prevailing economic environment, (c) fiscal (or budgetary) forecasts to enable aircraft and marketing resources to be allocated in an optimum manner, (d) development forecasts (from two to seven years ahead) to examine the overall market situation in order to plan routes and the size of its fleet most effectively, and (e) speculative forecasts (over seven years ahead) to examine new products and market areas.

7.3 A CONCEPTUAL FRAMEWORK FOR EVALUATING FORECASTS

To make a contribution to decision making and planning, forecasts cannot be accepted at face value. A certain amount of evaluation has to be considered, either through a conceptual framework judging or evaluating forecasts, or through a number of performance criteria. Amara (1981(b):68) proposes a number of criteria for judging the work of forecasters. However, a complaint usually leveled against forecasters is the fact that there is no general criteria for distinguishing between "good and useful" forecasts from "bad and misleading" forecasts. There are three basic categories proposed by Amara.

7.3.1 TECTING FOR CONCEPTUAL EXPLICITNESS

Firstly, the basic premises about forecasting are generally not explicit but the absence of any generally agreed-upon framework clearly identifies basic premises such as those described in chapte two to be essential.

Secondly, the purposes of the forecast must be made explicit in providing a structure for defining objectives and rules regarding a projective forecast, for example: it is expected that one million people will visit our resort over the next twelve months or a prospective forecast where a probable or a preferable number of visitors will visit the resort over the next year.

Thirdly, the forecasters values must be clear. It is important that the objectives of his value system be precise and not vague. This will depend on what is expected of the forecaster as well as the extent to which their effects are controlled. For example, if making a forecast of the potential of international tourism to South Africa the recipient of the forecast must know whether high or low growth is advocated or expected.

7.3.2 TESTING FOR ANALYTICAL CLARITY

Firstly, the forecasters methods must be explicit. Forecasters who use formal approaches such as extrapolation methods, find it reasonably easy to be explicit, while those who indulge in speculative images such as the formulation of alternative future states find it difficult to explain their methods, as is the case with the three stage scenario.

Secondly, the forecast must include a description of changed processes. A systematic plan of all relevant steps of development is significant. The steps of clarifying the key uncertainties by providing the relevant information when developing the forecast contributes not only to the forecasters credibility but enhances it, both on a conceptual and practical level.

Thirdly, there must be enough time to act. Developing complex forecasts can be so time-consuming that by the time the exercise is finished reality has already taken over. It could be more rewarding to formulate scenarios making provision for a number of eventualities which can be continually updated. This enables the forecaster to improve the assumptions on a continual basis.

7.2.3 TESTING FOR THE USEFULNESS OF FORECASTS

Firstly, the product must be clear and specific. The forecast must not be ambiguous, complex, nor incomprehensible. Scenarios, for example should be straight-forward and easy to understand as it is has an important function as a communication medium within the strategic planning framework.

Secondly, the forecast must be credible. The forecast should be internally consistent, fit together well, and make sense. For example, scenarios should contain sufficient information both to inform the strategic questions they address and ensure their internal integrity and plausibility. However certain methodological problems regarding tourism field and other fields still remain.

Thirdly, the forecast should be effective in changing perceptions or guiding actions. Forecasts must be explicit in clarifying the assumptions and perceptions about the future state of demand for the tourism businesses products and or services.

All these issues need to be addressed and clarified between the preparer and user of the forecast in the planning and the decision making process.

7.4 THE EVALUATION OF FORECASTING PERFORMANCE

Before communicating the output of the forecasting process to others, Simmonds (1977: 24) indicates that the results should be evaluated as follows: for need, underlying cause, relevance and reliability. These checks reduce the likelihood of an elementary error or omission from slipping through by a systematic interrogation of the process and results.

However, despite the increasing number of reports on tourism forecasting, Van Doorn (1982:164) is surprised that little attention is paid to the comparison of actual data with the corresponding forecasts. This, despite the existence of a considerable number of criteria to assess and evaluate these results. For this reason it is necessary to evaluate some criteria to this effect.

7.4.1 ACCURACY IN DEMAND FORECASTING

It is widely accepted that accuracy represents the appropriate criterion for evaluation of forecast performance. However, it is necessary to consider accuracy in the light of both the purpose and special difficulties inherent in demand forecasting. Makmound (1984:139) believes in defining the purpose of the forecast and to some extent the degree of accuracy is also defined. For some decision-makers in the tourism industry a plus or minus percentage error may be sufficient, but in other cases due to the perishability of the product, an error of as much as five percent could spell disaster.

Accuracy is an appropriate criterion in judging forecast performance and is supported by authors such as Klein (1984:1). He concludes:

"...that the forecast itself has an intrinsic importance and to the user community it is the all important thing. Its accuracy is the 'bottom line' for the professional forecastar, much as the net profit is the "bottom line" for the chief executive of an enterprise".

Makridakis (1986:15) believes that:

"Improving the accuracy and utilization of forecasting involves considerable benefits for decision and policy makers who must use its prediction for planning, strategy and other types of future oriented decision making".

From a survey conducted by Carbone and Armstrong (1982:215) at the First International Symposium on Forecasting in 1981 an attempt was made to find out what criteria are used or deemed

important in evaluating forecasts and methods. From table 7.1 a number of accuracy measures are provided by academics and practitioners together with a number of other criteria surveyed. Carbone and Armstrong (1982:216) concluded that:

"The most important among them is without any doubt accuracy with only 14 percent of the respondents excluding it as a criterion."

CRITERIA	Academics $(n = 70)$	Practitioners (n = 75)
Accuracy		
R2	-	2
Mean square error (MSE)	30	20
Geometric MSE	1	-
Minimum var ance	2	4
Theil's U test	3	1
Mean % error (MPE)	5	5
Mean absolute error (MAE)	12	14
Mean absolute % error (MAPE)	15	7
Minimax absolute error (MMAE)	2	-
Random forecast errors	1	2
No specific measure	8	14
Ease of interpretation	26	29
Cost/time	24	25
Ease of use/implementation	26	18
Adaptive to new conditions	10	13
Universality	3	10
Capture turning points	5	6
Robustness	10	3
Incorporates judgmental input	4	2

TABLE 7.1: EVALUATIVE CRITERIA AND THEIR RELATIVE IMPORTANCE AS DETERMINED BY FORECASTING PRACTITIONERS AND ACADEMICS

SOURCE: Carbone, R. and Armstrong, J.S., 1982. Note: evaluation of extrapolative forecasting methods: results of a survey of academics and practitioners. **Journal of Forecasting**. 1(2). 1982: 16.

A number of the accuracy measures ranked most important by the academics and practitioners will be evaluated. These include the Mean Square Error (MSE), Mean Absolute percentage error (MAPE), the mean absolute error (MAE) and one rank not as important, Theil's U-test.

7.4.1.1 THE MEAN SQUARE ERROR (MSE)

According to Gardner (1983:263), this criterion is appropriate due to its ability to give extra weight to large forecast errors. Although the MSE results are difficult to interpret they are very useful. Large errors can be disastrous in tourism since being able to provide in the demand through adequate supply, large positive errors can result in a significant loss of market share before capacity can catch up to demand.

The Mean Square error will take on the following form.

$$MSE = 1/n \overset{n}{\overset{o}{\delta}} (A_t - P_t)^2$$

where:

 A_t represents the actual demand in t P_t represents the predicted demand in t n represents the number of forecasts.

7.4.1.2 MEAN ABSOLUTE PERCENTAGE ERROR (M A P E)

When comparisons are made across different time series the MAPE is useful because it expresses error in percentage terms (Moriarty, 1985:354). For example, if a test was carried out on data series of origin - destination tourist flows of different sizes, it is essential to use a criterion of accuracy which measures in unit-free terms where average error values are required. According to Witt (1991:1576), this measure of forecast accuracy is widely supported in the forecasting literature.

The criterion is presented as:

MAPE =
$$1/n \stackrel{n}{\circ}_{n=1} |A_t - P_t|/A_t$$

where:

 $|A_t - P_t|$ denotes the absolute value of the error A_t the actual number of tourist visits for example

Lewis (in Witt, 1991:1577) suggests that the following classification of MAPEs is applicable to industrial and business data:

< 10 % Highly accurate forecasting 10-20 % Good forecasting 20-50 % Reasonable forecasting > 50 % Inaccurate forecasting.

7.4.1.3 MEAN ABSOLUTE ERROR (MAE)

This criterion is a further measure to evaluate positive and negative errors. It is very similar to the MSE. Instead of squaring the error, the absolute value is taken and averaged. The "best" forecast obtained is the lowest MAE (Witt and Rice 1981:19).

The measure is given as:

MAE =
$$1/n \frac{\delta}{n=1} |A_t - P_t|$$

where the parameters are the same as those indicated above.

7.4.1.4 Theil's U-statistic

According to Archer (1987:84), Theil's U-Statistic may be used among other things to compare forecasts during the estimation period with the observed changes during that period. It is a measure of the overall quality of a set of forecasts.

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The formula used is expressed as follows.

$$U_{2} = \frac{t}{t=1} \begin{bmatrix} t & 0 \\ 0 & 0 \\ t & t \end{bmatrix}$$

where:

Pt = expected percentage change in year t
At = the actual percentage change in year t
t = is an indication of the time periods
U = unequal coefficient

If $U_2 = 0$, then $P_t = A_t$ this results in a perfect estimate. If $U_2 = 1$, then $P_t = 0$ then the forecasts are equivalent to a no-change extrapolation.

Interpretation of the formula:

If $U_2 < 1$ then the estimate is relatively good and the forecast has merit.

If $U_2 > 1$ then the performance of the forecaster is regarded as weak.

7.5 <u>INTERACTION BETWEEN THE DECISION MAKER/PLANNER AND</u> FORECASTER

The complexity and large number of stakeholders which could be involved in regional or organisational tourism planning makes the reaching of a common understanding in successful planning of cardinal importance. One relationship which provides a logical contribution to the thought process when planning, is that between the preparer and user(s) of the forecast.

By providing a simplified diagrammatic representation of the process of interaction between the decision maker and the forecaster, a clearer perspective can be obtained. Besides identifying two main associates in the sketch, it is possible to identify a number of other significant factors of importance.

- * The policy maker/planner/"futuree"
- * The forecaster/"futuror"
- * Need for well defined and structured questions or requests
- * Expertise and knowledge on the part of the forecaster
- * The insight obtained from the multi-sectoral nature of the tourism industry from which further decisions are made.

The interaction between decision makers or planners and forecasters/futures researches is shown in figure 7.1. The figure indicates that through the insight obtained from a particular sector(s) in the tourism industry, communication takes place between the policy maker and forecaster based on a clearly defined and well structured question or forecasting problem. For instance, the number of tourists that will visit attraction X in Cape Town in 1995.

FIGURE 7.1: THE INTERACTION BETWEEN THE FORECASTER AND DECISION MAKER AND PLANNERS



* Insight in this context refers to the dynamism of the tourism industry

SOURCE: Compiled from information taken from Van Doorn, J.W.M. 1982. Can Futures research contribute to tourism policy? Tourism Management. September 1982: 149 - 166.

It is necessary for the forecaster(s) to have the expertise and experience to relay their findings to the planners/decision maker(s) through learning the distribution of outcomes in the forecast. Moriarty and Adams (1984:241) believe it is important because of the link between experience and observation in determining the distribution of outcomes for a given set of values. The decision - maker is responsible for spreading the

goals and objectives established by the forecast in the planning process to others within that tourism organisation environment through mutual co-operation and understanding.

7.5.1 THE FORECASTER'S CREDIBILITY

The forecaster need to establish their credibility opposite management in areas where they can be judged in terms of their current problems (Simmonds, 1977:22). However, in research undertaken by Coccari (1989:73) applicable to general businesses it was found that the preparers of forecasts feel inadequate in understanding management forecasting problems and in identifying the important issues in a forecasting situation. The author sees this problem being due to the lack of definability and structurability of the forecasting problem posed. Simmonds (1977:23) indicates the major element in credibility is clearly the ability to discern what later turns out to be the "right" questions in the short term.

7.5.2 THE POLICY DECISION-MAKER/MANAGER

Credibility cannot be established without a relation-interaction between the forecaster and decision maker (Simmonds, 1977:22). The possibilities of misunderstanding in futures studies such as those undertaken by the forecaster are real and serious. The decision- maker needs to involve himself, by being part of the formulation definition of scope right through to the final report and recommendations. His contribution throughout the study is critical, especially when advising on recommendations and conclusions as the decision-maker is the person who will implement them.

It is necessary that the forecasters position should have the requisite authority and responsibility to allow for its proper impact on decision making. Simmonds (1977:23) concludes, "The forecaster must "thread" futures studies into an organisation so that the studies become the organisation's.

7.5.3 THE COMMUNICATION PROBLEM

The last step in the futures chain is considered the most difficult, i.e. to convince others that the findings are valid, useful and worth acting on. Due to this. the ability to communicate is systematically and regularly underestimated. The reasons are clear. According to Simmonds (1977:21), decisionmakers assume that their higher position in the organisation implies better judgement on their part and greater ability to achieve than those working for them. Coccari (1989:73) indicates that there is not only a knowledge gap, but there is also a gap in communication between the user and preparer of forecasts. At the one extreme we find the executive, who through ignorance and fear of quantitative methods, relies mostly on intuition. At the other extreme is the forecaster, skilled in the latest forecasting techniques but unable or unwilling to relate the forecasting process to the needs of the organisation and its decision makers.

The author is of the opinion that in order to not only close the gap, but to improve communication between the preparer(s) and user(s), it is necessary to enter into a process of discourse and dialectic with each other. What is proposed is formal and lengthy discussion regarding the particular problem enabling a better understanding and reasoning by weighing contradictory facts or ideas with a view to the resolution through continuous interaction.

With this discussion as background to the real issue of forecasting in tourism businesses, the current situation is portrayed by an evaluation in the context of four phases of strategic planning proposed by Gluck et.al.

7.6 THE SITUATION OF FORECASTING IN TOURISM INDUSTRY PLANNING AND DECISION MAKING

Conclusions drawn by Van Doorn (1982:166) regarding the contribution of forecasting to tourism strategic decision making, mentions that forecasting on the whole, has not yet received universal recognition as a vital aspect of planning and decisionmaking in tourism. Van Doorn (1982:165) adds that the greater part of research in tourism refers to short-term exploratory forecasting and therefore will not substantiate the necessary support to strategic planning.

Seen in the context of Gluck, Kaufman and Walleck's (1982) identification of their four phases in the evaluation of strategic planning gives some idea on how far tourism planning has progressed since the 1960s. Their research is based on an extensive survey of hundreds of companies throughout the world and in doing so identified the following four phases, namely:

- * Financial planning, based on extrapolating budgets for one to two years.
- * Forecast-based planning, based on the development of multiyear budgets, gap analysis and on existing (constant) perceptions of resources and markets.
- * Externally oriented planning, based on a thorough situational analysis, competitive assessments, an evaluation of strategic alternatives and a dynamic (changing) perception of the nature of resource availability and markets.
- * Strategic management, where top-down control is replaced by decentralised control. Rules and regulations became less important, while alignment around a common understanding and vision becomes more important, widespread strategic thinking capabilities are developed throughout the organisation and a win-win culture which emphasises the unique contribution of each person is fostered.
A closer look at what forecast based planning entails, substantiates the claim that tourism planning internationally has progressed to at least this phase. If the results of a study undertaken by the author are analysed (see chapter 6), the majority of South African tourism enterprises appear to have progressed to the first phase.

When tourism enterprises move from the first phase to the second, it appears the problems of the first phase were thought to be overcome by a sophistication shift in planning to estimating budgets and obtaining perceptions of the market. As regards tourism these estimates could include occupancy rates, people visiting an attraction and the expected number of tourists who will use air transport.

However, planners soon begin to be frustrated in that the real world does not behave as their extrapolations predict. With a call for more sophisticated forecasting tools - trend analysis, regression models and simulation models, some improvement is accomplished, but sooner or later all extrapolative models fail. Gluck et.al (1982:7) believes that the failure of the models misleads management into a false sense of security in that the future is predictable from the past. Many companies find that the changes likely to have the greatest impact on their future do not result from continuous and predictable change but from unexpected environmental shifts (Something to which tourism businesses are prone).

Ackoff (1981:58) regards the style of management described above as preactivism, where its adherents believe the future will be better than either the present or the past. One characteristic of the preactivists is based on the assumption that the future, after all, is not pre-determined and cannot be predicted with perfect accuracy. They do however, claim the ability to identify possible futures and implement the correct contingency plan once they know what the future is. Van Doorn (1982:166) adds that the

few pre-stage scenarios in the tourism field move more along these lines (contingency plans) than in conformity with scenarios proper.

It seems that if the management style is termed preactivism or the planning is termed forecast-based some strategic character is evolved. Planning based on forecasting alone however, cannot deal effectively with more than the relatively short-term.

A form of planning is needed which could see far enough into the future so as to achieve an optimum integration of long-term economic benefits, environmental impacts and social advantages arising from tourism.

7.7 THE CONTRIBUTION OF FORECASTING TO AN "IDEAL" PLANNING AND STRATEGIC DECISION MAKING TYPOLOGY

Gluck et.al (1982:9) emphasises that there is a vast improvement in the potential effectiveness of strategic decision-making when organisations advance beyond simple forecast based planning using extrapolation procedures, toward externally oriented planning procedures using integrative and normative forecasting.

industry and businesses The tourism are continually in Yet, during competition for tourists discretionary income. periods of economic recession and other crises and disasters, like uncertainty and instability to which the tourism industry is very susceptible, it becomes important to view a more hopeful future (Haywood, 1988:110). However, this means a type of planning and decision making that bases itself on the capability to develop organisational learning over the long-term when strategic planning and management become a single united process. Strategic planning (or management) according to Van Doorn (1982:166) is not wide spread among the various tourism bodies and organisations.

It is crucial to realise that tourism planning should be integrated, balanced and coordinated. An inter-disciplinary focus based on norms and values should be set by decision-makers and conveyed to all stakeholders (interested or affected parties) in the tourism field as is relevant to the particular needs of the country, area or organization. Van Doorn (1982: 166) proposes integrative forecasting in contrast to the extrapolative approach being pursued by many tourism businesses, since this type of forecasting combines various social, political and economic trends in a normative policy framework.

The interactive concept of planning is the design of a desirable future for the organisation and the invention of ways to bring it about (Ackoff, 1981:61). According to Ackoff (1981:63) the objective is to maximize the organisations ability to learn and adapt and develop. This becomes essential due to the rapid changing environment in which not only tourism organisations but others have to function.

This approach to planning enables the parties concerned to pursue not only their needs, goals and objectives but their ideals as well. Four principles based on interactive planning can be distinguished (Ackoff 1981:65) in respect of the various tourism determinants which through changes grow in complexity and dynamism. These four principles are shortly discussed.

7.7.1 THE PRINCIPLE OF INTEGRATION (INTEGRATIVE PLANNING)

Through the principle of integration, planning done independently at any level of an organisation cannot be as effective as planning carried out inter-dependently at all levels and through all departments. To achieve this, it is necessary for a tourism organisation to integrate certain issues with competitive realities and visionary possibilities of an achievable future through normative and integrative forecasting. These issues being the following: relevant destination characteristics, relevant tourist markets, establishing ends to be pursued (needs

and goals), conservation or ecological planning and resource planning (which includes more than financial resources and market planning).

7.7.2 THE PRINCIPLE OF CO-ORDINATION (COORDINATED PLANNING)

According to Ackoff (1981:71), no part of an organisation can be planned for effectivity if it is not undertaken completely, simultaneously and interdependently at all levels. Consider an example - the building of an hotel. Planning should display cohesion between multi-sectoral participants and should strive to achieve coherent and viable co-ordination of the views and forecasts of all stakeholders in the area or region of establishment. This should be done simultaneously and on a interrelated basis within the organisation.

Besides the interested parties within the organisation (such as marketing and finance, the direct stakeholders in a region such as local authorities, attraction operators, transport and tour operators, retailers and restauranteurs together with the indirect stakeholders such as national government, policy-making tourist organisations, organisations (national tourist information offices) and environmental groups), community interests need to be considered to determine underlying relationships among independently obtained forecasts in order to achieve a convergence of results. Through the concluded opinions of all the stakeholders involved problems, threats and opportunities can be addressed simultaneously and cooperatively.

7.7.3 THE PRINCIPLE OF CONTINUITY (THROUGH BALANCED PLANNING)

The author proposes combining continuity in planning and balanced planning as a single process. Ackoff (1981:70) refers to the former as the continuous monitoring and evaluation of planned action. Balanced planning means a holistic (coordinatedintegrated) trade off of the economic, social and physical (environmental) dimensions of tourism.

Consider the following example: The tourism carrying capacity of an area or region is based on forecasts of population growth for the area, per capita demand for the areas attractions and facilities and changing age mix. It is found that per capita demand had not changed significantly over the past ten years, resulting in the assumption that demand will remain constant. Nevertheless as part of the regions interactive forecasting process it has formulated this assumption explicitly and evaluates it as frequently as relevant data becomes available.

Sudden and significant increases in demand can be detected in this way. Further research indicate that the change persist. As a result, the area's plans for construction of new attractions and facilities are accelerated. The regions competitors do not detect this change with the result that they are unable to meet increased demand. This will enable the region doing interactive forecasting as a contribution to it's planning process, to increase its market share considerably.

A balance will thus be maintained regarding the tolerance levels of the regions communities with reference to the number of tourists, by carefully determining the attractions and facilities needed. The process of continuity and balance may result in the continuous flow of the right type of tourists in the right numbers in relation to the desired levels of usage of facilities and expenditure in the area concerned. An equitable solution between the continuity in the regions planning and the acceptance of a balanced planning process is encouraged.

7.7.4 THE PRINCIPLE OF PARTICIPATION (PARTICIPATIVE PLANNING)

Ackoff (1981:65) discerns that the most important benefit of planning is not derived from its product (the plan), but from engaging in the process of formulating the plan.

Participative planning is a reduction of the difficulties normally associated with implementation of plans. People are more inclined to implement plans they have contributed to, than

those that are handed down or imposed on them. The same principle applies to the relationship between the user and preparer of forecasts.

Through the pro-active approach, appropriate tourism planning and management is provided with a strategic character, resulting in the achievement of goals, objectives and pursued ideals in a competitive environment. As Boshoff (1989:73) indicates, the tourism business must control its future by designing the future and selecting or creating ways to bring it into existence.

However, the integrative approach as indicated above, requires a great deal of time and effort which must be justified by a significant improvement in tourism organisational performance (Ackoff, 1981:78).

7.8 SUMMARY

Tourism planning activity is increasingly being tested by the degree to which it enhances opportunity and reduces social, economic and environmental disparities. The path toward achieving this goal is the logical contribution of effective normative and integrative forecasting procedures to the planning process.

This chapter aimed at providing a rationale for using forecasts by expressing the need for forecasting in the tourism enterprise. Examples of how forecasting can be used in the short, medium and long term was provided. Continuous evaluation of forecasts through the conceptual framework and evaluative criteria provided is a necessity in a changing uncontrollable environment, thus enhancing the effectiveness of forecasting.

Through participation in the forecasting and planning processes, the preparer and user of forecasts and vice versa, will reduce the shortcomings regarding the forecasters credibility and communication problems indicated in the text. A process of

discourse and dialectic could be helpful in enhancing the relationship between the parties.

The final section reviewed the position of planning in tourism businesses based on four phases of strategic planning. As indicated, only several tourism organisations may have progressed to a position which may be regarded as strategic planning. A situation which encompasses various principles of interactive planning complimented by normative and integrative forecasting was presented providing impetus to those that have an ideal future planned.

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SECTION 4

FINAL SUMMARY AND CLOSING REMARKS

CHAPTER 8

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

8.1 INTRODUCTION

This chapter encompasses four sections. The first section entails a short summary of the study. The second section provides a number of conclusions drawn with specific reference to the empirical investigation undertaken. Section three includes a number of recommendations made pertaining to the contribution this study can make in the various sectors of the tourism industry.

8.2 SUMMARY

The primary objective of this study was to provide a practical insight into demand forecasting in the South African tourism industry. By achieving the secondary objectives the primary objective was realized.

Section one of the study concentrated on issues which provided a basis for the discussion of the essence of the investigation: "Forecasting models and techniques with reference to tourism demand." Consisting of four chapters including the background to the investigation, this section examined issues concerning the role and scope of tourism demand forecasting as a futures research procedure, the nature of tourism demand in a forecasting context and those determinants which affect demand.

Chapter two provided a theoretical basis by debating some underlying theory of forecasting as pertaining to demand. Amongst the subjects discussed were the nature and principles of

forecasting demand, an analysis of factors considered in the development and choice of a model, (the latter being complemented by the authors presentation of an expansionistic approach) and finally the forecasting process.

The problems associated with data/statistics concerning the collection and availability thereof and the shortcomings of consistercy and variability were investigated from a South African perspective.

Chapter three examined different aspects of demand, which included nature, instability and seasonality. Further attention focussed on different types of demand affecting integrated planning in the tourism business, the link between demand and supply through three different approaches and how demand is measured from a propensity and frequency perspective. To conclude, the evolution of demand over the past three decades was evaluated from an international and domestic view point.

An analysis of the various determinants affecting demand was provided from a South African perspective with international comparisons. Amongst the macro and micro environmental factors examined, the social, economic, cultural, demographic, political and physical consequences received attention. Finally, the blending together of these uncontrolable factors was portrayed through elaborating a linear and systems approach to producing the effect the determinants have on demand.

The core of any forecasting exercise is the use of some form of procedure, be it simple or complex. This section (2) gave cognisance to the various forecasting techniques and models applicable to forecasting tourism demand. Qualitative and quantitative models and techniques were discussed and evaluated. Specific attention was paid to the applicability of the model or technique in the tourism business/organisation and examples of how the technique or model has or is being applied

internationally was provided. These issues were specifically discussed in an attempt to satisfy the primary and secondary objectives of the study.

The link between the technique or model and the approach used in forecasting was discussed. At this stage the author found it necessary to assess some observations pertaining to the use of forecasting techniques and models.

Section three consisted of two chapters pertaining to the evaluation of forecasting. Firstly, an empirical study was conducted to determine to what degree forecasting is undertaken in the tourism industry, what forecasters and/or planners knowledge is of the applied techniques and models used in their organisation or business and forecasting in general. One of the most important contributions the study may make, is its practical structure and application in the South African tourism industry.

Chapter seven considered the contribution of forecasting evaluation to the formulation of strategic plans and decisions. Three parts were distinguished. Firstly, the need for forecasting was addressed by providing examples of how forecasting may be undertaken. The second part considered the evaluation of forecasts per se and the communicating of results. The former considered a conceptual framework for evaluating forecasts while insight was provided regarding forecasting errors and the accuracy of forecasts. The latter addressed issues pertaining to the interaction between preparer and user of forecasts. Attention was paid to the forecasters credibility, his position in relation to management decision makers and the problem of communication between the forecaster and planner.

The final part of the chapter evaluated the contribution of forecasting to planning and decision making together with the present situation of forecasting in tourism planning and policy formulation. An "ideal" planning typology which incorporates the contribution of forecasting in the planning process was provided.

The process involves the coordination of various forms of planning (integrated, coordinated, balanced and participative) into an interactive process.

8.3 CONCLUSIONS

The underlying hypotheses of this study as presented in chapter one are as follows:

- Tourism organisations have a general lack of knowledge concerning the value of scientific based forecasting methods in tourism planning.
- * The need for demand forecasting and its effectiveness, as well as the use and choice of the appropriate forecasting model or technique in forecasting demand, differs between associated business in the various sectors of the tourism industry.

The most important conclusions based on the stipulated hypotheses are as follows:

- * The misconception is created by the persons responsible for preparing forecasts in tourism businesses that they posses appropriate knowledge concerning qualitative and quantitative forecasting techniques and models used in tourism demand forecasting.
- * Of the non-users of forecasts, the majority felt it necessary to implement forecasting on a qualitative and/or quantitative basis in their businesses in the future.
- * Due to lack of research pertaining to tourism demand forecasting in South Africa, forecasters and especially nonforecasters lack insight pertaining to the various qualitative and quantitative techniques that could be used in the South African context.

- * A definite preference is shown by forecasters with respect to naive or simple qualitative techniques and models which can be attributed to insufficient knowledge of quantitative (statistically based) techniques.
- * Forecasters believe that the applied quantitative and qualitative techniques can be seen to produce average forecasts in the medium to long term.
- * Even though most businesses indicate data to be available for forecasting demand, insignificant use is made of this data in calibrating quantitative techniques and models as there is a greater reliance on qualitative techniques.
- * Discrepancies in the data available for forecasting were indicated by the majority of businesses making use of forecasts in determining future demand. This indicates a number of ineffective forecasting efforts on the part of tourism practitioners.
- * Cost and speed of producing a forecast are seen by businesses which forecast as being less important than the interpretation of the forecast value and the ease with which the selected technique or model can be applied.
- * Environmental issues such as political instability results in tourism businesses experiencing difficulty in forecasting demand for the future in an environment where instability and confusion exists.
- * A lack of co-ordination and co-operation in tourism businesses results in inadequate forecasting due to the forecasters' seeking of individual glory.

8.4 <u>RECOMMENDATIONS</u>

The following recommendations are made in view of the practical assessment of the study in general:

- * A data base for domestic tourism should be established for private and public sector concerns so that they may draw statistics/data to be used in forecasting exercises in the future. A set of guidelines for data collection needs to be compiled to prevent problems of data aggregation when used in model calibration.
- * The presentation of practical tourism courses for tourism practitioners in the various sectors of the industry is necessary. Attention could be given to tourism demand forecasting and related issues in a session of such a tourism workshop.
- * Tourism forecasting seminars and conferences could be held where the latest research in the field of forecasting may be conveyed to industry participants. The conference could consider two research disciplines, one for technical research and the other for practical research.
- * The formation of a South African Tourism Society, with the objective of coordinating and facilitating of tourism activities, could be useful in providing the organisational skills necessary for convening conferences, seminars and training courses for tourism industry participants.
- * Forecasting of demand or any other form of forecasting should be undertaken by those persons with appropriate knowledge and expertise. The opportunity costs of inadequate forecast results may be high without the necessary schooling in the latest forecasting technology.

- * Greater co-operation and co-ordination between private and public sectors of the tourism industry are needed to obtain adequate forecasts of the tourism market and its potential in the future. This may be obtained by combining forecasts of individual concerns in both the private and public sectors.
- * The necessity of including supply variables when forecasting demand is important for decisions regarding adequate carrying capacity and providing infrastructure for the projected flow of tourists to a particular attraction or region.

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APPENDIX A Procedure used to calculate seasonal indices

DATA OF BEDNICHTS SOLD TO TOURISTS : 1980 - 1990

MONTH	YBAE	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	.390
JANUARF		1082.7	1089	990.9	985.5	962.3	945.6	750.4	835.206	915.507	999.754	953 303
FEBRUARY		986.7	958.6	919.2	944.5	942.7	893.5	724	796.613	892.069	972.185	964.457
MARCH		1070.4	1044.4	1053.4	1011.8	1051.3	1008.9	860.5	956.567	1009.193	1123.4	1047.033
APRIL		1131.1	1155.7	1103.8	1085.4	1039.8	951.4	856.7	990.252	1044.88	970.551	924.133
HAY		944.8	999.2	890	853.5	929.4	820.7	811.3	894.905	881.963	925.134	871.384
JUNE		813.3	826.6	753	736.8	855.1	845.3	711.4	745.727	798.807	867.403	811.665
JULY		977.3	984 6	865.4	876.2	960.8	850.8	834.2	914,798	939.138	944.427	926.935
AUGUST		903.8	858.2	816.7	826.3	878.1	809.4	829.3	825.595	894.893	915.566	895.296
SEPTEMBER		888.9	881.8	805.2	850.9	905.3	816.8	846.3	880.698	934.005	917.619	918.491
OCTOBER		997.8	983.8	900.9	950	966,1	857.9	873.6	948.814	994.322	1000.056	979.04
NOVEMBER		938.3	892.7	829.5	762.6	892.9	776.1	806.9	890.119	953.66	993.78	1 5.151
DECEMBER		1230.2	1126.6	1019.8	1176.9	1080.3	985	1135.7	1187.022	1182.075	1150.041	1137.573

11965.3 11801.2 10947.8 11060.4 11464.1 10561.4 10040.3 10866.31 11440.51 11814.91 11334.46

DATA supplied by the Buro for Economic Research. University of Stellenbosch

THE CALCULATION OF SEASONAL FACTORS FOR BEDNICHTS SOLD TO TOURISTS:

Calculation of the seasonal averages for each year:

YEAR	NUMBER		AVERAGE
1980	11965.3	12	997.1083
1981	11801.2	12	983.4333
1982	10947.8	12	912.3166
1983	11060.4	12	921.7
1984	11464.1	12	955.3416
1985	10561.4	12	880.1166
1986	10040.3	12	836.6916
1987	10866.31	12	905.5258
1988	11440.51	12	953.3758
1989	11814.91	12	984.5758
1990	11334.46	12	944.5383

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Calculation of the index for each month:

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1999	1990
JANUARY	1.085840	1.107345	1.086136	1.075078	1.031568	1.093378	1,130166	0.828690	0.876051	0.026 0	1 050420
FEBRUARY	0.989561	0.974748	1.007545	0.997287	0.988652	1.071108	1.067897	0 799536	0.935571	0 506011	1 000000
MABCH	1.073504	1.061994	1.154643	1.142888	1.059098	1.194501	1 205821	0.050077	1 000*40	1.002000	1.1600004
APRIL	1.134380	1.175169	1.209887	1,197565	1.136138	1 181435	1 127640	0.550211	1 050000	1.0000003	1,103304
MAY	0.947540	1.016032	0.975539	0.965607	0.893398	1 056007	A 000007	0.002044	1.030000	1.001249	1.021040
JUNE	0.815658	0.840524	0.825371	0.816968	0.771242	0 071576	1 010200	0.702001	0.336070	0.895780	0.979455
JULY	0.980134	1.001136	0.948574	0 938917	0 017150	1 001674	1 010000	0.001000	0.784196	0.811321	0.918335
AUGUST	0.906421	0.872657	0.895194	0.886080	0.911105	0 007700	1.010004	0.321633	0.909036	0.903851	0.999882
SEPTEMBER	0.891478	0.896654	0.0000104	0.0000000	0.001340	1 000011	0.30/384	0.910822	0.865970	0.908912	0.969326
OCTORES	1 000694	1 000079	0.000400	0.00010000	0.004400	1.022220	0.970220	0.334095	0.923768	0.948637	1.003261
NUVENESE	n q/1001	0 000010	0,30/400	0.311933	0.334403	1.097636	1.025348	0.964744	0.995215	1.009899	1.064071
ADADMOCO	1 000020	1 145520	0.303444	0.033301	0.138543	1.014525	0.927582	0.891085	0.933650	0.968600	1.052133
aconoona a	1+603105	1+140019	1+11/814	1,106433	1.231916	1.227451	1.17725€	1.254189	1.245073	1.200594	1.217569

The calculation of the monthly seasonal index:

MONTHLY SEASONAL INDEX

JANUARY	11.3025
FEGRUARY	10.6672
MARCH	12.0604
APRIL	12.2452
MAY	10.5448
JUNE	9.34910
JULY	10.7290
AUGUST	10.0504
SEPTEMBER	10.2501
OCTOBER	11.1173
NOVEMBER	10.2437
DECEMBER	13,1576

APPENDIX B

CATEGORIES OF RESPONDENTS INCLUDED IN THE INVESTIGATION

Nº FORTOT TRUTTO	A:	POLICY	MAKERS
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1. 2. 3.	NATIONAL LE REGIONAL/PE CITY LEVEL:	EVEL: ROV LEVEL:	Satour; Dept. Admin & Tourism Regional tourism assoc's Major cities	2 7 5
в:	TRANSPORTAT	ION SECTOR	2	14
1.	NATIONAL:	Airlines SAA, Fli	Assoc., Transnet, SAVRALA, testar, AA + 5 Car Rental Co's	11
4.	REGIONAL:	Major bu	is co's; Regional Airlines	
c:	ACCOMMODATI	ON SECTOR		18
1.	NATIONAL:	Fedhasa,	B&B Assoc., Caravan club of SA	3
2.	REGIONAL:	Fedhasa-	-Cape	1
D:	ATTRACTIONS	SECTOR		4
1.	NATIONAL:	Society	of SA	5
2.	REGIONAL:	Wine Rou	ites, Table Mountain, V&A,	
		Regional	Parks Board	10
				15
E:	TRAVEL ORGA	NIZERS		
1.	NATIONAL:	ASATA, S	SATSA/TLC, SAPTO, SARTOC, ITM	5
2.	REGIONAL:	Major To	our Operators	11
				16
F:	CONSULTANTS	ACADEMICS	5	
1.	REGIONAL:	Prof M I	eibold, Drs JN Steyn & EA Uken,	
		MI N UE	VIIIEIS	
G:	INDUSTRY OF	ERATORS		
1.	HOTELS			7
2.	RESTAURANTS	(MAJOR)		8
3.	TRAVEL AGEN	ITS (MAJOR)	07/6	9
4.	GAME LODGES	AND SAFAR	1 D	
				29
			TOTAL	100

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APPENDIX C

UNIVERSITY OF STELLENBOSCH

DEPARTMENT OF BUSINESS ECONOMICS

QUESTIONNAIRE - AN ORIENTATION OF FORECASTING BY DIFFERENT TYPES OF ORGANISATIONS/ EUSINESSES WHO ARE INVOLVED IN THE TOURISM INDUSTRY IN SOUTH AFRICA

This questionnaire consists of four Sections: To be answered by	Inis	questionnaire	consists	of	four	Sections:	To be	ansvered	by
---	------	---------------	----------	----	------	-----------	-------	----------	----

A	:	FORECASTING PERSPECTIVES	:	ALL RESPONDENTS
B	:	DATA AVAILABILITY AND COLLECTION	:	RESPONDENTS WHO FORECAST
C	:	FORECASTING MODELS AND TECHNIQUES	:[RESPONDENTS WHO FORECAST
D	:	GENERAL STATEMENTS	:	ATT. RESPONDENTS

BECTION & PORTUABTING PERSPECTIVES

Where applicable please mark the box of your choice with a (X)

A.1) To which sector does your organisation/business belong? (More than one alternative may be indicated)

POLICY MAKERS	
TRANSPORTATION	
ACCOMMODATION	
ATTRACTIONS	
TRAVEL ORGANIZERS	
CONSULTANTS & ACADEMICS	
INDUSTRY OPERATORS	

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A.2) Does your organization undertake demand forecasting?

YES	GO	то	QUESTION	A.6
NO]			

IF NO: ANSWER QUESTIONS A.3, A.4, A.5

A.3) How do you project future demand for your organisation's products and/or services?

A.4) Not undertaking forecasting, do you see a NEED for forecasting in your organisation in the future?



IF YES: please state the REASON(S).

A.5) What is the possibility or likelihood of **implementing** practically based forecasting in your organisation in the future?

(Please mark the appropriate alternative with a X)

VERY LIKELY	LIKELY	UNLIKELY	HIGHLY	UNLIKELY
-------------	--------	----------	--------	----------

IF YES: ANSWER ALL THE QUESTIONS THAT FOLLOW

A.6) Please indicate the time horizon(s) for which your forecasts are made. If another time classification is used indicate in the space provided.

Less than three (3) months							
Between 3	months and two (2) years						
More than	two (2) years						

- ECTION B DATA COLLECTION
 - 5.7) Are statistics/data available for you to undertake forecasting regarding future potential demand?

YES	GO	то	QUESTION	В.9
NO				

IF NO: ANSWER QUESTION B.8

B.8) What are possible reasons for data or statistics not being collected or made available for forecasting purposes?

IF YES: ANSWER QUESTIONS B.9 AND B.10

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B.9) Which sources are used to obtain statistics enabling the making of a forecast?

(More than one alternative may be specified)

(Please mark the appropriate box with a X)

Government (eg. Satour)IIndustry Organisations (eg. Fedhasa)IUniversities/TechniconsIResearch companiesIOwn research (eg. survey)IOther. Please specify:

B.10) In your opinion are there any shortcomings/problems regarding the data obtained from the sources mentioned above?

YES	NO

IF YES: In your opinion what are these problems?

SECTION C - FORECASTING MODELS and TECHNIQUES

C.11) How do you rate the IMPORTANCE of demand forecasting on a scale of 0 to 10 with 0 being least important and 10 most important.



(PLEASE CIRCLE THE APPROPRIATE NUMBER ON THE SCALE)

C.12) State which technique(s) and /or model(s) are applied in demand forecasting in your organisation? (over the three time horizons)

PLEASE REFER TO QUESTION C.16

Long term (L/T) : (2 years or more) Medium term (M/T) : (3 months to 2 years) Short term (S/T) : (3 months or less)

(PLEASE INDICATE THE TIME SPAN WITH A X IN THE APPROPRIATE BOX)

QUANTITATIVE:	L/T	M/T	S/T
QUALITATIVE:			

C.13) Please give as examples, situations where you have applied the techniques or models mentioned above.

LONG TERM: (> 2 years)	MEDIUM TERM: (3 months - 2 years)	SHORT TERM:
0	0	0
1	1	1
2	2	2
3	3]	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
1	1	
10	10	10

C.14) In general, how effective are the technique(s) used in your organisation in terms of ACCURACY, rated on a scale of 0 to 10?

(PLEASE CIRCLE THE APPROPRIATE NUMBER ON THE SCALE)

C.15) Indicate the importance regarding each attribute of a forecasting technique by placing a X in the appropriate box.

ATTRIBUTE						
CRITERIA	Ease of interpretation	Ease of Application	Total cost effectiveness	Speed of forecast prod.		
Most important						
Important						
Unsure						
Less important						
Least important						

C.16) How would you RATE the following forecasting techniques in terms of the criteria mentioned in the previous question (C.15)

(PLEASE MARK WITH A X IN THE APPROPRIATE BOX)

NB: YOUR FRANKNESS IN ANSWERING THIS QUESTION WOULD BE APPRECIATED

	Excel lent	Good	Fair	Poor	Very Poor	Un- sure
OWN INTUITION						
OPINION OF EXPERTS						
COMMITTEES & UNREFINED GROUPS						
REFINED GROUPS (eg. DELPHI)						
MOVING AVERAGE METHODS						
EXPONENTIAL SMOOTHING						
TREND EXTRAPOLATION MODELS						-
SEASONAL DECOMPOSITION						
SIMULATION MODELS						
STRUCTURAL MODELS						
REGRESSION (MULTIPLE)						
SCENARIO BUILDING						
Other (Please specify):						

C.17) Indicate for each time horizon which form of inaccuracy do you consider to be generally worse by placing a X in the appropriate box.

	L/T	M/T	S/T
OVERESTIMATION		-	
UNDERESTIMATION			

SECTION D - GENERAL STATEMENTS

D.18) Indicate in the appropriate block the degree of CONCURRENCE or UNSUITABILITY with each statement/question.

(INDICATE PY PLACING A X IN THE APPROPRIATE SPACE)

 Forecasting is essential for an organisation's future planning and management decision-making.

DEFINITELY AGREE	AGREE	UNSURE	DISAGREE	DEFINITELY DISAGREE

 Forecasts are attempts to reduce the possible uncertainty regarding future demand for tourism products and services.

DEFINITELY AGREE	AGREE	UNSURE	DISAGREE	DEFINITELY DISAGREE

 Through forecasting it is possible to influence your organization's future.

DEFINITELY AGREE	AGREE	UNSURE	DISAGREE	DEFINITELY DISAGREE

 It is almost impossible to provide worthwhile forecasts, especially of vital factors in the tourism industry.

DEFINITELY AGREE	AGREE	UNSURE	DISAGREE	DEFINITELY DISAGREE

 It is definitely possible to reach decisions without having to undertake forecasts.

DEFINITELY AGREE	AGREE	UNSURE	DISAGREE	DEFINITELY DISAGREE

6) The forecasters' personal outlook could be problematic in his assessment(s).

DEFINITELY AGREE	AGREE	UNSURE	DISAGREE	DEFINITELY DISAGREE

D.19) Please provide any relevant comments concerning this investigation.

THANK YOU FOR YOUR CO-OPERATION.