A CONCEPTUAL MODEL OF KNOWLEDGE ACQUISITION AND UTILISATION THROUGH MARKETING RESEARCH IN TOURISM: DEVELOPMENT AND AN EMPIRICAL ASSESSMENT

by

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DECLARATION

This thesis contains no material that has been accepted for the award of any other degree or diploma in any university or other institution. To the best of my knowledge, this thesis contains no material previously published or written by another person, except where due reference is made in the text.

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ABSTRACT

This thesis is concerned with the process of knowledge acquisition and utilisation through marketing research in tourism. Its main objective is to determine the factors that lead to a marketing research orientation in tourism organisations. A conceptual model of antecedents and consequences of marketing research in tourism is constructed within a framework of theories of the sociology of knowledge and the diffusion of innovations. The model is tested using data gained through structured personal interviews with marketing and marketing research executives in a sample of the largest Australian tourism organisations.

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CHAPTER 1

INTRODUCTION

The main question which this thesis attempts to answer is:

> What are the factors that determine marketing research orientation
> in a tourism organisation?

A number of constructs will need to be defined before this question is answered. Primarily, these are the definitions of the constructs of 'marketing research' and 'tourism'. However, as this dissertation argues that marketing research constitutes new knowledge and therefore is an innovation, it is also necessary to define the constructs of 'knowledge' and 'innovation'. Chapter 2 looks at the classical theories of the sociology of knowledge to investigate the philosophical underpinnings of these social constructs. The sociology of knowledge application and more recent theories of the diffusion of innovations, particularly in an organisational context, and a conceptualisation of the marketing research construct as an innovation are also discussed in this chapter.

Having presented the theoretical foundations of the argument, Chapter 3 offers a selective review of the earlier work on knowledge utilisation in general, and a more complete discussion of the literature on marketing research utilisation in particular.

Chapter 4 presents a conceptual model of knowledge acquisition and utilisation through marketing research. The variables in the model are discussed by relating them to the literature in various relevant disciplines.

After a discussion of the methodology used to collect them, the data that were uncovered through the primary research survey, which forms the basis of this thesis, are presented in Chapter 5 to provide a cross sectional view of the *status quo* of marketing research in tourism in Australia. The inaugural nature of the study makes an understanding of the role that marketing research information plays in the management of tourism organisations a prerequisite to a more abstract analysis.

Chapter 6 discusses various hypotheses to be tested, and the techniques used in the analyses of the data.

The conceptual model presented earlier in Chapter 4 is tested and discussed in detail in Chapter 7, along with a discussion of structural equation modelling.

Chapter 8 presents the findings and discusses their relevance in terms of academic theory and managerial practice. Directions for further research are indicated.

CHAPTER 2

SCOPE AND IMPORTANCE OF RESEARCH

2.1   The Importance of Knowledge for Business

Machlup (1962, p. 362), an Austrian-American economist, found that "knowledge production in 1958 was almost 29 per cent of adjusted GNP". Twenty-four years later, Rubin, Huber and Taylor (1986, p. 24), estimated the 'knowledge industry' in the United States to be worth more than 34 per cent of GNP. Citing Machlup's earlier work among others, Toffler and Toffler (1994) proposed that power, as the world has known it, was going through a radical change of structure. It was not only the transfer of power that the world is witnessing, but also a revolutionary transformation of it. They argued that violence and wealth continue to play their important parts, but knowledge is the key to power. The growth of knowledge production has been enormous since World War II. In an earlier work, Toffler (1974) estimated that scientific and technical literature grew by 60,000,000 pages per year. Price (1961), after a study of scientific journals from the 17th century to the present, found that total scientific productivity increased exponentially.

The recognition of knowledge as a primary factor in the success or failure of organisations is increasing (see, for example, Barabba and Zaltman 1993). In marketing, the top 10 U.S. research companies generated worldwide research revenue of over $US 4.1 billion in 1996, indicating a 10 per cent increase on the previous year (Advertising Age 1997). Several authors have drawn attention to the value of "intellectual capital", the implications of knowledge use in an information-intensive environment, and the need to produce more useful knowledge (see, for example, Glazer 1991; Myers, Greyser, and Massy 1979). This thesis is concerned with the acquisition and utilisation of knowledge through marketing research and its effect on organisational performance. The utilisation of marketing research is known to occupy an important place in the development of market orientation (Kohli and Jaworski 1990; Jaworski and Kohli 1993). Market orientation is defined as "the organisation-wide generation of market intelligence, dissemination of intelligence across departments, and organisation-wide responsiveness to it" (Jaworski and Kohli 1993, p. 53). According to this definition, marketing research is an essential part of the

market orientation construct. However, it appears that the understanding of how the information generated by marketing researchers "is used within organisations and of the major determinants of and impediments to knowledge utilisation within firms, is less than adequate" (Menon and Varadarajan 1992, p. 53).

During the last decade, various authors have made valuable contributions to the study of marketing research use (see Deshpandè 1982; Deshpandè and Zaltman 1982, 1984, 1987; Hearne 1984; John and Martin 1984; Kinnear and Root 1989; Lee, Acito, and Day 1987; Link 1988; Menon and Varadarajan 1992; and Menon and Wilcox 1994). In general, however, research into the acquisition and utilisation of knowledge in organisations is too fragmented to do justice to the importance of the issue. It is further suggested that the previously developed measures of marketing research utilisation (cf. Deshpandè and Zaltman 1982; John and Martin 1984; Lee, et al. 1987) are too narrowly defined, largely overlook the type and extent of research use, and "ignore the multiple, specific forms and facets of research use" (Menon and Wilcox 1994, p. 3).

Capital investment made by tourism companies in buildings and equipment worldwide was estimated at $US705 billion in 1995. In the same year, the tourism industry stimulated 200 million jobs world-wide, and its output reached $US3.4 trillion. With its contribution to the world's gross domestic product at 11.4 per cent in 1995, tourism is claimed to be the world's largest industry (Waters 1996). Two studies, which comprised the exploratory phase of the current project, have established that tourism organisations devoted substantial resources to the conduct of marketing research, and performed many different types of research (Yaman and Shaw 1997, 1998b). As the industry's growth continues, it is expected that research in tourism will expand accordingly in both extent and scope as a crucial supporting function. However, evidence suggests that the managers of the tourism industry generally do not appreciate the importance of marketing research and the subsequent use of the knowledge generated by it. Baker, Hozier, and Rogers (1994, p. 7) state that an important component of tourism research "is neither efficient, effective, or accountable [because] … many users of tourism research do not demand efficient, effective, and accountable research". According to Taylor, Rogers, and Stanton (1994, p. 9), although "the amount of research that has been developed over the years by a variety of tourism agencies has grown consistently … the use of this research by

the many tourism businesses which have need for the information … has not grown". An extensive literature review revealed very little research on the dissemination and utilisation of knowledge in the tourism industry. Until 1996, the only published study in the area that specifically targeted the tourism industry was a status report (Rovelstad and Blazer 1983).

The acquisition of information is of limited value if not followed by effective utilisation because, in organisations, there is a distinct difference between the gathering of information and its utilisation (see, for example, Sinkula and Hampton 1988). An exploratory study which aimed to answer some of the questions on marketing research utilisation in tourism (Yaman and Shaw 1998b) has shown that the existing conceptualisations of marketing research use offer limited guidance for understanding this complex phenomenon as it manifests itself within the tourism industry. The present study attempts to investigate the utilisation of marketing research in a holistic framework that would include the antecedents, precedents, and processes, as well as the outcomes of information acquisition. The main objective of this thesis is to provide an understanding of the utilisation of information obtained within a relatively formal framework (marketing research). However, the essential premise is that utilisation is a part of a cyclical process that can only be properly investigated in its entirety.

Therefore, the *status quo* regarding the marketing research orientation of tourism organisations needs to be discovered before an understanding of the utilisation process is attempted. Specifically, the questions that need to be answered include the following: What are the marketing research activities of tourism organisations? What techniques are employed in the conduct of marketing research? Who conducts marketing research, and who analyses it? Why are some organisations more marketing research oriented than others? What organisational and/or individual characteristics influence the utilisation of marketing research? What are the environmental factors that influence the utilisation of marketing research? What are the perceptions of tourism decision-makers of the quality and usefulness of marketing research? What are the perceptions of tourism decision-makers of the effects of marketing research on financial and other quantitative and qualitative performance outcomes?

2.2　Theoretical Underpinnings

Mitroff (1974) asserted that all perceptions of the world are subjective despite the claims of some toward rational objectivity. Consequently, the problems chosen for scientific analysis by each intellectual discipline, as well as the tools and techniques used, are determined by the specific world-view of the discipline. This inevitably influences the quality of conclusions reached regardless of the level of rigour exercised during the process of investigation. The meaning that is assigned to a situation is not inherent in the nature of the objective environment. Instead, it is the result of a definition. Both marketing and tourism, the two multidisciplinary areas of scientific inquiry that are the tenets of the present study, are concerned with human activity in social situations. Arguably, phenomena in both marketing and tourism are best investigated in terms of a societal perspective, rather than an individualistic one. Consequently, the sociology of knowledge is a better framework for the study of marketing and tourism activities than, say, the psychology of knowledge.

2.2.1　The Sociology of Knowledge

The sociology of knowledge was conceptualised by one of its most influential scholars (Mannheim 1936, p. 7) as 'the consideration of mental productions insofar as they are influenced by social factors'. A more inclusive definition of the discipline could be phrased as 'a field of intellectual inquiry concerned with the study of the production, organisation, dissemination, and application of knowledge within a social construction of reality' (Author, after Bell 1974).

The discipline of the sociology of knowledge was formed in the late 19th century in France and Germany, particularly, as a direct response to the Enlightenment. The quintessential thinker of the Enlightenment thought was Descartes, who claimed that a system of inquiry should be concerned with more than the truth or falsity of its statements, and it must be capable of guaranteeing the validity of its own results. (Other representers of the Enlightenment were Voltaire, with his naturalistic history of western civilisation, and Kant who advocated freedom of independent thought and judgment for 'enlightened' individuals.)

The rationalism of this philosophy was contested by a number of thinkers. One of the most prominent detractors of the Enlightenment was Karl Marx. Marx interpreted history in terms of the conduct of men. According to Marx, men's actions could be

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explained by their occupation in the world of work and its economic forces. The inequalities in the distribution of power gave way to conflicting ideologies. Knowledge creation and dissemination could be interpreted in terms of ideological dialectics. 'The development of fixed capital indicates the extent to which general social knowledge has become a direct force of production ... It shows to what degree the social forces of production are produced ... in the form of knowledge' (Marx 1858/1961, pp. 104-5).

Mannheim (1936) followed Marx's lead by conceiving of the sociology of knowledge as seeking the interpretation of belief systems in the life situations of the persons who express them. He adopted Marx's dialectic by distinguishing between two kinds of knowledge systems as ideologies and utopias. According to Mannheim, ideologies are intellectualised justifications for the existing social order upheld by the established sections of the society, which usually represent the more conservative forces. Ideologies are mainly moral defences and explanations, often clothed in quasi-scientific arguments that are formulated to support the *status quo*. Utopias attempt to transcend the existing social order. They are critiques of existing societal structure by socially progressive forces. According to Mannheim, utopias are the reason why ideologies are forced to provide intellectual defences for their stances.

Mannheim's conceptualisation was similar to Marx except where Marx conceived of all ideologies being formed in a political struggle between capital and labour, Mannheim tried to stay away from such relativism. In a similar attempt, Scheler used a framework of the philosophy of anthropology in which to interpret and analyse all knowledge in terms of certain absolute values. Scheler (in Bell 1974, p. 175): distinguished three classes of knowledge. *Herrschaftswissen*, which described knowledge for the sake of action or control; *Bildungswissen*, or, knowledge for the sake of non-material culture; and *Erlösungswissen*, or, knowledge for the sake of salvation. Although most of Scheler's effort was systematically flawed, this particular insight into institutionally structured knowledge later served as a basis for classifying information use by knowledge utilisation scholars, as will be seen in discussions of more recent literature in Chapter 3.

Comte (1975) visualised a society of technocrats where the development of knowledge was linked with the progress of science and technology. His idea of

evolution was the development of a division of labour and the emergence of a scientifically self-conscious social system. Durkheim (1964) asserted that the division of labour would lead to the establishment of conditions for individual freedom through 'organic solidarity'. Following the philosophy of Kant, Durkheim indicated the existence of certain *a priori* logical schemas that dictated the search for, and organisation of, knowledge. According to Durkheim:

> To classify is not only to form groups; it means arranging these groups according to particular relations ... Every classification implies a hierarchical order for which neither the tangible word nor our mind give us the model. We therefore have reason to ask where it was found ... These facts lead us to the conjecture that the scheme of classification is not the spontaneous product of abstract understanding, but results from a process into which all sorts of foreign elements enter (Durkheim and Mauss 1963, p. 8).

Weber's vision of evolution included the separation of society into distinct social roles. This segmentation of society into differentiated groups led to specific forms of conduct that became institutionalised. This institutionalisation led to the formation of a bureaucracy and professional working groups such as lawyers, physicians, and scientists. Each of these working groups had its own body of knowledge that allowed it to perform its tasks and set jurisdictional boundaries on what it could and could not do (Weber 1930). However, Weber thought that dissemination of knowledge would be severely restricted because of the vested interests of these interest groups. Later, Weber (1948) believed that every bureaucracy sought to increase the superiority of the professionally informed by keeping their knowledge and intentions secret. Bureaucratic administration always tended to be an administration of 'secret sessions': in so far as it can, it hid its knowledge and action from criticism.

Simmel took a socio-psychological approach to the investigation of knowledge. He perceived the social circumstances and even knowledge itself as society. The social structure determined, and in turn was determined by, knowledge. To Simmel, society was 'a network of structured interactions among conscious and reflective actors who form views and images of themselves as they form images of others' (Simmel 1964, p. 64). These 'actors' participated in a flow of communication in which they constructed what Simmel referred to as 'syntheses', typifications of the attributes and boundaries of roles, groups, and societies. Simmel's conceptualisation of interactive information flow between individuals shows up in most of the models of knowledge utilisation that have been developed in the 1970s and 1980s (see, for example, Caplan

et al. 1975, Rich 1977, Menon and Varadarajan 1992).

2.2.2   The Social Construction of Reality

The view that all perceptions of the world is subjective is supported by Berger and Luckmann (1979) who perceived the mission of the sociology of knowledge as understanding the processes by which the development, transmission, and maintenance of whatever passes for knowledge in society is done in such a way that the ordinary person readily accepts it for 'reality'. "In other words, we contend that the sociology of knowledge is concerned with the analysis of the social construction of reality" (ibid. p. 23). Holzner (1972, p. 20) similarly argued that "we are compelled to define 'knowledge' as the communicable mapping of some aspect of experienced reality by an observer in symbolic terms".

In keeping with the terms of this argument, knowledge in this thesis is primarily conceptualised as a sociological construct. The conceptualisation of knowledge in symbolic theories allows the investigator to consider qualities, or attributes, of specific types of knowledge. A number of such attributes as applied to marketing research knowledge is discussed in Chapter 4 when a model of marketing research utilisation is considered.

Kuhn (1970) suggested that scientific knowledge advances by integrating disparate frames of reference. A frame of reference is understood as a set of ideas, as of philosophical or religious doctrine, in terms of which other ideas are interpreted or assigned meaning. Looking at it from the frame of reference of another knowledge domain facilitates the interpretation of one knowledge domain. Therefore, a proper understanding of the knowledge methodologies is only possible through an identification of the reference frames. The choice of a particular frame of reference betrays a value commitment to a certain set of ideas or a discipline.

Frames of reference are constructed with atomistic monads (as proposed by the Leibnizian inquiry system). The Leibnizian inquirer uses mathematics and logic as tools for reasoning. The basic elements of the system involve minute information bits, called monads, which are 'reasonable' in themselves and cannot be further subdivided. The relationships between the monads are established through 'correspondence rules' (Suppe 1977, p.17) and master models are formed. A set of

reality tests needs to be applied to models to determine the reliability and validity of new knowledge. There are several different types of reality tests. They are all designed to validate an observation. For example, pragmatic reality tests measure knowledge in terms of the consequences of its application. The utilitarian nature of these tests makes them suitable for adoption by managers. Similarly, authoritative reality tests deal with source credibility. The higher the value the perception of the user places on the source of knowledge, the more likely its utilisation.

In contrast, rational reality tests are used to validate the formal logical consistency of the model. As such, they are Leibnizian. Consensual reality tests look for general agreement in relevant groups of interest. As Locke suggested, what the majority of the group agrees as being real is real. Magical reality tests assess the consequences of the methods used, whereas mystical testing looks at the origin of knowledge to ensure its validity. The appearance of objectivity is assigned to most forms of scientific inquiry through empirical reality tests. Empirical reality tests involve the experimental validation of suggested hypotheses through the use of approved methodological tools.

These validity-testing procedures are used within particular frames of reference as ways of interpreting the validity of knowledge. They are institutionalised within "epistemic communities" (Holzner 1972). Each specific community establishes control over specific information spheres or, as Kuhn (1970) suggests, they share certain common exemplars. Medicine and law are obvious examples of such epistemic communities, each with its own classifications of community interest and knowledge control.

Any specific form of knowledge production, as long as its elaboration requires an independent forum, probably will result in the structure of an epistemic community. Each community in return establishes a common frame of reference with its own particular types of reality tests. By extension of this concept, the process of knowledge acquisition and utilisation in an organisational context is subjective. What is to be investigated, how the knowledge is to be utilised, and the performance effect on the organisation of the whole process are decided within a particular framework that is shaped by factors that are specific to the organisation and the environment in which it operates. In the light of this, attempting to determine certain factors leading

to decisions and outcomes of actions through 'objective' means may be futile. For example, one of the important undertakings of this study is to determine the effect of marketing research on organisational performance, both in financial and other quantitative and qualitative terms. It would be very difficult, if not impossible, to isolate the influence of marketing research from that of a number of other factors that affect organisational performance. One viable alternative to seeking objective means of assessment is to attempt to determine the effect of marketing research endeavour on financial performance through the perception of decision-makers.

2.2.3   Philosophical Grounding of the Sociology of Knowledge

Before moving on to a discussion of the literature on various research utilisation models, it is useful to make some comment on the philosophical grounding of the concepts theorised in the sociology of knowledge. The following section presents an attempt to explain how the literature discussed so far, as well as the body of this thesis, fits into a philosophical framework. This is done through a consideration of the work in the philosophy of science and particularly, the philosophy of information science. These disciplines take as their focus of interest specific systems of inquiry that can be associated with philosophers and scientists historically (Mitroff 1977).

In the early 19th century, inquiry in science concerned itself with the discipline of logic. Symbolic logic was used to posit models. Symbolic logic had certain properties that other conceptual systems did not. It had certain definite rules that could be manipulated, and it was based on an assumption that the world was rational. Therefore, there was a strong rationalistic bias to systems of inquiry in science. The qualities of precision and consistency of symbolic logic were considered to more than compensate for the cost of loss in flexibility.

In the mid-19th century, symbolic logic came under critical scrutiny. Dewey suggested that rationalism could not exist without empiricism. This requirement for empiricism is integral to the Comtian system of inquiry. Descartes thought that a complete inquiry system must not only be able to say what statements are true or false, but also must be capable of guaranteeing the validity of its own results.

This view of science is best illustrated by the system of inquiry suggested by Leibniz and supported by Spinoza and Descartes (Mittroff 1974). The Leibnizian system is

based on formal, deductive reasoning. Most of the knowledge utilisation literature until the 1980s followed a Leibnizian approach. Economic utility models of information-worth assume a rational buyer or consumer of information. The Leibnizian inquirer deals with well-structured problems to which it attempts to provide a unique solution. A major characteristic of this system is that its proponents believe that theory building is superior to, primary to, and can be handled independently of data-collection.

In contrast to this deductive mode of thinking, the Lockean inquiry system takes as its primitive elements sensory or experiential inputs from the environment. Locke's primary assumption was that the human mind at birth is a blank tablet (*tabula rasa*). Inductive inquiry in the Lockean system allows well-structured problems to be solved uniquely by means of general agreement. A Lockean epistemic community can be said to be using consensual reality tests rather than the rational reality tests favoured by a Leibnizian epistemic community. Followers of the Lockean system of inquiry also believe that data-collection is superior to, primary to, and can be carried on independently of theory building.

The system of inquiry proposed by Kant presupposes theory. It can be viewed as a system that involves a Leibnizian inquirer with a Lockean database. Kant stated that "the order and uniformity in the phenomena we call nature we ourselves bring into them and never had we found them had we not first put them there" (Bell 1996, p. 591). In answer to the followers of the Lockean empiricist system who believed that the laws of nature existed and could be studied in science because these laws could be found, the Kantian school indicated that we find these laws because we know *a priori* that they are there. In other words, we cannot have found by looking for them the eyes without which we could not have looked (ibid.). Kant's law of understanding asserts that facts need to allow themselves to be understood in some way if they are to make themselves known at all.

Hegel proposed another major system of inquiry. The Hegelian system of inquiry is based on the conflict between two equally strong and diametrically opposed viewpoints. Some of the literature on utilisation of research discussed in Chapter 3 appears to have taken the Hegelian approach, albeit without following it through to its natural resolution. The essential premise of the Hegelian system is that conflict is

superior to consensus in that it forces the surfacing of the basic assumptions behind data-collection. The dialectic will occur optimally only if both sides in the argument are equally powerful.

More recent philosophers of science suggested that as no single inquiry system can provide satisfactory answers, the primitive or basic elements of inquiry should be those of all the other inquiry systems. This eclectic approach to scientific inquiry suggests a meta-system that marries interdisciplinary approaches in an attempt to resolve problems with effective, long-term, optimally designed solutions (see, for example, Campbell and Fiske 1959).

The above discussion on the taxonomy of inquiry systems can be summarised with examples from classical sociology of knowledge theory. Kant, who began a distinctive trend away from traditional Enlightenment thought, challenged the rationalistic thought of deductive logic that was proposed by Descartes. Kant suggested that part of the freedom of independent thought and judgment should be devoted to a consideration of *a priori* thinking – an understanding of how we came to search for classes of knowledge and knowledge constructs. This Kantian thinking can be seen in the work of Durkheim when he suggested that every classification implied a hierarchical order that came from the external environment. Simmel went further by looking into the nature of social circumstances and social processes to understand knowledge as representative of the social construction of reality.

Marx, on the other hand, followed the Hegelian inquiry system by looking at knowledge as the ideological product of the struggle between the proletariat and the bourgeoisie. As mentioned earlier, to a large extent, Mannheim's work is similar to that of Marx in its interpretation of utopia and ideology. These thinkers can be seen as members of diverse epistemic communities involved in a dialectic aimed at establishing the superiority of one or the other stream of thought.

Kuhn indicates that the history of science demonstrates that scientific growth occurs through two parallel processes (Kuhn 1962). The first process is through what he defines as 'normal science', which is the secretive and incremental process in which scientific ideas accumulate in a gradual, linear fashion. The major innovations occur by way of a series of scientific revolutions wherein an anomaly that cannot be adequately explained by normal science requires the development of a new

'paradigm'. This paradigm is first strongly contested by the defenders of the more traditional normal science until it demonstrates a subsuming quality. That is, the new paradigm explains both what normal science previously explained as well as explaining the anomaly. When there is sufficient consensus on the worth of the new paradigm, it becomes institutionalised into what is then accepted as the 'normal' science for the generations of future scientists. Quantum theory confronting the traditional physics or the theories of Marx and Mannheim confronting the comfortable certainties of Enlightenment thought are examples of Kuhn's conception from two separate disciplines.

The conflict between proponents of the old (normal) science and the new (revolutionary paradigm) owes a debt to Hegelian dialectic. However, a number of scientists need subscribe to the different frame of reference before this new paradigm can be institutionalised. This support might involve the discarding of established reality tests for the new ones, or even the construction of new reality tests. When this consensus is achieved, the epistemic community broadens its membership base, and the once revolutionary paradigm becomes 'normal' science, until a new revolutionary paradigm enters the scene.

Kuhn was criticised for making the concept of 'paradigm' too broad to encompass all scientific activity in its abstract generalisation. Partly in response to his critics, Kuhn (1977) modified his original definition to describe 'disciplinary matrices'. Disciplinary matrices refer to the sets of elements of inquiry that are shared by the members of an epistemic community. These elements are the paradigms of the same community. Kuhn further suggested that these disciplinary matrices (frames of reference) be made up of symbolic generalisations, models and exemplars. Symbolic generalisations are formal expressions which can be cast into some logical form such as (x) (y) (z) ϕ (x, y, z). Models are what provide the epistemic community with preferred analogies. Holzner and Marx (1979, p. 102) refer to models as 'metaphoric images of the domain under inquiry'. Exemplars are concrete problem solutions that are accepted by the members of epistemic community as being paradigmatic.

Kuhn's chief concern, which is the question of how individuals attach symbolic expressions to nature, is one of the major issues in modern thought. Traditional thought in the sociology of knowledge proposes that individuals use correspondence

rules to align problems with sets of preferred solution-alternatives with which they are familiar. Therefore, scientists would choose from among a set of rules that their epistemic community prescribed as being the optimal methods of resolving a problem. However, these correspondence rules are not normally found in texts or teaching of science. According to Kuhn, correspondence rules are established implicitly by experiential or formal learning. Education in the physical sciences, for example, allows students to find patterns of similarity in problem solving. These patterns make them use certain specific tools or methodologies over certain others when faced with new problems. These new problems need to be sufficiently like the old problems, which the students have successfully solved before in order for them to venture a preferred solution-mechanism. If the problems are truly new, then the students cannot solve them since they require the development of a 'revolutionary', or radically different, solution mechanism.

This concern is at the heart of the present thesis. If Kuhn's proposition is extended to an organisational sphere of activity, then the organisational culture preserved by the *status quo* will determine whether (and if so, to what extent) marketing research activities are conducted (new knowledge sought). For example, if management sees the challenges the business faces as different formations of old problems that can be solved by intuitive decision-making, then either marketing research (systematic exploration of new knowledge) will not be conducted or, if it is done for political reasons, then its use is more likely to be affective (inappropriate).

The discussion so far established the particular frame of reference adopted by this thesis, that is, an investigation of knowledge created by marketing research activity within a sociological framework. There is an additional angle to the conceptualisation of this type of knowledge. The following section discusses this conceptualisation in terms of diffusion of innovation studies.

2.2.4   Knowledge as an Innovation

The term innovation is central to knowledge utilisation phenomena. An innovation is an idea, practice, or material artefact perceived as new by a potential user or adopter (Zaltman 1986). Knowledge generated by marketing research activities may be seen as new by users of research studies. In this sense, new knowledge itself is an innovation. The nature of marketing research utilisation may also put it into the

category of "reinvention", that is, a process in which the existing innovations are modified by users to fit unique circumstances (Rogers 1995). Conceptualisation of marketing research as an innovation indicates that the characteristics of knowledge (attributes of marketing research) will influence its dissemination and use. The reinvention aspect suggests that the acquisition of knowledge continues while the knowledge is translated into action (used in planning, operations, etc.), but with 'users' rather than 'producers'.

The concept of social change is also relevant to the current study. Rogers (1995) conceives social change as an alteration in the structure and functioning of a social system brought about by innovation. A tourism organisation (indeed any organisation) is a *social system*, which may be defined as a set of interrelated units that are engaged in joint problem-solving to accomplish a common goal. A system has *structure*, defined as the patterned arrangements of the units in a system, which gives stability and regularity to individual behaviour in a system (Rogers 1995). The utilisation of knowledge may influence the structure and functioning of a social system brought about by innovation and involves relearning. Zaltman (1986, p. 484) proposes that 'the effective transfer of knowledge from one person or agency to another is an instant of innovation, adoption and diffusion'. When relearning takes place, the marketing research utilisation process may be viewed as a *social change*, defined as the process by which alteration occurs in the structure and function of a social system. "When new ideas are invented, diffused, and are adopted or rejected, leading to certain consequences, social change occurs" (Rogers 1995, p. 6). Zaltman (1986) contends that many instances of intended knowledge utilisation are instances of planned social change.

Zaltman, Duncan and Holbek (1973) specified distinct aspects of innovation when it took place in an organisation. The main dependent variable of the study was implementation, or putting the innovation into use, rather than adoption. When this approach is applied to knowledge acquisition in organisations, the importance of the study of the form and type of utilisation of new knowledge becomes paramount.

Zaltman et al. (ibid.) described 19 attributes of innovations. These attributes are:

1. Cost: This attribute may be financial and/or social. There is an initial cost as well as a continuing one when the innovation is adopted and diffused.

2. Return to Investment: This may be tangible and intangible.

3. Efficiency: This is measured in terms of overall timesaving and avoidance of bottlenecks.

4. Risk and Uncertainty: This attribute is particularly intense on the part of early adopters. It is gradually lessened for later adopters.

5. Communicability: This attribute refers to the ease of dissemination of an innovation and the clarity of results.

6. Compatibility: This is the consistency of innovation with existing values of the organisation.

7. Complexity: This refers to the complexity of ideas, and in actual implementation.

8. Scientific Status: This refers to the applicability of empirical tests of reliability, validity, generality, etc., to the innovation.

9. Perceived Relative Advantage: This is the visibility and demonstrability of the innovation.

10. Point of Origin: This refers to the origin of the innovation - whether from within or outside the organisation.

11. Terminality: This concept refers to the point beyond which adoption becomes less rewarding, useless, or impossible.

12. Status Quo Ante: This refers to the degree of reversibility and divisibility of the innovation.

13. Commitment: This refers to the prior attitudinal or behavioural acceptance.

14. Interpersonal Relationships: This refers to the impact on intra-organisational personal relationships on a disruptive-integrative continuum.

15. Publicness versus Privateness: This is the degree of availability of innovation to all members of the social system.

16. Gatekeepers: This refers to the number of approved channels.

17. Susceptibility to Successive Modification: This is the ability to refine, elaborate, or modify innovation.

18. Gateway Capacity: This refers to the opening of avenues to other innovations.

19. Gateway Innovations: This refers to the instrumental setting of stage for large-scale innovations.

Rogers (1995), stressing the need for a standard classification scheme for describing the perceived attributes of innovations in universal terms, presented five attributes of innovations distilled from the last three decades of innovation research. 'Selection of these five characteristics is based on past writing and research, as well as on a desire for maximum generality and succinctness' (ibid. p. 208). These five attributes are:

1. Relative Advantage: This is the degree to which an innovation is perceived as being better than the idea it supersedes. It may be expressed as increased profitability, social prestige, or other qualitative benefits.

2. Compatibility: This is the degree to which an innovation is perceived as consistent with existing values, past experiences and the needs of potential adopters. In an organisational setting, an innovation may not be compatible with the values of the organisation or its culture.

3. Complexity: This is the degree to which an innovation is perceived as relatively difficult to understand and use. An innovation may not be clear in its meaning to the potential adopter. Attributes of a marketing research report can be seen in this regard.

4. Trialability: This is the degree to which an innovation may be experimented with on a limited basis. The degree of commitment the potential adopter has to invest in an innovation before 'trying it out' may have an effect on its rate of adoption.

5. Observability: This is the degree to which the results of an innovation are visible to others. Some ideas produce results that can be observed and communicated easily, whereas others are more difficult to observe and/or communicate.

Rogers found that relative advantage, compatibility, trialability, and observability as perceived by members of a social system were positively related to the rate of adoption of an innovation, whereas complexity was negatively related.

Marketing research activities have an ideal set of perceived attributes. Relative advantage is conceptualised in this thesis as the improved financial and other

outcomes of marketing research activity. Compatibility is the ease with which marketing research fits within the information culture of the organisation as well as its historic appreciation in the perception of decision-makers. Complexity is the degree with which the marketing research report characteristics are viewed as being technical and threatening to decision-makers whose skills may not be sufficient to interpret them. Trialability is the perceived usefulness of marketing research information in decision-making. Finally, observability is conceptualised as the degree of existence of objective systems within an organisation that could evaluate the results of marketing research activity.

CHAPTER 3

A REVIEW OF THE LITERATURE ON RESEARCH UTILISATION

The discussion so far has concentrated on the sociology of knowledge and its foundations in the philosophy of science, as well as a conceptualisation of knowledge as an innovation. As outlined earlier, the sociology of knowledge is concerned with the various functions of knowledge, such as its production, acquisition, dissemination, and application. This thesis attempts to deal with the use of a particular type of knowledge process (marketing research) within a specific social environment (tourism organisations). To reiterate an earlier assertion, knowledge utilisation in organisations is a complex construct and may not be investigated adequately without a consideration of the factors that affect its acquisition and its consequences. Consequently, as the discussion is narrowed to a critical review of the research utilisation literature, the focus will still encompass the antecedents of research to the extent that they have influence on how the research is used. As an extensive search failed to reveal any published work on the consequences of knowledge use in organisations, some of the relevant work on the effects of strategic planning on organisational performance will be discussed.

3.1   A Critical Review of Knowledge Utilisation Studies

Research utilisation has been a discipline of systematic inquiry, albeit of some erratic value, since the mid-1970s. Most of the early work emanated from the non-profit sector and covered a wide range of contexts including social work, mental health, medicine, science, and education. The main concern of the studies was various aspects of social change. Glaser (quoted in Dunn 1986) estimated that there were 20,000 citations in the literature on knowledge use. Perhaps inevitably, most of the work is repetitive and overlapping. Despite the abundance of studies, a number of important theoretical, conceptual, and methodological issues have not been properly addressed by most of the researchers in the area. For example, what is meant by knowledge when the attempt is made to measure its use by decision-makers in problem solving? How should knowledge use be conceptualised and its use

measured? Could there be more than one type of use of knowledge and, if so, how are these types of use related to attributes of knowledge itself? What models are available to make more plausible deductions about the uses of knowledge in organisational settings? These questions suggest a number of important methodological problems facing the scholars who investigate knowledge utilisation. In this chapter, an overview of knowledge use studies to date is provided with a critical assessment of their conceptual and methodological strengths and limitations. The purpose of this chapter is to utilise selectively the historical work in order to contribute to the progress of investigation of the field.

3.1.1 Prior Conceptualisations

Caplan, Morrison, and Stambaugh (1975) interviewed 204 government officials and found 575 illustrations of their use of social science knowledge. Most of the knowledge came from specialised studies of a contemporary nature. Caplan et al. defined utilisation as the familiarity of respondents with relevant research and a consideration of, and an attempt to apply, the research to solve policy-relevant issues. Their main finding was that the leading factors that constrain the utilisation of social science research information related to what they termed the 'two-communities theory' (the term was borrowed from C.P. Snow's *The Two Cultures*). Caplan et al. indicated that the main reasons for non-utilisation of knowledge were explained by examining the relationships of the researcher and the knowledge production process to the decision-maker and decision-making process, which they referred to as the policy-makers and policy-making process. They suggested that social scientists and policy-makers operated in different worlds where different and often conflicting values, reward systems, and different languages existed. A lack of mutual trust was an important factor in the separation of the two communities. Caplan (1977), in a later re-analysis of his study, asserted that there were two types of knowledge: 'Hard' knowledge that is research-based, quantitative, and couched in everyday language, and 'soft' knowledge that is anecdotal and appeals to the intuition. Caplan claimed that hard knowledge was of limited instrumental value, and the final decision was more likely to depend on an evaluation of soft knowledge. Caplan et al. found that policy-makers were willing to accept findings that confirmed their own beliefs, and were unwilling to accept findings that went against their intuition. Scientific objectivity and even political feasibility were not considered to be as important

factors in the determination of knowledge use. Further, respondents who were 'high knowledge users' were less likely to agree that an intuitive person could know as much about social behaviour as a social scientist could by using research. Caplan et al. also found that if policy-makers perceived the research findings as subjective (or relatively less objective) and counter to their political orientation, they were less likely to utilise knowledge.

Rich (1977) studied information processing in seven government departments. During a period of about 18 months, a total of 35 individuals who were directly involved in providing the information, utilising the information, and providing the initial funding for the gathering of the information of a public opinion data base were interviewed. Rich found that organisational and administrative factors were the most prominent in terms of affecting policy outcomes. Rich took under consideration a number of other variables, such as communication barriers and personality conflicts, but found their effect was not significant as organisational factors. Rich found that the level of trust extended to the provider of knowledge was a better predictor of utilisation than any of the other factors that were analysed. The objective was to minimise risks and protect organisational and administrative positions.

Rich (1977) found that there were two types of information use, which he referred to as 'instrumental use' and 'conceptual use' (later he redefined these terms as 'knowledge for action' and 'knowledge for understanding'). In general, instrumental or action-oriented, use refers to changes in the behaviour of the user of knowledge that can be directly linked to the findings and implications of a research study. Conceptual, or knowledge-enhancing, use refers to changes in the way that users think and understand the problems. In Rich's finding, instrumental use is consistently transmitted upward through the decision-making hierarchy. Conceptual use, on the other hand, tends to flow laterally or downward.

Rich's conceptualisation of knowledge use influenced most of the major studies of marketing research utilisation in the 1980s and 1990s, including the present work (see, for example, Deshpandè and Zaltman 1982; Menon and Varadarajan 1992; Moorman 1995). Although not explicitly discussed in published work (probably due to space restrictions), Rich's conceptualisation clearly had its roots in the classical theories of the sociology of knowledge. The influence of Scheler's (in Bell 1974)

classifications of knowledge in terms of absolute values (discussed in Chapter 2) as well as Mannheim's ideology / utopia dichotomy are apparent.

Knorr (1977) conducted face to face interviews with 70 medium-level decision-makers employed by Austrian federal and municipal government agencies that were all directly involved with contract research. Her findings indicated that officials had initiated or sponsored a research project with predetermined expectations that research findings should serve certain purposes. Knorr identified four such functions that social science research results appeared to serve: a census function, a motivation function, an acquisition function, and a rationalisation function. The census function related to those cases in which the researcher took on the role of a 'census bureau' because of 'a striking deficiency of the documentation and information infrastructure' (ibid., p. 166). In these instances, the cognitive interests of the agency that sponsored the research were communicated to the researcher in the form of predefined information demands. Methodological requirements of the project were limited and seldom progressed beyond knowledge of interviewing procedures. The utilisation of results often took the form of distributing the information to those who were interested. The motivation function demanded that knowledge should have characteristics that would help motivate expectations, attitudes and values of the concerned group. The social scientist as researcher made the outcomes acceptable and attractive to group members by designing strategies that would confirm their values. The results of the research is not directly used and utilisation responsibility is spread over several hierarchical levels and positions in the organisation. The intentions underlying the third function, acquisition, are similar to those of the motivation function, with the exception that research results are directly translated into practical measures. Knorr chose the term rationalisation function to characterise the final kind of utilisation interest. This function can be described as a reliance on objective data to increase the planning and programming capacity of government agencies. Knorr found that a concentration on factual 'rationalisation' without taking into account subjective motives and expectations 'created problems when consumer interests of various groups of the population were directly involved' (ibid., p. 167).

From these results, Knorr (1977) differentiated four different roles which research results played in the decision-making process:

1. Decision-preparatory role: In this form of utilisation research, results served as a base for actual decisions to take place. In other words, data and conclusions supplied by the researcher entered into the preparatory stage of a decision, where they affected the final outcome to various degrees. This type of use was conducive to the motivation and rationalisation functions.

2. Decision-constitutive role: In this form of utilisation, research results were put into practical use and were directly translated into action strategies. Knorr found that the research results were used in this manner where the acquisition function was concerned.

3. Substitute role: This referred to the use of research results as a 'substitute' for the decision or problem solution that was required. Through sponsoring the research project and distributing the results, the decision-maker tried to convince the interested parties that something was being done about the problem, while neglecting or postponing the necessary measures for the solution.

4. Legitimisation role: In this type of use, research results are used selectively, and sometimes distortingly, to support publicly a decision that has already been taken or a position that the decision-maker already holds.

Knorr's decision-preparatory role is similar to the conceptual use suggested by Caplan et al. (1975) and Rich (1977) whereas her decision constitutive role is a version of instrumental use. Substitute and legitimisation roles, however, are an introduction to another type of knowledge use that would later be elaborated by various authors and would find its most recent conceptualisation in the works of Menon and Varadarajan (1992) and Menon and Wilcox (1994).

Rein (1976) also pointed to a type of legitimising function of information once a decision has been arrived at on other grounds. Rein stated that the objectives and values of both the decision-makers and suppliers of information should be subjected to critical review such that the values themselves become the object of analysis. His suggestion, which indicates that values are more than mere voluntary choices of will, is both a critique of positivism and an attempt to put values and facts back together. Rein mentions the social conflict that is inherent in any democratic system and the changing nature of social reality. Instead of taking these for granted, Rein suggests an analysis of the value frameworks that serve as frames of reference of policy-making.

The fallacy of the assumption of value-neutrality in information use appeared in other conceptual essays on knowledge utilisation (see, for example, Mayntz 1977).

There was little consensus among the knowledge utilisation scholars in the 1970s on the independent variables that determined the use of knowledge. Weiss and Bucuvalas (1978) found that decision-makers used five frames of reference. These were relevance of research topic, research quality, conformity of results with prior expectations, orientation to action, and challenge to existing policy (*status quo*). Weiss and Bucuvalas defined the decision-maker's likelihood of taking a specific research study into account in their work (conceptual use) as the 'usefulness' of the research. They also found that research studies were subjected to using a truth test and a utility test. The truth of knowledge was judged on the alternative grounds of congruence with prior knowledge or scientific merit. Utility, on the other hand, was judged on the alternative grounds of feasible direction for practical action or challenge to current policy. Their findings contradicted Caplan et al.'s finding that suggested research that contradicted the intuition of the decision-maker was less likely to be utilised. Weiss and Bucuvalas (1978, p. 15) found that people in positions of authority were 'about equally likely to agree with findings that challenged institutional policy and practice as they were to disagree'. This finding pointed to more tolerant and open-minded decision-makers than other literature had shown. However, as the discussion on methodological issues of prior research in the following section will indicate, Weiss and Bucuvalas' findings are strongly controversial as a result of the questionable methodological approach they adopted.

In a controversial argument, Lindblom and Cohen (1979) indicated that knowledge utilisation researchers have focussed narrowly and incorrectly in their attempts to explain why social science information is under-utilised. In a strong attack on what they term 'professional social inquiry' (PSI), Lindblom and Cohen present five main arguments:

1. Knowledge utilisation researchers have focused too narrowly on specialised social scientific knowledge to the disregard of the wider body of knowledge.

2. Social problem solving rather than information utilisation should be the area of investigation.

3. Excessive concentration on a positivistic approach of PSI does not reflect

decision-making reality.

4. This positivistic approach overlooks the importance of interactive problem solving (action leading to behaviour) in its preference for analytical problem solving (thought leading to research leading to behaviour).

5. Most of the PSI knowledge is in reality ordinary knowledge because it comes from a base of ordinary rather than professionally collected knowledge.

Lindblom and Cohen suggest that a preoccupation with PSI leads to a type of imperial, authoritative intellectual arrogance. They assert that problem-solving is more problem-attacking. "'Solve' does not require an understanding of the problem but only an outcome, as when coin tossing solves a problem of whether to turn left or right at an unfamiliar, unmarked road junction" (Lindblom and Cohen 1979, p. 17). They suggest that most of the world's problem solving should be accomplished through forms of social interaction that substitute action for thought, understanding, or analysis. Chance, as in coin tossing, and social learning are examples of action suggested by these authors. Social learning is demonstrated in problems that need behaviour changes in certain groups of people before solutions are found. Lindblom and Cohen show the instances of economic inflation (where business people and wage earners must learn to decrease their income demands) and energy conservation as examples of social learning. They claim that these alternative forms of problem solving are based on 'ordinary knowledge' that does not owe its origin, testing, degree of verification, truth status, or currency to distinctive PSI techniques but rather to common sense, casual empiricism, or thoughtful speculation and analysis. While admitting that it is highly fallible, the authors contend that knowledge is learning to anyone who takes it for some commitment or action.

Lindblom and Cohen suggest that deprecation of alternatives to PSI advocated by professional inquirers leads to an over emphasis on social science knowledge production and on the importance of the social scientist (researcher) as the only person to provide that knowledge.

While most of the conclusions reached by Lindblom and Cohen may appear to be unwarranted and their attack on 'professional social inquirers' is somewhat inflated, there is some truth in their assertions. As will be discussed in later chapters, in the case of tourism there is some evidence that an intuitive, or common sense, approach

to problem solving may produce more operationally dependable results than the utilisation of heavily empirical research. Especially when it comes to the instrumental use of knowledge, the usefulness of scientific research in problem-solving has not been tested. However, the discipline of knowledge utilisation has long recognised the importance of conceptual use over the instrumental use of knowledge, and the assertion that its practitioners have imperial or authoritative tendencies is not warranted. The value of personal expertise and common sense wisdom had been articulated even before Lindblom and Cohen's work was published. For example, Rich (1977) pointed to the urgency of rethinking the preoccupation with action implications in the application of scientific knowledge. Weiss (1979, in Bulmer 1986, p. 40) referred to the need to overcome 'the disenchantment with the usefulness of social science research that has afflicted those who search for use only in problem-solving contexts'.

Nevertheless, Lindblom and Cohen's comments about broadening the sphere of investigation to social problem solving, rather than merely the utilisation of social science information for policy making are sound.

3.1.2   Marketing Research Utilisation Literature

Unlike the large body of work on knowledge utilisation in a public policy setting, there were few studies of marketing research utilisation until the 1980s. The most consistent investigation into the characteristics of marketing research utilisation is the five yearly survey sponsored by the American Marketing Association (AMA). The AMA surveys have looked at research utilisation in terms of the diffusion of the research results, and adoption of marketing tools, concepts, and methodologies by industry. The AMA surveys are beneficial in observing changes in organisational research behaviour as the marketing discipline has developed (Miller 1984; Kinnear, Taylor, Johnson, and Armstrong 1993). The most recent AMA survey was conducted in late-1993 and reported in 1995 (Kinnear and Root 1995). The AMA surveys concentrate on organisational demographics (size, type, etc.), internal structures for research, research budgets, and the specific marketing research activities performed. The items included in the AMA questionnaire vary with each survey, although there is a continuing core of questions. In the most recent survey, there was the useful addition of the question on the specific marketing research techniques used by

respondents, as well as questions differentiating the originators and users of research from those who actually conduct the research. Kinnear and Root (1995) do not present their results in terms of the statistical significance of the relationships displayed and, as with the other investigations into marketing research use, there is no focus on tourism-related organisations. The AMA studies do not include any questions on the types and forms of research use. This essentially head-counting nature of these studies may be the main reason that they are seldom cited in the literature on research utilisation in marketing. Miller (1984) made an attempt to replicate the AMA studies in an Australian context.

Greenberg, Goldstucker, and Bellenger (1977) conducted a similar study of 262 research directors and obtained a 22 per cent response rate. Their findings indicated varying usage of 37 research techniques covering data gathering, research design, sampling procedures, analysis, and measurement.

Bellenger (1979) reported on a survey of 353 managers (41 per cent response rate) drawn from the AMA Membership Roster. Bellenger's study dealt with issues of the value of marketing research and its relevance to decision-making. Like most other studies of marketing research utilisation, the survey was not industry specific. Respondents also differed greatly in terms of their position in their organisations. Bellenger found that executives were generally positive about marketing research but did not use it consistently, even in their major decisions. Only 22 per cent of respondents stated that they were getting what they needed from marketing research. The issues they highlighted included the degree of technicality in research reports (too technical), the lack of understanding of researchers of managerial realities, and the lack of ethics and training on the part of researchers. Bellenger's study was methodologically flawed and failed to distinguish between external and in-house researchers.

The first empirical study to concentrate on the types and forms of research use in marketing was the work of Deshpandè and Zaltman (1982). Drawing on the previous works on the definition and empirical operationalisation of information use discussed in the earlier section, which have been exclusively in non-business areas, Deshpandè and Zaltman conceptualised research use as essentially having two dimensions - instrumental use, and non-instrumental (conceptual) use (cf. Caplan et al. 1975; Rich

1977). They chose to focus on instrumental use, which they defined as the "instances in which specific, overt effects, or impacts are evident" (Deshpandè and Zaltman 1982, p. 17). They concentrated on the four dimensions of instrumental use, which are described as: a) the relevance of the information to the decision being made, b) information surplus, or gathering more information than will be used or needed c) the proportion of recommendations made which were implemented, and d) the general quality as reflected by the overall satisfaction with the research.

Deshpandè and Zaltman developed two questionnaires and mailed them separately to managers and researchers. Their manager-sampling frame was derived from the 100 largest advertisers cited in Advertising Age. They chose 500 managers in marketing divisions. The sampling frame for researchers was the American Marketing Association Membership Roster. They obtained a final individual response rate of 35 per cent for managers and 61 per cent for researchers.

As a result of their survey, Deshpandè and Zaltman constructed a basic model involving 11 variables that may have an effect on marketing research utilisation. Their model is shown in Figure 3.1.

Figure 3.1: Deshpande and Zaltman Model of Marketing Research Utilisation
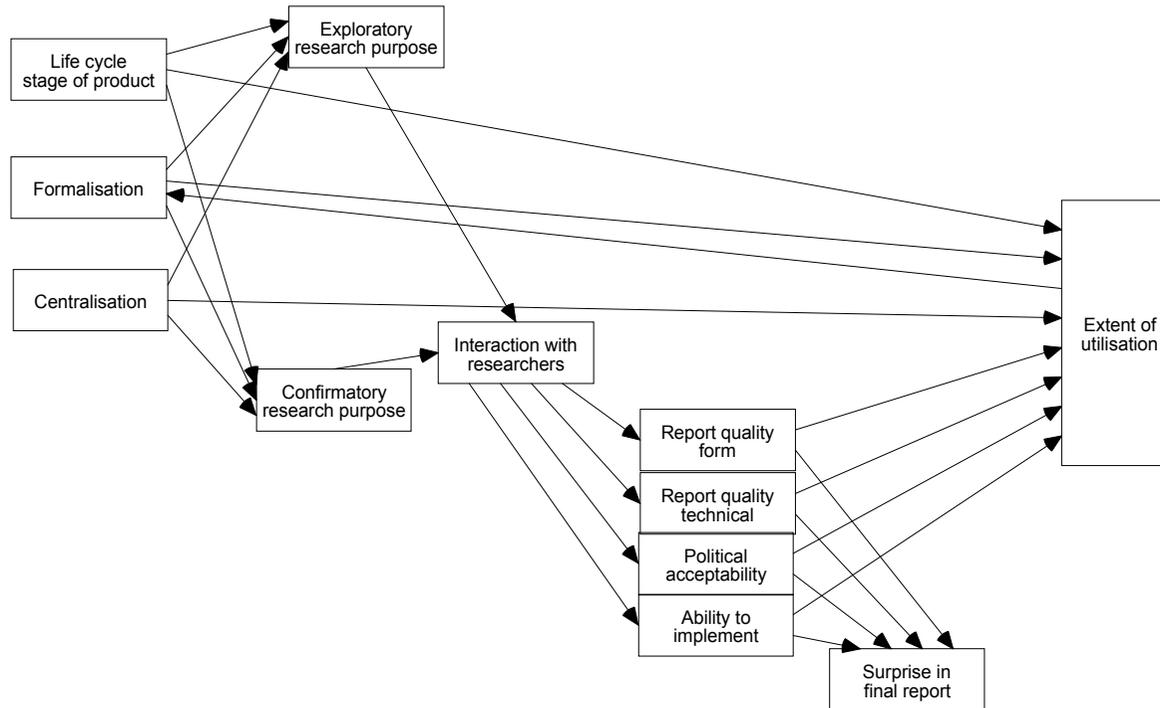
In the findings of Deshpandè and Zaltman, the most important variables influencing the utilisation of research were organisational structure (centralisation and formalisation), the technical quality of the research, surprise (conformity of the final report with prior notions of managers), and researcher-manager interaction. Their finding that more decentralised and less formalised organisations were more likely to make greater and better use of research were in accordance with the conclusions of earlier studies (e.g., Rich 1977). Deshpandè and Zaltman placed considerable importance on their findings about organisational structure. Suggesting that the structure of an organisation would have inhibitory effects on research use, the authors recommended redesigning (albeit temporarily) organisational structure to enhance research use. 'Thus, for purposes of implementing the research, a highly centralised firm may wish to decentralise decision making temporarily in the marketing area, at least during the implementation phase' (Deshpandè and Zaltman 1982, p. 26). Although sound in its intentions, this advice makes light of the entrenched organisational culture that exists in any commercial firm. If the organisation is historically centralised in its decision-making and formalised in its operational procedures, the attempt to change this temporarily for the purposes of a research project would have, at best, a cosmetic effect. Organisational structures determine the concentration of power in a firm and decision-making is often associated with power. Altering the structure of an organisation is a change management issue. It requires careful planning and a considerable amount of time, and to suggest that it can be switched on and off with each research project is unrealistic and implies a degree of naivete.

An important part of the work of Deshpandè and Zaltman (1982, 1984, 1987) is devoted to the issue of trust between researchers and managers. Authors suggest that to improve the usefulness of research information, managers should provide researchers with more information about the decisions to be made on the basis of the research that is produced. They also advocate feedback on the use or non-use of research information to researchers to ensure a continuing relationship.

Although it is commendable to have improved trust and communication between researchers and managers, pre-empting the decisions that will be made on research results should be approached with caution. External researchers covered by the work of Deshpandè and Zaltman are essentially commercial suppliers whose main interest lies in pleasing their customers (managers) to ensure continuing business. Intimate prior knowledge of probable decisions that would be based on research results may contaminate the contents of the report, albeit unconsciously. The same issue also goes to the heart of the other important finding of Deshpandè and Zaltman, that of surprise. The authors determined that surprise served as 'a reality test which helps managers decide whether or not to use certain research results' (ibid., p. 25). The degree to which research results reinforced the prior feelings of managers was positively related to the utilisation of research. One would think, therefore, the organisations should be advised on strategies to improve manager tolerance towards unanticipated results. Surely, it is more important to have results that reflect the reality of the situation (as long as they are reliable) than those that merely confirm prior conceptions. Instead, authors recommend that researchers be "especially sensitive to managers' tendencies to want confirmatory research containing few surprises" (ibid., p. 26). The impression is that authors are more concerned with marketing research as a commercial commodity in itself, rather than as an objective attempt to reveal the truth in the face of a given problem. This orientation is in keeping with their concentration on the instrumental use of research only.

Notwithstanding their questionable recommendations, the studies of Deshpandè and Zaltman represent the first major series of work devoted solely to the utilisation of marketing research.

John and Martin (1984) investigated the effects of organisational structure on the utilisation of marketing plans. They distributed mail questionnaires to multiple respondents in the marketing areas of 53 organisations and analysed data received from 292 individuals who were employed by 46 of these firms.

Only those organisations which supplied more than three respondents were included.

Contrary to Deshpandè and Zaltman's findings, John and Martin found that an increased level of formalisation positively affected utilisation of information. On the issue of centralisation, however, their results agreed with those of Deshpandè and Zaltman. Highly centralised structures were associated with decreased levels of utilisation. Despite their findings, John and Martin cautioned against bureaucratisation: '… it is important to note that a bureaucratic approach must be used selectively because of the undesirable consequences of certain aspects of such structures' (ibid., p. 180).

Although John and Martin report a high level of reliability of the items that measure the organisational structure construct, their results (as they admit) go against the common sense notion. Highly formalised structures generally stifle the free flow of communication between the members of an organisation.

Up to this point, most of the studies into marketing research utilisation did not offer a clear definition of the construct 'use', or defined it in one-dimensional, instrumental terms, or employed broad measures that did not differentiate between instrumental and conceptual effects of research results on the decision-making process. Menon and Varadarajan (1992) offered the first holistic conceptual model of marketing knowledge utilisation in their seminal article on the subject, after asserting that "despite seemingly general recognition of the multidimensional nature of research use, much of the research on knowledge utilisation seems to be based on singular, unidimensional conceptualisations and measures (ibid. p. 56). After a near-exhaustive distillation of extant literature, they argued that a valid conceptualisation of knowledge use should address the issues of immediacy, directness, and evaluation in terms of its effect, as well as the nature of the knowledge that is utilised, and the identity and number of the people who use it. Although Weiss (1981) first introduced this framework, Menon and Varadarajan extended the concept into a testable model of organisational and informational factors affecting knowledge utilisation in

organisations. Their model is shown in Figure 3.2.

Figure 3.2: Menon and Varadarajan Model of Organisational and Informational Factors Affecting Knowledge Utilisation
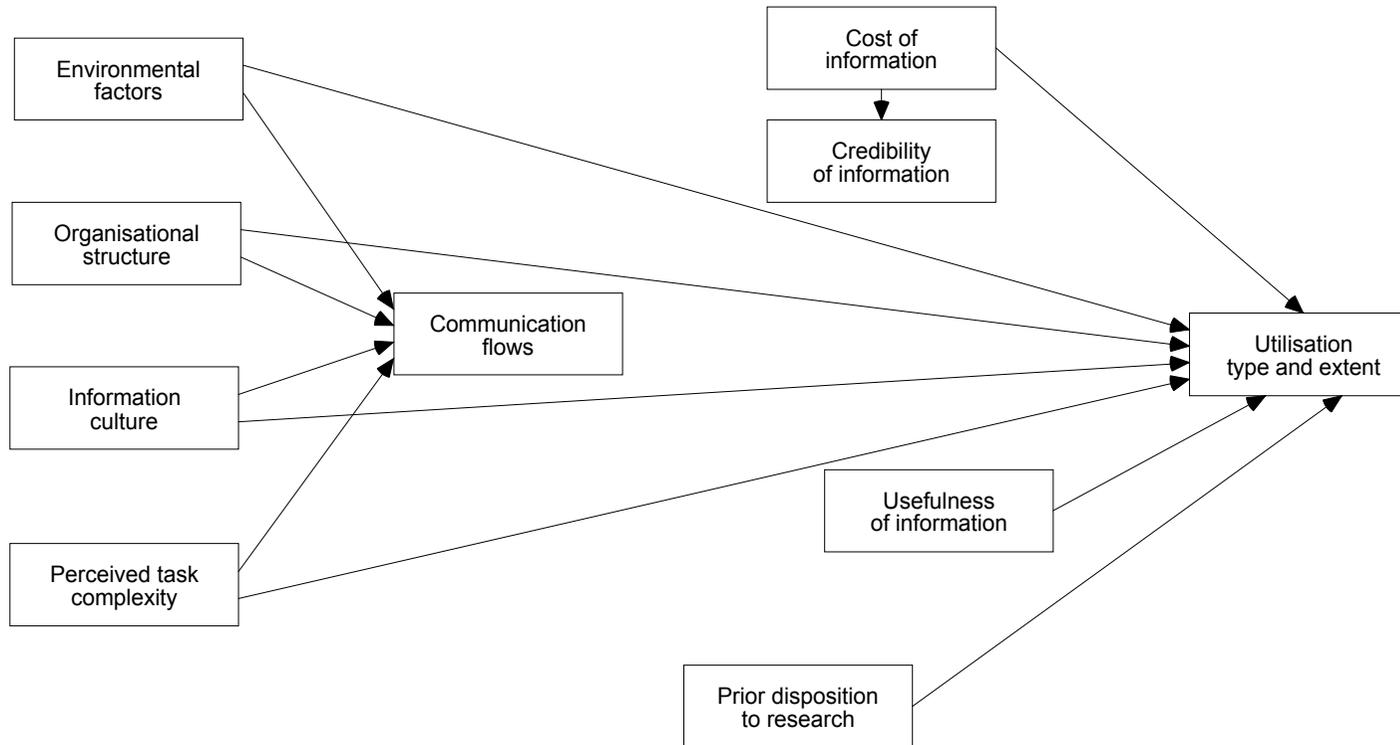
Source: Menon and Varadarajan (1992)

Menon and Varadarajan adopted the tripartite classification of types of knowledge use (instrumental, conceptual, and symbolic) as action-oriented, knowledge-enhancing, and affective use. Their classification was similar to that of Anderson et al. (1981), although their conceptualisation was marginally different. They thought further that knowledge-enhancing and affective uses had facets of product effects and process effects, whereas action-oriented use could be instrumental or symbolic. "The extent of use [could] be viewed as the degree to which these components affect the decision-making process" (Menon and Varadarajan 1992, p. 61).

An instrument to measure types of knowledge use in organisations based on Menon and Varadarajan's work was later developed by Menon and Wilcox (1994). The instrument (USER) is discussed in some detail later in this thesis. Both the article and the USER instrument were important advances in the field and were justifiably influential in the work that followed them, including the study discussed in this dissertation. However, they are not without flaws. One of the most important shortcomings of Menon and Varadarajan's work is that it does not explicate how the extent of use, as they define it, is going to be measured.

Moorman (1995) assumed a different viewpoint in her investigation of organisational market information utilisation. Instead of, or in addition to, individual decision-maker activities, Moorman conceptualised knowledge use as a function of certain organisational systems or processes. Moorman's main argument is that the emphasis organisations place on market information processes (such as acquisition, dissemination and utilisation of information) is determined by the congruence among an organisation's cultural norms and values. Basing her argument on organisational behaviour theories, Moorman claimed that the ability of the organisation to learn from information depended on more than the ability of individual organisational members. Moorman attempted to conceive and empirically distinguish a "set of organisational information processes … from individual information processing activities" (ibid. p.319).

Using the *Advertising Age* list of the top 200 advertisers, Moorman compiled a sample of 396 divisions of the firms that made up the list. She obtained 92 responses to her mail survey (31 per cent after eliminating recipients who found the questionnaire inappropriate).

Moorman (1995, p. 318) found that 'clans' "dominated the other cultures in predicting organisational market processes, suggesting that information processes are fundamentally people processes". Her results also indicated that conceptual utilisation of information was a strong predictor of new product performance. According to Moorman, competitive advantage was linked to information utilisation in organisations.

Moorman's study has shown that an understanding of how organisations (rather than individual managers) conduct knowledge processing and utilisation activities may be an important perspective. Additionally, Moorman's study once again confirmed that information processes might perform as 'knowledge assets' that can be used to gain competitive advantage in new products. Despite its usefulness, however, Moorman's study has a number of limitations. The most important of these is that she used single informants to measure the organisational information processes. Although essentially this approach is sound, her conclusions as to the effect of the presence of information processes on new product outcomes would clearly be better tested if she had employed a multi-informant design. This point becomes particularly salient when it is considered that Moorman used vice presidents of marketing as informants. Although marketing executives arguably possess better knowledge of their organisation than other functional executives and have a ready access to financial information, they also have a certain framework (or they constitute an epistemic community) that is markedly different from, say, managers in charge of production. This is a common shortcoming in market information utilisation literature that, to some degree, the present study shares.

More recently, there has been another attempt pursuing an industry-specific investigation into knowledge utilisation. Souchon and Diamantopoulos (1998) looked at the utilisation of information by exporting firms. Reporting on the results of their exploratory study, Souchon and Diamantopoulos conceptualise information use along the established lines of instrumental / conceptual use. One of the original aspects of their work is that they classify information into "three broad acquisition modes, namely export marketing research, export assistance, and export market intelligence" (ibid., p. 5). Export marketing research is defined as the formal and structured information gathering mechanism, and export assistance as the official, but non-marketing research information. Finally, export market intelligence is referred to as

the process of information gathering through informal day-to-day activities. At the time of writing, Souchon and Diamantopoulos' work was at a conceptualisation / exploratory research phase. However, their classification of information sources (especially the use of market intelligence) invites questions posed later in this thesis when the concept of knowledge in the literature is discussed critically.

3.1.3 Measures of Knowledge Utilisation in the Literature

One of the important contributions of the current study is the presentation of an original instrument to measure the utilisation of marketing research in organisations. Although it is specifically designed for, and tested within, the tourism industry, it is generic and comprehensive enough to be adapted for use in organisations in general and service organisations in particular. Comparing it to the instruments designed to measure the same construct (knowledge) in the past can best assess the potential efficacy of the instrument. The studies into knowledge utilisation reviewed earlier in this chapter include a number of diverse instruments used to measure this construct, some of which had direct influence on the present instrument. Others may have had a more subtle effect. A review of these instruments is presented in this section. This section follows and extends Dunn's (1986) profiling of procedures of knowledge use studies.

3.1.3.1 Information Utilisation Questionnaire

Larsen (1982) employed seven intervally rated categories and placed each finding, idea, suggestion, or recommendation in one of these categories, as shown in Figure 3.3:

Figure 3.3: Information Utilisation Questionnaire

1. Considered and Rejected: This rating suggests that some discussion of the information had taken place but the knowledge was not utilised.

2. Nothing Done: The new information was not even discussed. No action was taken.

3. Under Consideration: The information was considered and discussed, but not utilised.

4. Steps Toward Implementation: A decision was made to utilise the information and initial steps have been taken toward implementation, but information was not yet utilised.

5. Partially Implemented: The new information was partially utilised, while parts of it have been discarded.

6. Implemented as Presented: The information was utilised in its original form without alteration.

7. Implemented and Adapted: The information was utilised after being modified or adapted to fit the specific situation.

Larsen did not report reliability or validity data for her instrument. Larsen and Werner (1981) converted the same set of items to interval variables in another study.

3.1.3.2 Stages of Concern Questionnaire

This instrument was employed in the study by Hall, George and Rutherford (1979). It consisted of seven stages at which users and non-users of innovations state different kinds of concerns. The SoC instrument consisted of 35 statements of Likert-type interval scales. The seven stages are shown in Figure 3.4:

Figure 3.4: Stages of Concern Questionnaire

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1. Awareness: Although the innovation was known, there was little concern for, or involvement with it.

2. Informational: The innovation was known and there was some interest in its main aspects.

3. Personal: Perceived personal uncertainty about the relationship of the individual to the innovation.

4. Management: Attention directed towards the introduction of the innovation.

5. Consequence: Attention directed towards the impact of the innovation on team members.

6. Collaboration: Attention directed towards cooperation and coordination with team members in utilising the innovation.

7. Refocusing: Exploration of alternative innovations to replace the existing ones.

Hall et al. reported high reliability coefficients for the seven stages ranging from .64 to .83 with a median of .76 (n=830). The validity of the instrument was assessed through confirmatory factor analysis, which yielded factor scores for each stage ranging from .67 to .96.

3.1.3.3 Levels of Use (LoU) Questionnaire

The LoU questionnaire used by Hall, Loucks, Rutherford, and Newlove. (1975) measured eight levels of innovations, as depicted in Figure 3.5:

Figure 3.5: Levels of Use (LoU) Questionnaire

0	Nonuse: Potential user has little or no awareness of the innovation.
1	Orientation: User collects information about the innovation.
2	Preparation: User prepares for the initial use of the innovation.
3	Mechanical: User's attention is concentrated on day-to-day use of the innovation.
4	Routine: User balances the use of the innovation.
5	Refinement: User adjusts the application of the innovation.
6	Integration: User combines the innovation with the activities of team members to achieve collective impact.
7	Renewal: User reassesses the quality of use of the innovation.

The LoU questionnaire, which measured the adoption and implementation of innovations, was designed to be used in conjunction with the SoC questionnaire, which measured the individual feelings or reservations about innovations. The instrument was applied through personal interviews that rated respondent answers in terms of the eight levels of use.

3.1.3.4 Research Utilisation (RU) Index

This index, developed by Pelz and Horsley (1981), measured the responses to the question: 'We are interested in knowing how often you have engaged in the following research activities in the past year'. The response scale required answers in the form of frequency of activities, which ranged from zero to five or more times a year, in five areas. These are shown in Figure 3.6.

Figure 3.6: Research Utilisation (RU) Index

1   You reviewed research literature in an effort to identify new knowledge for use in your practice.

2   You evaluated a research study to determine its value for practice.

3   You transferred the knowledge included in the results of the research studies into useful practice activities.

4   You planned for the implementation and evaluation of new research-based practices.

5   You discounted or rejected a practice activity because of knowledge included in the results of research studies.

The internal consistency reliability for the RU index was reported as .87, calculated on the basis of responses from around 1500 nurses in 32 hospitals.

3.1.3.5 Overall Policy Impact (OPI) Instrument

Used by Van de Vall and Bolas (1982), the OPU questionnaire was designed to assess the impact of research on organisational decision-making. The OPI questionnaire comprised four subsets of measurement items:

Figure 3.7: Overall Policy Impact (OPI) Instrument

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1.   Manifest Impact: Identifiable impacts of the research project on the following stages of policy-making:

    Initiating a policy: advising / co-deciding.
    Preparing a policy: advising / co-deciding.
    Executing a policy: advising / co-deciding.

2.   Stage Impact: Identifiable impacts on decisions or measures at the following stages of research:

    Formulating the problem.
    Operationalising the problem in terms of research procedures.
    Sampling and collecting data.
    Analysing data.
    Conducting informal discussions with client.
    Translating research into policy recommendations.
    Conducting a follow-up of recommendations.
    Correcting and adjusting recommendations.
    Other.

3. Certainty Impact: Identifiable impacts on decisions or measures regarding the following:

    Perception of the problem.
    Explanation of causes of problem.
    Enhancing policymakers' status.
    Establishing information monopoly.
    Preventing policy error.

Overall policy impact (OPI) scores are calculated by adding the totals of the four component subscales. Internal consistency reliability is reported at .61 for all items in the instrument.

3.1.3.6 Behavioural, Affective and Cognitive Use Instrument

Anderson, Ciarlo, and Brodie (1981) conceptualised knowledge utilisation in terms of the specific changes in the individual in three psychological areas – behavioural, cognitive, and affective. Data were collected through interviews conducted for two inpatient service units of a public hospital. The evaluation focused on team perceptions of the effectiveness of policies regarding the treatment of chronic patients. The initial evaluation study resulted in a number of recommendations to the staff and, after the completion of the feedback process, presentation of a report to both teams. Anderson et al. then conducted one-month and six-month

postintervention interviews and assessed the utilisation of information in terms of three traditional psychological dimensions: behavioural, cognitive, and affective. Behavioural utilisation was measured through a set of representative statements that are shown in Figure 3.8.

Figure 3.8: Behavioural, Affective and Cognitive Use Instrument

1 New action, practice or policy *implemented* or pre-existing action, practice or policy intensified.

2 Pre-existing actions, policies or practices *terminated* or *diminished.*

3 Change in actions, practices or policies *decided on, but not yet implemented.*

4 Solutions or improvements in action, practice or policy seriously considered or initiated but *rejected* or *aborted* because of *valid* reasons (e.g., external constraints, not feasible).

5 Active decision to *maintain the status quo,* including abandoning pre-existing plans for change.

6 Change in action, practice, or policy *casually considered* but not seriously pursued.

7 *Rejected* or *misunderstood* the data and its implications.

8 *No evidence of serious consideration* of the data.

Anderson et al.'s coding schema identified nominal categories and their comparisons were more descriptive than statistical. (They have indicated that for later studies they "have added an additional item … that would allow [them] to make quantitative comparisons" (ibid., p. 102), however there is no published record of further studies.) Cognitive and affective changes were also assessed using representative statements from respondents.

As the authors themselves concede (ibid. p. 120), they have certain problems concerning their methodology. One problem concerns the validity of comparing behavioural utilisation on the basis of the number of activities reported. They often assigned the same code to activities that differed in scope and ease of implementation. Another problem has to do with 'recommending' strategies of utilisation to respondents instead of allowing them to develop their own strategies. The resulting

'yes' or 'no' response to whether a recommendation was followed severely limited the reliability of the research.

Despite its methodological problems, the work of Anderson et al. has seminal importance for being one of the first studies in knowledge utilisation that attempted to measure the phenomenon according to psychological dimensions. Although the conceptualisation of the three psychological stages is somewhat different in the work of Menon and Wilcox (1994) and the study reported in the present thesis, the debt to Anderson et al. is evident.

3.1.3.7 Deshpandè and Zaltman Questionnaire

In their seminal study of marketing research utilisation in a commercial environment, Deshpande and Zaltman (1982) examined factors affecting the consumption by managers of marketing research provided by external research agencies. Only the studies where the data were collected, analysed and presented in a final report by private research firms were included in their study. They distributed their questionnaire to 500 "primarily brand/product managers" and 300 professional researchers. Their final sample consisted of 86 managers and 90 researchers.

Deshpande and Zaltman questionnaire is included in the appendix because of its length. The instrument was influential in the preparation of the questionnaire that was used in the survey conducted for the present thesis.

3.1.3.8   *The USER Instrument*

The USER instrument was first introduced in a Marketing Science Institute report (Menon and Wilcox 1994). The instrument was largely based on the conceptual arguments developed by Menon and Varadarajan (1992) and their model of marketing knowledge use "according to the underlying forms or types of use and the extent of use in decision making" (ibid., p. 3). USER was intended to be a comprehensive instrument that measured the impact of research study findings on organisations, as well as the research process itself. The USER questionnaire originally consisted of 30 items, representing five items for each of the six subdimensions of their model (for the model, see Figure 3.2). After further refinement, the instrument was reduced to 18 items. The items were Likert-type statements using a scale ranging from 0=not at all, to 5=to a great extent. Apart from the 18 item inventory, which measured the type and form of research use, there were 21 other items inquiring about the specific marketing research project report, global impressions of the marketing research study, and organisational centralisation and formalisation. The USER instrument is presented in Figure 3.9.

Figure 3.9: The USER Instrument

	Disagree strongly				Agree strongly	
1. One or more findings of the study had a significant direct impact on a decision…………...............................….…	1	2	3	4	5	6
2. It is possible that without the research results a different decision would have been made ………...…….………..	1	2	3	4	5	6
3. It was worth waiting for the research results because some of them materially influenced a decision ...………..…	1	2	3	4	5	6
4. The study was used to make a decision which was inconsistent with at least some of the findings and conclusions …………………………………………	1	2	3	4	5	6
5. The results of the study were taken out of context to make a decision …….................……...………………………..	1	2	3	4	5	6
6. A decision baed on the research project was hard to reconcile with the results of the project ……….………..	1	2	3	4	5	6
7. The research was used for appearance sake ...………….……	1	2	3	4	5	6
8. The study was used for political purposes …………………...	1	2	3	4	5	6
9. At least in part, the study was used as a scapegoat ………..	1	2	3	4	5	6
10. The study was used to validate or confirm our understanding of something ………………………….	1	2	3	4	5	6
11. The research study was used to build awareness and commitment …………………………………………	1	2	3	4	5	6
12. The research study was used to promote awareness and appreciation of an issue of importance ………………	1	2	3	4	5	6
13. We learned from having to clarify the problem to be addressed by the research …………..…………….	1	2	3	4	5	6
14. Apart from what we learnt from the results, doing the study was educational …………………………….	1	2	3	4	5	6
15. We gained new insights while providing the researchers with background information on the company, business, and/or competitive situation ………………	1	2	3	4	5	6
16. The study results were used to provide new insights …….	1	2	3	4	5	6
17. The study results provided new knowledge about something …………………………………………….	1	2	3	4	5	6
18. The study results were used to learn something new about our business……………………………………………	1	2	3	4	5	6

The focus of USER was confined to organisations' utilisation of marketing research studies. Research techniques and specific functional purposes, for which marketing research may be conducted, are overlooked. Also (unlike the Deshpandè and Zaltman instrument that preceded and substantially influenced it), there is no distinction made as to the identities of the researchers conducting marketing research (such as internal departments or external consultants). Despite its limitations, USER manages to distil the best parts of knowledge use studies that went before it. The result is a workable inventory, although limited in scope, that is a valuable step in the evolution of an

instrument to measure the use of marketing research. (For a detailed assessment of the USER instrument, see Yaman and Shaw 1998a.)

3.1.4 An Overall Critical Assessment of Selected Knowledge Use Studies

The conceptualisations and the methodologies employed by the studies reviewed above are critically discussed in this section, with a view to demonstrating whether, and if so how, the current investigation contributes to, and extends, the extant work in this field. As with the preceding section, the studies selected are by no means exhaustive of the work published to date in this field. Neither is there any claim made that these are necessarily the most important, or representative, of the studies. However, they are the most often cited and evidently the most influential work on research utilisation studies that have been published in the last decade.

3.1.4.1 Research Design and Sampling

Some of the earlier studies of knowledge use were based on quasi-experimental designs. An example of this is the study conducted by Rich (1981) of the use of information provided by National Opinion Research Centre under the National Science Foundation sponsored Continuous National Survey. Rich performed his research under real-time conditions. A similar attempt was the study by Anderson et al. (1981), in which the researchers worked with several service units of a Department of Health and Hospitals Mental Health Program simultaneously. Another study that used an experimental design was reported by Larsen and Weeks (1981) and consisted of the analysis of data collected through 39 consultations regarding the information utilisation in community mental health centres in the United States.

All the studies that investigated information use in a private-sector context were cross-sectional or longitudinal designs (see, for example, Deshpandè and Zaltman 1982; Kinnear and Root 1995, Menon and Wilcox 1994, Moorman 1995) exploring retrospectively either the extent of research utilisation or the variety of factors that influenced it.

"A major advantage of longitudinal data over cross-sectional data is their ability to reflect the true extent of change taking place in a population" (Kinnear and Taylor 1996, p. 137). So far, the only marketing research utilisation studies that employ

longitudinal design are the AMA surveys (Kinnear and Root 1995). As mentioned earlier in this thesis, these studies do not attempt any analysis of the data beyond descriptive statistics. Cross-sectional data can produce misleading results, "since surveys at two points in time with different respondents in the sample can show no change when in fact very dramatic changes are taking place in the population" (Kinnear and Taylor 1996, p. 137). Until the studies of knowledge utilisation are repeated over time, their findings should be treated as tentative and subject to scrutiny. On the other hand, it is doubtful that experimental designs will be able to produce more reliable data on knowledge utilisation than self-reporting questionnaires. Apart from the lack of cooperation from participating organisations, and the issue of time and finance costs, there is the concern that the experimenters would almost certainly bias test unit responses with their active involvement.

All knowledge studies reviewed earlier use individuals or groups of individuals as data sources. This is understandable in that even in public service sector studies, access to objective data would be restricted and / or would need individual interpretation. Dunn's (1981) concern that responses to questions such as the number of times a certain research report influenced a policy-maker's decision would provide a misleading picture is largely unfounded. The effect of knowledge on individuals is multi-layered, and processes through which decisions are made in an organisational arena may be too complex to be dissected for analysis. By way of analogy, the properties of a whole living being may be manifest in a single cell. That does not mean that the function and structure of the whole can be understood by analysing the cell. A simultaneous study of socio-cognitive properties of intra-organisational networks may provide better indications of individual and group reactions to new knowledge. However, it is doubtful that any tourism organisation would allow such an experiment, which can be disruptive in a number of ways, to be carried out. Therefore, use of individuals as units of analysis is the only practical solution left to the researcher. The important point is who should be approached. A number of studies of information use in the private sector use multiple respondents from a number of organisations (see, for example, Deshpandè and Zaltman 1982; Kinnear and Root 1995; Menon and Wilcox 1994; Moorman 1995), without giving any indication as to the number of respondents from each firm. They also implicitly assume that respondents who work within the same organisation would complete the

self-administered questionnaire without consulting each other. Possible biases that may arise from this procedure are ignored. Separately, there is the issue of the position that respondents hold within the organisation. Some studies report the organisational position of respondents (e.g., Moorman 1995) where others do not. With the 'Tourism 98' study, a conscious effort was made to minimise these potential biases. Strict adherence to one respondent from each participating organisation, and the position of the respondent (the person in charge of marketing research or, in the absence of such a position, the person in charge of marketing) was crucial to the study.

The majority of the knowledge use studies in the 1970s (almost invariably in the public sector) employed convenience or judgmental samples of individuals. Although later studies employed random sampling methods, often the sampling frame used (typically the membership list of the American Marketing Association and the *Advertising Age* list of top advertisers) limited the generalisability of results. Organisations that belonged to these lists were invariably large with a possible complimentary bias towards marketing research. In addition, organisational size is often correlated with innovativeness (see, for example, Rogers 1995). Also, there is the question of response rate, which is typically low for the studies of this nature. Most studies report these as limitations, but others choose to ignore them and publish the results as if they are representative of the population at large (see, for example, the use of AMA survey results in Churchill 1996 and Kinnear and Taylor 1996).

3.1.4.2 The Measurement of Knowledge

As discussed earlier, for some researchers, knowledge utilisation is purely instrumental, represented and measured in terms of action behaviour. For example, Deshpandè and Zaltman (1982) and Weiss and Bucuvalas (1980) define and measure knowledge utilisation in terms of judgments about its usefulness determined by subjective criteria. These criteria manifest themselves in a number of ways, ranging from the perceived attributes of research results (such as the quality of the report or presentation) to the level of agreement of the results with the prior expectations of the decision-makers (referred to as the degree of surprise in Deshpandè and Zaltman 1982, 1984). Other investigators define knowledge utilisation as being essentially conceptual, which is measured in terms of mental processes, while others clearly

distinguish and acknowledge both forms of use (Caplan et al. 1975, Rich 1977), and more recent studies propose a third aspect, affective or symbolic use (Menon and Varadarajan 1992, Menon and Wilcox 1994).

Definitions that concentrate purely on the instrumental quality of knowledge overlook properties of knowledge that may benefit organisations in the long term through more subtle effects on organisational culture. In this respect, studies that distinguish between instrumental and conceptual uses of knowledge are more useful as they provide a more inclusive focus. However, even those studies based on various forms of knowledge use often fail to distinguish properly different forms of knowledge. For example, none of the extant literature on marketing research utilisation (with the sole exception of tourism studies that form the exploratory phases of the work reported in this thesis) defines the term 'marketing research'. Most of them do not even attempt to define what is meant by knowledge, or information. The meanings of knowledge, research, and information are taken for granted as known and agreed by all who read the reports.

Few studies indicate that the definition of categories of knowledge utilisation, such as instrumental or conceptual use, or concepts applied to the construct itself, such as truth, relevance and cogency, are subjective from the point of view of researchers. It is questionable that decision-makers (especially in the private sector) share the same constructs and assumptions as those of the investigators. Later studies use a variety of statistical methods, such as factor analysis, principal components analysis, and multi dimensional scaling (see, for example, Menon and Wilcox 1994; Weiss and Bucuvalas 1980), to reduce item-response to discrete constructs. However, these authors don not highlight the limitations that these data reduction techniques impose on the investigation of the structural properties of reference-frames differentiation, complexity, integration, and permeability that are central to questions of knowledge synthesis, and practical problem solving (Dunn 1986).

3.2   Knowledge Utilisation Studies in Tourism

There were two studies into marketing research utilisation in tourism and hospitality that preceded the current study, both conducted by the author under the supervision of Professor Robin Shaw at Victoria University in Melbourne, Australia. Although initially they were intended as independent projects, and they yielded valuable data in

understanding the use of knowledge in tourism, their ultimate use was as exploratory studies to the Tourism 98 study. They are briefly discussed in this section.

3.2.1 The 'Tourism 95' Study

The first systematic attempt to establish base case data of marketing research use in tourism was undertaken in 1995. The initial intention was to replicate the most recent AMA study focusing on tourism-related organisations, and analysing the nature of the relationships between the variables derived from the AMA questionnaire.

A draft of the questionnaire was prepared. The draft included a version of the AMA marketing research questionnaire, with only the minimum alterations to make it industrially and culturally specific (i.e., for the Australian tourism industry), and a version of USER instrument. The questionnaire was tested with 10 tourism executives in informal but structured interviews. A revised version was produced and mailed to 3,200 organisations, drawing on a combination of commercial mailing lists and researcher-compiled lists. A broad coverage by tourism sector, organization size, etc., was ensured.

A response rate of 12 per cent was achieved, yielding 388 usable questionnaires for many parts of the questionnaire. The response rate of 12 per cent was similar to that achieved by Kinnear and Root (446 / 2602 = 17 per cent). Despite that, this modest response rate was considered to be a shortcoming of the study.

The Tourism 95 study served as a good inventory of marketing research activity in tourism. Seventy-four per cent of the organisations surveyed (287/388) reported using at least one of the 38 types of marketing research. A direct relationship was found between marketing research formality and the total marketing research expense, the number of marketing research employees and the total number of employees, the total revenue of the organisation, and the total number of marketing research activities performed. The sector of tourism in which the organisation operated was not related to the formality of the marketing research organisational structure or total organisational marketing research expenditure. However, sector was related to several variables, e.g., the travel sector had fewer marketing research employees and fewer employees overall, and performed fewer of the 38 marketing research activities than expected.

A major indicator of the extent of usage of marketing research, the number of the 38 named marketing research activities performed, was found to be positively associated with the formality of the marketing research organization but not the age of any marketing research department, the expenditure on marketing research internally and in total but not externally, the number of marketing research and overall organisational employees, and the organisation's total revenue and the proportion of that revenue devoted to marketing research.

Some relationships were not as anticipated. For example, a negative relationship was found between the total revenue of an organization and its expenditure on marketing research, expressed as a percentage of that total revenue. But a positive relationship was found between an organization's total marketing research expenditure and its total revenue. The reconciliation of these apparently contradictory results is probably that, as organizations increased in total revenue, they increased their absolute total spending on marketing research, but at a decreasing rate. Hypothetically, spending two per cent of $1 million ($20,000) is still less than one per cent of $10 million ($100,000).

When each of the 38 individual types of marketing research activity was examined, it was found that some organisational aspects were related. Higher usage of every single marketing research activity was associated with a formal marketing research department and more marketing research employees, higher total marketing research expenditure, larger annual revenue, and more staff overall. Interestingly, industry sector was not a good predictor. And the degree of 'outsourcing', or the conducting of marketing research by outsiders, was not always related. That is, it may have been hypothesized that small firms or low marketing research users would contract marketing research out, but it seemed that a wide range of firms outsource to a widely varying extent. (For a full discussion of the results of Tourism 95, see Yaman and Shaw 1998.)

This initial study demonstrated that tourism organisations were not dissimilar to organisations in general in their approach to knowledge acquisition. Tourism organisations devoted substantial resources to the conduct of marketing research, and performed many different types of marketing research. Further, the results indicated substantial variation within the set of tourism organisations regarding most aspects of

marketing research.

However, the variables derived from the questionnaire tended to be rather global, and mainly of value for broad comparisons. While there may seem to be a lot of detail inherent in a list of 38 types of marketing research activities, simply knowing that most organisations claim to perform advertising effectiveness research, actually said very little. For example, who initiated the research, designed it, executed it, and analysed the results, and why? Which marketing research techniques were used, and why? What was the history of the organisations' experience with these projects, including their evaluation of them? How did organisations justify marketing research, initially, and monitor its execution, and assess its implementation and effect on financial performance? What was it about innovative marketing research techniques that influenced their diffusion within the tourism system?

3.2.2   The Travel Agents Study

Participation of small to medium sized organisations in the Tourism 95 study was limited, and travel agencies were not specifically identified in its findings. One academic paper on travel agents reported on research conducted in Australia, but the sample was mainly drawn from the US agents attending a Queensland conference (Rutledge and Williams 1995). A review of the existing academic literature revealed a number of facts: a) although there were a number of studies of the planning and scanning practices of small businesses, none of them specifically concentrated on marketing research practices; b) a limited number of studies into the marketing research practices of businesses in general existed, but none of them focused on small businesses; and c) there was little written on travel agencies. None of the existing studies was specifically concerned with small travel agents. Resultingly, an exploratory study was undertaken to profile and analyse the marketing research practices of small travel agents.

In order to characterise the marketing research orientation of small travel agents, the following research questions were raised:

1. What were the marketing research activities of, and techniques used by, small travel agents?

2. What was the relationship between the organisational characteristics of small

travel agents and their marketing research orientation?

3. What was the relationship between the individual characteristics of decision makers in small travel agencies (such as their age, formal education, and business specialisation) and the marketing research orientation of the agencies?

4. What were the perceptions of decision-makers in small travel agencies with regard to the cost and complexity of marketing research?

5. What were the perceptions of decision-makers in small travel agencies with regard to airline/wholesaler control over their product, and the amount of marketing research performed by airlines/wholesalers?

In accordance with the definition of a small business provided by the Australian Bureau of Statistics (ABS) classification system (ABS 1993-94) the sample in this research study was limited to businesses with fewer than 20 employees. Other guidelines for the definition of a small travel agent were the annual gross turnover of the agency (less than $25m), and the following common management or organisational characteristics which are traditionally associated with a "small" business: a) independently owned; b) closely controlled by the owner/manager; and c) the operations of which are usually locally based, although its markets might not be (Small Business in Australia 1992).

In this study, the questionnaire used in the Tourism 95 study was used as the foundation for an instrument to profile the general characteristics and marketing research orientation of small travel agencies. The section that was based on the AMA questionnaire was updated to the most recent work that was then in print (Kinnear and Root 1995). Sections of the AMA questionnaire on marketing research activities and techniques were shortened to make them more relevant to small businesses. Otherwise, these sections were used without alteration to enable comparative analyses. Questions were added to identify various characteristics of the decision-makers of small travel agencies, such as their age, education, area of specialisation, and their management orientation. Finally, a section of three questions was included to determine the perceptions of respondents of the level of control exercised by airlines and wholesalers; the level of research activity performed by airlines and wholesalers; and the cost and usefulness of marketing research. The initial draft was pretested with 20 marketing executives (mostly from the travel and hospitality fields).

The final questionnaire, after two stages of refinement, was administered during personal interviews conducted by the final year undergraduate marketing research students of a major Melbourne university. A non-probability sample (Churchill, 1995) using a combination of judgement and convenience, was utilised, with the students each being asked to choose five travel agencies within the greater Melbourne area. Necessary guidelines were provided to prevent duplication and to ensure a sample distribution profile with required characteristics according to the judgement component of the research design, i.e., students' choices were restricted to those agencies that conformed to the selection criteria provided.

The majority of respondents interviewed within each agency comprised the primary decision-makers. In other cases, the respondent was nominated by the decision-maker as the person with an intimate knowledge of the organisation. The interviews were conducted at the place of business of the respondent. Respondents were provided with a copy of the questionnaire at the beginning of the interview to try to ensure that misunderstandings did not occur because of the technical nature of questions relating to research activities and techniques.

A total of 104 respondents from as many travel agencies was interviewed. Four agencies were excluded later from the analysis because their location fell outside the boundaries of the Melbourne Metropolitan area. Three travel agencies were excluded because they had more than 20 employees. A further six questionnaires were excluded because the names of respondents were not disclosed. Although an assurance of full confidentiality was given to all agencies, the name and location of each respondent were considered a necessary prerequisite to ensure that duplication did not occur, and that the results were not contaminated because of an inclusion of an agency representative without the authority to act on behalf of the decision-maker. The final sample used in the analysis consisted of 91 travel agencies.

Attempts were made to quantify the relevant population of the study. The Australian Federation of Travel Agents claimed around 500 members. Membership of this organisation is voluntary. The Travel Agents Licensing Authority stated that there were 1018 licensed travel agents in Victoria, but there were no other statistics kept by the organisation. The most comprehensive records were kept by the Travel Compensation Fund, which is located in Sydney. Its records showed that there were

807 licensed travel agents in Victoria listed as head offices. A further 334 licensed travel agents have branch locations in Victoria with head offices in that State or elsewhere. The total number of licensed travel agents in Victoria was 1141. At the time of the enquiry, there were no statistics on numbers of personnel employed or annual turnover and the database of the Fund did not allow the easy separation of agents located in the Metropolitan area from country areas of the State. Manual calculation based on postcode revealed 930 travel agents in the Greater Melbourne region, with 630 listed as head offices, and 300 listed as branches with head offices in Victoria or elsewhere.

In keeping with the exploratory nature of the study, the variables and their relationships were analysed within the boundaries of the five research questions listed earlier. For the purposes of simplifying and clarifying the initial analyses, variables were collapsed by recoding the data either into two categories based on high or low value split at the median level, or in three categories split at the 33 and 67 percentiles approximately.

In summary, the study provided the following answers to the research questions (for a discussion of the full results, see Yaman and Shaw 1998b):

A general understanding of the marketing research activities of, and techniques used by, small travel agents was established.

Most organisational characteristics were not related to marketing research participation, although greater devotion of resources to marketing research was reflected in more comprehensive usage of marketing research, and a more positive attitude to the cost-effectiveness of marketing research in small organisations. The desirability of travel agents considering seriously the role of marketing research in assisting in clarifying the future options for the sector was noted.

As in the second question, most individual characteristics of the decision-makers of small travel agencies were not related to the marketing research orientation of the agency. The lack of a significant relationship between the education level of respondents and the marketing research activities of, and techniques used by, the agency was of interest. It would have been expected that respondents who were formally educated in a business discipline would be more familiar with the various techniques and activities.

This study confirmed the assertions of Andreasen (1983) that managers of small businesses harbour certain "myths" about marketing research. One of these myths is that marketing research is too expensive to conduct for small enterprises.

Results indicated that small travel agents, in general, believed that enough research was conducted by airlines/wholesalers to determine customer needs. However, further research was needed to ensure that these perceptions are in keeping with the reality. Issues such as the relevance of the type of research conducted by airlines/wholesalers to the specialised needs of small travel agency customers need to be examined. For example, a US Travel Data Centre Survey found that about 5 per cent of family travellers believed that it would cost them more to use a travel agent (Green 1996). It was also asserted that families in the United States began to book their own travel instead of using a travel agent because they did not trust travel agents (Green 1996). Do such trends exist in the Australian travel market?

The sampling selection procedure in this study was not strictly probability-based, and the sampling proportion was probably about 10 per cent of the relevant local population. Therefore, the results could not be projected to the nominal population unreservedly. Rather, the scope of the study was exploratory, with the intention of providing some useful and suggestive base case data. In this respect, the study was successful. A basis has been provided for a comparison of the travel agency sector with other elements of the tourism system, particularly in terms of the indicative activity levels regarding marketing research. Further, differences were observed within the travel agency sample which deserved research, e.g., are differences in marketing research usage based on reflective managerial judgments, or are they incidental to the genuine lack of familiarity of managers with the field? Regardless of this answer, it is clear that there is widespread unfamiliarity with MR techniques, and hence the opportunity to remedy that situation profitably - for both the educator and the travel agency.

Another limitation of this study was the suspicion or perception of some interviewers that some of the travel agent respondents were providing invalid or unreliable responses. That is, on occasion, some interviewers found it difficult to accept some of the answers, on various grounds. For example, respondents may have stated that they frequently used Likert scales, and other techniques, but the interviewer may have

detected a general lack of sophistication in most aspects of a small suburban agency. Whether social desirability, pride, or other factors such as the desire to conclude the interview quickly, were operating, is unclear but not unimportant in determining the confidence that may be placed in the data. This difficulty in obtaining reliable data from studies of small firms is "traditional" according to Smeltzer, Fann, and Nikolaisen (1988). Dollinger (1985) noted that structured personal interviews, as in this case, might well be preferable to mail surveys in this context because, although more time consuming and consequently usually being restricted to smaller sample sizes, they yield more reliable data.

3.2.3   Dissemination of Results of the Exploratory Studies

From a theoretical perspective, the answers provided by the results of the exploratory studies of marketing research use in tourism contributed to the development of positive theories of the marketing research system. They also confirmed the need for, and furnished the basis of, the more rigorous study that is the subject of this thesis. A report of the findings of the Tourism 95 study was compiled and distributed to the participating organisations. Separately, two articles based on the results of this study were published in major industry academic journals and presentations were made in various academic and industry forums. A paper based on the findings of the Travel Agent study was presented in a major international tourism conference. The contact with tourism decision-makers initiated by the studies has shown that most managers were interested in the development of normative theories of marketing research use, including the development of decision support models which address issues such as the optimal design of marketing research for specific types of organisations and purposes.

CHAPTER 4

A CONCEPTUAL MODEL OF MARKETING RESEARCH

UTILISATION IN TOURISM

This chapter builds specific concepts into an inclusive framework by drawing on the relevant literature that has been reviewed earlier. The purpose of the framework is to present a conceptual model of marketing research utilisation in tourism. The formal model in terms of the operationalisation of concepts and specific hypotheses is discussed in the following chapters. The discussion here is on an integration of terms and constructs rooted in the knowledge utilisation literature reviewed earlier.

Although an attempt is made to build a holistic model, no illusions are harboured as to its completeness. The terms and constructs discussed in this chapter will be operationalised later as exogenous or endogenous variables in the model. The essential subjectivity of scientific endeavour was discussed in the section on the social construction of reality. Accordingly, in the final analysis the set of concepts selected for the model inevitably reflects the particular bias of the investigator.

Before the concepts that constitute the model are discussed, it is necessary to define the two domain constructs, the meanings of which appear to have been taken for granted in most of the marketing, as well as the tourism, literature.

4.1   Domain Constructs

4.1.1   Marketing Research

The definition of what constitutes marketing research is an area seldom addressed by researchers and managers. To further complicate the issue, the terms 'market research', and 'marketing research' are often used interchangeably, sometimes within the same document. Gerhold (1993, p. 7) asserts that there is no difference between the two terms and they can both be defined as "any scientific effort to understand and measure markets or improve marketing performance". However, Kinnear et al. (1993, p. 19) distinguish between these two terms by indicating that "market research implied that the focus of research was on the analysis of markets". The term

'marketing research' extends the role and character of research, "with the emphasis on contact between researchers and the marketing management process" (ibid., p. 19). This study adopted the term 'marketing research' exclusively. The American Marketing Association definition of marketing research (adopted in 1988) is intended as an all-inclusive definition for all interested parties:

> Marketing research is the function which links the consumer, customer, and public to the marketer through information - information used to identify and define marketing opportunities and problems; generate, refine, and evaluate marketing actions; monitor marketing performance; and improve understanding of marketing as a process. Marketing research specifies the information required to address these issues; designs the method for collecting information; manages and implements the data collection process; analyses the results; and communicates the findings and their implications (Marketing News 1987, p. 3).

For the sake of brevity, the definition by Green, Tull, and Albaum (1993, p. 2), which is based on the above definition of the AMA, was used during the survey:

> Marketing research is the systematic and objective search for and analysis of information relevant to the identification and solution of any problem in the field of marketing.

4.1.2 Tourism and Hospitality

The attempt to arrive at a universally accepted conceptual definition of hospitality and tourism is beset with problems, mainly due to the inability of various authorities to agree on a common construct of what constitutes a 'tourist'. Morley (1990) found little universal agreement of the precise definition of 'tourist'. Burns and Holden (1995) claimed that the many and varied interpretations of the concept of tourism result from its abstract nature and serve as evidence of its complexity and importance. There is also a continuing debate as to whether a commercial phenomenon that depends on the collaboration rather than competition of various organisations can be called an 'industry'. Mill and Morrison (1992) stressed that tourism is best understood when seen as a process rather than an industry and suggested the term 'tourism system' as a solution to the problem of definition. Mathieson and Wall (1982, p. 1) defined tourism as 'the temporary movement of people to destinations outside their normal work and residence, the activities taken during their stay in those destinations and the facilities created to cater for their needs'. Jafari's definition of the concept is a more inclusive one:

> … a study of man [sic] away from his usual habitat, of the industry which responds to his needs, and the impacts that both he and the industry have on the host socio-cultural, economic, and physical environments (Jafari, as quoted in Burns and Holden 1995, p. 6).

Such conceptual arguments are necessary to establish a precise definition of the construct under academic scrutiny. They were, however, of little use for a study such as the present one, which depended on a practical definition in order to establish a sampling frame in the form of a specific listing of the identities and contact data of potential respondents. The categorisation outlined in the chapter on methodology was based on a practical definition of the tourism industry as suggested by Stear, Buckley, and Stankey (1989, p. 29): 'The tourism industry is the collection of all collaborating firms and organisations which perform specific activities directed at satisfying the particular needs of tourists'. The addition of the term hospitality was intended as a further justification for the inclusion of organisations (such as accommodation and foodservice) which serve consumers who travel for reasons outside the narrowly accepted notion of tourism (such as education travellers, or those who travel for medical reasons).

4.2   Concepts

4.2.1   Utilisation

It must be noted at the outset that this thesis employs the terms 'utilisation' and 'use' interchangeably as it is considered that the concepts are synonymous when they are applied to research activity.

Research utilisation (or use) has been conceptualised in different ways by different authors. Weiss and Bucuvalas (1980) define utilisation as the decision-maker's judgment of the likelihood that she will take a specific research study into account in her work. Caplan et al. (1975) and Rich (1977) separated use of research into knowledge for action (instrumental use) and knowledge for enlightenment or understanding (conceptual use). However, Caplan and his colleagues, in their survey of 204 government officials, concentrated on the instrumental component of research use. They defined utilisation in terms of the familiarity of the officials with relevant research and a consideration of an attempt to apply the research to some policy-relevant issue. They separated knowledge into 'hard knowledge', that is research-based, quantitative, and expressed in scientific language, and 'soft knowledge' that is

non-research based, qualitative and expressed in everyday language. Their study found greater usage of 'soft knowledge'. Managers seemed to have preferred to base their decisions on knowledge gained through informal sources to the results of scientific studies. This relatively low utilisation of hard (instrumental) knowledge may have led to the claims of widespread non-utilisation of social research.

In their influential study of marketing research utilisation, Deshpandè and Zaltman (1982) focused primarily on instrumental use, as they assumed the research was intended to solve a problem (instrumental use) rather than enlighten the user (conceptual use). This concentration on the decision-relevance of research overlooked the political aspects of research utilisation. Menon and Varadarajan (1992) offered a tri-partite conceptualisation as action-oriented, knowledge-enhancing, and affective utilisation. Although they suggested that their model differed from instrumental and conceptual use models, it was essentially the same with the additional dimension of affective use, which underlined political use. This conceptualisation led to Menon and Wilcox's (1994) USER model, combining instrumental and conceptual use with this other dimension, which they called symbolic use. Neither of these authors concerned himself with 'soft knowledge' – and rightly so, as the subject of the studies was only the knowledge gained through scientific studies of marketing research. The roots of this conceptualisation lay in Scheler's classification (see the discussion on the sociology of knowledge in Chapter 2) of knowledge for action, knowledge for non-material culture, and knowledge for salvation. However, in the last two concepts, Scheler was thinking of philosophy and religion. For example, knowledge gained through a study of politics (knowledge for action) could be easily differentiated from a study of metaphysics (knowledge for non-material culture) or a study of the intricacies of the bible (knowledge for salvation). The latter two have distinctly non-pragmatic qualities (and even then, history is full of examples of religious knowledge being used for action, e.g., the utilisation of Christian beliefs for the purposes of the Crusades, for example). However, it is difficult to claim that, in practice, knowledge gained through marketing research studies could have a distinctly conceptual use. It can be claimed that even the knowledge-enhancing use of marketing research knowledge is an instrumental use, although the effects might not be as direct as a decision based on the results. Conversely, a purely instrumental use such as a direct decision based on the findings of a marketing research study report will have

conceptual uses as the implementation influences the management and personnel in ways that would show its impact in other subtle ways (such as a greater confidence in further marketing research if the decision taken leads to positive results, or suspicion of further studies if a positive outcome is not gained).

This issue is addressed in some detail during the analysis of the results of the current study.

4.2.2   Marketing Research Activity

The conceptualisation of research utilisation in terms of the type and form of use overlooks one important consideration, especially in the case of marketing research, that is, the 'character' of research activity undertaken by the organisation. To be fair, Deshpandè and Zaltman (1982) include in their conceptualisation a variable that they term 'research purpose', which they classify as exploratory research or confirmatory research. They state that exploratory research 'is intended to identify new or previously unconsidered courses of action, whereas 'confirmatory research is intended to affirm a predetermined course of action' (ibid., p. 18). They go on to hypothesise that because exploratory research has a greater chance of producing surplus information, it is likely to be used. On the other hand, as confirmatory objectives will lead to research that fits the preconception of the managers, it is more likely to be utilised. Because Deshpandè and Zaltman concentrate exclusively on the instrumental use of research, the proposition is logical. It is, however, doubtful that managers in the tourism industry envisage research in terms of exploratory and confirmatory. This seems to be determined largely by the reason for which the research is undertaken. One of the contributions of this thesis is the suggestion that the type and form of the utilisation of research may also be coloured by the type of research activity. For example, it may be argued that marketing research activities grouped under 'buying behaviour studies' are more likely to lead to both instrumental and conceptual use than 'pricing studies', which are generally undertaken with an action-oriented (instrumental) use in mind. In other words, the organisation may be more likely to use instrumentally the results of a price elasticity study, whereas a product satisfaction study may be conducted more with a view of understanding customer satisfaction levels with the service. Dissemination of the results of the latter study may suffice to fulfil the purpose of the research, without any action-decision

being taken. This is particularly true when it comes to 'business/economic and corporate' research, which is undertaken almost invariably with a view to 'understanding' and 'making the front line operators understand' the economic and social trends. Whether this understanding directly leads to an action-decision is peripheral to the reasons for undertaking the research.

The only published works about marketing research that investigate specific research activities undertaken by organisations are the American Marketing Association studies (Kinnear and Root 1995) which were discussed in Chapter 3. These studies are seldom mentioned in academic literature, probably because they do not go any further than reporting the results of, somewhat less than rigorous, head-counting. The academic usefulness of these studies may be questionable, but both the concept of investigating the type of activity, and the activities listed as being part of the business research *œuvre,* are sound.

4.2.3   Marketing Research Techniques

The techniques used in the design of research, sampling procedures, the collection of data, and the measurement and analysis of research results may also influence the type and form of utilisation. The more sophisticated techniques recognised and/or adopted by decision-makers may be indicative of the innovativeness of the organisation. The familiarity with these techniques and a willingness to employ them may relate to decision-maker characteristics such as the level and type of education, and age. Each different technique may be interpreted as different reality tests used by epistemic communities to ascertain the validity, or truth, of new knowledge (see the discussion in Chapter 2). Hospitality and tourism industry managers who are trained to look for logical reliability in recommendations and results may be more concerned with rational reality tests to check for formal consistency.

A modified version of the list of techniques of marketing research data collection and analysis used by Kinnear and Root (1995) was employed. Research techniques and approaches were classified in a logical sequence under the main headings of research design, sampling procedures, data gathering, measurement, and analysis. Under each main heading the relevant techniques were listed ranging from relatively simple and more widely employed, to increasingly complex and more empirically rigorous.

4.2.4 Organisational Structure (Centralisation and Formalisation)

Organisational structure refers to the degree of flexibility in decision making in terms of the decentralisation of authority and the existence of formal procedures for handling specific tasks. Almost every piece of research utilisation literature reviewed earlier refers to organisational structure in some way. Rich (1977), for example, found organisational factors play a more important role than individual personality characteristics. Deshpandè and Zaltman (1982) found that organisational structure variables were better predictors of research use than life cycle maturity of the product, research purpose and report attributes.

Tourism and hospitality organisations have hierarchical structures where specialised jobs are created to handle particular activities. A consideration of the centralisation and formalisation dimensions of organisational structure seems especially pertinent to the discussion in this thesis.

4.2.5 Environmental Factors

The business environment of a tourism organisation is conceptualised in terms of market turbulence, competitive intensity, and technological turbulence. The rate and intensity of change in these factors are thought to have an influence on the type of research activity as well as the type and form of utilisation of research. The effect of environment on the structure and performance of organisations has been argued extensively in the strategy literature (see, for example, Bourgeois 1980). Certain sectors of the tourism industry, such as retail travel and accommodation, are extremely competitive. The industry is going through stages of market turbulence when new destinations are created and markets shift as a result of changes in currency exchange rates and political disturbance. An unstable market mix and changing technological requirements may entice organisations to seek new knowledge in a systematic fashion.

4.2.6 Information Culture

According to Zaltman (1986), if an organisation has a pro-innovation bias and a proclivity for gathering information, knowledge is more likely to be shared and used. A culture that promotes the free flow of information is also more likely to have managers who are more willing to adopt ideas and concepts that are developed

outside their immediate work group. More often the younger members of the management team are better educated and keener to adopt and use new ideas. An information culture that encourages junior members of the management team to try innovative ideas is more likely to lead to more research being conducted and more progressive techniques being adopted. The progressiveness of an organisation in the dissemination of information and the encouragement of innovation is a construct that is likely to have some bearing on its marketing research utilisation.

4.2.7 Historic Appreciation of Marketing Research

This concept relates to the management's perception of the usefulness of marketing research based on its experience with past research projects. It also encompasses managers' perception of the quality of past research projects, including the attributes of marketing research reports. It was stated earlier that knowledge can be viewed as a set of organised statements of facts or ideas, presenting a reasoned judgment from an experimental result, which is disseminated to users in some systematic form. The particular form of knowledge presentation that is being considered in this thesis is that of a marketing research report presented either internally from a marketing research department or externally from contracted suppliers to managers. As the report presents a unique interpretation of reality, the interpretation has some certain characteristics. These characteristics are the attributes of the report. Managers' perception of the quality of these attributes, along with their own assessment of past marketing research projects, constitute their historic appreciation of the marketing research process.

4.2.8 Organisational Demographics

In the exploratory study (Tourism 95), which was discussed earlier in Chapter 3, the size of the organisation referred to its age, annual revenue and the number of staff employed. The relationship of the size of the organisation to its innovativeness is well documented in the literature (see, for example, Rogers 1995). However, it is important to define carefully this concept within a tourism industry framework. The number of staff employed, for example, may be an inaccurate indicator of the organisation's size as some organisations that do not employ large numbers of personnel because of their particular *modus operandi* may be quite large according to their annual revenue. In some sectors of the industry the reverse is true. Highly labour

intensive organisations in certain sub-sectors may not have the corresponding revenue. For example, certain event management organisations that run annual events have only a small number of core staff in their employ during most of the year. However, during the running of the event the number of staff, mainly through the employ of volunteers, expands to disproportionate levels. Similarly, tourism support organisations such as national tourism organisations (NTOs) employ small numbers of highly specialised personnel but, through public funds and membership fees, have sizeable revenues and are more likely to conduct a higher number of research projects. Therefore, unless an intricate measurement system is employed, the annual revenue of the organisation remains the best indicator of the size of a tourism organisation.

4.2.9 Cost Benefit (Value) of Knowledge

Separate from the historic appreciation concept discussed earlier, managers' perception of the cost effectiveness of knowledge acquisition may affect both their perception of the usefulness of marketing research activity and the form of utilisation that follows the completion of research. According to Andraesen (1983), most managers believed that marketing research was costly and complicated. If managers believe that marketing research is not cost-effective but for various reasons, such as company policy, they carry out research, then their perception may influence both the acquisition process and the type of utilisation.

4.2.10 Performance Outcomes of Marketing Research Use (Financial Performance)

The assumption behind this construct is that marketing research activity through its utilisation affects the financial performance of the organisation. Intuition suggests that there is a link between an organisation's marketing research orientation and its financial performance. The main issue here is the development of valid measures that would isolate the influence of marketing research utilisation from other variables that affect financial performance. At first glance, it appears desirable to find an objective measure of the influence of marketing research activity on financial performance that is independent of the perception of the decision-makers. This was considered. As no previous study was found that attempted to measure the effect of marketing research activity on the financial outcomes of organisational performance, the investigator

searched the literature on strategic planning. Strategic planning can be considered akin to the marketing research activity in that its effects on the financial performance of the organisation are bound to be controversial and difficult to observe. One objective measure of organisational financial performance would be that of market share. Jaworski and Kohli (1993, p. 64) state that it is not clear that "market share is a particularly appropriate indicator of performance". In fact, various authors investigating the effect of strategic planning on organisational performance suggest that the determinants of financial performance comprise many different variables (see, for example, Capon et al. 1990). Either way, there are serious obstacles in the way of obtaining reliable information to assess objectively the influence of a single factor on financial performance. Even if marketing research led to higher market share and/or higher profitability, depending on the type of marketing research activity, this effect could take place over an extended period of time. Detailed objective financial data for an extended period of time may be difficult to obtain, as most organisations treat such information as highly confidential.

It is doubtful that any objective measure (even if it is possible to develop one) that would separate the effect of marketing research from a multitude of other factors on organisational performance would be as useful as one that measures the respondent's perception of such effect. If the manager does not perceive marketing research activity as contributing positively to organisational performance, it is unlikely that she will be persuaded otherwise if some 'objective' evidence is presented to her. As discussed earlier, one of the contentions of this thesis is that there is no objectivity outside the confines of an epistemic community. Therefore, as far as the construct of the effect on financial performance is concerned, it was decided that measuring the perceptions of respondents was likely to be more productive than attempts at developing objective measures.

4.2.11 Performance Outcomes of Marketing Research Use (Other Than Financial Performance)

Qualitative outcomes of marketing research use refers to even more elusive effects of the specific orientation of the organisation on employee morale, organisational commitment, and *esprit de corps*. The concept is analogous to what Pearce et al. (1987), writing on strategic planning, referred to as the intended and unintended outcomes other than financial performance. Similar to the financial performance

concept, managers' perception of the qualitative outcomes needs to be sought.

4.3 Towards a Comprehensive Model of Marketing Research Utilisation

Rogers' (1995) model of independent variables that related to organisational innovativeness (Figure 4.1) was the starting point in the development of the proposed model. In his comprehensive synthesis of research into organisational innovativeness, Rogers concluded that the size of an organisation had been found consistently to be related positively to its innovativeness (ibid., p. 379). Innovativeness was also related to leader characteristics, the internal characteristics of organisational structure such as centralisation, and formalisation, and external characteristics such as system openness.

Figure 4.1: Rogers' Model of Organisational Innovativeness

INDIVIDUAL LEADER
CHARACTERISTICS
1. Attitude toward change (+)

INTERNAL CHARACTERISTICS OF
ORGANISATIONAL STRUCTURE

1.Centralisation (-)
2. Complexity (+)
3. Formalisation (-)
4. Interconnectedness (+)
5. Organisational slack (+)
6. Size (+)

EXTERNAL CHARACTERISTICS

1. System openness (+)

ORGANISATIONAL

INNOVATIVENESS
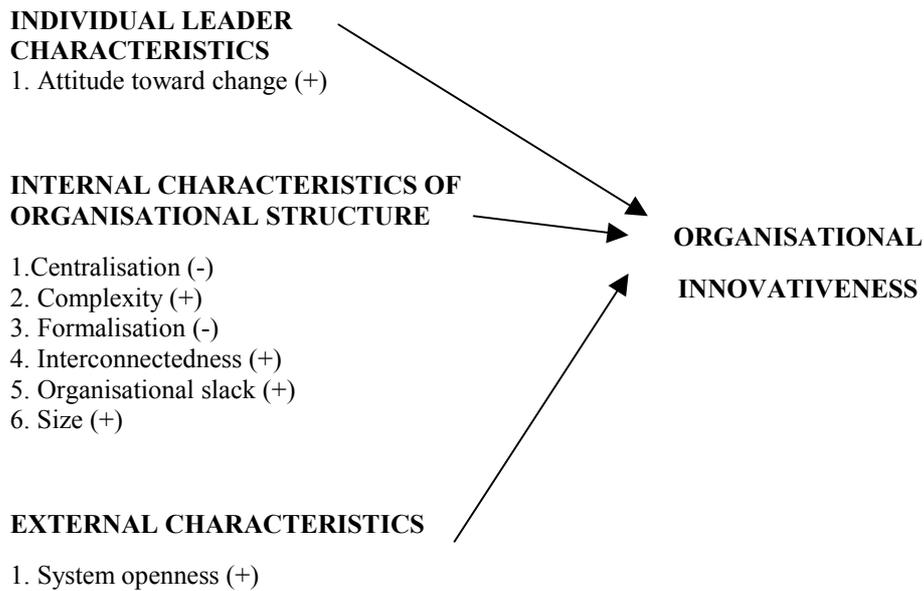
After Rogers (1995)

Figure 4.2 depicts the second influence for the proposed model of marketing research utilisation (Menon and Varadarajan 1992). However, as outlined earlier, Menon and Varadarajan's (1992) model, which was the basis for the *USER* conceptualisation, does not take into account any influence of marketing research attributes and process on the final utilisation of marketing research.

Figure 4.2: Menon and Varadarajan Model of Organisational and Informational Factors Affecting Knowledge Utilisation
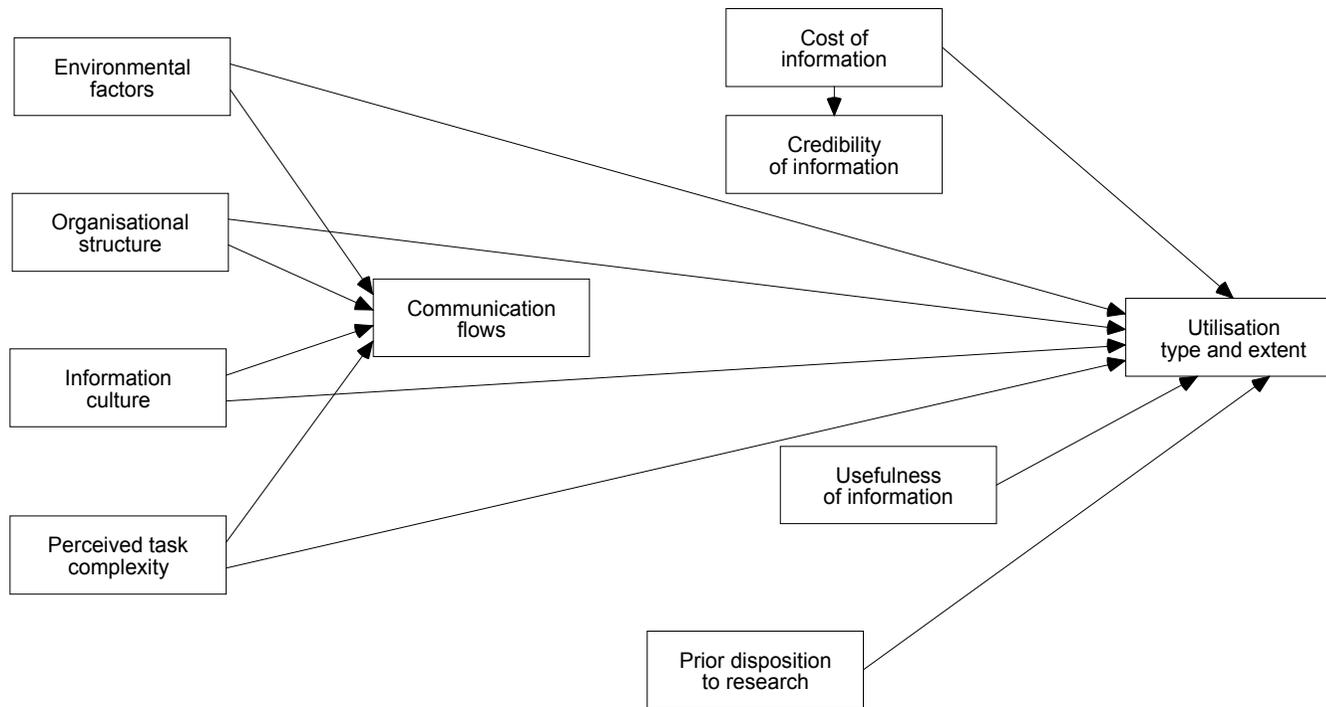
Source: Menon and Varadarajan (1992)

Figure 4.3 represents a suitably modified synthesis of these models to accommodate the hypotheses derived from the review of the literature and findings of the exploratory studies. A discussion and empirical testing of the hypotheses that pertain to the model are in Chapters 6 and 7. Chapter 7 also includes an attempt to test the model in its entirety.

Figure 4.3: A Conceptual Model of Antecedents and Consequences of Marketing Research Activity in Tourism
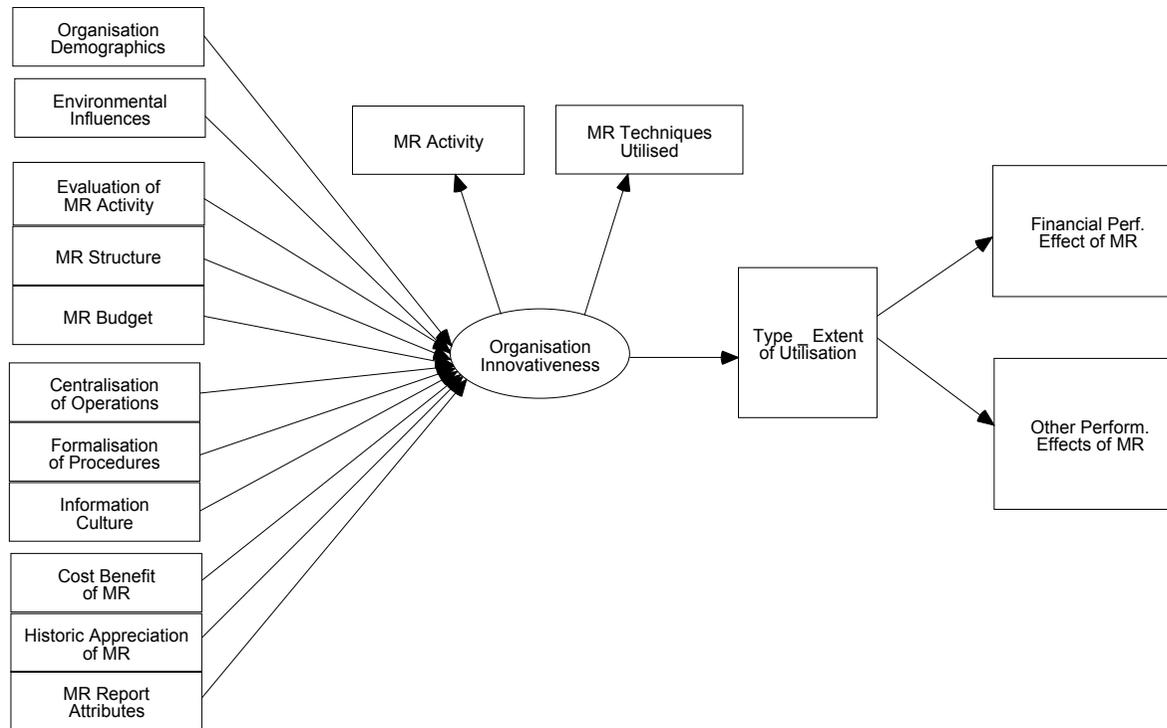
CHAPTER 5

RESEARCH METHODOLOGY

This chapter describes the selection of the sample used, the data collection process, the research questionnaire, and the operationalisation of the variables referred to in the earlier chapter. An exposition of the principles and reasons behind the particular choices and actions is provided in each case. As well as their informative purpose, these explanations are also intended to point to the limitations arising out of the particular choices made and perspectives adopted. As with all research designs, the present one has certain assumptions that may lead to statistical and substantive bias. The chapter ends with a discussion of the implications of such bias in terms of exerting influence on the results of the study.

5.1   Sample

5.1.1   Sector Classification

The following operational definition of the hospitality and tourism industry, as outlined by Tourism Training Victoria (1995, p. 1) and widely accepted by the operational management of the industry, was adopted for the purposes of this project:

> The tourism industry encompasses all economic activities that supply goods and services to tourists and visitors. The tourism industry can be divided into three major sectors; hospitality, travel and visitor services.

The sectors of the industry were divided as follows:

A.   HOSPITALITY

Accommodation with foodservice
(e.g., hotel, motel, resort with food and beverage outlet)
Accommodation only
(e.g., hotel, motel, resort without food and beverage outlet)
Foodservice
(e.g., café, restaurant, pub, club, function venue, caterer)

B.   TRAVEL

Retail travel organisation
(e.g., travel agency that deals with the public)

Transport
(e.g., airline, coach, shipping)
Tour operator
(e.g., tour packager, tour guide)
Industry support organisation
(e.g., management consultant)

C.   VISITOR SERVICES

Attraction management
(e.g., casino, zoo, theme park, nature based attraction)
Event management
(e.g., professional conference organisers, conventions, racing carnivals, festivals)
Non-profit tourism industry organisations
        Federal (e.g., Australian Tourist Commission, Australian Hotels
            Association)
        State (e.g., Tourism New South Wales)
        Regional / local (e.g., Gold Coast Tourism Bureau)

Management consultancy firms, which mainly consist of agencies that supply marketing research expertise to the industry, were kept out of the survey to prevent undue bias. By the nature of their business, these firms conduct marketing research on behalf of their clients, whereas they carry out relatively little research for their own purposes. In addition, the techniques they employ, as well as their knowledge of those techniques, generally would be more sophisticated than the industry executives. A further study that compares managers' research utilisation to that of researchers' conception within the tourism system along the lines of the research carried by Deshpandè and Zaltman (1982) would be beneficial.

The validity of the industry classification above was checked with 16 industry executives from various sectors of the tourism system. Twelve executives thought the classification was appropriate and reflected correctly the perceptions of the industry practitioners. Four executives thought that the classification was appropriate but found it difficult to categorise their organisations as their operations covered more than one area (e.g., retail agency and tour operator; transport organisation and tour operator; tour operator and retail agency and event management organisation). In those instances, the operation was classified according to its core activity, with other activities duly noted.

The focus of the study was the largest enterprises in the 11 sectors of the tourism

system as described earlier. In choosing commercial organisations, 'largeness' of an enterprise was defined in terms of annual revenue and/or number of personnel employed. In the case of non-profit industry organisations, total annual revenue was chosen as the indicator, as the number of employees could be misleading (as discussed earlier). Event management organisations, which largely depend on volunteers for their operations and employ only a small number of core personnel, were also classified primarily in terms of revenue.

5.1.2 Judgmental and Snowball Sampling

There is no single list that contains the demographic information required on all enterprises that operate within the tourism system. Sector-specific commercial directories (e.g., Dawson's Hotel Guide, RACV Attractions Guide) did not contain information on the revenue and number of personnel of the organisations listed. The few industry specific mailing lists available were those of trade magazine subscription lists, which were not suitable to the purposes of this study. Apart from their limitations that were highlighted during the exploratory study (see earlier notes), they were only available for mail surveys, as the lists were only useable through a mailing house. However, in the proposed study, the length of the instrument, commercial sensitivity of some of the information sought, and perception-based nature of some of the questions led to a preference for a personal interview technique. Because of the small sample size consisting select organisations, it was crucial to create a rapport with the respondent and to obtain as high a response rate as possible to protect the integrity of the study. Another objective was to avoid multiple respondents from the same organisation by ensuring that all respondents were personally identified before they participated in the survey. As a result, it was decided to adopt a combination of judgmental and snowball sampling techniques.

There is some disagreement among the marketing research texts as to the proper definition of the judgmental sampling technique (also referred to as judgment sampling or purposive sampling). Malhotra (1996, p. 366) defines it as 'a form of convenience sampling in which the population elements are purposely selected based on the judgment of the researcher'. Kinnear and Taylor (1996, p. 412) propose that judgmental samples are selected 'on the basis of what some expert thinks those particular units or elements will contribute to answering the particular research

question at hand'. According to Dillon, Madden and Firtle (1993, p. 229), judgmental samples involve 'selecting certain respondents for participation in the study presumably because they are representative of the population of interest and/or meet the specific needs of the research study'. A snowball design is defined as a form of judgmental sampling that involves either 'first locating the respondents who have the necessary qualifications to be included in the sample and then using these respondents as informants to identify still others … who belong to the target population' (Dillon et al. 1993, p. 230), or initially selecting a group of respondents at random and then asking them 'to identify others who belong to the target population of interest' (Malhotra 1996, p. 369). Zikmund (1994, p. 370) confirms that in snowball sampling 'initial respondents are selected by probability methods', which contradicts the earlier definition of snowball sampling as a form of judgmental sampling, which is clearly a non-probability sampling technique. There is also some evidence that if the population could be classified as rare and certain procedures for listing its members are followed strictly, the snowball sample can be treated as a probability sample (see, for example, Kalton and Anderson 1996; Biernacki and Waldorf 1981; and Rothbart, Fine, and Sudman 1982).

The investigator has formal qualifications in hotel management and worked in the hospitality and tourism industries between 1965 and 1991 in various executive positions, and as a senior consultant. His formal industry accreditations include a Certified Hotel Administrator (CHA) designation from the Educational Institute of the American Hotel and Motel Association, full membership of the Hotel and Catering International Management Association, and Fellowships from the Australian Institute of Hospitality Management and the Catering Institute of Australia. He immigrated to Australia in 1969, which meant the bulk of his experience was gained in this country. In addition, he has lectured in various hospitality and tourism management subjects in tertiary institutions and conducted short courses for industry executives since 1991. It is assumed that he qualifies as an expert in the industry. His personal judgment in the selection of the sample was pivotal, although not the only factor.

Jobson's Yearbook of Australian Companies 1997-98 and *Australia's Top 500 Companies 1997-98* were consulted to obtain the initial list of tourism enterprises. *Jobson's* revealed 29 companies that operated within tourism and hospitality. There

were 19 tourism companies in *Australia's Top 500*, eight of which were also listed in *Jobson's*. Together, the two publications revealed 41 relevant enterprises. Four organisations were discarded as they were investment enterprises and were not involved in the operations of their properties. Three others were discarded on the basis that their operations were confined to offshore. The final list yielded 34 enterprises. Use of these two publications as the sole sampling frame in other tourism research that has focused on large tourism enterprises is not new (see, for example, Athiyaman and Robertson 1995). However, although useful as a starting point, the list derived from these two publications is unrepresentative of the tourism system in Australia. *Jobson's* includes only the publicly listed companies, which effectively leaves out some of the largest tourism and hospitality organisations. Similarly, the revenue-based listing of the *Top 500* does not extend to hospitality and tourism organisations that are large within their sector but not large enough to qualify for inclusion in this publication. In addition, non-profit industry organisations such as the industry support organisations, which play a crucial role in fulfilling the research needs of the industry, attractions (especially those that are nature-based and operated on a non-profit basis), and event management enterprises with considerable revenues and influence which do not qualify because of their structure, were not found in either of the publications but were too important for the purposes of the research to be overlooked.

Therefore, the investigator's judgment was complemented by that of 10 industry executives who are close personal contacts of the investigator, to compile a list of a further 70 organisations to add to the initial list of 34 enterprises. The resulting database consisted of an initial judgmental sample of 104 organisations representing, as closely as possible, the leading entities in 11 sectors of tourism (the sector classification of the initial sample is detailed in the Appendix).

After compiling the initial sample, the investigator personally contacted each organisation by telephone and obtained the name and the title of the person in charge of marketing research or, in the absence of such a position, the name and the title of the person in charge of marketing operations. A letter was forwarded to the person identified, giving the survey details and giving notification of a request for an appointment for a personal interview. Seventeen organisations responded by telephone or fax to nominate a different person to the one initially identified. The

database was altered accordingly.

5.1.3   Data Collection Procedures

Assael and Keon (1982, p. 121) confirm that 'personal interview … with its high involvement seems to induce subjects to concentrate harder and respond more accurately'. However, they go on to add that personal and telephone interviews suffer from high non-response error, and therefore 'the personal interview's low response error is not enough to overcome its unappealingly large non-response error' (ibid.). Conscious of this fact, the investigator went to extraordinary lengths to ensure as high a response rate as possible. Initially, the majority of the executives could not take the telephone call and they did not respond to the messages left. On average, a total of four calls was made to obtain an appointment. After four telephone calls, if the particular organisation still had not responded, a fax was sent (Appendix), followed by another two telephone calls. Personal pleas were made to some major organisations through the contacts of the investigator. Finally, a second fax, representing the fourth written and tenth general communication attempt, was forwarded to those enterprises whose participation were considered crucial in the judgment of the investigator and who had yet failed to respond (Appendix).

In total, non-response reasons were obtained from 19 organisations by telephone, letter or facsimile transmission. Ten organisations (53 per cent of the non-respondents) gave lack of time and complexity of the questionnaire as reasons for not participating. Two organisations (10 per cent) stated that they were "simply not interested" in participating in the study. Another three (16 per cent) stated that they were too busy and would participate if they were contacted again after six months. Four organisations (21 per cent) claimed that it was against company policy to participate in surveys.

Appointments were made with 78 respondents. However, six executives had to cancel their appointments immediately before the meeting date, due to unforeseen circumstances. The rescheduling of these interviews was not possible because of the time and financial limitations of the investigator. Ultimately, a response rate of 74 per cent was obtained from this initial sample (n=72). Appointments were made for personal interviews in the three states (New South Wales, Victoria, and Queensland) where the majority of the organisations had their offices (n=61). Telephone

interviews were arranged with the organisations whose geographic locations did not justify the expense of travel (n=11).

The interviews took place during the months of January and February 1998. A scripted approach was used to ensure the uniformity of the interviews. At the conclusion of the interview each respondent was asked to nominate two organisations outside his or her own which, in his or her perception, should have been included in the list. Twenty-nine respondents declined to nominate any organisation. Ultimately, 43 respondents nominated a total of 78 organisations that were not in the original sample. After checking against the criteria, 56 organisations were selected as suitable to add to the original database, increasing the total sample to 160. A new mail-out was organised for the 56 organisations, this time seeking participation by mail. Precisely the same questionnaire was used for this mail-out. Seventeen useable questionnaires were obtained as a result. A follow-up telephone call was made to nine of the new respondents to seek clarification of the partly completed items in the questionnaire. The total response rate was 89, representing a 57 per cent response rate on the final sample of 160 organisations.

5.1.4 Limitations of the Sample

The survey sample was intentionally skewed toward larger organisations in various sectors of the tourism and hospitality system. Marketing departments of such firms are known generally to have larger research budgets and may be more technically sophisticated in their research methods (as evidenced by the exploratory study). Additionally, non-profit tourism support organisations may have a more favourable attitude toward marketing research than do managers in commercial operations who may be under more pressure to justify the cost-effectiveness of research.

There were only two open questions in the instrument. Those asked respondents to rate research activity in the order of their perception of their importance with a view to obtain a general inventory of research problems in tourism. Outside these two questions, the interviews were strictly structured. This approach ensured that responses were as relatively free from open interpretation on the part of respondents as possible, which made them ideal for quantitative analyses. However, it also constricted responses to particular questions and may have restricted the discussion of issues that respondents may have found interesting or important but were not covered

by the questionnaire.

The choice of marketing research managers or marketing managers in the sample was made so as to obtain respondents who are in positions that are intimately involved in the research activities of the organisation. They were also the executives who were functionally assigned to interact with outside consultants where the research was outsourced. This enabled the investigator to procure factually reliable responses, especially in the case of larger organisations, where the chief executive or other managers are unlikely to have an interest in the more technical aspects of research process. As one marketing research manager in a large transport organisation remarked: "Sometimes I wonder whether any of them get past the executive summary when they read the research report". On the minus side, selection of such managers for the sample may have skewed the distribution towards respondents who have a more favourable view of the research process and/or its usefulness for decision-making and its effect on the performance outcomes of the organisation. Results, discussed in Chapter 6, show this indeed to be the case. However, such bias is unavoidable unless a number of managers from different functional areas of the same organisation is interviewed with the same questionnaire. Apart from being highly impractical (considering the general apathy displayed by most tourism organisations toward academic inquiry, it may even be impossible) it is doubtful such effort will produce more reliable results. Each functional area inevitably will have its own construction of organisational reality based upon a world-view imposed on it by its discipline (epistemic community) and its interpretation of the usefulness and effects of research will be coloured by this bias.

5.1.5   Research Instrument

In both surveys, questionnaires with closed, structured queries, mostly on Likert-type scales, were used. For the first survey (Tourism 95), a first draft of the questionnaire, which was a combination of the Kinnear questionnaire and the *USER* instrument (see Chapter 3), with only the minimum alterations to make it industry and culture specific (i.e., for the Australian hospitality and tourism industry), was prepared. This draft was then discussed with several close industry contacts of the author in informal but structured interviews. The contacts were chosen from among the senior operational managers of the tourism industry and they broadly represented various sectors of the

industry as categorised in the instrument. The managers were asked to evaluate the questionnaire with a view to (1) assessing the relevance of its conceptualisation of marketing research utilisation, (2) appraising the suitability of the terminology to specific sectors, (3) identifying any other potential marketing research uses that are not covered by the proposed questionnaire, and (4) making other suggestions, criticisms and comments on the questionnaire and its facets. Based on this pretest, necessary revisions were made to the instrument to ensure its relevance to the hospitality and tourism industry within a specific (Australian) culture. In total 16 managers were approached, although only 13 of them were ultimately interviewed. Their feedback was recorded and analysed and necessary alterations to the instrument were made with the proviso that the altered instrument was sufficiently similar to the original instruments that it was based on, to enable comparative studies. The questionnaire that was used in the Tourism 95 survey was the instrument that was modified after these interviews, to produce the Tourism 98 instrument (Appendix).

The first section of the questionnaire began with the preliminary questions regarding sector identification, organisational demographics, and marketing research department structure and budget. Then, a list of marketing research activities, divided into six sectors as for the AMA questionnaire, was presented and respondents were asked to indicate whether the type of research was conducted by their organisation and, if it were, whether it was conducted by their marketing research department, another department in the organisation, or an outside organisation. In section two of the questionnaire, respondents were asked to focus on a recent marketing research project related to their organisation with which they had been associated. The use of one critical incident, rather than general questions about research, was chosen so as to obtain responses that are relatively less affected by attitudinal bias. This approach is in keeping with work on marketing research that preceded the present investigation (e.g., Deshpandè and Zaltman 1982, Menon and Wilcox 1994). However, given the mode of data collection, all measurement was based on respondent perceptions rather than observed behaviour. Since there are methodological problems associated with self-reports (Malhotra 1996), the use of a recently conducted project as the research incident of focus was in order to avoid an unduly large positive utilisation bias on the part of the respondents. It was also thought that short-term memory being more reliable than long-term memory, the discussion of a recently conducted research

project could provide more meaningful responses. Another perceived advantage of using this critical incident approach is the avoidance of non-recursiveness in the model to be tested. Since this thesis conceptualises utilisation as a cyclical process, the aggregative impact of experience makes causal model testing unreliable. By imposing a critical incident focus on one recent research project, sequential activities in the research process can be analytically separated and handled in a consecutive order.

The questions in section two of the questionnaire were largely similar to those in the USER instrument discussed earlier. The items were grouped in similar fashion to USER, with the exception that group headings were removed to avoid undue prompting that may lead to response bias. A six-point (rather than five or seven-point) Likert-type scale format was also kept in the belief that an even numbered rating may minimise the possibility of respondents taking the middle ground out of a desire to complete the questionnaire quickly or to avoid thinking carefully on issues.

The questionnaire ended with a space for respondent name and position title, and the name and address of the organisation. To reinforce the assurance of total confidentiality, the completion of respondent details was made voluntary. A copy of the research results was promised to respondents who completed the respondent details section. This was the only incentive offered for the response.

The results of the Tourism 95 survey (discussed in Chapter 6) indicated the need for a number of revisions of the initial questionnaire. In the first section, some questions on organisational demographics (revenue, number of personnel, and the age of the organisation) were moved towards the end of the questionnaire. This was principally because it was found that a number of respondents viewed the questions as commercially sensitive and their reaction influenced their decision to continue with the questionnaire. The questions on marketing research budget and marketing research department structure were simplified and left in the beginning of the questionnaire. Four questions from the Tourism 95 questionnaire were discarded because they did not produce meaningful responses or they replicated information that could be deduced from other questions.

The question on research activities was condensed in content but expanded in the choice of answers to include the parties who developed the research, and those who

analysed the data ('mainly this organisation', 'mainly outside organisation', 'both this and outside organisation'). A new, 46-part question on research techniques was added to this section inquiring whether the respondent recognised the technique and, if so, whether the technique was used at all and how often. This question was adopted from the latest AMA survey, the results of which were published whilst the Tourism 95 survey was in progress.

The 39 items in section two of the Tourism 95 questionnaire were kept, with the main modification of converting all statements to positive ones as a result of an exploratory factor analysis carried to assess the USER instrument (Yaman and Shaw 1998a). Another 44 items were added to measure respondent perceptions of the cost-benefit of marketing research, the information culture of the organisation, environmental factors, organisational structure, and the effect of marketing research on financial and other performance. Outside of two open questions that measured respondent perception of research priority needs of their organisation, all items were closed, Likert-type rating scales. The final instrument contained 90 main questions and a total of 142 answerable items.

5.2   Operationalisation of Variables

The conceptual development and a description of a set of variables that is pivotal for this study were presented at the end of Chapter 4. These variables included marketing research activity, marketing research techniques, organisational structure, environmental factors, information culture, historic appreciation of marketing research, organisational demographics, cost-benefit of knowledge, utilisation, financial performance outcomes, and other performance outcomes. The operational definition of each of these variables, along with the way it will be prepared for handling, will be explained in this section, in the order in which it appeared in the research instrument. A discussion of the relevant literature for the treatment of particular variables is discussed along with reference to their appearance in other earlier work.

5.2.1   Marketing Research Activity and Marketing Research Techniques

With the exception of the AMA surveys, studies into marketing research utilisation are not concerned with the type of research conducted by the organisations. As the

sole purpose of the AMA surveys is to provide the industry with a regular status report (they are conducted once in every five years), little attempt was made by the researchers to investigate the relationships between variables in order to ascertain the predictors of marketing research activity. Conversely, the major studies into marketing research utilisation were concerned with either the type of utilisation (e.g., Menon and Wilcox 1994), or factors that determine one type of utilisation (e.g., Deshpandè and Zaltman 1982). None of the previous studies made an attempt to formulate a holistic model that incorporated antecedents as well as consequences of marketing research. Such a model necessitated a unique framework within which to study the formal acquisition of knowledge (marketing research). As explained in Chapter 2, the framework employed in this study is a conceptualisation of marketing research as an innovation. This necessitated producing a construct that could anticipate the innovativeness of the organisation in terms of knowledge acquisition. It was, therefore, proposed that there was a direct relation between the innovativeness of the organisation and the extent of marketing research activity. Further, it was proposed that there was a relation between the innovativeness of the organisation and the type and sophistication level of the research techniques employed. At a more basic level, it was also thought that an inventory of marketing research activity and techniques at a given point in time would provide base case data of marketing research orientation in tourism and would assist future research to measure its progress.

The original items were taken from the latest AMA questionnaire available (Kinnear and Root 1995) and were pretested carefully with marketing academics and practitioners to ascertain their suitability to tourism and Australia. As a result, some items were removed and two items, which referred to the use of the Internet as additional data gathering techniques, were added. Appendix 1 shows the set of items and the instructions preceding them.

For the purposes of testing of the model, responses that related to the development of the research and analysis of the data ('mainly this organisation', 'mainly outside organisation', and 'both this and outside organisation') were kept out of statistical analysis. The reason for that omission is that the identity of those who conducted and analysed the research was not differentiated in the model. The wording of the items ('not done', 'sometimes done', 'frequently done') prevented their classification as

interval variables as each respondent may have had a different concept of 'sometimes' and 'frequently'. Therefore, the marketing research activity variable was collapsed to be uni-dimensional, with dichotomised 'MR not conducted' and 'MR conducted' values for each respondent. Similarly, the marketing research techniques variable was also collapsed into dichotomised values – in this case 'the technique not known or not used' and 'technique used'.

5.2.2   Cost Benefit of Marketing Research

An extensive literature review did not reveal any studies prior to the Travel Agents Study (Yaman and Shaw 1998) that attempted to measure managers' perception of the cost benefit (value) of marketing research. This is with the exception of one item in the USER instrument that was included with the report attribute measures: 'the information provided was worth the money spent on it'. This item, along with the three items that showed good reliability after the Travel Agents Study, comprised the cost benefit macro variable. All items were assessed on six-point Likert scales ranging from '1 = disagree strongly' to '6 = agree strongly'. The items were then combined into a single macro variable named COST.

5.2.3   Information Culture

The information culture construct was conceptualised as having three dimensional characteristics. These dimensions are top management risk aversion, intelligence dissemination, and innovativeness. These dimensions are commensurate with the studies on market orientation by Jaworski and Kohli (1993), and Kohli, Jaworski, and Kumar (1993). As well as these works, the three questions reflect minor modification of the works of Menon and Varadarajan (1992), Rogers (1995) and Zaltman (1996). The items were assessed on six-point Likert scales as above. The aggregation of the variables comprised the macro variable INFORM.

5.2.4   Environmental Factors

This construct was conceptualised as having three separate dimensions. These dimensions are market turbulence, competitive intensity, and technological turbulence. The items that were used to measure this construct were largely based on the works of Houston (1986), Jaworski and Kohli (1993) and Menon and Wilcox (1994). All items, except one, were taken from the literature (Jaworski and Kohli

1993) with minor modifications. The questions were assessed on six-point Likert scales. The eight items that measured three separate dimensions of environmental volatility were then combined to create the subset of ENVIRO.

5.2.5   Organisational Structure

The structural characteristics of an organisation have been defined for the purpose of this thesis as the degree of the decentralisation of authority (flexibility of decision-making for the more junior members of management team) and the formalisation of operational procedures. This definition is then operationalised in terms of the underlying structural dimensions of centralisation and formalisation.

Deshpandè and Zaltman (1982, p. 18) refer to two principal methods that can be used to study these concepts:

> 'One method … focuses on institutional measures that examine span of control, worker/supervisor ratios, distribution of employees across functional areas, and other indices of an organisation chart … This approach has been strongly criticised as producing extremely low internal reliability.'

The other principal method uses responses to questionnaire items, which ask respondents to indicate their level of agreement with a series of statements (Hall 1972 in Deshpandè and Zaltman 1982).

In addition to the above rationale, it can be added that the institutional measures that inquire into designed structure may not be as suitable for the purposes of this research as measures that investigate emergent structure. Measures that tap into respondent perceptions of organisational structure are more pertinent to the problem investigated in this study than measures that purport to provide an objective view of the same construct.

The items that relate to the organisational structure concept are listed in Appendix 2, as those that measure centralisation and formalisation. These items were handled as discussed in the sections related to other variables by aggregating them into two subsets to form the macro variables FORMAL and CENTRAL.

5.2.5   Utilisation of Marketing Research Findings

The 17 items that measured the three dimensions of the utilisation construct were taken from Menon and Wilcox (1994). These items were already used in the

exploratory study on marketing research utilisation in tourism, the Tourism 95 study (Yaman and Shaw 1998). Only one item out of the 18 used by Menon and Wilcox was discarded after the pretesting of the instrument with industry executives. The items were first aggregated into one macro variable to form the subset UTIL. This was the subset used for most of the analyses, which did not discriminate between the instrumental and conceptual uses of marketing research studies. Separately, three subsets were formed to represent the three separate dimensions of utilisation (instrumental, conceptual, and affective) for a separate analysis that was not included in the general model.

The reason for the consideration of the utilisation construct as one index, without the discrimination of various forms of use, has been discussed in the earlier chapters and will be touched on again during the discussion of the analyses.

5.2.6 Attributes of Marketing Research Report

The attributes of a marketing research report were conceptualised to have two separate dimensions. These dimensions are quality of content and the quality of form. The six items that measure the attributes were based on the USER instrument (Menon and Wilcox 1994) as tested by the earlier exploratory study (Yaman and Shaw 1998a). As with the other variables the items were assessed using a six-point Likert type scale and later were aggregated to form the macro variable ATTRIB.

5.2.7 Evaluation of Marketing Research

There were no prior studies that measured the evaluation procedures of organisations with respect to marketing research activity. The evaluation process was conceptualised as the approval of, and objective-setting for, the project (two items), individual and overall evaluation after the completion of the project (two items), and the frequency of projects (one item). All items were originally designed by the investigator, partly based on the experience gained from the two earlier exploratory studies. Items then were aggregated into the one macro variable of EVAL, which was used in the analyses.

5.2.8 Performance Outcomes of Marketing Research Use (Financial Outcomes)

As discussed earlier, no previous study attempted to investigate the effect of

marketing research on organisational performance. There were, however, many discussions on the subject in the strategy literature (Bracker et al. 1998, Capon et al. 1990, Jaworski and Kohli 1993, Miller and Cardinal 1994, Narver and Slater 1990, Pearce et al. 1987, Phillips 1996). It was thought that this measure would have the widest universal appeal among the variables in the study as it was of particular importance to managers and researchers. The items (all original) were designed to measure the effect of marketing research on financial performance through its various dimensions. Firstly, the general existence of formal systems of evaluation was queried (item 63). Secondly, the importance placed on intuition in determining the usefulness of marketing research was measured (item 64). Thirdly, through three separate items the effect of marketing research on the unit sales, on the profit margin, and on the return on investment was measured (items 65 to 67). Fourthly, through four questions the influence of marketing research on the four Ps of marketing (see McCarthy et al. 1997, p. 43) was measured (items 68 to 71). Finally, three questions measured the organisation's financial performance in general (items 73 and 74) and the decision-makers' satisfaction level with the contribution of marketing research to financial performance (item 75). Items 63 to 74 were aggregated to form the macro variable FINANCE. Item 75 was recoded as SATIS.

5.2.9 Performance Outcomes of Marketing Research Use (Other Than Financial)

This construct was conceptualised as employee morale and *esprit de corps* in line with the work of Kohli and Jaworski (1990). The conceptualisation was also cognate with the work on strategy (Langley 1988, Pearce et al. 1987, Ramanujam et al. 1986a). The measurement (six-point Likert type scale) and the creation of the macro variable QUAL followed the same procedure described earlier.

5.3 Marketing Research Use in Tourism: A Status Report

This section consists of a descriptive presentation of data that were collected during the 'Tourism 98' survey. The main objective of this section is to convey an understanding of the role that marketing research plays in the management of tourism organisations in Australia. Firstly, characteristics of participating organisations and individual respondents are presented. Secondly, the organisational structure for marketing research, and the research techniques and activities that are utilised are

summarised. Thirdly, organisations' use of marketing research studies in making policy and strategy decisions, developing knowledge, and promoting organisational learning is presented. Finally, organisations' evaluation of marketing research activity and respondents' perception of the contribution of marketing research to organisational performance is outlined. Development and analyses of specific hypotheses and a discussion of the testing of the conceptual model will be offered in Chapter 6.

5.3.1 Participating Organisations by Industry Sector

The original 13 sectors outlined earlier were collapsed into four main sectors for the purposes of analysis. Accommodation organisations (such as hotels and resorts) and foodservice organisations (such as caterers and restaurants) were grouped under the heading of *hospitality*. Retail and wholesale travel organisations (such as travel agencies and tour packagers), and transport organisations (such as airline and shipping companies) were grouped under the heading of *travel*. Attraction organisations (such as zoo and theme park managements), and events organisations (such as professional conference organisers and festival managements) were grouped under the heading of *event / attraction*. Non-profit tourism industry associations (such as the Australian Tourist Commission) were grouped under the heading of *support*. The event / attraction sector provided the highest proportion of respondents at 36 per cent. Hospitality organisations comprised 30 per cent of respondents. Travel and support sectors provided 18 and 16 per cent of respondents, respectively. Figure 5.1 is a graphic depiction of respondents by industry sector.

Figure 5.1: Participants by Industry Sector
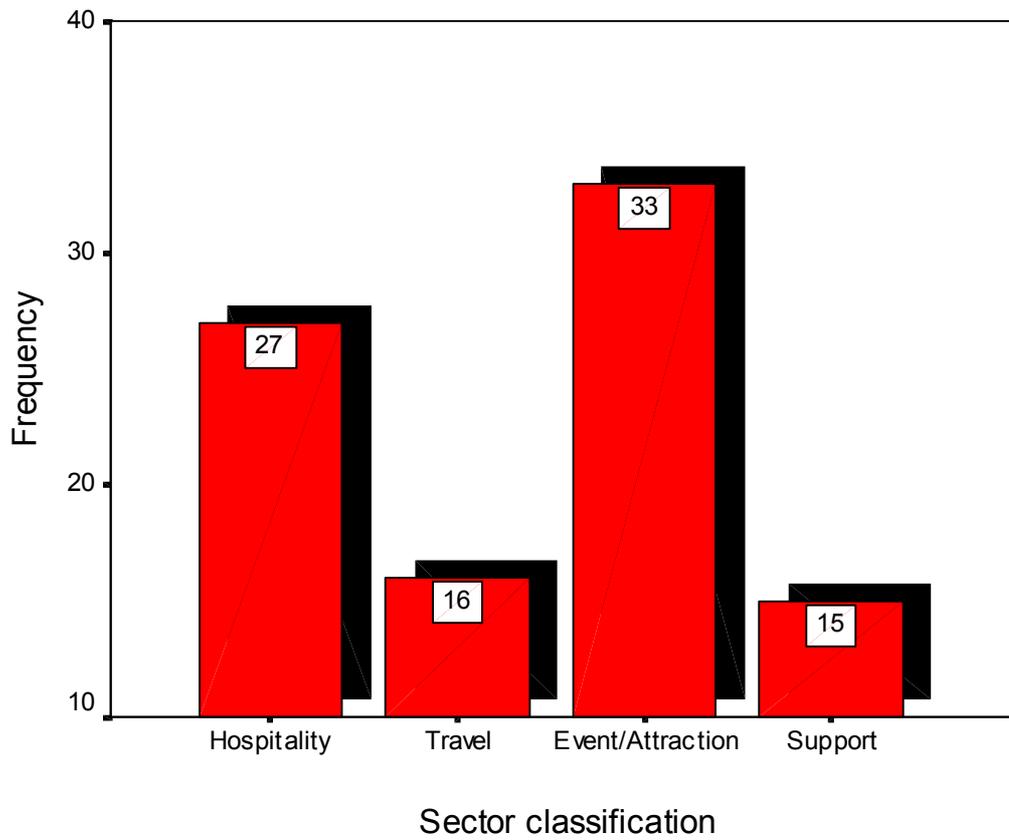
5.3.1.1 Participating Organisations by Annual Revenue

The majority of participating organisations (53 per cent) declared annual revenue between $5m. and $99.9m. Twenty-five per cent of participants were larger organisations with annual revenue in excess of $100m. Twenty-three per cent had revenues below $1m. per annum. Two organisations declined to reveal their annual revenue. Frequency results are displayed in Figure 5.2.

Figure 5.2: Respondents by Annual Revenue
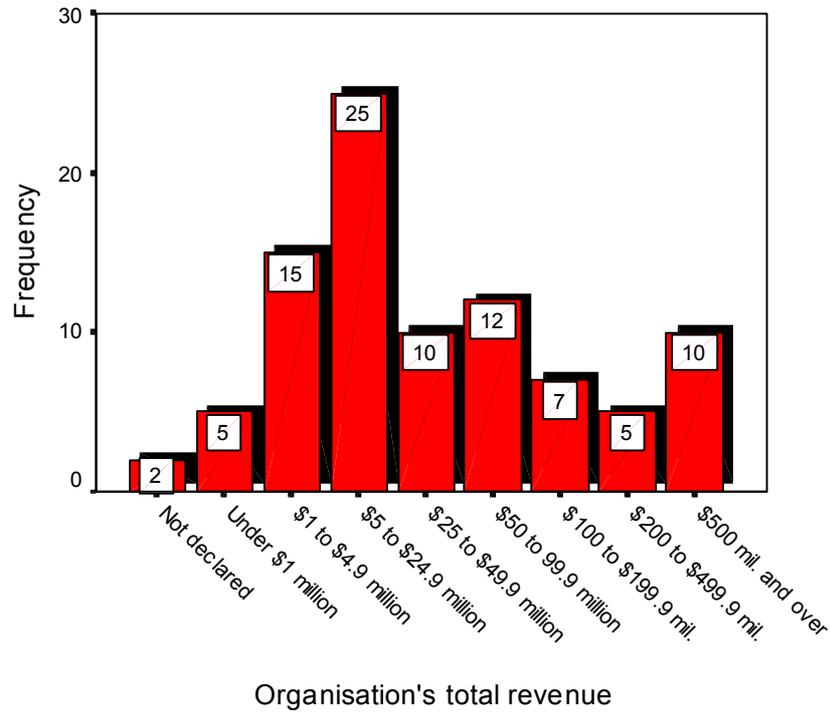
5.3.1.2 Participating Organisations by Number of Staff Employed

More than 71 per cent of respondents employed more than 100 staff in their total organisation. Only 12 per cent of participating organisations could be classified as small enterprises, with fewer than 20 employees (Department of Industry, Technology and Regional Development 1995). Results are displayed in Figure 5.3.

Figure 5.3: Respondents by Number of Staff Employed
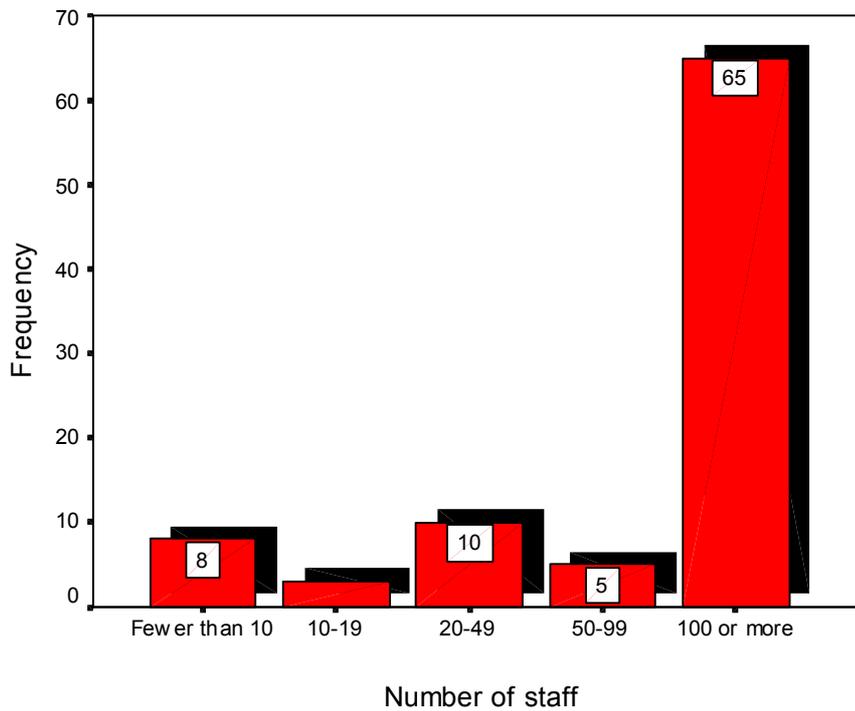
5.3.1.3 Responding Executives by Position

The study was specifically aimed at those executives in the organisation who were in a decision-making position for the commissioning and conduct of marketing research or, in the absence of such a position, in charge of marketing operations.

One executive in charge of a small but prominent event management organisation referred to himself as the owner / operator. Other titles ranged from managing director (3) through to senior manager (41) and department manager (32). There was not always a congruity with the titles given on the questionnaire with those used on the business cards. For example, some group marketing directors described themselves as general managers, while others preferred the title of senior manager. Results are shown in Table 5.1.

Table 5.1: Responding Executives by Position

Position	Frequency	Percentage
Owner / Operator	1	1
Managing Director	3	3
Chief Executive Officer	3	3
General Manager	11	12
Senior Manager	41	45
Department Manager	32	35
TOTAL	91	100

5.3.2   Organisational Structure for Marketing Research

Respondents were asked about the degree of formality of their internal marketing research organisation, ranging from the absence of anyone specifically assigned to marketing research, through the assignment of at least part of a person's time, to the operation of a formally-designated marketing research department. The study found that the majority of the organisations (88 per cent) had at least part of one employee's time assigned to marketing research. Of those, 28 had a formal marketing research department. Results are depicted in Table 5.2.

Table 5.2: Marketing Research Organisation

Marketing Research Organisation	Frequency	Percentage
Central Marketing Research Department	25	28
Central Marketing Research Department with division elsewhere	3	3
At least part of one person's time assigned to marketing research	52	57
No employees engaged in marketing research	11	12
TOTAL	91	100

Three of the participating organisations declined to disclose their marketing research budgets. The majority (58 per cent) declared a marketing research budget of up to $5,000, where only six organisations had no marketing research budget. The marketing research budget of respondents is outlined in Table 5.3.

Table 5.3: Marketing Research Budget

Annual Marketing Research Budget	Frequency	Percentage
No marketing research budget	6	7
Up to $5,000	53	58
$5,001 to $200,000	15	17
$200,001 to $999,999	9	10
$1m and more	5	5
Undisclosed	3	3
TOTAL	91	100

5.3.3 Marketing Research Activities

Respondents were asked to indicate which of the specific marketing research activities they had performed, their frequency, and whether the research was developed and analysed internally or externally. Marketing research activities were categorised under eight broad headings: A. Pricing Studies; B. Buying Behaviour Studies; C. Distribution and Sales Force Studies; D. Product Studies; E. Promotion Studies; F. Business / Economic and Corporate Studies; G. Internal Studies; and H. Other Studies. Results are summarised in Tables 5.4 and 5.5.

Table 5.4: Marketing Research Activity of Organisations

Research Activity	Number of Respondents Conducting	Percentage of Participants Conducting	Rank
Buying Behaviour Studies	78	85.7	1
Promotion Studies	74	81.4	2
Product Studies	68	74.8	3
Pricing Studies	60	66.0	4
Business / Economic and Corporate Studies	59	64.9	5
Internal Studies	53	58.3	6
Distribution and Sales Force Studies	43	47.3	7
Other Studies	8	8.8	8

From Table 5.4 it is observable that nearly 86 per cent of respondents reported the performance of a research activity under the group of Buying Behaviour Studies, which was detailed in the questionnaire as incorporating brand preference, brand attitudes, product satisfaction, purchase behaviour, and segmentation data studies. This was closely followed by Promotion Studies (81 per cent), which included motivation, media copy, advertising effectiveness, competitive advertising, and public image research. Product Studies (concept, brand name, existing product, competitive product, packaging design testing) were performed by 75 per cent of the responding organisations and Pricing Studies, which incorporated cost, profit, price elasticity, and demand analysis studies were performed by 66 per cent. Industry and market trends,

and share data, which the questionnaire listed under the heading Business / Economic and Corporate Studies, were performed by 65 per cent of the respondents. Internal Studies (internal employee data such as employee morale, job satisfaction) were performed by 53 respondents (58 per cent). Distribution and Sales Force Studies, which were defined as channel performance, channel coverage, sales force compensation, and sales force quota research, came last in the ranking of research activities with 43 respondents (47 per cent) reporting the conduct of such studies. Eight respondents reported conducting research that, in their perception, did not fit into any of the seven groupings. These activities were listed as response tracking, gaming studies, tele-marketing, visitor tracking, crowd-movement studies, new resort development research, a survey of stakeholders, and member satisfaction surveys. In reality, each of these activities that respondents insisted on listing under the heading of 'other studies' could be classified in one of the seven main classifications. Response tracking, tele-marketing, crowd-movement, and stakeholder surveys fit under the grouping of Promotion Studies. Visitor tracking is a Buying Behaviour study. Gaming studies is essentially a Product Study for gaming organisations, and member satisfaction studies and new resort development research could be seen as part of Business / Economic and Corporate Studies. There is general disagreement on, or indifference towards, definitions among managers. In reality it makes little difference whether response tracking is an advertising effectiveness study or not, as long as it produces the desired result for management decision-making. However, it is of some academic importance for studies such as the current one. None of the previous studies into knowledge utilisation mentions any attempt to ensure a consensus of terms and definitions.

A total of 86 organisations (95 per cent) reported conducting research in at least one of the eight main groups of activities. Buying Behaviour Studies represented the most commonly performed research activity, closely followed by Promotion Studies, reflecting the importance placed by management on understanding the customer behaviour and cost-effectiveness of promotion. The relatively low ranking of Employee Studies could be misleading as in the majority of organisations this group of research activity was seen as the domain of Human Resources, and only in some of them was the marketing or marketing research department assigned to the conduct of this type of research. In other organisations, Human Resource departments conducted

their own employee morale and employee satisfaction studies.

As well as the frequency of research activity, respondents were asked to indicate whether marketing research project development and data analysis were conducted by the organisation or outsourced. Results can be observed in Table 5. In total, 94 per cent of those organisations that conducted marketing research activity outsourced either the development of projects or the analysis of the results. The development of Promotion Studies projects was the most frequently outsourced (54 per cent of organisations conducting research), closely followed by Buying Behaviour Studies (53 per cent) and Product Studies (50 per cent). Business / Economic and Corporate Studies were developed by firms outside the respondent organisations in 37 per cent of the cases. The development of Pricing Studies was outsourced by 34 per cent of organisations conducting research. Distribution and Sales Force Studies were outsourced in 24 per cent, and Internal Studies were outsourced in 20 per cent of the cases. Two organisations outsourced research they classified under 'Other Studies'.

It was interesting to note that not all organisations that outsourced research projects left the analysis of results to the firms that conducted the research.

Table 5.5: Outsourcing of Marketing Research Project Development and Data Analysis

Research Activity	Number Outsourcing Development	Number Outsourcing Analysis	Rank
Promotion Studies	46	47	1
Buying Behaviour Studies	45	42	2
Product Studies	43	42	3
Business / Economic and Corporate Studies	32	29	4
Pricing Studies	29	29	5
Distribution and Sales Force Studies	21	18	6
Internal Studies	17	15	7
Other Studies	2	2	8

5.3.4 Use of Marketing Research Techniques

Respondents were presented with a variety of research techniques and approaches, and were asked to indicate whether they recognised the technique and, if so, whether they utilised it. A total of 41 research techniques and approaches were categorised under five broad headings: A. Research Design; B. Sampling Procedures; C. Data Gathering; D. Measurement; and E. Analysis. Results are summarised in Table 5.6.

In the Research Design component of the question, more than 82 per cent of respondents (n=75) either did not use longitudinal designs or did not recognise the term. Even the most basic research design, descriptive, was not recognised and/or used by 56 per cent of respondents. In the Sampling Procedures section, the least used/recognised procedure was cluster sampling (76 per cent) followed by systematic sampling (74 per cent).

Recognition / use of data gathering techniques fared the best. As would be expected, the most commonly used data gathering method was the utilisation of internal company records (82 per cent). Most tourism organisations (particularly hospitality organisations) have the advantage of collecting demographic data on their customers through the compulsory means, such as registration slips, often required by law. It was found that most organisations used this information to assist with some decisions

such as the measurement of advertising effectiveness and the determination of the demographics of their market. The second most common data gathering source was through personal interview (77 per cent), closely followed by syndicated sources (76 per cent) and focus group interviews (76 per cent). Telephone and mail interviews also fared well (71 per cent), whereas the consumer observation techniques were used by a relatively smaller group of organisations (60 per cent). Results also showed that tourism organisations were slow to adopt new technological techniques. Twenty-one per cent of the organisations surveyed stated that they used the Internet website surveys as a data gathering technique. The Internet targeted newsgroup surveys were utilised by only 2 per cent of tourism organisations.

More than half of the respondents (55 per cent) did not recognise / use the most elementary measurement technique, the nominal scale. When it came to more technical-sounding measurement scales, e.g., Likert and paired comparison, recognition / usage dropped alarmingly (28 per cent and 18 per cent respectively).

The question on the techniques of analysis gave similar results. Forty-four per cent of respondents stated that they did not recognise / use measures of central tendency (e.g., median, mean). On the more selectively used analysis techniques, such as discriminant analysis and multidimensional scaling, the recognition / usage rate was minimal (8 per cent and 9 per cent respectively).

It must be noted that this question attempted to measure the recognition / use of the techniques by the responding executive. For example, a professional research firm contracted by the responding organisation may have used a particular analysis technique, such as cluster analysis. The term may not have been indicated in the final report or the respondent may have been familiar with the technique without knowing the actual technical term for it. Considering the size of the organisations surveyed and the educational background of the responding executives, these results are still confounding. The majority of the respondents (74 per cent) had post-secondary education in tourism or other business disciplines. They were all involved in high-level decision making in marketing and a number of them were specialists in marketing research. Some familiarity with the commonly used terms would have been expected even when the respondent was only involved in the commissioning of the research activity and not the actual conduct of it. Results indicate a serious

shortcoming in the education of business graduates in Australia, at least when it comes to tourism.

The lack of a significant relationship between the education level of respondents and their recognition / use of marketing research techniques was of interest. It would have been expected that respondents who were formally educated in a business discipline would be more familiar with the various techniques. Further research may attempt to determine the adequacy of technical and higher business education in this respect.

Table 5.6: Utilisation of Marketing Research Techniques

Research Technique	Do not recognise / use (N)	Do not recognise / use (%)	Use (N)	Use (%)
A. Research Design				
1. Descriptive	51	56.0	40	44
2. Cross-sectional	56	61.6	35	38
3. Longitudinal	75	82.4	16	17
4. Causal (experimentation)	69	75.9	22	24
B. Sampling Procedures				
1. Simple random sampling	26	28.6	65	71
2. Stratified sampling	57	62.6	34	37
3. Quota sampling	56	61.6	35	38
4. Judgmental sampling	63	69.3	28	30
5. Cluster sampling	69	75.8	22	24
6. Convenience sampling	62	68.1	29	31
7. Systematic sampling	67	73.7	24	26
8. Area sampling	58	63.8	33	36
C. Data Gathering				
1. Syndicated data (government/ trade/association)	22	24.2	69	75
2. Internal company records	16	17.6	75	82
3. Personal interviews	21	23.0	70	77
4. Telephone interviews	26	28.6	65	71
5. Mail surveys	26	28.6	65	71
6. Focus group interviews	22	24.2	69	75
7. Consumer observation	37	40.7	54	60
8. Internet website surveys	72	79.1	19	21
9. Internet targeted newsgroup surveys	89	97.8	2	2
D. Measurement				
1. Nominal scale	50	55.0	41	45
2. Ranking scale	44	48.4	47	52
3. Rating scale	47	51.7	44	48
4. Likert scale	66	72.5	25	27
5. Paired comparison scale	75	82.4	16	18
E. Analysis				
1. Measures of central tendency (e.g., median, mean)	40	44.0	51	56
2. Measures of dispersion (e.g., range, standard deviation)	47	51.7	44	48
3. Correlation analysis	54	59.4	37	40
4. Regression analysis	71	78.0	20	22
5. Confidence intervals	67	73.7	24	26
6. Time series analysis	69	75.8	22	24
7. Chi-square analysis	79	86.8	12	13
8. Other statistical tests of significance	67	73.7	24	26
9. Analysis of variance/covariance	76	83.6	15	16
10. Factor analysis	69	75.8	22	24
11. Cluster analysis	72	79.1	19	21
12. Conjoint analysis	83	91.2	8	9
13. Choice modelling	81	89.0	10	11
14. Multidimensional scaling	83	91.2	8	9
15. Discriminant analysis	84	92.3	7	8

5.3.5 Cost Effectiveness Perception of Marketing Research

Four separate questions were asked to determine respondents' perception of the cost effectiveness of marketing research. Because the majority of respondents were marketing professionals who were employed by larger tourism organisations, a bias towards the cost effectiveness of research was anticipated. To minimise this bias, two of the questions related to small organisations. A universally accepted definition of a small organisation as one that employs fewer than 20 personnel (Department of Industry, Technology and Regional Development 1995) was used. The fourth question referred to the most recent marketing research project with which respondents had a direct involvement. Results are presented as mean responses in Table 5.7.

The great majority of respondents (87 per cent) agreed with the statement that marketing research frequently produced results that justified the cost in time and money. Similarly, 87 per cent of respondents agreed that the information provided as a result of the most recent marketing research project with which they had a direct involvement was worth the financial investment. When it came to cost effectiveness of marketing research for small organisations they were less enthusiastic. Fifty-five per cent of them expressed agreement with the statement which suggested that marketing research was affordable to small organisations and with the statement that managers can conduct marketing research within the time available to them.

Table 5.7: Respondent Perceptions of Cost Effectiveness of Marketing Research

Items	Mean	Std. Dev.	Min.	Max.
Marketing research is affordable enough to be undertaken by small organisations.	3.5	1.5	1	6
Small organisations can conduct marketing research within the time available to managers.	3.6	1.5	1	6
Marketing research frequently produces results that justify the cost in time and money invested into it	4.7	1.1	2	6
The information provided was worth the money spent on it.	4.8	1.2	1	6

Note: Questions were assessed on six-point scales: 1=Disagree strongly, 6=Agree strongly.

5.3.6 Form of Utilisation of Marketing Research

Respondents were asked to comment on the outcomes of a marketing research project with which they had had an active involvement. These questions were intended to measure organisations' use of marketing research studies in making policy and strategy decisions, developing knowledge, and promoting organisational learning. Results of the 17 questions that inquired into respondents' perception of the form of utilisation of marketing research are displayed in Table 5.8 as the mean of total responses. Questions are listed in the order in which they appeared in the questionnaire.

Table 5.8: Form of Utilisation of Marketing Research

Items	Mean	Std. Dev.	Min.	Max.
It was worth waiting for the research results because some of them materially influenced a decision.	4.8	1.2	1	6
We learned from having to clarify the problem to be addressed by the research.	4.6	1.0	2	6
The research study was used to promote awareness and appreciation of an issue of importance.	4.7	1.1	1	6
The study results were used to learn something new about our business.	4.6	1.1	2	6
The research was used for the sake of appearance.	2.0	1.2	1	6
The study results provided new knowledge about something.	4.7	1.0	1	6
We gained new insights while providing the researchers with background information on the organisation, business, and/or competitive situation.	4.2	1.3	1	6
Apart from what we learned from the results, doing the study was educational.	4.5	1.3	1	6
It is possible that without the research results a different decision would have been made.	4.5	1.3	1	6
A decision based on the research project was easy to reconcile with the results of the project.	4.5	1.1	1	6
The study was used to make a decision which was consistent with at least some of the findings and conclusions.	4.8	1.0	1	6
The study results were used to provide new insights.	4.6	1.0	2	6
The study was used for political purposes.	3.4	1.6	1	6
The research study was used to build awareness and commitment.	4.5	1.3	1	6
The study was used to validate or confirm our understanding of something.	5.0	1.0	2	6
The results of the study were used to make a decision in accordance with its recommendations.	4.8	1.1	1	6
One or more findings of the study had a substantial direct impact on a decision.	4.8	1.2	1	6

Note: Questions were assessed on 6-point scales: 1=Disagree strongly, 6=Agree strongly.

Results indicate that the majority of respondents have a highly positive perception of the usefulness of marketing research. The most positive perception of the use of

marketing research was regarding its confirmatory value for managers. Ninety per cent of respondents agreed with the statement that the marketing research study was used to validate or confirm their understanding of something. The influence of marketing research findings on managerial decision-making was also confirmed with 89 per cent of respondents agreeing with the statements that the results of the marketing research study were used to make a decision in accordance with its recommendations, and that the findings of the study had a substantial direct impact on a decision. Similarly, 87 per cent of respondents thought that it was worth waiting for the research results because some of them materially influenced a decision.

Perceptions of the influence of marketing research in developing knowledge and promoting organisational learning were also positive, albeit a little reserved. Sixty-nine per cent of respondents thought that doing the study in itself was an educational experience, and 67 per cent agreed with the statement that the study was used to build awareness and commitment.

In contrast, according to the managers surveyed, the affective use of marketing research was minimal. Only 11 per cent of respondents thought that the research project was used for the sake of appearance only. However, the political use of marketing research was also acknowledged with 47 per cent of respondents agreeing with the statement that the marketing research study was used for political purposes. As one manager pointed out, "because it was politically manipulated does not mean that the study was otherwise useless, it just means that in an organisation everything has a political facet to it".

5.3.7 Perceptions of the Quality of the Research Project

Respondents were asked for their perception of the quality of the research project they were involved in. The results are presented in Table 5.9. Uniformly, all perceptions on the quality of studies were positive. It is interesting to note that 98 per cent of managers thought that the information gathering practices were appropriate, with only 2 per cent of them "somewhat disagreeing" with the statement.

Table 5.9: Perceptions of the Quality of Research Report Attributes

Items	Mean	Std. Dev.	Min.	Max.
The analysis of the data was straightforward and simple enough to understand without expert technical knowledge.	4.7	1.3	1	6
There was sufficient interpretation or explanation of the findings.	4.8	0.9	2	6
Tables/graphs/statistics were appropriately used to illustrate and enhance important points.	4.7	1.2	2	6
The language of the research report/presentation was clear.	4.9	1.0	2	6
The way information was gathered was appropriate.	5.1	0.8	3	6
The technical quality of the research was high.	4.7	1.1	1	6

Note: Questions were assessed on 6-point scales: 1=Disagree strongly, 6=Agree strongly.

5.3.8 Global Measures of Forms of Use

Respondents were presented with three statements relating to three major dimensions of marketing research use conceptualisation.

These three global measures were first offered as summates to act as surrogates for the three facets of research use (namely instrumental, knowledge-enhancing and symbolic) measured by the 17-item inventory discussed earlier (Menon and Wilcox 1994). The original rationale for the inclusion of the summates was to improve the usefulness of the questionnaires as a practical audit instrument. It was suggested that

organisations seeking a practical way of conducting a research audit or evaluating decision-makers would prefer a more accessible instrument. They were included in the present study to determine whether an industry and culture specific form of the questionnaire would produce similar results. The results, presented in Table 5.10, indicate agreement with the results of related items on the 17-item scale outlined earlier.

Table 5.10: Global Measures of Instrumental Use, Knowledge-Enhancement and Symbolic Use

Items	Mean	Std. Dev.	Min.	Max.
Overall, rate the degree to which, rightly or wrongly, the results of the study were influential in the final decision[a].	4.6	1.1	1	6
Overall, rate the degree to which something new was learned from the research results and/or from having this research conducted[b].	4.5	0.9	2	6
Overall, to what extent was "being seen to be doing the research" more important than the actual utilisation of the research project[c].	2.3	1.2	1	6

Note: Questions were assessed on 6-point scales: [a] 1=Not influential, 6=Strongly influential.
[b] 1=Nothing learned, 6=Learned a great deal
[c] 1=Extremely unimportant, 6=Extremely important

5.3.9   Perceptions of Centralisation and Formalisation

Seven questions in the research instrument referred to respondents' perceptions of the centralisation of decision-making and the formalisation of operational procedures in their organisations. The results, presented in Table 5.11, show that tourism organisations in general are perceived as reasonably formalised entities with more than average centralisation of decision-making. The level of disagreement with the second centralisation statement is particularly interesting. More than 79 per cent of respondents disagreed with the statement which suggested that junior and middle level managers were encouraged to make their own decisions. It appears that

managerial empowerment theories have not had much impact in tourism organisations. Similarly, 75 per cent of respondents stated that they had to refer even small matters to their superiors for final answers, with 24 per cent agreeing strongly with the statement. Considering that the great majority of the managers interviewed occupied senior positions, this finding has serious implications for the decision-making procedures of tourism organisations.

Although responses to the statements on formalisation of operational procedures gave similar results to those of centralisation, these need some qualification. Seventy-eight per cent of respondents agreed with the statement that there was a complete job description for their position. However, at the conclusion of the structured personal interviews many of the managers pointed out that the fact that there was a written job description did not mean that their duties were the same, in reality, to those that are described. Similarly, some managers alerted the interviewer to the fact that 'written records' were often used as political weapons rather than genuine performance appraisal tools. The last two statements on the existence of formal operational procedures were also qualified. Managers pointed to the fact that most of the strict operational procedures were required by local, state and federal laws and statutes as compulsory health and safety measures. Event and attraction managers, in particular, commented that this strict adherence to rules did not extend to more mundane daily operational procedures.

Table 5.11: Perceptions of Centralisation and Formalisation

Items	Mean	Std. Dev.	Min.	Max.
Centralisation:				
There is little action taken in this organisation until a superior approves the decision.	3.2	1.4	1	6
In this organisation, junior and middle level managers are encouraged to make their own decisions.	2.7	1.3	1	6
Even small matters on this job have to be referred to someone higher up for final answers.	4.4	1.4	1	6
Formalisation:				
There is a complete job description for my position.	4.6	1.6	1	6
The organisation keeps a written record of everyone's performance.	3.9	1.6	1	6
We follow strict operational procedures at all times.	3.6	1.5	1	6
Whenever situations arise, we have procedures to follow in dealing with them.	3.7	1.5	1	6

Note: Questions were assessed on six-point scales: 1=Disagree strongly, 6=Agree strongly.

Responses to centralisation and formalisation questions were analysed within the context of each of the four sectors of the tourism industry. Disaggregation of the questions on centralisation did not reveal anything new, as the responses were nearly uniform across sectors. Sector analysis of responses to centralisation statements was somewhat different. The results, presented as the mean of total responses, are shown in Table 5.12. It can be seen that managers in the hospitality sector perceive that their organisations are more formalised when it comes to written records of performance, especially when compared to event / attraction organisations. This can be explained by the fact that event organisations greatly rely on voluntary workers. The same phenomenon may be responsible for the considerable difference between event / attraction and support organisations on the perception of having formal procedures in

place to deal with most situations.

Table 5.12: Sector Specific Responses to Formalisation Statements

Sector		Q25 Job Description	Q26 Written. Record	Q27 Strict Ops. Procedure	Q28 Procs.
Hospitality	Mean	4.7	4.7	3.7	3.8
	N	27	27	27	27
	Std. Deviation	1.6	1.1	1.4	1.4
Travel	Mean	4.4	3.7	3.8	3.7
	N	16	16	16	16
	Std. Deviation	1.5	1.7	1.5	1.5
Event/Attraction	Mean	4.7	3.3	3.8	4.0
	N	33	33	33	33
	Std. Deviation	1.7	1.7	1.6	1.6
Support	Mean	4.3	4.1	3.1	3.0
	N	15	15	15	15
	Std. Deviation	1.8	1.8	1.3	1.6
Total	Mean	4.5	3.9	3.6	3.7
	N	91	91	91	91
	Std. Deviation	1.6	1.6	1.5	1.5

5.3.10 Perceptions of Business Environment

Eight questions in the research instrument referred to respondents' perceptions of the business environment defined in terms of market turbulence, competitive intensity, and technological turbulence. The results, presented in Table 5.13, show that tourism executives in general believe that their businesses operate in a reasonably turbulent market where the competition is highly "cut-throat". They believe that the technology is changing very rapidly and the technological changes are providing new opportunities. Overall, 58 per cent of the respondents agreed with the statement that suggested the needs and wants of their customers changed very often. However, only 49 per cent thought that their customer base remained relatively unchanged over the years.

Seventy-three per cent of respondents agreed with the statement which suggested that the competition in the industry could be termed "cut-throat". However, only 53 per cent thought that the price competition was the hallmark of the industry, and 47 per cent agreed with the statement that suggested offers could be matched among the

competitors readily.

Reaction to technological turbulence appeared, in general, positive. Seventy per cent of respondents agreed with the statement which suggested that the technology in the industry was changing rapidly and 83 per cent thought that the technological changes provided important opportunities. Eighty per cent of the executive thought that technological breakthroughs made a large number of new product ideas possible

Table 5.13: Perceptions of Business Environment

Items	Mean	Std. Dev.	Min.	Max.
Our customers' needs and wants change very often	3.8	1.2	1	6
Our customer base changed very little over the years	3.6	1.4	1	6
Competition in our industry can be termed "cut throat".	4.3	1.5	1	6
Price competition is a hallmark of our industry	3.8	1.5	1	6
Anything that one competitor of ours can offer, others can match readily.	3.5	1.5	1	6
The technology in our industry is changing rapidly.	4.6	1.3	1	6
Technological changes provide important opportunities in our industry.	4.8	1.1	1	6
A large number of new product ideas has been made possible through technological breakthroughs in our industry.	3.9	1.3	1	6

Note: Questions were assessed on six-point scales: 1=Disagree strongly, 6=Agree strongly.

Responses to environmental turbulence questions were analysed within the context of each of the four sectors of the tourism industry. The results, presented as the mean of total responses, are shown in Table 5.14. The responses to market turbulence questions were nearly uniform across sectors, except that support organisations perceived a more turbulent environment than hospitality, travel and event / attraction sectors. Sector analysis of responses to competitive intensity statements showed that

event / attraction executives, in general, did not perceive the environment as being particularly competitive. This was in contrast with hospitality and travel sectors which perceived the environment as being highly competitive. This finding supports the previous study in the same area which found that travel agency executives perceived their environment as highly competitive and the main product particularly difficult to differentiate (Yaman and Shaw 1997). All sectors agreed strongly with the statements concerning technological turbulence, which included the effect of technology to new product innovation. Again, event / attraction executives were more reticent in their agreement when compared with the other sectors.

Table 5.14: Sector Specific Responses to Business Environment Statements

Sector		Market Turbulence (Q12-13)	Competitive Intensity (Q14-16)	Technological Turbulence (Q17-19)
Hospitality	Mean	3.5	4.4	4.7
	N	27	27	27
	Std. Deviation	0.9	1.0	0.8
Travel	Mean	3.5	4.8	4.7
	N	16	16	16
	Std. Deviation	1.1	1.0	1.0
Event/Attraction	Mean	3.7	3.0	3.9
	N	33	33	33
	Std. Deviation	1.0	0.9	1.2
Support	Mean	4.3	3.7	4.9
	N	15	15	15
	Std. Deviation	1.3	1.4	0.9
Total	Mean	3.8	3.8	4.4
	N	91	91	91
	Std. Deviation	1.0	1.2	1.1

5.3.11 Evaluation of Marketing Research Activity

Responses to the questions inquiring about the evaluation of marketing research activity in organisations indicate that the majority has systems in place to evaluate individual marketing research projects. The determination of specific objectives for marketing research projects appears to have a high priority. However, 53 per cent the organisations did not evaluate marketing research activity on an annual basis. Similarly, 59 per cent disagreed with the statement that suggested their organisations

had systems in place to measure the impact of marketing research projects on their financial performance.

Table 5.15: Evaluation of Marketing Research Activity

Items	Mean	Median	Std. Dev.	Min.	Max
In this organisation, each new marketing research project is approved separately.	4.9	5.0	1.3	1	6
In this organisation, specific objectives are set for each marketing research project.	5.0	5.0	1.2	1	6
In this organisation, each marketing research project is evaluated separately after its completion.	4.7	5.0	1.3	1	6
In this organisation, an overall evaluation of marketing research activity is conducted annually.	3.3	3.0	1.7	1	6
In this organisation, there is always some marketing research activity in progress.	4.0	4.0	1.8	1	6
We have systems in place to measure the impact of marketing research projects on our financial performance.	3.0	3.0	1.6	1	6

Note: Questions were assessed on 6-point scales: 1=Disagree strongly, 6=Agree strongly.

5.3.12 Perceptions of the Effect of Marketing Research on Organisational Performance

Respondents were asked for their perception of the effect of marketing research activity on the financial performance of their organisation. The results presented in Table 5.16 indicate that the majority of respondents had a positive opinion of the effect of marketing research on their organisations' financial performance, especially in the areas of promotional activity and new product introduction.

Table 5.16: Effect of Marketing Research on Organisational Performance
(Financial Outcomes)

Items	Mean	Median	Std. Dev.	Min.	Max.
At least partly as a result of marketing research activity, our unit sales last financial year increased compared to the previous year.	4.0	4.0	1.4	1	6
At least partly as a result of marketing research activity, our profit margin for the last financial year increased compared to the previous year.	3.8	4.0	1.5	1	6
At least partly as a result of marketing research activity, the organisation provided a better return on investment for its shareholders last year.	3.7	4.0	1.4	1	6
At least partly as a result of marketing research activity, we were able to introduce new products into the market last year.	4.2	5.0	1.5	1	6
At least partly as a result of marketing research activity, we were able to improve the effectiveness of our pricing policies last year.	3.7	4.0	1.5	1	6
At least partly as a result of marketing research activity, we were able to improve the effectiveness of our promotional activity last year.	4.5	5.0	1.4	1	6
At least partly as a result of marketing research activity, we were able to improve the effectiveness of our distribution activities last year.	3.6	4.0	1.7	1	6
At least partly as a result of marketing research activity, the percentage of new product sales to old product sales increased last year.	3.3	4.0	1.6	1	6

Note: Questions were assessed on 6-point scales: 1=Disagree strongly, 6=Agree strongly.

5.3.13 Perceptions of *Esprit de Corps* Among the Employees

The majority of executives responding perceived a high level of bonding and *esprit de corps* among the employees of their organisations.

Table 5.17: Relationship Between Marketing Research and Organisational
Performance
(Other than Financial Outcomes)

Items	Mean	Median	Std. Dev.	Min.	Max.
The bonds between this organisation and its employees are strong.	4.4	5.0	1.1	1	6
In general, employees are proud to work for this organisation.	4.8	5.0	1.1	1	6
Employees feel as though their future is intimately linked to that of this organisation.	4.3	4.0	1.1	1	6
A team spirit pervades all ranks in this organisation.	4.3	4.0	1.3	1	6
Few people in this organisation view themselves as independent individuals who have to tolerate others around them.	4.4	5.0	1.2	2	6
Most people in this organisation are genuinely concerned about the needs and problems of each other.	4.6	5.0	1.0	2	6

Note: Questions were assessed on 6-point scales: 1=Disagree strongly, 6=Agree strongly.

CHAPTER 6

HYPOTHESES AND RELIABILITY

The theoretical concepts that have been discussed in earlier chapters, and relevant literature citations that have already been developed, along with some others the relevance of which is confined to the composition of hypotheses, are brought together in this chapter in an attempt to answer the central question that was posed at the outset of this thesis: What are the factors that influence the use and consequences of marketing research information in tourism? Firstly, the empirical hypotheses to be tested are presented and tested. Secondly, a discussion of the methods of analysis that are employed is presented. Thirdly, reliability and validity issues in the research design and its operationalisation are presented.

6.1   Hypotheses

The diverse variables that have been suggested earlier as influencing the utilisation of marketing research information in particular, and marketing research orientation in general, in tourism organisations can be drawn together into a network of testable hypotheses. These hypotheses are detailed in this section with a brief rationale for their articulation. Most of these hypotheses are grounded in earlier literature (either in marketing, management, tourism theory, or organisational theory). This section will be followed by the analysis of research results through a number of subsets of the final model. Then these subsets will be elaborated into the complete model presented earlier in the thesis. The general model will be tested for causal implications in the last sections of this chapter.

6.1.1   Organisational Demographics

The demographics of the organisation refer to its vital statistics, such as its age and size. The exploratory study by Yaman and Shaw (1998b) indicated a positive relationship between the size of the organisation, and the number and type of marketing research activities conducted. As mentioned earlier, Rogers (1995, p. 379) reported that diffusion researchers had found consistently that the larger the organisation the more innovative it was. The size of the organisation serves as a

surrogate measure for a number of attributes that may lead to innovation in general and marketing research utilisation in particular, such as the availability of resources and the technical expertise of the individuals. Andreasen (1983) stated that most business managers perceived marketing research as costly and complicated, and understandable and affordable only to large companies. This study intentionally focuses on larger tourism organisations, many of which have formal marketing research departments, which presumably are more research-orientated. This hypothesis will test whether the organisation's size in terms of its annual revenue and the number of staff employed is an independent predictor of the level of its innovativeness as defined by marketing research activities conducted and marketing research techniques utilised.

> H_1: The larger the tourism organisation, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

6.1.2 Environmental Factors

Factors in the business environment of tourism organisations that are most likely to influence its marketing research orientation are conceptualised to be (1) market turbulence; (2) competitive intensity; and (3) technological turbulence.

6.1.2.1 Market Turbulence

Jaworski and Kohli (1993, p. 57) suggested that organisations "that operate in more turbulent markets are likely to have to modify their products … continually in order to satisfactorily cater to customers' changing preferences". Market turbulence is defined as "the rate of change in the composition of customers and their preferences" (ibid., p. 57). Tourism may be the main growth industry in the world today (Waters 1996). Tourism organisations, in general, operate in highly dynamic environments. In addition, it can be asserted that various sectors of the industry (for example, travel organisations, and hospitality organisations) operate under more turbulent environments in comparison to other sectors of the industry (tourism support organisations, and attraction management). In markets where customer preferences are subject to continuous change, there will be a need for increased marketing research activity, especially in those activities related to product development, and promotion.

6.1.2.2 Competitive Intensity

The connection between marketing research utilisation and business performance may also be influenced by the competitive intensity of the market in which a tourism organisation operates. Houston (1986) concluded that organisations perform well in the absence of competition, because customers have no choice outside what the organisation offers. Conversely, in highly competitive environments, customers have a number of options from which to choose. Consequently, organisations that operate in highly competitive environments may perform better if their marketing research utilisation is congruous and positive, as suggested by Menon and Wilcox (1994).

6.1.2.3 Technological Turbulence

Technological turbulence is defined as the rate of technological change in a business environment (Jaworski and Kohli 1993). Many innovative marketing research techniques are dependent on new technologies. Computerised travel reservation systems, hotel reservation systems, and other computer assisted technology make it easier to store and process data, and conduct preliminary analyses. Tourism organisations that work with nascent technologies that are in the process of constant change may be able to obtain competitive advantage through technological innovation (such as through the conduct of continuous in-house research), and may gradually have less need for empirically sound, detailed marketing research studies. Jaworski and Kohli (1993) advanced the proposition that technologically more adept organisations may diminish the importance of market orientation. Although there are no empirical studies on the effect of technology on the market orientation of tourism organisations to date, the marketing research process may not be insulated from the far-reaching effects of technological turbulence. Therefore:

> H_2: The more turbulent the external environment in which a tourism organisation operates, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

6.1.3 Appraisal of Marketing Research

6.1.3.1 Evaluation of Marketing Research Activity

According to Zaltman, Duncan and Holbek (1973) risk and uncertainty attribute of an

innovation is one of the determinants of its adoption. Rogers (1995) found that observability attribute of an innovation was positively related to its utilisation. As mentioned earlier, observability in this thesis is conceptualised as the degree of existence of objective systems within an organisation that could evaluate the results of marketing research activity. Tourism organisations that have formal procedures for evaluating the usefulness of marketing research activity are likely to be more innovative in terms of marketing research activity and the use of marketing research techniques:

6.1.3.2 Marketing Research Department Structure

Although the organisational structure variables of centralisation and formalisation relate to the organisation's marketing research structure, there is evidence that the structure of the marketing research department of an organisation independently influences the innovativeness where it relates to marketing research. The AMA studies (Kinnear and Root 1995) indicated a positive relationship between the age and the size of the marketing research department of the organisation, and the number and type of marketing research activities conducted. Yaman and Shaw (1998b) found that higher usage of each of 38 marketing research activities was associated with a formal marketing research department, more marketing research employees, and higher total marketing research expenditure.

6.1.3.3 Marketing Research Budget

The amount of funds organisation reserves for its marketing research activities may relate directly to its innovativeness. Marketing research is perceived to be an expensive and complex process (Andreasen 1983). Return to investment, an attribute of organisational innovativeness (Zaltman et al. 1973) implies that an investment is necessary for the innovation to take place. An earlier study on marketing research utilisation in tourism (Yaman and Shaw 1997) found that greater devotion of resources to marketing research was reflected in more comprehensive usage of marketing research. Therefore:

> H_3: The more formalised the systems to evaluate the usefulness of marketing research, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research

techniques utilised).

H[4]: The more formalised a tourism organisation's marketing research structure, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H[5]: The higher the annual marketing research budget of a tourism organisation, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

6.1.4 Organisational Structure

6.1.4.1 Centralisation and Formalisation

Rogers and Agarwala-Rogers (1976) assert that the structural characteristics (such as high complexity, low formalisation, and low centralisation) that facilitate the initiation of the innovation process by opening the organisation to its environment, make it difficult for the organisation to implement the innovation. Other studies recognised the effects of organisational structures on the utilisation of research and other knowledge within organisations (Deshpandé 1982; John and Martin 1984; Menon and Varadarajan 1992; Menon and Wilcox 1994; Rogers 1995; Weiss 1977; Zaltman, Duncan, and Holbek 1973). Most studies into knowledge utilisation have found that a decentralised structure encouraged marketing research use (Deshpandé 1982; John and Martin 1984; Menon and Wilcox 1994). There are findings to the contrary (see, for example, Corwin and Louis 1982). Interpreting the work of Zaltman et al. (1973), Rogers (1995, p. 381) suggested that low centralisation and low formalisation "facilitate the initiation process, but … make it difficult for an organisation to implement an innovation". Analyses of the 'Tourism 95' study indicated a degree of relationship between organisational structure and the marketing research process (Yaman and Shaw 1998b).

6.1.4.2 Information Culture

Zaltman (1986) found that organisations with a pro-innovation bias encouraged the acquisition and dissemination of knowledge. Rogers (1995, p. 381) concluded that the degree of uncommitted resources available to an organisation was positively related to organisational innovativeness. Menon and Varadarajan (1992) stated that a culture that promotes change and innovative behaviour would encourage the active exchange

of ideas and increased communication flows. This type of pro-innovation orientation would be reflected in a general atmosphere of inventiveness, and a willingness to take chances ((ibid., p. 64).

> H_6: The higher the centralisation of a tourism organisation's structure, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).
>
> H_7: The higher the formalisation of a tourism organisation's structure, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).
>
> H_8: The greater the information bias in a tourism organisation, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

6.1.5   Attitude Towards Marketing Research

6.1.5.1 Cost Benefit of Marketing Research

Return to investment is an important attribute of organisational innovativeness (Zaltman et al. 1973). Both the tangible and the intangible aspects of this concept relate to cost benefit of marketing research. If decision-makers perceive marketing research to provide adequate returns they are more likely to favour further research projects;

6.1.5.2 Historic Appreciation of Marketing Research

Historic appreciation of marketing research refers to the organisation's past experience with marketing research studies. This concept may include the decision-makers' personal position (negative or positive) on the importance of research. Sternthal and Craig (1982) found that managers with strong positions on research issues were less likely to seek additional information. Deshpandé and Zaltman (1982) reported that decision-makers are more likely to overlook new information that does not confirm their prior beliefs. Lee et al. (1987) found that managers downplayed the usefulness of the research results when they contradicted their position on the topic. Menon and Varadarajan (1992) claimed that managers who were negatively predisposed toward a study are likely to utilise the results in a symbolic (rather than action-oriented) manner.

Historic appreciation of marketing research would also include the perceived degree

of usefulness and perceived quality of the marketing research projects. Usefulness is defined as "the ability of the results to provide decision-makers a rationale for making decisions" (Menon and Varadarajan 1992, p. 66). The concept of usefulness has meaning only within a specific context. According to Shrivastava (1987), the usefulness of research includes its degree of innovativeness. Deshpandé and Zaltman (1982) found that managers were less likely to implement the research results if they were innovative (unusual, unexpected, or non-obvious). This contradicts the earlier finding of Weiss and Bucuvalas (1980). Menon and Varadarajan (1992, p. 66) assert that both findings may be valid. Innovative and non-innovative results may both be used "but differently". However, it is more likely that most decision-makers in the tourism industry will decide (or reconsider their decision) on the usefulness of research after the evaluation of performance outcomes.

6.1.5.3 Marketing Research Report Attributes

Knowledge can be conceptualised as a set of organised statement of facts or ideas, presenting a reasoned judgment from an experimental result, which is disseminated to users in some systematic form (Bell 1974). The form of knowledge presentation considered in this study is that of a marketing research report produced and presented by either externally contracted or in-house researchers to decision-makers in a tourism organisation. If knowledge is a mapping of experienced reality (Holzner 1972) then the mapping has certain characteristics. These characteristics are the attributes of the marketing research report. Weiss and Bucuvalas (1980) indicated that the attributes of research report can be conceptualised along several dimensions. The dimensions that are considered in this study are those of the report quality and the communicability of ideas.

Most of the studies into marketing research utilisation found that the technical quality of information was less important than the relevance of the information to the decision-maker (Deshpandé and Zaltman 1982; Lee, Acito, and Day 1987; Perkins and Rao 1990).

> H_9: The more positive the cost benefit ratio of marketing research, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).
>
> H_{10}: The more positive the historic appreciation of marketing research of a tourism organisation the greater the organisational

innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

$H_{11:}$ The higher the perceived marketing research quality in terms of report attributes, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

6.1.6 Impact of Marketing Research Process and Marketing Research Utilisation on Performance Outcomes of the Organisation

6.1.6.1 Financial Performance

The field of tourism is increasingly recognising the desirability of evaluating the consequences of managerial decisions (Faulkner 1997). Many scholars have written on the importance of the utilisation of knowledge for improved business performance (see, for example, Deshpandé 1982; Glazer 1991; Gorelick 1993; Kohli and Jaworski 1990; Menon and Wilcox 1994). The generation and dissemination of knowledge have implications for the market orientation of organisations, which in turn has been associated with business profitability (Narver and Slater 1990). Seen as an integral part of the strategic planning process, marketing research utilisation can have a relatively consistent impact on business performance (see Capon, Farley, and Hoenig 1990; Veliyath 1992; Miller and Cardinal 1994; Bracker, Keats, and Pearson 1988). Recent research indicated that tourism firms do not lag behind other industries in the use of strategic planning (Athiyaman and Robertson 1995). Rogers and Agarwala-Rogers (1976) found that innovation in organisations is related to organisational effectiveness.

There has been no systematic research to date that attempted to measure the influence of a marketing research program on the financial performance of an organisation. In fact, none of the studies into marketing research utilisation extends the enquiry into the consequences of marketing research use. Findings of the analogous studies into the effects of strategic planning on financial performance have been contradictory. Some researchers found that strategic planning did not affect an organisation's financial performance (see, for example, Greenley 1986; Mintzberg 1990), where others concluded that planning positively affects the financial performance (Miller and Cardinal 1994). The closest model is the study into market orientation conducted

by Jaworski and Kohli (1993). These researchers found "a market orientation to be significantly related to business performance when overall performance is assessed using judgmental measures" (Jaworski and Kohli 1993, p. 63). However, when the "more objective" measure of market share was used, a market orientation did not appear to be related to business performance (ibid. p. 63). Narver and Slater (1990, p. 27) reported that "subjective measures of performance commonly are used in research on private companies and on business units of large companies". Other studies have found a strong correlation between subjective assessments and their objective counterparts (e.g., Pearce, Robbins, and Robinson 1987).

Although intuition suggests that there is a link between an organisation's marketing research orientation and its financial performance, it may be difficult to develop valid objective measures to isolate the influence of marketing research utilisation from other variables that affect financial performance. In fact, various authors investigating the effect of strategic planning on organisational performance suggest that the determinants of financial performance comprise many different variables (see, for example, Capon et al. 1990). Jaworski and Kohli (1993, p. 64) state that it is not clear that "market share is a particularly appropriate indicator of performance". Either way, there are serious obstacles in the way of obtaining reliable information to assess objectively the influence of a single factor on financial performance. Even if marketing research led to higher market share and/or higher profitability, depending on the type of marketing research activity, this effect could take place over an extended period of time. Detailed objective financial data for an extended period of time may be difficult to obtain, as most organisations treat such information as highly confidential. Nevertheless, the difficulty of developing objective measures should not be a deterrent.

> $H_{12:}$ The greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised) of a tourism organisation the higher the utilisation of marketing research.

> $H_{13:}$ The higher the utilisation of marketing research, the higher the financial performance of the organisation.

6.1.6.2 Other Performance Outcomes

Pearce et al. (1987) draw attention to intended and unintended outcomes of planning,

other than financial performance. Kohli and Jaworski (1990) found that a market orientation led to a sense of pride and *esprit de corps* among the employees of an organisation. Langley (1988, p. 49) asserts that "formal strategic planning is as much a social process as a rational analytic process". Therefore:

H$_{14:}$ The higher the utilisation of marketing research, the greater the *esprit de corps* and organisational commitment of employees of a tourism organisation.

6.2   The Purification of Data

The data for MRTOUR 98 were generally in a good condition because of the method employed during data collection. Almost all data were collected through personal interviews or mail-out followed by telephone interviews. Despite the care exercised during data collection, there were still some missing data.

The missing data need to be dealt with before the analysis, as they have two effects. Firstly, when a variety of regressions are run during the testing of various models and some variables are dropped, then the number of cases on which the regression is based would shift because of the missing data. This would make it difficult to compare different regression results. Secondly, although even in the presence of missing data Amos computes full information maximum likelihood estimates, it assumes that data values that are missing are 'missing at random'. In practice, this assumption would not be valid in most cases. It could be, for example, that an executive employed by an organisation which has a low marketing research budget to revenue ratio, may fail to respond to the budget question in order to mask this perceived inadequacy.

A standard method for dealing with missing data is to eliminate from the analysis any case for which some data are missing, which is referred to as 'listwise' deletion. This method was unsatisfactory for this study because of the relatively small sample size. Another reason why listwise deletion should not be considered would be that other information contained in the responses might be too valuable for the purposes of the study to be discarded, especially in a highly specialised area such as the subject of the present investigation.

Another common approach, referred to as 'pairwise' deletion, requires each sample

moment to be calculated separately, excluding a case only when it is missing a value that is needed for the specific computation. For example, in calculating the sample mean marketing research budget, it would be necessary to exclude all organisations that did not report on this item. Similarly, in computing the sample covariance between marketing research budget and, say, size of organisation (in terms of annual revenue), it would be necessary to exclude all observations where the budget is missing, as well as all records without revenue information.

The third method is data 'imputation', replacing the missing data values with an educated guess, and then proceeding with conventional analysis appropriate for complete data.

The dataset of MRTOUR 98 had one case with missing data on four variables, and two cases with missing data on one variable. The data for the missing cases was imputed using a regression method. This is a more reliable method than just computing the sample mean, and assigning it to the observation with missing data. Through a simple regression analysis, a predicted value based on the information available was obtained. The missing variable was regressed against all the other variables in the model. The predicted value was checked against other information provided by the organisation to ensure that the value was logical. Then the missing data were replaced with the imputed value.

6.3   An Evaluation of the Measurements

A multi-item instrument should be evaluated for accuracy and applicability (Greenleaf 1992). The evaluation of the measurements used in the current research instrument involved the assessment of the reliability and validity of the instrument.

6.3.1   Reliability

Reliability of an instrument refers to the extent to which the instrument produces consistent results if repeated measurements are conducted (Peter 1979). Systematic sources of error, because they "affect the measurement in a constant way and do not lead to inconsistency", do not have an adverse impact on reliability (Malhotra 1996, p. 304). However, random error results in inconsistency and leads to lower reliability. Reliability can be defined as "the extent to which measures are free from random error" (ibid.). To assess reliability, the association between scores obtained from

different administrations of the instrument is determined. When the association is high, the particular measure within the instrument yields consistent results and is reliable.

There are three main methods for assessing reliability. These are test-retest, alternative-forms, and internal consistency methods. The test-retest method involves the administration of identical instruments on two different occasions to the same sample of respondents under as nearly equivalent conditions as possible. A correlation coefficient is computed to determine the degree of similarity between the two measurements. The reliability is assumed to be positively related to the correlation coefficient – the higher the correlation coefficient, the higher the reliability. However, several problems are associated with this method of assessing reliability (Kinnear and Taylor 1996, Malhotra 1996). The first problem is the sensitivity of the method to the interval between testing - the longer the time interval between the measurements, the lower the reliability. The second problem is the influence of the first measurement on subjects' responses to the subsequent measurements - the subjects may have learned from the first interaction and may have altered the attitude under measurement. The third problem is the carry-over effect - the respondent may attempt to remember the responses given during the first measurement. As a fourth problem, the situational factors may change, resulting in a change in the measurement. Added to these, the practicality and logic of administering the same measurement to the same subject make the test-retest method a less dependable assessment of reliability.

The alternative-forms method involves measuring the same respondents at two different times with two equivalent, but not identical, instruments. The scores from the administration of two separate instruments are correlated to assess the reliability (Segal 1984). This method has two major problems associated with it. Firstly, it is difficult in all cases (and very difficult in some) to construct two equivalent forms of the same instrument. Secondly, even when it is possible to construct two equivalent forms, the exercise would be expensive and time-consuming. For example, in the case of the present research, even if it were possible to find the time and resources to construct an equivalent version of the instrument, it would not have been possible to ensure the equivalence in content of the two separate versions. Therefore, a low correlation may have reflected either an unreliable instrument or simply non-

equivalent forms (Malhotra 1996).

The third method, internal consistency reliability, "is used to assess the reliability of a summated scale where several items are summed to form a total score (Malhotra 1996, p. 305). The assumption behind this method is that each item measures some aspect of the construct measured by the entire instrument. The items should be consistent in what they indicate about the concept being measured. The simplest measure of internal consistency is split-half reliability, which involves dividing a multi-item measurement device into two halves and correlating the item responses to estimate reliability. Although commonly used in academic literature in marketing, the procedure is problematic because the results depend on how the items are divided. A well-used approach to overcoming this problem is the use of Cronbach's alpha (Cronbach 1951, Nunnally 1978).

Cronbach's alpha (also referred to as the coefficient alpha) is formulated as follows:

$$\alpha = (\frac{\kappa}{\kappa - 1})(1 - \frac{\sum_{i}^{\kappa} \sigma_i^2}{\sigma_t^2})$$

where κ = number of items in the measurement device,

σ_i^2 = variance of item i, and

σ_t^2 = total variance of the measurement device.

Cronbach's α is the average of all possible split-half coefficients resulting from the different ways of splitting the instrument items (Cronbach 1951). A property of Cronbach's α is that its value increases with an increase in the number of measurement items. The inclusion of redundant items may superficially inflate the value of Cronbach's α (Peterson 1994). Despite this reservation, Cronbach's α is referred to as one of the most important deductions from the theory of measurement error (Nunnally 1978). This is the method that is employed in this study to assess the reliability of several items in their index form.

Multi-item instruments, such as the one used for the present study, contain several sets of items designed to measure different aspects of a multi-dimensional construct.

As these dimensions are independent of each other, a measure of internal consistency computed across dimensions would not be appropriate. "If several items are used to measure each dimension, however, internal consistency reliability can be computed for each dimension" (Malhotra 1996, p. 306).

Table 6.1 shows the values of Cronbach's α for the 11 macro variables (subsets) used in the analyses in this study. These subsets are formalisation (FORMAL), centralisation (CENTRAL), cost-benefit of marketing research (COST), information culture of the organisation (INFORM), environmental factors (ENVIRO), report attributes (ATTRIB), historic appreciation of marketing research (APPREC), type and form of utilisation (UTIL), marketing research process evaluation (EVAL), financial outcomes (FINANCE), and qualitative outcomes (QUAL). Each index is reported with the number of items in the original subset, the means and standard deviations, and the reliability coefficients as measured by Cronbach's α. Four other macro variables, marketing research activities (MRAC_DI), marketing research techniques (MRTEC_DI), marketing research budget (BUDGET), and marketing research department structure (MRARR) were categorical and thus, reliability coefficients were not computed.

Table 6.1: Reliability Coefficients (Cronbach's α) for Variable Subsets

SUBSET	NUMBER OF ITEMS	MEAN	STANDARD DEVIATION	RELIABILITY
CENTRAL	4	15.8	4.5	0.70
FORMAL	3	11.9	3.1	0.61
COST	3	16.5	3.5	0.62
INFORM	3	12.4	3.1	0.74
ENVIRO	8	32.3	6.8	0.78
APPREC	2	8.4	2.4	0.87
UTIL	16	72.9	11.8	0.90
ATTRIB	6	28.8	4.5	0.80
EVAL	7	27.8	6.7	0.78
FINANCE	11	43.8	11.4	0.90
QUAL	6	26.7	5.5	0.90

The level of acceptable reliability is a contentious issue. Deshpandè and Zaltman (1982) were content with reliability coefficient of 0.50 and above, for which they cite Nunnally as authority. Although Nunnally initially recommended that the minimally acceptable reliability should be in the range of 0.50 to 0.60, in the second edition of his *Psychometric Theory* he increased the recommended level to 0.70, without explanation. In his meta-analysis, Peterson (1994) found that average reported alpha coefficients in behavioural research ranged from 0.70 for values and beliefs to 0.82 for job satisfaction. Although the recommendations of experts differ, it is generally agreed that a reliability level of below 0.60 is unacceptable.

Table 6.1 shows all macro variables meet the requirement of acceptable reliability coefficients of 0.60 or above. Ideally, the investigator would have preferred to have 0.70 as the minimally acceptable reliability level. However, the two subsets that fall below 0.70 (FORMAL and COST) are backed by strong theory. The construct FORMAL is derived from previous work in marketing research utilisation (Deshpandè and Zaltman 1982; Menon and Wilcox 1994) and the construct COST consists of four items that are a combination of an earlier study in marketing research utilisation in tourism (Yaman and Shaw 1997) and a non-industry specific work on marketing research utilisation (Menon and Wilcox 1994). As the decision-maker perception of the cost-effectiveness of marketing research and formalisation of operational procedures in the organisation are important to the study, the subsets are retained at this stage for analysis.

In the process, three items were reverse-coded to ensure that all variables that constitute the subset are in the appropriate direction. The first of these was question 10: "In this organisation, information is disseminated on a 'need to know basis'", which belonged to the construct INFORM. In its original form, a high agreement with this statement could have corresponded with a low agreement with the concept that the organisation had a progressive approach to dissemination of information. The direction of the other two variables, represented by questions 9 and 11, were positive: "Top managers in this organisation encourage innovative decisions, knowing that some will fail", and "Progressive ideas and new ways of doing things are often encouraged in this organisation". The second was question 13: "Our customer base changed very little over the years" which was a part of the construct ENVIRO. A high agreement with this statement in its original form would place it in the opposite

direction with the other seven questions that made up the subset, all of which, if agreed, indicated a high level of turbulence in the external environment of the organisation (see Table 6.2 and Appendix for the specific questions). The third was question 23: "In this organisation, junior and middle level managers are encouraged to make their own decisions', which belonged to the construct FORMAL. Similarly, a high agreement with this question, which would indicate a relative lack of formalisation, would place the variable in the opposite direction with the other two questions that constituted the subset. These two other questions were 22 and 24 (see Table 6.2 and Appendix).

Only one item was eliminated from the subsets, as a result of its negative effect on coefficient alphas. This was question 33: "The research was used for the sake of appearance", an item that belonged to the construct UTIL. The interviewer formed the impression that the respondents largely misinterpreted the question. In retrospect, perhaps the wording should have been "the research was used only for the sake of appearance". However, the item was directly taken from previous studies (Menon and Wilcox 1994) and, at the time of designing the questionnaire and during the pretest, this difficulty was not foreseen. The main problem with the responses to the question seemed to be that the respondents interpreted the statement as being that the research was used for the sake of appearance as well as its other uses, instrumental and knowledge-enhancing. As discussed elsewhere in this thesis, there is a problem with the affective use dimension of the utilisation construct. The only item left to measure this dimension was question 41: "The study was used for political purposes", which for many respondents did not represent affective or cynical use at all. It appears that the utilisation of research results for political purposes does not contradict its instrumental and conceptual uses. Like one executive remarked: "After all, everything is political in an organisation, isn't it?" Perhaps the best measure of the affective use is the global summate represented by question 55: "Overall, to what extent was 'being seen to do the research' more important than the actual utilisation of the research project".

6.3.2   Validity

In a very general sense, a measuring instrument is considered to be valid if it does what it is intended to do. Reliability, although necessary for validity, is not in itself

sufficient. The fact that a rifle is an accurate instrument does not necessarily mean that the marksman is aiming correctly or his vision is not impaired (Zikmund 1994, p. 292). Validation of an instrument always demands empirical investigations, with the nature of the evidence required depending on the type of validity (Nunnally 1978). Several types of validation procedures are suggested in the literature (see, for example, Churchill 1996, Nunnally 1978, Zikmund 1994). Out of these, three have been selected as being appropriate to the research reported in this thesis. These are (1) content validity, (2) inter-item index validity, and (3) concurrent validity (which is a form of criterion-related validity).

6.3.2.1 Content Validity

Content validity refers to the degree to which the measure adequately captures the domain in question. "When it appears evident to experts that the measure provides adequate coverage of the concept, a measure has face validity" (Zikmund 1994). Content validity of the subsets used in the present instrument was established by the origin of the reserve of items from which the remaining items were drawn. More precisely, most of the items were taken from the extant knowledge utilisation literature or two prior investigations of marketing research use in tourism. The new items constructed that were used for the first time in the current instrument were incorporated after a structured pretest with tourism and marketing academics and practitioners. All the various aspects of each construct dimension were included and often described by more than one item in the question subsets. For instance, the effects of marketing research use on organisational performance comprises respondent perceptions of an outcome on one aspect of performance (e.g., pricing, promotion) as well as the general impact on financial performance (e.g., profitability) and qualitative performance (e.g., employee morale). Various items captured all these aspects of the effect on organisational performance. Content validity is essentially a subjective agreement among concerned professionals (Zikmund 1994), but in view of both the origin (literature-based and/or exploratory research and pretest-based) and comprehensive content of the subsets, content validity of the instrument may be deemed to be acceptable.

6.3.2.2 Inter-item Index Validity

Inter-item index validity is the degree to which items that constitute a subset can truly be considered to belong to that subset. Item analyses were conducted on all of the items that belong to each of the 11 subsets. Initially, each of the number of items was correlated with the subset (the total score for the construct) with the item removed. The resulting coefficients are reported in Table 6.2. It can be observed that all the correlations were greater than 0.30 and were significant at the 0.05 level (2-tailed). The only exception was question 64: "In this organisation, the usefulness of marketing research activity is determined mainly through the intuition of the decision-makers. This may indicate that tourism executives largely do not see intuitive decision-making as contradictory to an evidence-based, objective approach to decision-making. Often, the two need to be combined to facilitate spontaneous, action-directed decisions that are a hallmark of most sections of the tourism and hospitality system.

Table 6.2: Inter-Item Index Validation Correlations (Pearson) for Question Subsets Used in the Model

Items	N	Pearson Correlation	Subset
There is a complete job description for my position	91	0.67[a]	
The organisation keeps a written record of everyone's performance	91	0.73[a]	CENTRAL
We follow strict operational procedures at all times	91	0.76[a]	
Whenever situations arise we have procedures to follow in dealing with them	91	0.74[a]	
There is little action taken in this organisation until a superior approves the decision	91	0.75[a]	
In this organisation, junior and middle managers are encouraged to make their own decisions (reverse-coded)	91	0.68[a]	FORMAL
Even small matters on this job have to be referred to someone higher up for final answers	91	0.81[a]	
Marketing research is affordable enough to be undertaken by small organisations	91	0.79[a]	
Small organisations can conduct marketing research within the time available to managers	91	0.74[a]	
Marketing research frequently produces results that justify the cost in time and money invested into it.	91	0.56[a]	COST
The information provided was worth the money spent on it.	90	0.56[a]	
Top managers in this organisation encourage innovative decisions, knowing that some will fail	91	0.83[a]	
In this organisation information is disseminated on a 'need to know' basis (reverse-coded)	91	0.74[a]	INFORM
Progressive ideas and new ways of doing things are often encouraged in this organisation	91	0.87[a]	

Items	N	Pearson Correlation	Subset
Our customers' needs and wants change very often	91	0.57[a]	
Our customer base has changed very little over the years (reverse-coded)	91	0.31[a]	
Competition in our industry can be termed "cut-throat"	91	0.75[a]	ENVIRO
Price competition is a hallmark of our industry	91	0.73[a]	
Anything that one competitor of ours can offer, others can match readily	91	0.59[a]	
The technology in our industry is changing rapidly	91	0.77[a]	
Technological changes provide important opportunities in our industry	91	0.68[a]	
A large number of product ideas has been made possible through technological breakthroughs in our industry	91	0.67[a]	
This organisation has a positive view of its past marketing research projects	91	0.94[a]	
Even when the results were difficult to implement, the marketing research process has always been beneficial to decision-making in the past.	91	0.94[a]	APPREC

Items	N	Pearson Correlation	Subset
It was worth waiting for the research results because some of them materially influenced a decision	90	0.75[a]	
We learned from having to clarify the problem to be addressed by the research.	90	0.75[a]	
The research study was used to promote awareness and appreciation of an issue of importance	90	0.74[a]	
The study results were used to learn something new about our business	90	0.72[a]	
The study results provided new knowledge about something	90	0.65[a]	
We gained new insights while providing the researchers with background information on the organisation, business, and/or competitive situation.	90	0.57[a]	UTIL
Apart from what we learned from the results, doing the study was educational.	90	0.48[a]	
It is possible that without the research results a different decision would have been made.	90	0.77[a]	
A decision based on the research project was easy to reconcile with the results of the project.	90	0.67[a]	
The study was used to make a decision which was consistent with at least some of the findings and conclustions.	90	0.73[a]	
The study results were used to provide new insights.	90	0.70[a]	
The study was used for political purposes.	90	0.34[b]	
The research study was used to build awareness and commitment.	90	0.55[a]	
The study was used to validate and confirm our understanding of something.	90	0.40[a]	
The results of the study were used to make a decision in accordance with its recommendations.	90	0.72[a]	
One or more findings of the study had a substantial direct impact on a decision.	90	0.79[a]	

Items	N	Pearson Correlation	Subset
The analysis of the data was straightforward and simple enough to understand without technical expert knowledge.	90	0.57[a]	
There was sufficient interpretation or explanation of the findings	90	0.82[a]	
Tables/graphs/statistics were appropriately used to illustrate and enhance important points	90	0.79[a]	ATTRIB
The language of the report/presentation was clear	90	0.80[a]	
The way information was gathered was appropriate	90	0.69[a]	
The technical quality of the research was high	90	0.64[a]	
In this organisation, each new marketing research project is approved separately.	90	0.63[a]	
In this organisation, specific objectives are set for each new marketing research project.	90	0.79[a]	
In this organisation, each new marketing research project is evaluated separately after its completion.	90	0.70[a]	EVAL
In this organisation, an overall evaluation of marketing research activity is conducted annually.	90	0.69[a]	
In this organisation, there is always some marketing research activity in progress.	90	0.79[a]	
We have systems in place to measure the impact of marketing research projects on our financial performance.	90	0.69[a]	

Items	N	Pearson Correlation	Subset
At least partly as a result of marketing research activity, our unit sales last financial year increased compared to previous year.	90	0.82[a]	
At least partly as a result of marketing research activity, our profit margin for the last financial year increased compared to the previous year.	90	0.83[a]	
At least partly as a result of marketing research activity, the organisation provided a better return on investment for its shareholders last year.	88	0.80[a]	
At least partly as a result of marketing research activity, we were able to introduce new products into the market last year.	90	0.76[a]	FINANCE
At least partly as a result of marketing research activity, we were able to improve the effectiveness of our pricing policies last year.	89	0.69[a]	
At least partly as a result of marketing research activity, we were able to improve the effectiveness of our promotional activity last year.	90	0.72[a]	
At least partly as a result of marketing research activity, we were able to improve the effectiveness of our distribution activities last year.	89	0.62[a]	
At least partly as a result of marketing research activity, the percentage of new product sales to old product sales increased last year.	88	0.71[a]	
Overall, the financial performance of the organisation last year was better than in the previous year.	88	0.49[a]	
Overall, the financial performance of the organisation last year was better than that of our competitors.	87	0.41[a]	
Overall, we were satisfied with the contribution which marketing research made to our organisational performance last year.	90	0.76[a]	

Items	N	Pearson Correlation	Subset
The bonds between this organisation and its employees are strong.	91	0.87[a]	
In general, employees are proud to work for this organisation.	91	0.81[a]	
Employees feel as though their future is intimately linked to that of this organisation.	91	0.76[a]	QUAL
A team spirit pervades all ranks in this organisation.	91	0.89[a]	
Few people in this organisation view themselves as independent individuals who have to tolerate others around them.	91	0.73[a]	
Most people in this organisation are genuinely concerned with the needs and problems of each other.	91	0.83[a]	
Pricing studies – research frequency	91	0.55[a]	
Buying behaviour – research frequency	91	0.69[a]	MRAC_DI
Distribution studies – research frequency	91	0.61[a]	
Product studies – research frequency	91	0.76[a]	
Promotion studies – research frequency	91	0.59[a]	
Internal studies – research frequency	91	0.53[a]	

Items		N	Pearson Correlation	Subset
Research design –	Descriptive	91	0.64[a]	
	Cross-sectional	91	0.65[a]	
	Longitudinal	91	0.63	
	Causal (experimentation)	91	0.56	
Sampling procedures –	Simple random sampling	91	0.65[a]	
	Stratified sampling	91	0.64[a]	
	Quota sampling	91	0.61[a]	
	Judgmental sampling	91	0.55[a]	
	Cluster sampling	91	0.46[a]	
	Convenience sampling	91	0.57[a]	MRTEC_DI
	Systematic sampling	91	0.42[a]	
	Area sampling	91	0.53[a]	
Data gathering	Syndicated data	91	0.57[a]	
	Internal company records	91	0.53[a]	
	Personal interviews	91	0.51[a]	
	Telephone interviews	91	0.58[a]	
	Mail surveys	91	0.40[a]	
	Focus group interviews	91	0.51[a]	
	Consumer observation	91	n.s.	
	Internet website surveys	91	0.23[a]	
	Internet newsgroup surveys	91	n.s.	
Measurement	Nominal scale	91	0.73[a]	
	Ranking scale	91	0.66[a]	
	Rating scale	91	0.72[a]	
	Likert scale	91	0.65[a]	
	Paired comparison scale	91	0.33[a]	
Analysis	Measures of central tendency	91	0.80[a]	
	Measures of dispersion	91	0.72[a]	
	Correlation analysis	91	0.70[a]	
	Regression analysis	91	0.60[a]	
	Confidence intervals	91	0.70[a]	
	Time-series analysis	91	0.71[a]	
	Chi-square analysis	91	0.59[a]	
	Other tests of significance	91	0.56[a]	
	Analysis of	91	0.56[a]	
	variance/covariance	91	0.64[a]	
	Factor analysis	91	0.61[a]	
	Cluster analysis	91	0.40[a]	
	Conjoint analysis	91	0.39[a]	
	Choice modelling	91	0.42[a]	
	Multidimensional scaling	91	0.41[a]	
	Discriminant analysis			

[a] *Correlation is significant at the >0.05 level*
 n.s. Not significant

6.3.2.3 Convergent Validity

This is a form of construct validity, which is defined as "the confirmation of a

relationship by independent measurement procedures" (Churchill 1996, p. 539). Convergent validity is generally represented by the correlation between two separate attempts to measure the same concept. Selected subsets were correlated with other items in the questionnaire. These are shown in Table6.3. For instance, if marketing research information were classified as being highly utilisable on the utilisation scale, it should correlate negatively with the global question that asked respondents to rate the affective use of research. When the UTIL subset was correlated with question 55: "Overall, to what extent was 'being seen to be doing the research' more important than the actual utilisation of the research project", it had a negative correlation significant at the 0.05 level. Conversely, if research information was highly utilisable, then it should correlate positively with an item such as question 75: "Overall, we were satisfied with the contribution which marketing research made to our organisational performance last year. Table 6.3 shows correlation as significant at the 0.05 level.

Table 6.3: Convergent Validation (Pearson) for Selected Subsets Used in the Model

Subsets and Items Correlated	N	Pearson Correlation
UTIL with Question 75: "Overall, we were satisfied with the contribution which marketing research made to our organisational performance last year".	91	0.50[a]
EVAL with Question 55: "Overall, to what extent was 'being seen to be doing the research' more important that the actual utilisation of the research project"	91	0-.24[a]
MRTEC_DI with Marketing Research Budget	91	0.60[a]
MRAC_DI with Marketing Research Budget	91	0.49[a]
COST with Total Number of MR Employees	91	0.54[a]
CENTRAL with Annual Revenue of the Organisation	91	0.23[a]
FORMAL with Annual Revenue of the Organisation	91	-0.23[a]

[a] *Correlation is significant at the 0.05 level*

If the evaluation procedures of marketing research are high in an organisation then this subset should correlate negatively with the global question that measures the affective (symbolic) use of marketing research. This is because if the management takes the trouble of implementing empirical systems to evaluate the usefulness of

marketing research, their interest in the 'show value' of information should be minimal. When the EVAL subset was correlated with the question 55, it had a negative correlation significant at the 0.05 level.

When the subsets that measure marketing research techniques (MRTEC_DI) and marketing research activities (MRAC_DI) were correlated with the marketing research budget question, the correlations were positive as would be expected, at the 0.05. This is in keeping with the hypotheses that organisations that allocate more resources to marketing research conduct a greater variety of research activities and use a greater number of research techniques.

The subset that measures the cost-value perception of respondents (COST) should be expected to correlate positively with the total number of marketing research employees, as the organisation that has more employees working in research is expected to have a more positive perception of the cost effectiveness of marketing research. The correlation between COST and total number of marketing research employees was positive at the significance level of 0.05.

Finally, to determine whether formalisation and centralisation were inversely correlated with annual revenue, each of their subsets was paired with the question that asked the annual revenue of the organisation. The CENTRAL subset showed a positive correlation while the FORMAL subset showed a negative correlation, both significant at the 0.05 level. This is understandable as a substantial number of respondents belonged to multi-property hospitality management organisations, which are increasingly centralising their operations for managerial control and economies of scale. However, within the established procedures, junior and middle managers have considerable flexibility in their decision-making capacity, and the value of their boundary-spanning expertise and resultant valuable contributions are increasingly appreciated and encouraged by the higher management.

In summary, both reliability and validity measurements on the sample show relatively strong instrumentalisation and generalisability. It should be noted however, that because the same sample was used to conduct the item analyses and to assess coefficient alpha, the reliability estimates are likely to be overestimates of the population coefficient alphas (Peter 1979).

CHAPTER 7

MODEL DEVELOPMENT AND ANALYSES

This chapter presents a discussion of structural equation modelling (SEM) and the empirical testing of the hypotheses forwarded in the previous chapter. The model is developed incrementally and the advantages and the shortcomings of the method of anaysis are presented.

7.1   A Discussion of Structural Equation Modelling (SEM)

Before beginning a description of the testing of the particular hypotheses in the model, a brief discussion of the nature and limitations of structural equation modelling in general, and as they apply to the particular dataset that is used in this thesis, is presented in this section.

Structural equation modelling (SEM) is the name given to a collection of statistical techniques that are used to examine a set of relationships between one or more independent variables (here called 'exogenous' variables) and one or more dependent variables (here called 'endogenous' variables). Either set of variables can be either continuous or discrete, and either latent (factors) or measured variables. Causal modelling is among the few other names that are used to describe structural equation modelling.

Structural equation modelling allows questions to be answered that involve multiple regression analyses of factors. In this regard, structural equation modelling is a combination of exploratory factor analysis and multiple regression (Tabachnick and Fidell 1996). The full structural equation model consists of a system of structural equations (Bollen 1989). The equations contain random variables, structural parameters, and less frequently, nonrandom variables. The three types of random variables are latent, observed, and disturbance/error variables. The links between the variables are summarised in the structural parameters, which are constants that provide the 'causal' relationship between variables (ibid. p. 11). The causal links that are described by the structural parameters may be between latent (unobserved) variables, between measured (observed) variables, or between latent and measured variables.

All latent variables in a structural equation model are hypothetical, which is to say they correspond to concepts. Latent variables, like concepts, are highly abstract. For example, in this thesis innovativeness is a highly abstract latent variable that is pivotal to the study. The variable of marketing research activity, on the other hand, is a directly measurable variable provided the respondents agree to a clear definition of the concept, which is what exactly consists of marketing research activity within an organisation.

The strength of hypothesised models depends very much on the underlying theoretical structure of the model. This theoretical structure specified by a set of equations may be represented by a path diagram. If a relatively strong model is confirmed to exist statistically, and the structural model has not been modified substantially from the original theory for that to happen, then it can be reasonably deduced that the hypothetical structure has meaning. As noted below (7.1.2) the focus of the estimation of a structural equation model is to test the extent to which the observational data confirm the theoretical structure

7.1.1 Causality and the Limits of Causal Modelling

Structural equation models continually make causal assumptions. Before going into a detailed discussion of a series of subsets of that will culminate in the final model of the marketing research orientation of tourism organisations, it is necessary to discuss briefly the nature of causality, the condition of causation, and the limits of causal modelling.

The general definition of causality as used in structural equation modelling states that if a change in one variable ($\gamma 1$) accompanies a change in another variable ($\chi 1$) then $\chi 1$ is a cause of $\gamma 1$, provided the latter is isolated from all other influences. The definition of cause has three components: isolation, association, and the direction of influence. As correlation does not imply causation, association between two variables is not enough by itself. Isolation must come before association. Then there is the problem of establishing direction – that the association is due to $\chi 1$ affecting $\gamma 1$, and not the other way around.

Holland (1986) argued that a variable could be a cause only if it can be subject to human manipulation. There are problems with this view as it is goes against common

sense and intuition: Earthquakes do cause destruction of buildings and other property, and the moon does cause the tides. This thesis accepts Bollen's (1989, p. 41) assertion that human manipulation is neither a necessary nor sufficient condition of causality.

However, pure isolation is impossibility. The principle of isolation assumes that $\chi1$ and $\gamma1$ are free from all other influences or, as Malhotra (1996) puts it, that there is an absence of other causal factors. This implies that the two variables exist in a vacuum that excludes all other influences. In reality, phenomena that these variables represent are part of a complex of characteristics of individuals, groups, or other objects of study. The $\gamma1$ variable cannot happen in isolation since the units of analysis possess many characteristics besides $\chi1$ on which they differ, and a number of these are expected to have some influence on $\gamma1$. Therefore, it cannot be stated with certainty that $\chi1$ causes $\gamma1$.

The condition of association (concomitant variation) refers to the extent to which a cause, $\chi1$, and an effect, $\gamma1$, vary together as predicted by the theory. In this respect, the common practice of assuming a bivariate relation between measured and latent variables is not fully justified. For example, consider the following item taken from the present instrument: "Apart from what we learned from the results, doing the study was educational". Respondents are asked to indicate the level of their agreement with this statement. The resulting responses form the measured (observed) variable. However, a number of latent variables may underlie the level of agreement with this statement. One latent variable may be the level of respondents' own involvement with the research project. Those who had a direct involvement with the project, or those who had a contribution at the initiation of the project, are more likely to agree with this statement. The general attitude of respondents towards the usefulness of the particular type of project is also likely to influence their response to the statement. Utilisation as a latent variable may have a causal effect on the observed variable here, but it is likely that other latent variables also have an effect. A similar situation exists for many other indicators. In these situations, a bivariate association is neither necessary nor sufficient for a causal relationship between them.

Bollen (1989, p. 58) expresses this phenomenon in statistical terms:

> Even under ideal conditions there are some complications to establishing the association. To illustrate, consider [the following]:
>
> $$\gamma_1 = \gamma_{11}\chi_1 + \zeta_1$$

$$\gamma_2 = \beta_{21} \gamma_1 + \gamma_{21} \chi_1 + \zeta_2$$

The γ_1 coefficient gives the association of χ_1 and γ_1. The γ_{11} is a population parameter. We have $\hat{y}_{11}$, a consistent estimator of γ_{11}, as the basis of making statements about γ_{11}. In any given sample the value of $\hat{y}_{11}$ differs from γ_{11} because of sampling error. Usually we can estimate the probability that γ_{11} takes particular values. But these are probabilities not certainties, and mistakes in judging associations will occur. However, in practical terms we are usually willing to live with sampling error as long as we know its magnitude.

The third issue about causal relationships is the direction of causation. The likelihood of an association being causal is dependent on getting the direction of association right. "The time order of occurrence condition states that the causing event must occur either before or simultaneously with the effect; it cannot occur afterwards" (Malhotra 1996, p. 236). It is of course easier to claim a cause-effect relationship if there is a measurable time lag between the cause variable and the effect variable. To use an example from the present study if the decision-maker's appreciation of the organisation's past marketing research activity is positive then this would have a positive influence on the evaluation of the current marketing research project. This proposition makes intuitive sense and it is supported by substantive and theoretical work on organisational strategy in the past.

However, it is not known when the planning for the current marketing research project had started. If it is assumed that the decision-maker had some vested interest in the success of the current marketing research project, then her desire to have it approved might have influenced her part in the evaluation of past activity. In other words, it can be said (erroneously) that a future event partly caused a present one. In fact, the future is not the cause. It is the expectation of the approval of the later project that is the cause, not the later project itself, which had not happened yet. Nevertheless, the direction of the cause-effect relationship between the appreciation of the past activity and the evaluation of the most recent marketing research project is already in doubt. For this reason, although most of the causal relationships depicted in the model are not bi-directional, the cyclical nature of the marketing research activity and its consequences is continually asserted.

7.1.2   Other Limitations of Causal Modelling

Structural equation models check the model-data consistency by comparing relations predicted by a model and its assumptions to those that exist in the data. The

implication of the model is that the data should possess certain characteristics that can be checked. However, model-data consistency does not necessarily mean that the model is consistent with the processes in the real world. Earlier in this section, an assertion was made that the strength of the model depended on its underlying theoretical structure. If the model is confirmed statistically without altering it substantially from the original theory, then the hypothetical structure can be claimed to have meaning. It would be misleading, although tempting to do so, to use this model-data consistency as evidence of model-reality consistency. "If a model is consistent with reality, then the data should be consistent with the model. But, if the data are consistent with a model, this does not imply that the model corresponds to reality" (Bollen 1989, p. 68). (The discussion of objective reality in this section does not contradict the reality/perception argument presented in Chapter 2. Managers' perception of events might not correspond with an objective reality, should there be one, but there is the reality of their perception.)

The power of causal modelling lies in the fact that models that are inconsistent with the data can be rejected. But a model that is accepted (that is consistent with the data) cannot be said necessarily to correspond to reality because it is only one of many that might fit the data. As only one of the many models that fit the data can be true (can have model-reality consistency) it can never be ascertained without doubt whether this particular model is the true one or one of the many false ones. Substantive knowledge can help in excluding some of the possibilities. On the other hand, most models are formulated to help edify real-world relations, which implies that knowledge in the area investigated is not sufficiently developed to rule out all false models.

Earlier in the thesis (see Section 2.2.2) it was stated that the appearance of objectivity is assigned to most forms of scientific inquiry through empirical reality tests. Empirical reality tests involve the experimental validation of suggested hypotheses through the use of approved methodological tools. Hypotheses link together variables and they are formally represented by a model. As the theory stated through hypotheses is an approximation of reality, a model constructed from it can only approximate reality. Model building and modification is a process of successive approximation. "Due to the approximate nature of models and the impossibility of directly observing causality, all causal inferences must be regarded as tentative in the

absolute sense, though subjectively we may have varying degrees of confidence in the relations being causal" (Bollen 1989, p. 71). Approximation is at the heart of every model, whether it is a structural equation model or some other model, whether it belongs to the realm of the social sciences or the realm of natural sciences.

Another problem is that the investigator is seldom able to rule out all the false models. Not only does the number of possible true models increase exponentially with the number of variables, but also sometimes it is preferable to adopt a simpler model, which has a relatively poorer fit, than an elaborate one. This is because the investigator might believe that the simpler model is more likely to generalise to other samples than the more complex one.

In summary, a causal model can never be completely validated, as a good model-data fit does not necessarily mean that the model is true. Neither the model nor the structural relations depicted by it can be proven. We can only disconfirm a model through statistical tests.

7.1.3   The Effect of the Sample Size

Structural equation modelling is based on covariances. Covariances and correlations are less stable when estimated from small samples (Tabachnick and Fidell 1996, p. 715). In structural equation modelling, instead of thinking about number of subjects per measured variable, Bentler (1995, in ibid.) suggests thinking about the number of subjects per 'estimated parameter', as in structural equation modelling there is no linear relationship between the number of variables and the number of parameters. There are no definitive recommendations when it comes to the adequate sample size to obtain reliable solutions and parameter estimates in structural equation models. Different authors use different 'rules of thumb'. According to Bentler and Chou (1987, pp. 90-91), the ratio of sample size to the number of parameters can go as low as five to one "under normal and elliptical theory". Boomsma (1987, p. 184) suggests "that the estimation of structural equation models by maximum likelihood methods be used only when sample sizes are at least 200". Arbuckle (1997) gives a number of examples of structural equation models with sample sizes smaller than 100 cases. Tabachnick and Fidell (1986, p. 715) argue that "fewer than 10 subjects per estimated parameter may be adequate if the estimated size of effect is large and the measured variables are normally distributed". As well as normality of the distribution, the

existence and level of missing data seem to influence the reliability of the analysis in structural equation models.

The sample size and sampling method for the current study are discussed in detail in Chapter 5. It needs to be added that the relative smallness of the sample size is counterbalanced with fastidious collection of the data.

The limitations of structural equation modelling in general, and the particular shortcomings of the investigation in particular, should not decrease the scope and importance of the study. No claims are made to present a definitive study that mirrors the reality of marketing research utilisation in tourism. It is, however, the first study that attempts to empirically validate the antecedents and consequences of marketing research activity in tourism. It also makes a claim to be the first study to present a framework with which to measure the effect of marketing research utilisation on organisational financial performance in tourism, or in any other commercial endeavour.

7.1.4 The Statistical Packages Used in the Analyses

The data was edited and coded, and the preliminary analysis and the descriptive analysis presented in Chapter 5, were conducted through SPSS (version 8). A computer statistical package named AMOS (version 3.61) was used for the structuring and analysis of the general model and its subsets in this study. Apart from being the latest, and therefore presumably the most advanced, software program on the subject, Amos was chosen for its relative ease of use. AMOS 3.61 has the facility to read data from SPSS[1].

7.2 Development and Empirical Analysis of the Conceptual Model of Research Utilisation in Tourism

The overall model described in Chapter 3 was tested incrementally. A number of Submodels was tested gradually building to the complete model. Although there are some problems associated with this approach, in the present study its advantages outweighed those. Above all, it allowed a chance to gradually clear some variables that, for various reasons that are discussed, do not correlate well. Also some variables

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[1] Amos 3.61 was the latest available at the time the analyses were undertaken. Subsequently Amos version 4.0 has been released. However the new version does not contain any changes to the underlying algorithms used to estimate the kinds of models used in this thesis, and its use would not have changed any aspects of the diagrams or statistical results.

were combined in gradual models allowing for additional degrees of freedom, which dealt in part with the sample size issue discussed earlier. Figure 7.1 presents the full conceptual model to be tested in the form of a path diagram. In structural equation models, the set of connections between the observed and unobserved variables is often called the measurement model. The component of the model connecting the unobserved variables is referred to as the structural model (Arbuckle 1997). The present problem has five measurement models and one structural model.

Figure 7.1: **Conceptual Model of Antecedents and Consequences of Marketing Research Activity in Tourism Organisations :**
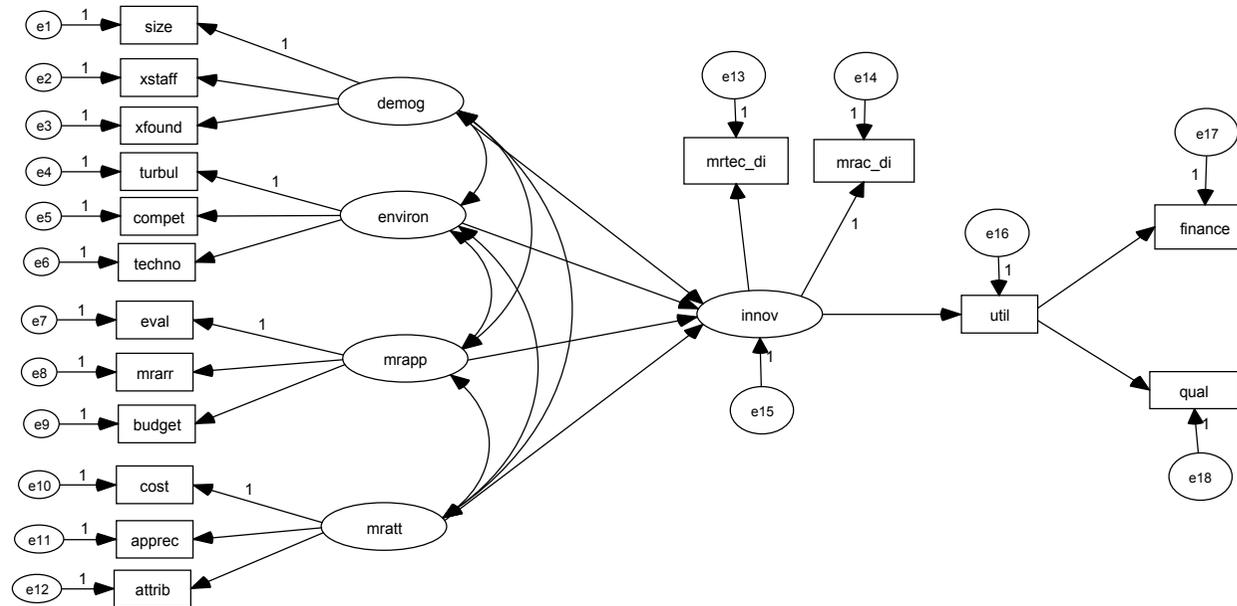
A correlation matrix for the hypothesised model was computed to obtain an understanding of the patterns of relationships between the constructs. As mentioned earlier, the correlation matrix allows for direct comparisons of the coefficients within a model. However, it is not used to explain the total variance of a construct as needed in theory testing. Hair et al. (1995) suggest that interpretation of results and their generalisability should be made with caution, when a correlation matrix is used.

The correlation matrix for the hypothesised model is presented in Table 7.1

Table 7.1: Correlation Matrix for the Hypothesised Model

	SIZE	XSTAFF	XFOUND	TURBUL	COMPET	TECHNO	EVAL	MRARR	BUDGET	COST	APPREC	ATTRIB	MRTEC_DI	MRAC_DI	UTIL	FINANCE	QUAL
SIZE	1.00																
XSTAFF	.62*	1.00															
XFOUND	-.15	-.27*	1.00														
TURBUL	-.12	-.34*	.17	1.00													
COMPET	.24*	.04	-.00	.19	1.00												
TECHNO	.29*	.11	.03	.23*	.50*	1.00											
EVAL	.25*	.15	-.02	.06	.25*	.38*	1.00										
MRARR	.35*	.30*	-.10	.00	.05	.12	.51*	1.00									
BUDGET	.25*	.20	-.04	.04	.01	.12	.39*	.55*	1.00								
COST	.08	.23*	.04	.13	.06	.28*	.41*	.48*	.39*	1.00							
APPREC	.08	.08	-.08	-.06	.08	.26*	.63*	.41*	.35*	.48*	1.00						
ATTRIB	-.07	-.02	.11	.02	-.06	.10	.33*	.05	-.18	.22*	.31*	1.00					
MRTEC_DI	.20	.09	-.00	.14	.12	.27*	.53*	.54*	.47*	.46*	.33*	.05	1.00				
MRAC_DI	.23*	.31*	.01	.02	.23*	.22*	.56*	.46*	.39*	.56*	.50*	.12	.45*	1.00			
UTIL	.06	.08	-.13	.04	.16	.18	.55*	.38*	.21*	.37*	.57*	.42*	.33*	.42*	1.00		
FINANCE	.08	.11	-.08	.08	.26*	.33*	.74*	.44*	.28*	.51*	.61*	.26*	.50*	.50*	.58*	1.00	
QUAL	-.09	-.04	.09	.12	.02	.07	.12	.00	-.11	.27*	.15	.41*	.04	.11	.07	.20	1.00

* Correlation is significant at the 0.05 level (2-tailed).

In a path diagram, manifest (observed, measured) variables are represented in a rectangle. In the present path diagram these variables are size, xstaff, xfound, enviro, mrarr, budget, central, formal, inform, cost, apprec, attrib, mrac_di, and mrtec_di. The error variables (e_n), demog, struct, mrapp, mratt and innov are enclosed in circles because they are latent (unobserved, unmeasured) variables. The single headed arrows in the diagram represent causal paths (linear dependencies). For example, the arrow leading from size to mrac_di implies that marketing research activity scores depend, in part, on the size of the organisation. The double-headed arrows depict correlations or covariances. A necessary assumption in linear regression is that error variables are assumed to be uncorrelated with any other predictor variable. Predictor variables are referred to as exogenous and criterion variables are referred to as endogenous. All endogenous variables have at least one single-headed path pointing towards them. Exogenous variables have no single-headed arrows going in.

The error variables represent not only random fluctuations due to measurement error in the variables they are attached to, but also a composite of anything outside these variables on which they may depend, but which was not measured in the present study. For example, error14 depicts random fluctuations in marketing research activity results due to possible measurement error as well as a compound of, say, real decision-maker power of the respondent, organisational bias towards task complexity and anything else on which marketing research activity may depend but the measurement of which was not attempted in this research.

The model, as it stood, was too big for a meaningful analysis through structural equation. Apart from the considerations regarding the sample size, Bentler and Chou (1987) states that a model should contain at most 20 variables (five or six constructs each measured by three to four indicators). "The interpretation of results and their statistical significance becomes difficult as the number of concepts becomes large (exceeding 20) (Reisinger and Turner 1999, p. 76). There was a need to reduce the number of variables. The four latent variables (demog, struct, mrapp and mratt) were created in an effort to reduce the moment structures and obtain a more parsimonious model. In the present study, parsimony is of utmost importance because of the sample size. The reliability of the subsets which formed the exogenous variables was demonstrated earlier in the thesis. There was now a need to demonstrate validity and unidimensionality of the newly theorised factors (latent exogenous variables).

Factor structures of the four exogenous groups forming latent variables were analysed using principal components analysis. Bartlett's test of sphericity was also used to test whether the correlation matrix was significantly different from the identity matrix. Bartlett's test is available as an option in SPSS Factor and recommended for samples of reasonable size.

Following the analysis one factor (struct) was dropped because the results indicated that the initial assumption of unidimensionality was incorrect. The results are presented in Table 7.2 (Bartlett's test χ^2=4.16, df=3, p=0.25).

Table 7.2: Inter-item Correlations of the Subset 'struct'

		CENTRAL	FORMAL	INFORM
CENTRAL	Pearson Correlation	1.00	-0.035	0.02
	Significance	.	0.74	0.86
FORMAL	Pearson Correlation	-0.04	1.00	0.21
	Significance	0.74	.	0.05
INFORM	Pearson Correlation	0.02	0.21	1.00
	Significance	0.86	0.05	.

In the analysis of demog, xfound was negative. Consequently, this variable was dropped and the standardised scores of the remaining two variables were combined to create a new variable (xdemog) to be used in the full model. The results of the factor analysis of demog are shown in Table 7.3 (Bartlett's test χ^2=49.06, df=3, p=0.00)

Table 7.3: Correlation Matrix for 'size', 'xfound' and 'xstaff'

		SIZE	XFOUND	XSTAFF
SIZE	Pearson Correlation	1.00	-0.15	0.62[*]
	Significance	.	0.15	0.00
XFOUND	Pearson Correlation	-0.15	1.00	-0.27[*]
	Significance	0.15	.	0.01
XSTAFF	Pearson Correlation	0.62[*]	-0.26[*]	1.00
	Significance	0.00	0.01	.

    * Correlation is significant at the 0.05 level (2-tailed).

Table 7.4: Factor Structure of 'demog'

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.74	57.91	57.91	1.74	57.91	57.91
2	0.89	29.83	87.69			
3	0.37	12.31	100.00			

Extraction Method: Principal Component Analysis.

The results of the analyses of the remaining two factors that would form the rest of the exogenous variables are shown in Table 7.5. As can be seen from the Table 7.5, the structure of these factors are as expected. All loadings are high on their hypothesised factor and Bartlett's test shows a high significance.

Table 7.5: Factor Loadings and Reliabilities for New Exogenous Variables

Factor	Loading	Cronbach's Alpha	Subset
MRAPP	0.77	0.69	EVAL
	0.76		MRARR
	0.80		BUDGET
MRATT	0.78	0.60	COST
	0.83		APPREC
	0.62		ATTRIB

Next, a latent variable (innov) was created to represent organisational innovativeness as defined by the level and range of marketing research activities (mrac_di) conducted and marketing research techniques utilised (mrtec_di). This is in accordance with the theory discussed in the earlier chapters.

7.2.1 Incremental Analysis of the Model

The surviving exogenous variables and innov were formed into a measurement model, which was the first submodel to be analysed. The model tested the following hypotheses:

H$_2$: The more turbulent the external environment in which a tourism organisation operates, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H$_3$: The more formalised the systems to evaluate the usefulness of marketing research, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H$_4$: The more formalised a tourism organisation's marketing research structure, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H$_5$: The higher the annual marketing research budget of a tourism organisation, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H$_9$: The more positive the cost benefit ratio of marketing research, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H$_{10}$: The more positive the historic appreciation of marketing research of a tourism organisation the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H$_{11}$: The higher the perceived marketing research quality in terms of report attributes, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

The path model for Submodel 1 with standardised estimates is shown in Figure 7.2.

Figure 7.2: **Path Diagram of Submodel 1 of Determinants of Marketing Research Activity in Tourism Organisations**
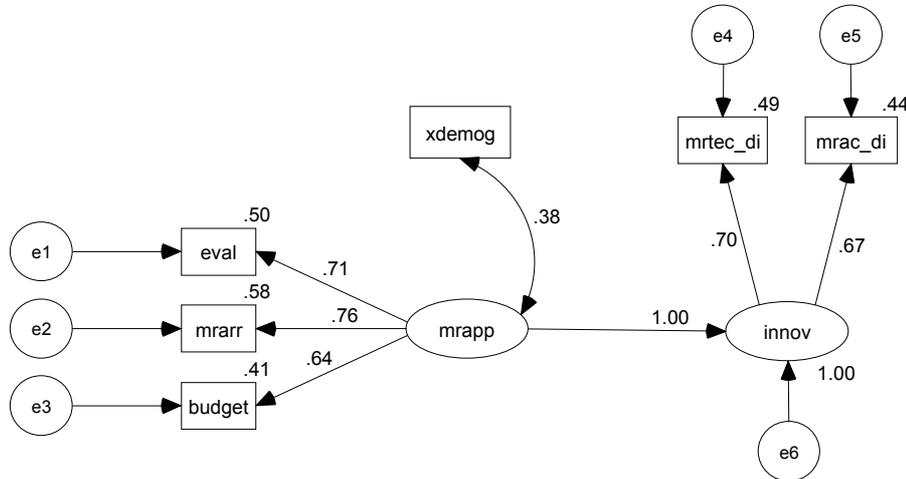
Path Model of Antecedents and Consequences of Marketing Research Utilisation (Standardised Estimates)

chi square = 12.220 df = 9 prob. = .201 gfi = .956

In a path diagram, manifest (observed, measured) variables are represented in a rectangle. In the present path diagram these variables are size, eval, mrarr, budget, xdemog, mrac_di, and mrtec_di. The error variables (e1 to e6), mrapp, and innov are enclosed in circles because they are latent (unobserved, unmeasured) variables. The single headed arrows in the diagram represent causal paths (linear dependencies). For example, the arrow leading from mrapp to innov implies that innovativeness scores depend, in part, on the variables that make up marketing research appraisal of the organisation. The double-headed arrows depict correlations or covariances. A necessary assumption in linear regression is that error variables are assumed to be uncorrelated with any other predictor variable. Predictor variables are referred to as

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exogenous and criterion variables are referred to as endogenous. All endogenous variables have at least one single-headed path pointing towards them. Exogenous variables have no single-headed arrows going into them, only arrows pointing towards other variables.

The error terms represent not only random fluctuations due to measurement error in the variables they are attached to, but also a composite of anything outside these variables on which they may depend, but which was not measured in the present study. For example, error1 depicts random fluctuations in evaluation procedures of the organisation measurement results due to possible measurement error as well as a compound of, say, individual bias towards the efficacy of evaluation procedures, organisational bias towards task complexity and anything else on which evaluation procedures appraisal may depend but the measurement of which was not attempted in this research. The error variables are essential because the path diagram is expected to show all variables that affect innovativeness scores as defined by marketing research activity and utilisation of marketing research techniques. Without the inclusion of error variables the path diagram would imply that innovativeness is an exact linear combination of the stated variables..

Table 7.6 shows setup and minimal selected output for computer analysis of the Submodel in Figure 7.2. In this instance, a detailed explanation of the analysis will be presented with a discussion of goodness of fit indices used in structural equation modelling. This discussion then will serve as a template for the presentation of further submodels and finally the complete model.

Table 7.6: Output for the Path Diagram of Submodel 1 of Determinants of Marketing Research Activity in Tourism Organisations

```
Computation of Degrees of Freedom

                 Number of distinct sample moments:   21
        Number of distinct parameters to be estimated:   11
                                 ------------------------
                           Degrees of freedom:   10

Minimum was achieved
Chi-square =    15.932
Degrees of freedom =   10
Probability level =     0.102

Maximum Likelihood Estimates
----------------------------

Regression Weights:                   Estimate   S.E.     C.R.     Label
-------------------                   --------   -------  -------  -------

           innov <---------- mrapp     2.897     0.377    7.687
           eval <----------- mrapp     1.000
           mrarr <---------- mrapp     0.518     0.058    8.960
           budget <--------- mrapp     0.440     0.063    7.030
           mrac_di <-------- innov     1.000
           mrtec_di <------- innov     2.473     0.394    6.270

Standardized Regression Weights:      Estimate
--------------------------------      --------

           innov <---------- mrapp     1.000
           eval <----------- mrapp     0.800
           mrarr <---------- mrapp     0.781
           budget <--------- mrapp     0.665
           mrac_di <-------- innov     0.707
           mrtec_di <------- innov     0.734

Covariances:                          Estimate   S.E.     C.R.     Label
------------                          --------   -------  -------  -------

           mrapp <--------> xdemog     0.731     0.194    3.777

Correlations:                         Estimate
-------------                         --------

           mrapp <--------> xdemog     0.403

Variances:                            Estimate   S.E.     C.R.     Label
----------                            --------   -------  -------  -------

                          mrapp        1.000
                          xdemog       3.293     0.488    6.745
                            e10        0.005
                             e1        0.563     0.113    4.960
                             e2        0.171     0.034    5.044
                             e3        0.245     0.042    5.876
                             e8       44.066     8.053    5.472
                             e9        8.402     1.487    5.652

Squared Multiple Correlations:        Estimate
-----------------------------         --------

                          innov        0.999
                       mrtec_di        0.538
                        mrac_di        0.500
                         budget        0.442
                          mrarr        0.610
                           eval        0.640
```

```
Implied Covariances


          xdemog   mrtec_di mrac_di  budget    mrarr    eval
          -------- -------- -------- -------- -------- --------
xdemog     3.293
mrtec_di   5.236   95.402
mrac_di    2.118   20.761   16.798
budget     0.322    3.152    1.275    0.439
mrarr      0.378    3.708    1.499    0.228    0.439
eval       0.731    7.163    2.897    0.440    0.518    1.563

Implied Correlations


          xdemog   mrtec_di mrac_di  budget    mrarr    eval
          -------- -------- -------- -------- -------- --------
xdemog     1.000
mrtec_di   0.295    1.000
mrac_di    0.285    0.519    1.000
budget     0.268    0.487    0.470    1.000
mrarr      0.315    0.573    0.552    0.519    1.000
eval       0.322    0.587    0.565    0.532    0.625    1.000

Summary of models
-----------------
```

Model	NPAR	CMIN	DF	P	CMIN/DF
Your_model	11	15.932	10	0.102	1.593
Saturated model	21	0.000	0		
Independence model	6	167.045	15	0.000	11.136

Model	RMR	GFI	AGFI	PGFI
Your_model	2.274	0.941	0.877	0.448
Saturated model	0.000	1.000		
Independence model	3.997	0.522	0.331	0.373

	DELTA1	RHO1	DELTA2	RHO2	
Model	NFI	RFI	IFI	TLI	CFI
Your_model	0.905	0.857	0.962	0.941	0.961
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Your_model	0.667	0.603	0.641
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Your_model	5.932	0.000	20.937
Saturated model	0.000	0.000	0.000
Independence model	152.045	114.157	197.391

Model	FMIN	F0	LO 90	HI 90
Your_model	0.177	0.066	0.000	0.233
Saturated model	0.000	0.000	0.000	0.000
Independence model	1.856	1.689	1.268	2.193

Model	RMSEA	LO 90	HI 90	PCLOSE
Your_model	0.081	0.000	0.153	0.222
Independence model	0.336	0.291	0.382	0.000

Table 7.6: (continued)

Model	AIC	BCC	BIC	CAIC
Your_model	37.932	39.787	85.261	76.551
Saturated model	42.000	45.542	132.355	115.728
Independence model	179.045	180.057	204.861	200.110

Model	ECVI	LO 90	HI 90	MECVI
Your_model	0.421	0.356	0.588	0.442
Saturated model	0.467	0.467	0.467	0.506
Independence model	1.989	1.568	2.493	2.001

Model	HOELTER .05	HOELTER .01
Your_model	104	132
Independence model	14	17

7.2.1.1 Results of the Analysis of the Submodel 1

There are six observed and eight latent variables, including six error variables. There are two fixed and six unlabelled variances, one unlabelled covariance, eight fixed and four unlabelled weights. Therefore, there are 21 sample moments (sample moments refer to variances, covariances and means – means are not considered in this model). There are a total of 11 parameters to be estimated. Consequently, the model is identified with 10 degrees of freedom.

"Structural equation modelling has no single statistical test that best describes the 'strength' of the model's predictions" (Hair et al 1995, p. 489). Evaluating the overall goodness of fit for structural equation models is not direct as with the other multivariate dependence techniques, such as multiple regression, discriminant analysis, multivariate analysis of variance, or conjoint analysis. Bollen (1989, p. 275) suggests that "selecting a rigid cutoff for the incremental fit indices is like selecting a minimum R^2 for a regression equation. Any value will be controversial. Awareness of the factors affecting the values and good judgment are the best guides to evaluating their size." The same advice applies equally well to other goodness of fit measures (Hair et al 1995). According to Tabachnick and Fidell (1996, p. 752), good models produce consistent results on many different indices in many cases and, if all the indices inspire similar conclusions, then the choice of which indices to report is a matter of personal preference. In all of the various Submodels discussed in this thesis, as well as in the final attempt at a complete model, all indices given by AMOS are presented in tables. However, following the convention used in the peer-reviewed journal articles, only a select number of indices will be discussed in detail.

7.2.1.2. Model Identification

In structural equation modelling a model is specified, parameters for the model are estimated using sample data, and the parameters are combined to produce the estimated population covariance matrix. Only models that are identified can be estimated. "A model is said to be identified if there is a unique numerical solution for each of the parameters in the model" (Tabachnick and Fidell 1996, p. 743). If there are more sample moments than the number of parameters to be estimated, then the model is said to be overidentified. Overidentification is an essential prerequisite for

proceeding with the analysis.

The results of the model first need to be inspected for offending estimates. Offending estimates are "estimated coefficients … that exceed acceptable limits" (Hair et al. 1995, p. 610). The initial estimate for the error variable e6 in the model was negative, which is not acceptable and needs to be resolved. In the case of negative error variances (also known as Heywood cases), one possibility is to fix the offending error variances to a very small positive value (0.005) (Bentler and Chou 1987). The error variable e6 is fixed at 0.005.

The 'implied' covariances are the best estimates of the population variances and covariances under the null hypothesis that parameters required to have estimates are, in reality, equal in the population. The 'sample' covariances are the best estimates without making any equality assumptions. If the null hypothesis is correct, both the implied and sample covariances are maximum likelihood estimates of the corresponding population values, but the implied covariances are better estimates, because the standard errors are reduced. However, if the null hypothesis is incorrect, the sample covariances should be chosen, and the implied covariances should not be used. Therefore, it is of interest to test the accuracy of the null hypothesis. The chi-square statistic is an overall measure of how much the implied and sample covariances differ and, with a perfect fit, is 0. "The more the implied and sample covariances differ, the bigger the chi-square statistic, and the stronger the evidence against the null hypothesis" (Arbuckle 1997, p. 328).

The chi-square statistic is the only statistically based measure of goodness of fit available in structural equation modelling (Bollen 1989). The chi-square test against the null hypothesis for the Submodel 1 shows χ^2 = 12.22, df=9, prob=0.20. If the null hypothesis were true, the chi-square statistic would follow an approximate chi-square distribution with 10 degrees of freedom, and would have a value about the same as the degrees of freedom. The probability that such a chi-square statistic equals or exceeds 15.93 is about 0.10. In the Submodel 1, the evidence against the null hypothesis is not significant at the five per cent level. Consequently, the null hypothesis can be rejected with confidence.

Several authors suggested the use of Normed Chi-square (chi-square measure divided by degrees of freedom) as a measure of fit. "One very rough rule of thumb … is that a

good fitting model may be indicated when the ratio of χ^2 to the degrees of freedom is less than 2" (Tabachnick and Fidell 1996, p. 748). Byrne (1989, in Arbuckle 1997) asserted that a χ^2/df ratio > 2.00 represented an inadequate fit. Normed chi-square (χ^2/df ratio) is shown under the heading CMIN/DF in the AMOS output (see Table 7.6) and is 1.59 for the model in discussion, below the upper threshold of level of 2.00

However, the χ^2 measure is criticised for being too sensitive to sample size differences. If the sample size is large, this measure has an inclination to indicate significant differences for equivalent models. If the sample size is around 100 or fewer, it may show acceptable fit even when none of the model relationships is shown to be significantly different. "Thus the chi-square statistic is quite sensitive in different ways to both small and large sample sizes, and the analyst is encouraged to complement this measure with other measures of fit in all instances. Its use is appropriate for sample sizes between 100 and 200, with the significance test becoming less reliable with sample sizes outside this range" (Hair et al 1995, p. 490). The sample size in this study is close to the 100 range (n=91), and the data meet the distribution assumptions the chi-square test (a normality check is provided in the Appendix). Despite these, the chi-square test in itself (although a useful indication of model fit) was not considered sufficient.

As shown in Table 7.6, AMOS provides a number of goodness of fit measures outside the chi-square test, and allows the investigator to test the model against both the fully-identified model (here called saturated model) and the non-identified model (here called independence model). In Table 7.5, the first section under the heading 'summary of models' refers to the chi-square test discussed above (NPAR = number of parameters, CMIN = chi-square, DF = degrees of freedom). Other goodness of fit measures follow this.

The second measure of absolute fit index, and one of the most often quoted, is the GFI (Goodness-of-Fit Index). Provided by Jöresko and Sörbom (1984), the GFI is a nonstatistical measure ranging in value from 0 (which indicates a poor fit) to 1.0 (which indicates a perfect fit). The GFI is a measure of overall degree of fit, "the squared residuals from prediction compared to the actual data" (Hair et al. 1995, p. 490). The GFI is not adjusted for degrees of freedom. Although higher values indicate

a better fit, there is no established minimum level for acceptability. As can be seen in Table 7.6, the GFI for the Submodel 1 represents a good fit at the 0.94 level.

The AGFI (Adjusted Goodness of Fit Index) takes into account the degrees of freedom available for testing of the model. The AGFI has an upper limit of 1.0, which indicates a perfect fit. It is not, however, bounded below by zero, as the GFI is (Arbuckle 1997). It is given by

$$AGFI = 1 - (1 - GFI)\frac{db}{d}$$

where

db is degrees of freedom of the baseline model, and

d is the degrees of freedom of the model being tested.

The RMSEA (Root Mean Square Error of Approximation), also referred to as RMSR and RMS, is "the square root of the mean of the squared residuals – an average of the residuals between observed and estimated input matrices (Hair et al 1995, p. 490). Although no threshold can be established, Browne and Cudeck (1993) suggest that a value of RMSEA of about 0.05 would indicate a "close fit" of the model in relation to the degrees of freedom, and a value of 0.08 or less would indicate a reasonable error of approximation. Models with a RMSEA greater than 0.1 are generally rejected.

The NFI (Normed Fit Index) (Bentler and Bonnet 1980) has been recommended to counteract the sample size problems. This measure compares the model to a baseline model. It can be expressed as:

$$NFI = 1 - \frac{C}{Cb} = 1 - \frac{F}{Fb}$$

where

C is the chi-square measure of the baseline model,

F is the chi-square measure of the model being evaluated,

$C = nF$ is the minimum discrepancy of the model being evaluated, and

$Cb = nF_b$ is the minimum discrepancy of the baseline model.

The independence model is the one most often used, and the one that AMOS employs. A rule of thumb for the NFI is that both indexes should be greater than or equal to 0.90. Models with values less than 0.90 have variances that remain to be explained (Bentler and Bonnett 1980).

Bentler and Bonnett (1980) discuss the TLI (Tucker-Lewis Index) in the context of analysis of moment structures (variances, covariances, and means). TLI values close to 1.0 indicate a very good fit (Arbuckle 1997). The TLI can be written as:

$$TLI = \frac{\frac{Cb}{db} - \frac{C}{d}}{\frac{Cb}{db} - 1}$$

where

Cb is the chi-square measure of the baseline model,

db is the degrees of freedom of the baseline model,

C is the chi-square measure of the model being tested, and

d is the degrees of freedom of the model being tested.

Table 7.7 shows the comparison of preferred Goodness-of-Fit Measures for the Submodel 1 with the calculation of measure (after Hair et al. 1995).

Table 7.7: Comparison of Goodness-of-Fit Measures for Submodel 1 of Determinants of Marketing Research Activity in Tourism Organisations

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Submodel 1 Data: Six observed and eight latent variables, six exogenous, eight endogenous. Total degrees of freedom: 10

Proposed model:	$\chi^2 = 15.93$	df = 10 prob. = 0.10	χ^2/df = 1.59
Independence model:	$\chi^2 = 167.04$	df = 15 prob. = 0.00	χ^2/df = 11.13

Evaluation of Proposed Model (Submodel1) with Goodness-of-Fit Measures

---

Goodness-of-Fit Measure	Levels of Acceptable Fit	Calculation of Measure	Fit
Chi-square test (χ^2)	Statistical test of significance provided	$\chi^2 = 15.39$ *significance level*: 1.00	Acceptable
Normed chi-square (χ^2/df)	Recommended level: Lower limit: 1.0 Upper limit: 2.0/3.0 or 5.0	$Normed\chi^2 = \dfrac{15.93}{10} = 1.59$	Acceptable
Goodness of Fit Index (GFI)	Values close to 1.0 indicate better fit, no established thresholds	$GFI = 0.94$	Acceptable
Root Mean Square Error of Approximation (RMSEA)	Values of 0.08 or less indicate a reasonable error of approximation	$RMSEA = 0.08$	Acceptable
Adjusted Goodness of Fit (AGFI)	Recommended level: 0.90	$AGFI = 0.88$	Acceptable
Normed Fit Index (NFI)	Recommended level: 0.90	$NFI = \dfrac{167.04 - 15.93}{167.04} = 0.90$	Acceptable
Tucker-Lewis Index (TLI)	Recommended level: 0.90	$TLI = \dfrac{(167.04/15) - (15.93/10)}{(167.04/15) - 1} = 0.94$	Acceptable

Table 7.7 shows that, overall, the initial fit of the Submodel 1 was very good.

7.2.1.3 HYPOTHESES TESTS

In the path model presented in Figure 7.2, the scores appearing on the edge of the boxes are variance estimates, that is, the amount of variance in the observed variable explained by the latent unobserved variable. Figures next to the one-headed arrows are standardised regression weights and the figure appearing next to double-headed arrow is a correlation. In the output depicted in Table 7.6, non-standardised regression weights are displayed under the heading of Maximum Likelihood Estimates. Right next to these estimates, in the S. E. column, is an estimate of the standard error of the regression. These figures can be used to construct a 95 per cent confidence interval on the population covariance by computing

$$C.I. = R \pm 1.96 * S.E.$$

The figure right next to the standard error, in the C.R. column, is the critical ratio obtained by dividing the variance estimate by its standard error. If we look at the first relationship between mrapp and innov, this ratio is 2.90/0.38=7.68. This ratio is relevant to the null hypothesis that, in the population from which the present dataset's 91 subjects came, the variance score between mrapp and innov is zero. If this hypothesis is true, provided the normality and independence of observation assumptions are met (as they are in the present data); the critical ratio is an observation of a random variable that has an approximate standard distribution. Therefore, using a significance level of 0.05, any critical ratio that exceeds 1.96 in magnitude would be called significant. In the first relationship (mrapp → innov), since 7.68 is greater than 1.96, the variance in innovativeness of the organisation as a result of the influence of marketing research appraisal (as defined by formality of evaluation procedures, formality of marketing research department, and annual marketing research budget) is highly significant.

When we go down the list, we find all other relationships are also significantly related. The results strongly support the following three hypotheses, within the limits of the present model.

H[8]: The more formalised the systems to evaluate the usefulness of marketing research, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H[9]: The more formalised a tourism organisation's marketing research structure, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

H[10]: The higher the annual marketing research budget of a tourism organisation, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

At this juncture, it may be mentioned that statistical hypothesis testing, if adhered to blindly, can be a poor tool for choosing a model. One of the creators of the LISREL package, Jöreskog (1997) discussed this issue in the context of factor analysis. It is generally accepted that a model can only be an approximation at best and that it can be useful without being true. Arbuckle (1997, p. 371) reiterates this point of view and adds that the models are never perfectly correct, and "thus can always be rejected on statistical grounds … consequently, rejection of a model on purely statistical grounds … is not necessarily a condemnation".

In this study the causal relationships are complex and the number of observed variables is large compared with the sample size. As a result, only latent variables that were strongly defined by the principal components analysis, and observed variables which loaded strongly on these latent dimensions were used. Outside this, no modifications were made to the structural models, except the addition of few constraints in the larger model, as duly noted, to achieve identification. The larger models are likely to be less than optimal given no attempt has been made to improve their fit. It is the view of the investigator that the interpretation of models on statistical grounds must be tempered with logic and knowledge of the field as well as the extant work in the field. This is why any post analysis modifications with the sole aim of improving statistical results are resisted in this study.

7.3   Analysis of Submodel 2

Another submodel, presented in Figure 7.3, was constructed to test the relationship of

marketing research attributes construct (mratt) to organisational innovativeness
(innov).

Figure 7.3: **Path Diagram of Submodel 2 of Determinants of Marketing Research
Activity in Tourism Organisations**
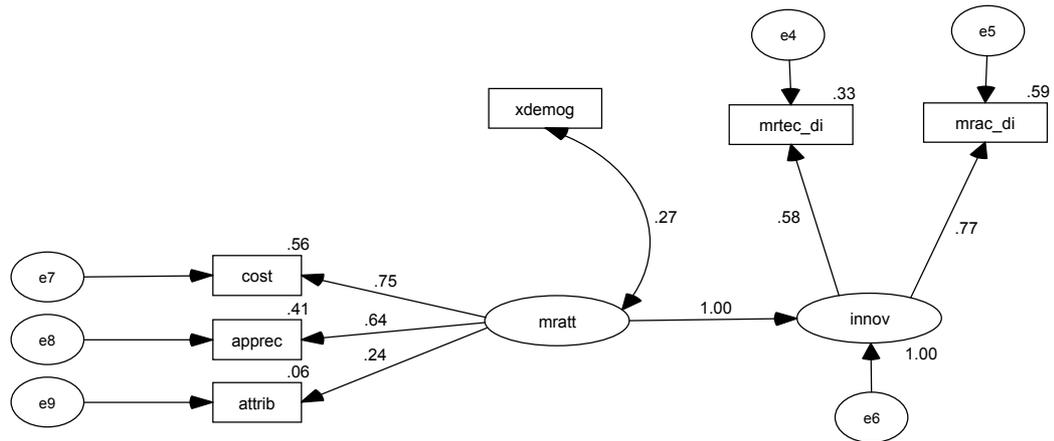
Path Model of Antecedents and Consequences of Marketing Research Utilisation
(Standardised Estimates)

chi square = 11.002 df = 9 prob. = .276 gfi = .959

The fit of this submodel was also particularly good (GFI = 0.96, AGFI = 0.90, TLI = 0.97, RMSEA = 0.05). Chi-square measures were within the acceptable limits (χ^2 = 11.00, df = 9, χ^2 / df = 1.22). Critical ratios of regression weights were well above the lower limit of 1.96:

Table 7.8: Maximum Likelihood Estimates for Submodel 2

Regression Weights	Estimate	Standard Error	Critical Ratio
mratt -→ innov	4.50	0.77	**5.87**
mratt -→ cost	1.00*		
mratt → apprec	1.16	0.22	**5.22**
mrapp → attrib	0.27	0.13	**2.06**
innov → mrac_di	1.00*		
innov -→ mrtec_di	1.79	0.37	**4.82**
Covariance			
mratt -←> xdemog	0.32	0.15	**2.17**

The unstandardised regression values of 1.00 correspond to parameters assigned in order to achieve identification

As mentioned earlier, there is a need constrain one variable connected to each latent variable to achieve identification of the model. Paths to mratt → cost and innov → mrac_di were fixed for model identification purposes.

All other things being equal, the model supported the following hypotheses:

> H_{11}: The more positive the cost benefit ratio of marketing research, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

> H_{12}: The more positive the historic appreciation of marketing research of a tourism organisation the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

> $H_{13:}$ The higher the perceived marketing research quality in terms of report attributes, the greater the organisational innovativeness (as defined by the range of marketing research activities conducted and the range of marketing research techniques utilised).

7.4   Analysis of Submodel 3

The exogenous variables were correlated and the environmental turbulence (enviro) subset was added as a manifest variable to form the larger measurement model, which is depicted in Figure 7.4

Figure 7.4: Path Diagram of Submodel 3 of Determinants of Marketing Research Activity in Tourism Organisations
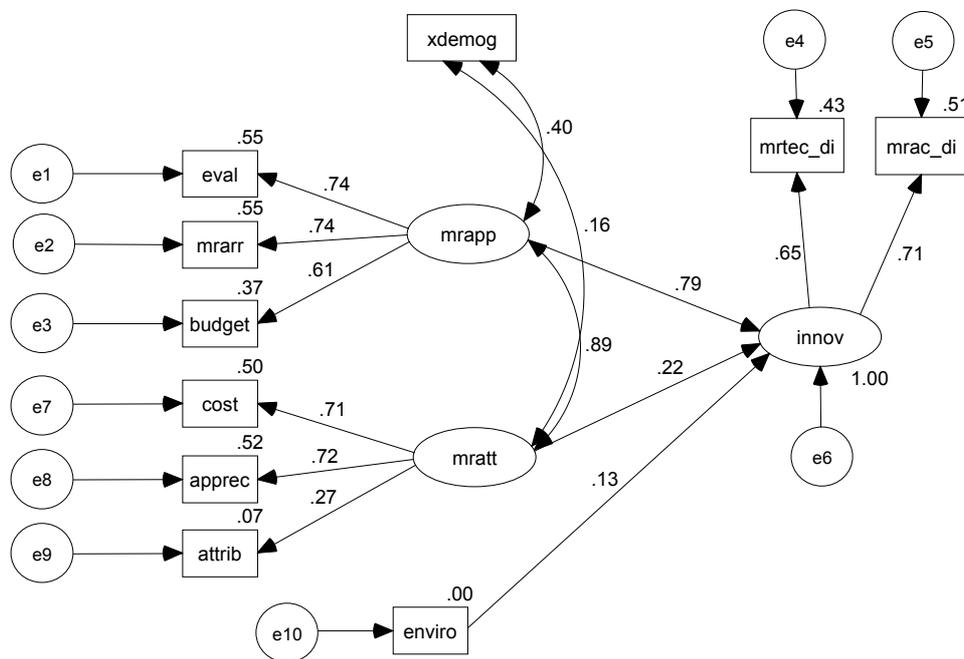
Path Model of Antecedents and Consequences of Marketing Research Utilisation (Standardised Estimates)

chi square = 75.810 df = 32 prob. = .000 gfi = .859

.

The fit of this submodel was modest (GFI = 0.86, AGFI = 0.76, TLI = 0.78, RMSEA = 0.12). Chi-square measures were also on the margins of acceptable limits (χ^2 = 75.81, df = 32, χ^2 / df = 2.37). Critical ratios of regression weights did not support the effect of mratt and enviro on the variable innov. These are depicted in Table 7.9.

Table 7.9: Maximum Likelihood Estimates for Submodel 3

Regression Weights	Estimate	Standard Error	Critical Ratio
mrapp -→ innov	2.66	1.15	**2.31**
mratt -→ innov	0.98	1.47	**0.67**
enviro -→ innov	0.43	0.29	**1.47**
mrapp-→ eval	1.00*		
mrapp → mrarr	0.57	0.09	**6.58**
mrapp -→ budget	0.48	0.09	**5.41**
mratt -→ cost	1.00*		
mratt → apprec	1.38	0.24	**5.70**
mratt → attrib	0.31	0.14	**2.27**
innov → mrac_di	1.00*		
innov -→ mrtec_di	2.19	0.38	**5.70**
Covariances			
mratt -←> xdemog	0.18	0.15	**1.25**
mrapp -←> xdemog	0.58	0.19	**3.00**
mrapp -←> mratt	0.46	0.11	**4.31**

The unstandardised regression values of 1.00 correspond to parameters assigned in order to achieve identification

7.5 Analysis of Structural Model 1:

The first final path model of antecedents and consequences of marketing research in tourism is depicted in Figure 7.5.

Figure 7.5: Path Diagram of Structural Model of Determinants of Marketing Research Activity in Tourism Organisations

Path Model of Antecedents and Consequences of Marketing Research Utilisation (Standardised Estimates)

chi square = 182.589 df = 62 prob. = .000 gfi = .767
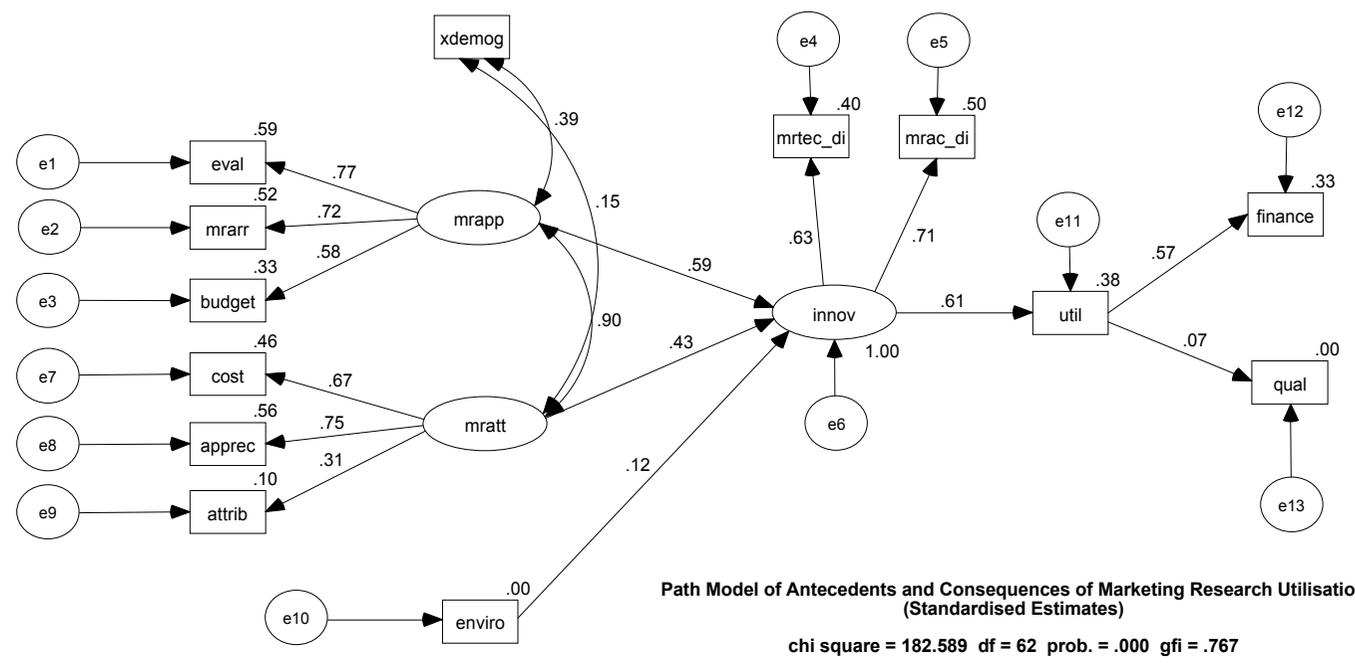
Once again, considering the reservations expressed earlier, the fit of the model was modest (GFI = 0.77, AGFI = 0.66, TLI = 0.64, RMSEA = 0.15, χ^2 = 182.59, df = 62, χ^2 / df = 2.95). Critical ratios of regression weights, in general, indicate strong relationships, especially between organisational innovativeness (innov) and utilisation of marketing research (util), and between utilisation and financial performance of the organisation (finance). These are displayed in Table 7.10:

Table 7.10: Maximum Likelihood Estimates for the Structural Model 1

Regression Weights	Estimate	Standard Error	Critical Ratio
mrapp -→ innov	1.91	1.01	**1.88**
mratt -→ innov	1.94	1.45	**1.34**
enviro -→ innov	0.39	0.26	**1.46**
mrapp-→ eval	1.00*		
mrapp → mrarr	0.54	0.08	**6.73**
mrapp -→ budget	0.43	0.08	**5.28**
mratt -→ cost	1.00*		
mratt → apprec	1.51	0.26	**5.89**
mratt → attrib	0.38	0.14	**2.66**
util -→ finance	0.88	0.13	**6.66**
util -→ qual	0.50	0.78	**0.64**
innov → mrac_di	1.00*		
innov -→ mrtec_di	2.12	0.38	**5.89**
Covariances			
mratt -←> xdemog	0.16	0.14	**1.17**
mrapp -←> xdemog	0.59	0.20	**2.97**
mrapp -←> mratt	0.46	0.11	**4.34**

*The unstandardised regression values of 1.00 correspond to parameters assigned in order to achieve identification

With 29 distinct parameters to be estimated, the model was still too liberal for the sample size. There was no support for the effect of util on the construct qual (C.R. = 0.64). The hypothesized influence of marketing research utilisation on non-quantitative organisational performance indicators such as employee morale and *esprit de corps* was a relatively weak point in the theory. Therefore, the construct qual was dropped from the model. The support for the effect of enviro on innov also was not significant (C.R. = 1.46). The theoretical justification of the influence of environmental turbulence on innovativeness as defined by marketing research activity was relatively harder than the justification of the other unsupported concept (mratt). Therefore, the variable enviro was omitted from the final structural model. The resulting structural model of antecedents and consequences of marketing research utilisation in tourism is depicted in Figure 7.6.

Figure 7.6: Path Diagram of Structural Model of Antecedents and Consequences of Marketing Research in Tourism Organisations
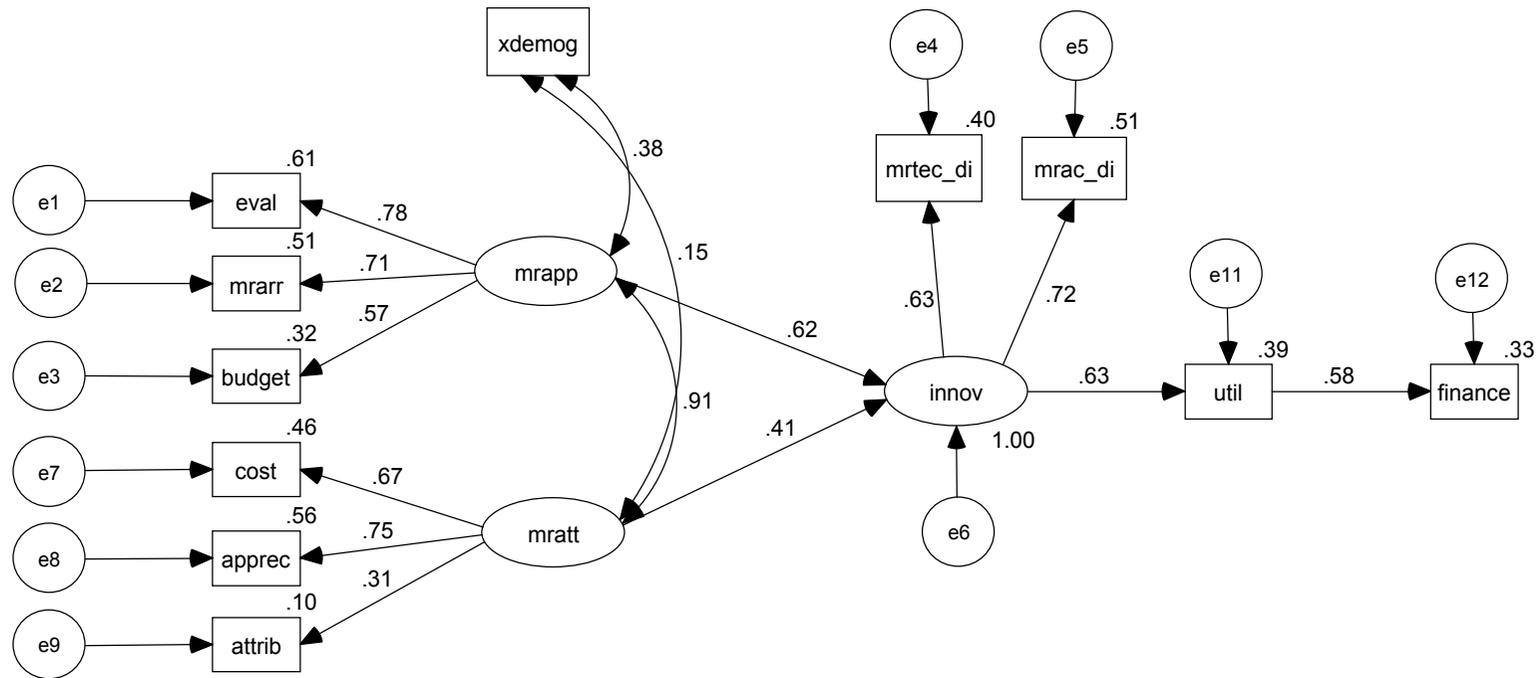
Path Model of Antecedents and Consequences of Marketing Research Utilisation
(Standardised Estimates)

chi square = 139.303 df = 41 prob. = .000 gfi = .790

The fit of the model is outside the conservative levels recommended in the literature (GFI = 0.79, AGFI = 0.66, TLI = 0.67, RMSEA = 0.16, $\chi2$ = 139.30, df = 41, $\chi2$ / df = 3.40). However, as the theoretical grounding is strong and the essential nature of the investigation is exploratory, no further attempt was made to modify the model. As discussed earlier and supported by the seminal literature on the subject such attempt would serve no other purpose than achieving a statistical fit at the expense of contaminating the theoretical basis of the study. In addition, Darden (1983) suggests that achieving a good fit at all costs may result in a model that is theoretically less appropriate as there are many models that could fit the data better.

In the final model, critical ratios of regression weights indicate strong relationships between all concepts except the one between marketing research attributes (mratt) and organisational innovativeness as defined by marketing research activity (innov). The theory strongly suggests that marketing research attributes (mratt) should be retained despite its relatively non-significant parameters, as the sample size in the present study maybe too small to detect its real significance (see, Joreskog and Sorbom 1989). Most importantly, the paths between organisational innovativeness (innov) and utilisation of marketing research (util), and between utilisation and financial performance of the organisation (finance) show significance. These are displayed in Table 7.11.

Table 7.11: Maximum Likelihood Estimates for the Final Structural Model

Regression Weights	Estimate	Standard Error	Critical Ratio
mrapp -→ innov	2.02	1.04	**1.95**
mratt -→ innov	1.90	1.49	**1.27**
mrapp-→ eval	1.00*		
mrapp → mrarr	0.52	0.08	**6.74**
mrapp -→ budget	0.42	0.08	**5.26**
mratt -→ cost	1.00*		
mratt → apprec	1.51	0.26	**5.89**
mratt → attrib	0.38	0.14	**2.66**
innov → util	0.17	0.03	**5.55**
util -→ finance	0.88	0.13	**6.72**
innov → mrac_di	1.00*		
innov -→ mrtec_di	2.10	0.37	**5.62**
Covariances			
mratt -←> xdemog	0.16	0.14	**1.17**
mrapp -←> xdemog	0.59	0.20	**2.97**
mrapp -←> mratt	0.46	0.11	**4.34**

The unstandardised regression values of 1.00 correspond to parameters assigned in order to achieve identification

CHAPTER 8

DISCUSSION AND CONCLUSION

Research is the process of going up alleys to see if they are blind.

Marston Bates

This chapter of the thesis integrates the findings of the study and attempts to interpret them in terms of academic theory and managerial practice. Summarised results are put into perspective and the theoretical underpinnings are referred to in order to provide a social science appraisal of the final model. This final chapter concludes with suggestions for further research.

8.1   Summary of the Study

8.1.1   Objectives of the Research

The main objective of this study was to develop a model to depict the factors that are associated with the acquisition and lead to utilisation of knowledge, in this instance through marketing research, in tourism organisations and the effects of this utilisation on organisational performance.

A secondary, and more practical, objective was to provide a status report on the state of marketing research utilisation in tourism in Australia.

8.1.2   The Theoretical Underpinnings

As marketing research primarily is an attempt by organisations to acquire new knowledge, a social science perspective was adopted. The specification of the research domain was based on the theories of philosophy and sociology of knowledge. Marketing research was also conceptualised as an innovation. The attributes of innovations corresponded well with the attributes of marketing research.

A conceptual model was developed based on the theories explored in general and the extant studies on marketing research utilisation in particular. The model attempted to

conceptualise the antecedents of innovativeness, as defined by marketing research activity conducted and marketing research techniques used, and the consequences of such utilisation.

In the initial conceptual model, which was developed to be empirically tested, the antecedents of organisational innovativeness in tourism were conceptualised as the following factors:

Organisational Demographics (size, number of staff, and the age of organisation

Environmental Influences (market turbulence, competitive intensity, technological turbulence)

Organisational Structure (centralisation, formalisation, information culture)

Appraisal of Marketing Research (evaluation of marketing research, marketing research department structure, budget)

Attitude Towards Marketing Research (cost-benefit, historic appreciation of marketing research, research report attributes)

The consequences of innovativeness were conceptualised as the following:

Type and Extent of Utilisation of Marketing Research

Financial Performance Effect of Marketing Research

Other Performance Effect of Marketing Research

8.1.3   The Method

A questionnaire was developed, based on the previous studies by the author and other work in the area, and tested with a select group of industry executives. The questionnaire was refined and restructured as a result of these pilot interviews. The final questionnaire was used to survey a judgmental sample of executives in the largest tourism organisations in Australia. The executives surveyed were those in charge of marketing research or, in the absence of such position, those in charge of marketing operations of their organisations.

Unlike the previous studies into marketing research utilisation, this study employed a strict definition of marketing research to prevent any possible confusion or conflation

with other, more informal, forms information acquisition, such as market intelligence, which is defined as an informal, ongoing information acquisition process. Similarly, to preserve the rigour of the study, close definitions of other crucial concepts, tourism and its sectors, were provided.

Most of the survey was conducted through person-to-person structured interviews, which adhered strictly to the questionnaire.

8.2   Summary and Interpretation of Results

8.2.1   The Status Report

Apart from two exploratory studies, which were also conducted by the author, this was the first study to investigate the knowledge acquisition and utilisation through marketing research activity in tourism. It was also the first to investigate the consequences of marketing research in terms of organisational performance anywhere. Because of this inaugural nature of the study, it was thought useful to present a status report before a more empirical form of statistical analysis was conducted. This consisted of a mainly descriptive presentation of data that were collected during the survey. The main objective of this presentation was to convey an understanding of the role that marketing research plays in the management of tourism organisations in Australia.

The descriptive results showed that tourism organisations devoted large sums to marketing research and conducted many different types of research. Of the studies conducted, the majority was on buyer behaviour and promotion studies. Around half of the organisations surveyed used outside consultants to conduct the studies and/or analyse the results.

The results presented in the status report also showed that the majority of executive were satisfied with the quality and outcomes of marketing research activity in their organisations and thought that marketing research was cost-effective. The majority of the executives thought that the decision-confirmatory value of marketing research (instrumental use) was its most useful quality. They were a little more reserved on the issue of the educational value of marketing research (knowledge-enhancing use) although they gave some credence to this quality. On the other hand, only a small minority of executives believed that marketing research was used solely for the sake

of appearance only (affective use), although many of them acknowledged the political aspect of research.

The results of the status report showed that the majority of tourism marketing executives viewed their organisations as highly centralised and the operational procedures highly formalised. There were some differences of opinion among the different sectors of the industry.

The majority of executives in general perceived their businesses' external environment as a reasonably turbulent market where the competition was highly "cut-throat". The technology was changing very rapidly with the technological changes are providing new opportunities

Around half the organisations surveyed evaluated their marketing research activity on a formalised basis. However, majority of them had a positive view of the effect of marketing research on organisation's financial performance.

The majority of executives believed that employee morale in their organisation was high and there was a positive team spirit.

8.2.2 Summary and Interpretation of Empirical Findings

Statistical analyses were conducted to test how well the model fit to data. Specific findings are reported in the sections below.

Findings that relate to antecedents and consequences of innovativeness, as defined by the level of marketing research activity conducted and the number and complexity of marketing research techniques applied, are presented in the order in which they appear in the conceptual model depicted in Figure 4.3. In order to avoid unnecessary repetition the concept of 'innovativeness as defined by marketing research activities conducted and marketing research techniques utilised' will be referred as 'marketing research activity' from this point onwards.

8.2.2.1 Consequences of Marketing Research Activity in Tourism (Constructs That Were Not Supported)

The findings did not support the effect of the following constructs on marketing research activity in tourism.

Organisational Demographics

At first glance, the lack of direct relationship between the demographics of tourism organisations (size, age, and number of staff) and marketing research activity appears to go against intuition. Both the extant literature on organisational innovativeness and the earlier exploratory study in marketing research use in tourism consistently found that the size of the organisation was positively related to its innovativeness in general, and the number and type of marketing research activities conducted in particular.

However, within the confines of the population from which the sample is drawn this result might not be unusual. Unlike the earlier study in tourism, and most other studies in the area, the population in this study was carefully defined as the biggest (in terms of annual revenue and the number of staff employed) tourism organisations in Australia. It might be that the differences in size between the organisations in the sample were not significant enough to make a difference to marketing research activity.

The demographics variable in the model was retained and was allowed to correlate with other predictor factors. The theory dictates that ultimately the size of the organisation would play some role in its marketing research activity, if only through the effect it would have on the resources allocated to marketing research.

Environmental Factors

Although in the preliminary analyses the variable representing environmental factors was found to be significantly correlated to marketing research activity conducted and marketing research techniques utilised, the factor would not prove to be a significant predictor in the structural model. This might imply that business environment as defined by market turbulence, competitive intensity and technological turbulence) does not have significant influence on marketing research activity in tourism. However, the result is not convincing. One reason would be that the items that were used to measure the construct were taken from the earlier studies, all of which were North American. Perhaps, in a different cultural setting, the measures were not as reliable as they were shown to be, in the sense that questions were not clearly understood (or properly interpreted) by the respondents. Further research in the area

should include the same constructs, measured through a different set of items.

One of the reasons for the lack of relative instability of data might be due to the difference in perceptions of environment among different sectors. Descriptive analyses summarised in the status report also vouch for this possibility. The perception of market turbulence or competitive intensity, for example, might be viewed differently by tourism support organisations (which are looking at the large picture – the destination) and travel organisations (which mainly compete on price).

Organisational Structure

Centralisation, formalisation and information culture of the organisations were not found to be significant predictors of marketing research activity, although centralisation and information culture show a simple but significant correlation with the number of marketing research activities conducted. Past findings on the effect of structural characteristics on innovativeness in general, and utilisation of marketing research in particular, were ambiguous.

Similar to the environmental influences factor discussed above, the measures for organisational structure were lifted from previous studies with some items deleted to provide the much-needed parsimony. Resulting items, although supported by inter-item index validation, might have resulted in unstable data through misinterpretation by respondents. The investigator is not utterly convinced on that point, however. It is likely that at least the formalisation of operational procedures has little to do with innovativeness, especially when it is defined through marketing research activity. Previous findings were not consistent and were in different directions. Some maintained that low centralisation and low formalisation encouraged marketing research utilisation where others concluded otherwise. Previous exploratory study in tourism found limited significance on the issue.

Again, similar to the previous construct, there was some evidence that different sectors perceived centralisation and formalisation differently. Event/attraction management organisations, which had a small number of core personnel but relied on volunteer workers, had a more relaxed approach to formalisation as compared to hospitality organisations, which are labour-intensive and traditionally have hierarchical structures.

8.2.2.2 Consequences of Marketing Research Activity in Tourism (Constructs That Were Supported)

The following constructs were found to be significant predictors of marketing research activity in tourism.

Appraisal of Marketing Research

The organisations with formal, objective systems that could evaluate the results of marketing research activity are likely to be more innovative in terms of marketing research activity and the use of marketing research techniques. This was one of the clearest findings of the study. As pointed were the findings that the more formal an organisation's marketing research department and the more funds were dedicated to marketing research the more of it was conducted.

Although there is a natural assumption that the existence of formal systems of evaluation and the devotion of resources precede the activity, the circular nature of this proposition should be noted. When did the organisation begin to implement formal evaluation procedures? Before its first formal marketing research activity or after one or more successful such projects? Similarly, what if the original projects did not produce satisfactory results? Although the historical appreciation construct (discussed next) attempted to measure managers' satisfaction with past marketing research activity, this in itself is not enough to answer the question as the initiation of marketing research activity was likely to have preceded the respondent's history with the organisation. However, the circular nature of this proposition is of academic interest only. One of the essential findings of this study is that the more research is conducted the more its results are evaluated objectively and formally and the more resources are invested in research. The evidence on this point is so highly significant that it exceeds considerations such as the sample size.

Attitude Towards Marketing Research

This factor was conceptualised as consisting of cost-benefit, historic appreciation and research report attributes constructs. This factor was not found to be as significant a predictor of marketing research activity as the previous one, marketing research appraisal. This was mainly due to the report attributes construct, which was not as significantly related to marketing research activity as the other two.

The cost of a research project were perceived in both financial terms and nonmonetary terms such as managerial hours and energy directed towards conducting the research or towards collecting the information. There is a general trend among the managers to perceive more expensive studies as being of higher quality. Also if managers expend more time and energy on the project, they are more likely to perceive the findings as more reliable. This leads to increased utilisation of the study findings for decision-making, if partly to justify the expenditure of the resources. The findings of this study confirm these general assumptions. Cost-benefit perception was a strong indicator of the attitude towards marketing research construct, which in turn was positively related to marketing research activity.

Historic appreciation is based on the perceptions of executives on their past experience with marketing research. This variable accounted for 56 per cent of the variance of mratt factor. The utilisation of marketing research is partly dependent on the prior dispositions of executives who are commissioning or conducting research. Those managers who have a positive view of their past marketing research experiences are more likely to conducts more and varied research and utilise the results in their decision-making process.

Physical qualities of the research report effects the executives' attitude towards marketing research and its utilisation. However, in the causal path analysis this variable accounted for 10 per cent of the variance of mratt. One of the reasons for that may be that the sample consisted mainly of marketing executives who are, in general, more used to dealing with technical presentations.

Perhaps the most important single contribution of this thesis to the marketing research utilisation literature is that it is the first attempt to include the consequences of utilisation in a conceptual model. In modern usage the term 'model' is defined as a synonym for 'theory' (Simon, in Zaltman et al. 1973, p. 88). The model explicated in this thesis represents what Kaplan referred to as a "concatenated theory [which] … is one whose component laws enter into a network of relations so as to constitute an identifiable configuration of pattern… A law or fact is explained by a concatenated theory when its place in the pattern is made manifest" (Kaplan 1964, p. 298). The hypotheses that were tested show the 'network of relations' which come together on the ultimate criteria of utilisation and its consequence. Each hypothesis can be

comprehended only in its concurrence with other relationships that contribute to making of the final theoretical model.

Although there has been systematic attempts to build and test a formal research utilisation models in the past (see, for example, Deshpande and Zaltman, Menon and Wilcox) those were not industry specific and did not attempt to include the consequences of utilisation in their structure. In addition, this thesis is also the first instance of any investigation into marketing research use in tourism. As such, the findings of this thesis can be seen as a benchmark against which the future work can be measured. Although contextually and industrially specific (i.e., based in marketing decision-making in tourism), the hypotheses in this work attempted to unite constructs that can, with some modifications, be used in other settings as well. The grounding of the constructs in the literature of the sociology of knowledge and the theory of innovations offers a broader base for such operationalisations. For example, the diffusion of innovations literature discussed in Chapter Four can be used to consider specific characteristics of innovative information acquired by means other than formal marketing research, and the influence of organisational environment on the implementation of this information.

In a more discipline-specific sense, tourism has seen relatively few attempts at formal conceptual model construction. Most empirical efforts to date have been rather indiscriminate in their references to earlier, more basic theoretical work. This thesis departs from this undesirable practice in both its eclectic use of sources, and its conscious attempt at introspective appraisal, as can be seen in the following section in this chapter. Therefore, it attempts to make a unique contribution to tourism literature, particularly in the under-investigated area of the management of marketing research.

In terms of methodology, this thesis represents one of the few attempts of the use of structural equation modelling in tourism research. Structural equation modelling has not been widely used in the tourism discipline, despite the fact that the application of structural equation modelling in tourism is important as a tool for promoting better research (Reisinger and Turner 1999). The relevance of causal modelling for the testing of relationships between constructs involving interdependence structures of variables has already been discussed in Chapter Five. Despite a relatively small sample, structural equation modelling was successful in measuring the existence of

significant interaction relationships and allowed a holistic examination of the total model.

8.3   An Appraisal Of The Conceptual Model

This section evaluates the general conceptual model of antecedents and consequences of marketing research utilisation using the philosophy of science criteria suggested by Zaltman, Pinson and Angelmar (1973). Through the provision of formal, semantical, methodological, and epistemological criteria of assessment, the discussion that follows appraises the theory presented in this thesis, with a view of preparing the groundwork for the final section on future directions that related research could take.

Formal Criteria

Formal criteria for the evaluation of a theory, as suggested by Zaltman et al (1973) are that it should be well formed, internally consistent, independent and strong.

One of the purposes of the development of the theoretical models is that they be communicated to others. The theory, therefore, must be evaluated on the grounds of 'well formedness'. As the hypotheses obey the rules of linguistic composition and those of transformation corresponding to elementary logic, the theory can be considered as well-formed. It contains no logical contradictions, therefore it is 'internally consistent'. The terms that are essential to its structure have been defined and, where possible, grounded in other work, and the basic assumptions behind hypotheses have been articulated. Therefore, the theory is at least partly 'independent'. Also, the theory covers models and theoretical attempts in several other disciplines including informational theory, organisational design, management information systems and strategic management. Therefore, it meets the criterion of 'strength'.

Semantical criteria

These criteria are set out as the theory should be linguistically exact, conceptually united, empirically testable, and representative

All the variables and relationships in the model in this thesis are clearly defined and operationalised. Therefore, the theory can be accepted as linguistically exact. The domain of dissertation is marketing research management in tourism, to which

constant reference is made, therefore the theory has conceptual unity. Clear distinctions are made between theoretical concepts and what they refer to, as well as the operational definitions used in an empirical test. Therefore, the theory is empirically very testable in principle. The theory extends beyond the surface descriptive analyses of earlier knowledge utilisation theories and endeavours to understand the reasons behind those. Therefore, the theory can be said to be representative.

Methodological criteria

The theory is operationalised and tested in this thesis. It is therefore falsifiable. In fact, nearly half of the hypotheses have been rejected. The theory can be considered complex methodologically; it is not so cumbersome as to make refutation impossible.

Epistemological criteria

These criteria as promulgated by Zaltman et al are that the theory should confirm prior knowledge but should be original in conception. It should also be externally consistent and should have demonstrated unifying power as well as heuristic power. Finally it should be stable.

The theory expounded in this thesis satisfies the criteria of confirmation and originality since it fits in with established knowledge and increases knowledge by deriving new propositions (for example, the conceptualisation of marketing research in terms of organisational innovation, and the hypotheses on consequences of research use are original). The theory is externally consistent as it is congruent with parts of existing tested knowledge in other disciplines as well as its own discipline. It unifying power is demonstrated with the way it connects previously unconnected items (marketing research techniques with utilisation and performance, for example). It has heuristic power because it points to new directions for research (see the following section). Finally, it has good stability in that it is able to accommodate new evidence.

In conclusion, the model delineating the antecedents and consequences of marketing research activity in this thesis satisfies the criteria for theory evaluation from the philosophy of science. In the next section, a discussion of future research that can help strengthen this theory and extend it into other areas is provided.

8.4   The Significance of Findings for Management

Outside the theoretical and methodological issues, this thesis has a number of implications for the marketing research management in tourism. These are summarised below:

The more careful and objective the evaluation of marketing research is in an organisation the higher the understanding of its effect on financial performance. Despite that, less than half the organisations that invest resources in marketing research have formalised evaluation procedures in place. Managers should realise intuitive responses to research processes might end up in the waste or misallocation of valuable resources.

Despite the considerable attention directed to marketing research and the high level of formal qualifications among them, the managers who are expected to be experts in the field of marketing and marketing research are generally not well informed about research techniques. Taking into account the fact that the majority of executives surveyed had qualifications in business, it is assumed that they undertook courses in research techniques and statistics. The findings have implications for the efficacy of the technical teaching in our colleges and universities.

One of the guiding assumptions of this study is that knowledge, if applied properly and wisely, is power. Therefore, using research is a good thing because it is essentially acquisition and utilisation of new knowledge. The responses received from the industry executives (including those who are employed by organisations that choose not to do much research) reaffirm this assumption. There is strong belief that positive financial outcomes emanate from research use. These findings provide support for a number of recent studies that asserted the growing importance of "managing intellectual capital for superior performance" (Menon and Wilcox 1994, and see also Kohli and Jaworski 1990, Glazer 1991, Menon and Wilcox 1994, Yaman and Shaw 1998b). Tourism managers must note that the evidence increasingly leads to the proposition that intensified research use (where it improves decision-making quality and managerial confidence) leads to better market performance. In the future, market-driven organisations in tourism will be tantamount to knowledge-driven organisations.

8.5   Future Research Directions

A number of major directions can be suggested for further research. These involve both theoretical and empirical considerations.

An alternative theoretical grounding can be chosen for utilisation issues. For example, an investigation of information processing based upon individual differences in managers from diverse backgrounds and employed in different departments suggests itself. This kind of underpinning may substantiate or refute some of the findings of this thesis. It may also build on them by presenting new constructs and new operationalisations that may explain a different nature of utilisation and its consequences.

Comparative studies can be conducted that can match the findings of this investigation with those in other industries or different sectors of the same industry. By operationalising a similar study using banking industry, for example, a study can be conducted and compared to the findings of this thesis. The comparison would allow each discipline to contribute to the other in terms of possible recommendations for enhancing the utilisation of knowledge and its consequences.

The same conceptualisation can be used to investigate the utilisation and consequences of less formal knowledge acquisition (such as informal market intelligence) in tourism and other industries. The results then can be compared to those of this thesis to understand the advantages (or disadvantages) of utilisation of marketing research over less formal knowledge acquisition in managerial decision-making.

An observational measure of the dependent variable of utilisation could be used by first content-analysing actual research reports that had been submitted and then seeing which (and to what extent) recommendations had been implemented.

The context of utilisation in marketing in tourism could be transferred to an area such as that of customer group decision making. By studying particular high-involvement purchases (such as long-term group bookings or large convention bookings) an assessment can be made as to what the initial assumptions are of individual decision makers, what type of information sought and obtained, how this information confirmed or disconfirmed their expectations, and eventually how the information is

selectively utilised in making the purchase decision.

In conclusion, the research explicated in this thesis is seen as providing a contribution to theory, methodology, operational practice, and to future research in the knowledge acquisition and utilisation in tourism in particular and, by extension, in other disciplines in general. The current study also has a number of limitations which must be appreciated and improved by future researchers. The operationalisation of some of the constructs needs more work. This is particularly true for the organisational structure (formalisation, centralisation and information culture) which perhaps show more importance in their total effect on utilisation and its consequences than the present analyses suggest. In addition, research report attributes variables need to be broadened so as to get a better understanding of how various qualities of research report and its presentation affect the utilisation of research information. There may be a need to use additional indicants of related constructs such as organisational climate (openness to research), task complexity (varying across different research projects) and most importantly, management hierarchies based on functional differentiation (marketing, food and beverage, finance, convention sales, etc.) or geographical distinctions (resort properties or agencies as against city locations, etc.). The extent of modification of research findings to suit particular organisational philosophies may also prove a productive area of development.

Similarly, comparative studies can be carried out between different countries, which may have subtle differences in management styles and responses to research activity.

Finally, the sample size must be increased to better meet the requirements of structural equation modelling. A larger sample would also allow meaningful comparisons between managers of different disciplines, personal traits and/or leadership styles in their reactions to knowledge acquisition, utilisation and perceptions of its contribution to organisational performance.

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APPENDICES

APPENDIX A

MARKETING RESEARCH UTILISATION

QUESTIONNAIRE (TOURISM 98)

SURVEY OF MARKETING RESEARCH UTILISATION IN TOURISM AND HOSPITALITY

SECTOR CLASSIFICATION

Hospitality organisation (accommodation with foodservice) ....…......... 1
  (e.g., hotel, motel, resort <u>with</u> food and beverage outlet)

Hospitality organisation (accommodation only) ....…......... 2
  (e.g., hotel, motel, resort <u>without</u> food and beverage outlet)

Hospitality organisation (foodservice only) ....……. 3
  (e.g., cafe, restaurant, pub, club, function venue, caterer)

Travel organisation (retail) ....…… 4
  (e.g., travel agency that deals directly with the public)

Travel organisation (transport) ....…… 5
  (e.g., airline, railway, coach, shipping)

Travel organisation (tour operator) ....…… 6
  (e.g., tour packager, tour guide)

Tourism industry support organisation ....…… 7
  (e.g., management consultant)

Tourism attraction organisation (management) ....…… 8
  (e.g., casino, zoo, theme park, nature based attraction)

Tourism events organisation (management) ....…… 9
  (e.g., professional conference organisers, conventions, racing carnivals,
    festivals)

Tourism industry organisation / association (non-profit / federal) ....….. 10
  (e.g., Australian Tourist Commission, Australian Hotels Association)

Tourism industry organisation / association (non-profit / state) ....….. 11
  (e.g., Tourism New South Wales, Victorian Accommodation Association)

Tourism industry organisation / association (non-profit / regional / local) ....…. 12
  (e.g., Gold Coast Tourism Bureau)

Other (*describe*) ....…………... 13

    _____

    _____

SECTION ONE

1. Please circle ONE code number that best describes your organisation's marketing research arrangement:

a.	Central marketing research department, doing work for the entire organisation	1
b.	Central department, but with regional or divisional research unit elsewhere ….	2
c.	Regional or divisional unit, with headquarters elsewhere ....….	3
d.	No formal marketing research department, but have at least part of one person's time definitely assigned to the research function ...….........................	4
e.	No employees formally engaged in marketing research ....…......................	5
f.	Other (please describe) …………..…….................	6

_____

_____

2. How many employees in your organisation are assigned to marketing research?

Number of full-time research employees ⎯⎯⎯⎯

Number of part-time research employees ⎯⎯⎯⎯

Total number of research employees ⎯⎯⎯⎯

3. What is your annual marketing research budget?

$ ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯

4. For each type of research listed below, please indicate how often it is done, who plans and develops it, and who analyses it, by circling the appropriate code number. Please be sure to circle a code number for each line.

	Research Frequency			Research Developed by			Data Analysed by		
	Not done	Sometimes done	Frequently done	Mainly this organisation	Mainly outside organisation	Both this and outside organisation	Mainly this organisation	Mainly outside organisation	Both this and outside organisation
A. Pricing Studies (Cost, profit, price elasticity, demand analysis)	1	2	3	1	2	3	1	2	3
B. Buying Behaviour (Brand preference, brand attitudes, product satisfaction, purchase behaviour, segmentation data)	1	2	3	1	2	3	1	2	3
C. Distribution and Sales Force Studies (Channel performance, channel coverage, sales force compensation, sales force quota)	1	2	3	1	2	3	1	2	3

D. **Product Studies** (Concept, brand name, existing product, competitive product, packaging design testing)	1	2	3	1	2	3	1	2	3

	Research Frequency			Research Developed by			Data Analysed by		
	Not done	**Sometimes done**	**Frequently done**	**Mainly this organisation**	**Mainly outside organisation**	**Both this and outside organisation**	**Mainly this organisation**	**Mainly outside organisation**	**Both this and outside organisation**
E. Promotion Studies (Motivation, media copy, advertising effectiveness, competitive advertising, public image)	1	2	3	1	2	3	1	2	3
F. Business/Economic and Corporate Studies (Industry/market trends, market share data)	1	2	3	1	2	3	1	2	3
G. Internal Studies (Internal employee data)	1	2	3	1	2	3	1	2	3
H. Other Studies _____ _____ _____	1	2	3	1	2	3	1	2	3

5. **For each type of research technique or approach listed below, please indicate how often this technique is utilised by circling the appropriate code number. Please be sure to circle a code number for each line.**

	Do not recognise the technique	Recognise but never use	Sometimes use	Frequently use
A. Research Design				
1. Descriptive	1	2	3	4
2. Cross-sectional	1	2	3	4
3. Longitudinal	1	2	3	4
4. Causal (experimentation)	1	2	3	4
5. Other	1	2	3	4
_____				
B. Sampling Procedures				
1. Simple random sampling	1	2	3	4
2. Stratified sampling	1	2	3	4
3. Quota sampling	1	2	3	4
4. Judgmental sampling	1	2	3	4
5. Cluster sampling	1	2	3	4
6. Convenience sampling	1	2	3	4
7. Systematic sampling	1	2	3	4
8. Area sampling	1	2	3	4
9. Other	1	2	3	4
_____				
C. Data Gathering				
1. Syndicated data (government/ trade/association)	1	2	3	4
2. Internal company records	1	2	3	4
3. Personal interviews	1	2	3	4
4. Telephone interviews	1	2	3	4
5. Mail surveys	1	2	3	4
6. Focus group interviews	1	2	3	4
9. Consumer observation	1	2	3	4
10. Internet website surveys	1	2	3	4
11. Internet targeted newsgroup surveys	1	2	3	4
12. Other	1	2	3	4
_____				
D. Measurement				
1. Nominal scale	1	2	3	4
2. Ranking scale	1	2	3	4
3. Rating scale	1	2	3	4
4. Likert scale	1	2	3	4
5. Paired comparison scale	1	2	3	4
6. Other	1	2	3	4
_____				

	Do not recognise the technique	Recognise but never use	Sometimes use	Frequently use
E. Analysis				
1. Measures of central tendency (e.g., median, mean)	1	2	3	4
2. Measures of dispersion (e.g., range, standard deviation)	1	2	3	4
3. Correlation analysis	1	2	3	4
4. Regression analysis	1	2	3	4
5. Confidence intervals	1	2	3	4
6. Time series analysis	1	2	3	4
7. Chi-square analysis	1	2	3	4
8. Other statistical tests of significance	1	2	3	4
9. Analysis of variance/covariance	1	2	3	4
10. Factor analysis	1	2	3	4
11. Cluster analysis	1	2	3	4
12. Conjoint analysis	1	2	3	4
13. Choice modelling				
14. Multidimensional scaling	1	2	3	4
15. Discriminant analysis	1	2	3	4
16. Other	1	2	3	4
_____				

SECTION TWO

The following statements refer to your perception of the current business environment, the degree of progressiveness of your organisation, and the marketing research process in general. To what extent do you agree with the following statements? Please circle a code number for each statement.

	Disagree strongly				Agree strongly	

6. Marketing research is affordable enough to be undertaken by small organisations ……….…………….……….. 1 2 3 4 5 6

7. Small organisations can conduct marketing research within the time available to managers ……..……..……... 1 2 3 4 5 6

8. Marketing research frequently produces results that justify the cost in time and money invested into it …….….. 1 2 3 4 5 6

9. Top managers in this organisation encourage innovative decisions, knowing that some will fail ……………… 1 2 3 4 5 6

10. In this organisation information is disseminated on a "need to know" basis ……………………………….…….. 1 2 3 4 5 6

11. Progressive ideas and new ways of doing things are often encouraged in this organisation ……………………... 1 2 3 4 5 6

12. Our customers' needs and wants change very often …….. 1 2 3 4 5 6

13. Our customer base has changed very little over the years... 1 2 3 4 5 6

14. Competition in our industry can be termed "cut throat" … 1 2 3 4 5 6

15. Price competition is a hallmark of our industry …………. 1 2 3 4 5 6

16. Anything that one competitor of ours can offer, others can match readily ……………………………………….... 1 2 3 4 5 6

17. The technology in our industry is changing rapidly ……. 1 2 3 4 5 6

18. Technological changes provide important opportunities in our industry ...………………………………………….... 1 2 3 4 5 6

19. A large number of new product ideas has been made possible through technological breakthroughs in our industry ……………………………………………….... 1 2 3 4 5 6

20. This organisation has a positive view of the value of its past marketing research projects ……………………… 1 2 3 4 5 6

21. Even when the results were difficult to implement, the marketing research process has always been beneficial to decision-making in the past ………….…………… 1 2 3 4 5 6

SECTION THREE

The following questions refer to your perception of the centralisation of decision making and formalisation of operational procedures in your organisation. To what extent do you agree with the following statements? Please circle a code number for each statement.

	Disagree strongly					Agree strongly
22. There is little action taken in this organisation until a superior approves the decision ....…	1	2	3	4	5	6
23. In this organisation, junior and middle level managers are encouraged to make their own decisions ..…………...	1	2	3	4	5	6
24. Even small matters on this job have to be referred to someone higher up for final answers ....…………..…	1	2	3	4	5	6
25. There is a complete job description for my position …….	1	2	3	4	5	6
26. The organisation keeps a written record of everyone's performance ....……………………..	1	2	3	4	5	6
27. We follow strict operational procedures at all times ……..	1	2	3	4	5	6
28. Whenever situations arise, we have procedures to follow in dealing with them ....…………..…	1	2	3	4	5	6

SECTION FOUR

The following questions ask you to comment on the outcomes of a marketing research project with which you have been involved. To what extent do you agree with the following statements?

	Disagree strongly					Agree strongly
29. It was worth waiting for the research results because some of them materially influenced a decision …..…….....	1	2	3	4	5	6
30. We learned from having to clarify the problem to be addressed by the research ....……..…….	1	2	3	4	5	6
31. The research study was used to promote awareness and appreciation of an issue of importance ………....…...	1	2	3	4	5	6
32. The study results were used to learn something new about our business ....…………………..	1	2	3	4	5	6
33. The research was used for the sake of appearance ....…	1	2	3	4	5	6
34. The study results provided new knowledge about something ....……........................…….	1	2	3	4	5	6
35. We gained new insights while providing the researchers with background information on the organisation, business, and/or competitive situation ....…...	1	2	3	4	5	6
36. Apart from what we learned from the results, doing the study was educational ………….............................…...	1	2	3	4	5	6
37. It is possible that without the research results a different decision would have been made ....…………………...	1	2	3	4	5	6
38. A decision based on the research project was easy to reconcile with the results of the project ....………....	1	2	3	4	5	6
39. The study was used to make a decision which was consistent with at least some of the findings and conclusions ....……………	1	2	3	4	5	6
40. The study results were used to provide new insights ……..	1	2	3	4	5	6
41. The study was used for political purposes ....….……...	1	2	3	4	5	6
42. The research study was used to build awareness and commitment ………….......................................…...	1	2	3	4	5	6
43. The study was used to validate or confirm our understanding of something ...……...................…...	1	2	3	4	5	6
44. The results of the study were used to make a decision in accordance with its recommendations ......…………...	1	2	3	4	5	6

	Disagree strongly					Agree strongly
45. One or more findings of the study had a substantial direct impact on a decision.................................………...	1	2	3	4	5	6
46. The analysis of the data was straightforward and simple enough to understand without expert technical knowledge …………………………………………...	1	2	3	4	5	6
47. There was sufficient interpretation or explanation of the findings ....…………...	1	2	3	4	5	6
48. Tables/graphs/statistics were appropriately used to illustrate and enhance important points ……..….......	1	2	3	4	5	6
49. The language of the research report/presentation was clear ....………….........	1	2	3	4	5	6
50. The information provided was worth the money spent on it ....……………..........................	1	2	3	4	5	6
51. The way information was gathered was appropriate. …...	1	2	3	4	5	6
52. The technical quality of the research was high. …….......	1	2	3	4	5	6

	Not influential					Strongly influential
53. Overall, rate the degree to which, rightly or wrongly, the results of the study were influential in the final decision ....……………	1	2	3	4	5	6

	Nothing learned					Learned a great deal
54. Overall, rate the degree to which something new was learned from the research results and/or from having this research conducted ....………………….....	1	2	3	4	5	6

	Extremely unimportant					Extremely important
55. Overall, to what extent was "being seen to be doing the research" more important than the actual utilisation of the research project ………………….......................….	1	2	3	4	5	6

	Much lower		About the same		Much higher	
56. Compared to past research projects, the number of people who will use, or have used, this research is	1	2	3	4	5	6

57. In your opinion, what proportion of this particular
study need not have been done (for whatever reasons)? —————— %

SECTION FIVE

> The following questions ask you to comment on the relationship between marketing research and the performance of your organisation. To what extent do you agree with the following statements? Please circle a code number for each statement.

	Disagree strongly					Agree strongly
58. In this organisation, each new marketing research project is approved separately. …………....………….………..	1	2	3	4	5	6
59. In this organisation, specific objectives are set for each marketing research project. ………………………………	1	2	3	4	5	6
60. In this organisation, each marketing research project is evaluated separately after its completion. ……………....	1	2	3	4	5	6
61. In this organisation, an overall evaluation of marketing research activity is conducted annually. ……….……...	1	2	3	4	5	6
62. In this organisation, there is always some marketing research activity in progress. …………………………	1	2	3	4	5	6
63. We have systems in place to measure the impact of marketing research projects on our financial performance. …………….…………………….……	1	2	3	4	5	6
64. In this organisation, the usefulness of marketing research activity is determined mainly through the intuition of the decision-makers. ..……………………….………....	1	2	3	4	5	6
65. At least partly as a result of marketing research activity, our unit sales last financial year increased compared to the previous year. ..…………….…………………	1	2	3	4	5	6
66. At least partly as a result of marketing research activity, our profit margin for the last financial year increased compared to the previous year. ..………..…………....	1	2	3	4	5	6
67. At least partly as a result of marketing research activity, the organisation provided a better return on investment for its shareholders last year………..……..	1	2	3	4	5	6
68. At least partly as a result of marketing research activity, we were able to introduce new products into the market last year. ……………………………………..	1	2	3	4	5	6
69. At least partly as a result of marketing research activity, we were able to improve the effectiveness of our pricing policies last year. .……………………………..	1	2	3	4	5	6
70. At least partly as a result of marketing research activity, we were able to improve the effectiveness of our promotional activity last year. .……………………...	1	2	3	4	5	6

	Disagree strongly				Agree strongly	

71. At least partly as a result of marketing research activity, we were able to improve the effectiveness of our distribution activities last year. …………………….. 1 2 3 4 5 6

72. At least partly as a result of marketing research activity, the percentage of new product sales to old product sales increased last year …………..…………….... 1 2 3 4 5 6

73. Overall, the financial performance of the organisation last year was better than in the previous year. …..……... 1 2 3 4 5 6

74. Overall, the financial performance of the organisation last year was better than that of our competitors. ……….. 1 2 3 4 5 6

75. Overall, we were satisfied with the contribution which marketing research made to our organisational performance last year. ……………………………… 1 2 3 4 5 6

SECTION SIX

The following questions ask you to comment on the *esprit de corps* that exists among the employees of your organisation. To what extent do you agree with the following statements? Please circle a code number for each statement.

76. The bonds between this organisation and its employees are strong ……………………………..……….. 1 2 3 4 5 6

77. In general, employees are proud to work for this organisation ……………………………..…….. 1 2 3 4 5 6

78. Employees feel as though their future is intimately linked to that of this organisation …………………..…… 1 2 3 4 5 6

79. A team spirit pervades all ranks in this organisation ……. 1 2 3 4 5 6

80. Few people in this organisation view themselves as independent individuals who have to tolerate others around them …………………………………….... 1 2 3 4 5 6

81. Most people in this organisation are genuinely concerned about the needs and problems of each other ……….. 1 2 3 4 5 6

82. If you were allocated an additional $100,000 to spend on marketing research activity for the forthcoming financial year, how would you allocate the spending?

Pricing Studies ……………………….……………………..$ _____

Buying Behaviour Studies ……………………………………..$ _____

Distribution and Sales Force Studies ……………………….……...$ _____

Product Studies ……………………………………………..$ _____

Promotion Studies …………………………………………$ _____

Business / Economic and Corporate Research …………………….…..$ _____

Internal Studies ……………………………...………………..$ _____

Other (please describe)

_____ $ _____

TOTAL ……………………………………………………...$ 100,000

83. Why have you allocated the funds in this way?

_____
_____
_____
_____

Finally, we would like to ask you a few questions about your organisation and yourself, for classification purposes.

84. Please circle the code number representing your organisation's total gross revenue for the last financial year. If the organisation is non-profit, please use total revenue including external funding, membership fees, etc.)

    a. Under $1 million ....……....   1

    b. $1 to $4.9 million   2

    c. $5 to $24.9 million ....…….   3

    d. $25 to $49.9 million ....…….   4

    e. $50 to $99.9 million ....…….   5

    f. $100 to $199.9 million ....…….   6

    g. $200 to $499.9 million ....…….   7

    h. $500 million and over ....…….   8

85. When was your organisation founded? (Please circle one code number.)

    1950 or before   1

    1951 - 1960 ...……...   2

    1961 - 1970 ....……...   3

    1971 – 1980 ……………...   4

    1981 - 1990 ....……...   5

    1991 or later ……………...   6

86. Please circle the code number representing the total number of staff employed in your organisation.

    Fewer than 10 ....……   1

    10 - 19 ....……   2

    20 - 49 ....…….   3

    50 - 99 ....……   4

    100 or more ....……   5

85. Please circle ONE code that best describes the position you hold within your organisation.

Owner/operator ....………..... 1

Managing Director ....……… 2

Chief Executive Officer 3

General Manager ....……… 4

Senior Manager ....……… 5

Branch/Division/Department Manager ....…. 6

Other (Please specify) ....……. 7

86. Which of the following best describes your highest level of formal education?

Secondary School …………….. 1

TAFE Certificate / Associate Diploma / Diploma (or equivalent) ....…........... 2

Bachelor's Degree ....………......... 3

Post Graduate Certificate / Diploma ....…...... 4

Master's Degree ....……… 5

Doctoral Degree ....……..... 6

87. Which of the following disciplines was your main area of specialisation?

Business (hospitality and tourism) 1

Business (other than hospitality and tourism) 2

Arts/Humanities 3

Science ....……… 4

Education ....……… 5

Law ....……… 6

Other (Please specify) ....……… 7

THANK YOU VERY MUCH FOR YOUR COOPERATION

RESPONDENT DETAILS:

Name   _____

Position title   _____

Organisation   _____

Address   _____

                        _____

                        _____

APPENDIX B

SAMPLE COPY OF THE COVER LETTER OF MARKETING RESEARCH UTILISATION QUESTIONNAIRE

9 March, 1998

Mr Leighton Wood
Chief Executive Officer
Melbourne Major Events Company
222 Albert Road
South Melbourne VIC 3205

Dear Mr Wood

Re: Marketing Research in Australian Tourism

Recently, I have sent you a copy of the report of the report of our exploratory study of the marketing research activities of Australian tourism organisations, with a letter informing you of the new study I am conducting.

Although the preferred method is personal interviews, the number of participating organisations and the exceedingly busy schedule of the marketing executives make it very difficult to arrange for mutually convenient times. To date, 76 major tourism organisations participated in the survey. For the convenience of the remaining participants, I have decided to continue the survey through mail. I enclosed a copy of the questionnaire for your perusal.

I will greatly appreciate if you could return the questionnaire to me – even if it is only partially completed – by Friday, 27 March 1998. A Reply-Paid, self-addressed envelope is provided for this purpose.

The data you provide will be treated in strict confidentiality, and you will be provided with a report of the findings. Only the summary data will ever be reported. Meanwhile, if you have any questions or concerns, please do not hesitate to call me at (03) 9688 4647, or send a fax message to me at (03) 9688 4931.

Best regards

Ruhi Yaman

Centre for Hospitality and Tourism Research

APPENDIX C

SAMPLE COPIES OF THE FOLLOW UP LETTERS

9 January 1998

Ms Sue Drinkwater
General Manager Marketing
P&O Cruises
160 Sussex Street
Sydney NSW 2000

Dear Ms Drinkwater

Recently, we have sent you a copy of the report of our exploratory study of the marketing research activities of Australian tourism and hospitality organisations, with a letter informing you of the new study we are conducting.

I have attempted to contact you on the telephone without success. As a past executive in the hospitality industry I am acutely aware of the type of demands you must have on your time. However, P&O Cruises is one of the major organisations in the travel sector in Australia. The study will be less than complete without the participation of your organisation.

This study aims to determine the organisational characteristics that determine the level and use of marketing research in tourism organisations. Analyses of the data will assist the industry in determining the factors that influence marketing research activity. All I need is 20-30 minutes of your time for a personal interview. I will be conducting interviews in Sydney between 19 and 29 January. <u>An interview date can be arranged any time between these dates to suit your schedule</u>. I am sending you today a copy of the questionnaire for your perusal. If you are still unable to see me personally, then please complete the questionnaire and allow a five-minute telephone conversation to relate the results to me.

All responses are confidential and your or your organisation's identity will not be revealed in any of the research findings.. <u>I will be grateful for your participation which I consider to be crucial.</u> I can be contacted by telephone number 03 9688 4647 or by fax 03 9688 4931. I look forward to your reply.

Thanking you in anticipation

Ruhi Yaman

9 March, 1998

Mr Jamie Bartels
Esecutive General Manager Marketing
Crown Casino
East Whiteman Street
South Bank 3006

Dear Mr Bartels

Re: Marketing Research in Australian Tourism

I have attempted to contact you a number of times for the above survey. I am indeed very sorry to impose on your evidently busy schedule. But as a marketing executive, I am sure you will appreciate that I would be less than diligent if I had not extended every effort to ensure the participation of one of the most important organisations in tourism in Australia.

Although the preferred method is personal interviews, the number of participating organisations and the exceedingly busy schedule of the marketing executives made it very difficult to arrange for mutually convenient times in all cases. To date, 76 major tourism organisations participated in the survey. For the convenience of the remaining participants, I have decided to continue the survey through mail. I enclosed a copy of the questionnaire for your perusal.

I will greatly appreciate if you could return the questionnaire to me – even if it is only partially completed – by Friday, 27 March 1998. A Reply-Paid, self-addressed envelope is provided for this purpose. Following the receipt of the completed questionnaire, I will attempt to contact you again by telephone to clear any outstanding points.

The data you provide will be treated in strict confidentiality, and you will be provided with a report of the findings. Only the summary data will ever be reported. Meanwhile, if you have any questions or concerns, please do not hesitate to call me at (03) 9688 4647, or send a fax message to me at (03) 9688 4931.

Best regards

Ruhi Yaman

Centre for Hospitality and Tourism Research

APPENDIX D

SHOWCARDS USED DURING THE INTERVIEWS

SHOWCARD ONE

(Read out to the respondent before the commencement of the interview)

Thank you for agreeing to the interview. As I have mentioned previously, this study is an investigation into marketing research activity and the utilisation of research results in the tourism and hospitality industries.

I would like to reiterate at this point that all information you provide is strictly confidential. Your or your organisation's identity will not be revealed in the report or in any other publication or correspondence related to this investigation.

I will now hand you a copy of the questionnaire. This is to ensure that the questions are clear for you. Where a question needs to be answered in a sector-specific context or the definition of a term, such as marketing research, needs to be agreed upon, I will hand you an additional card with the necessary explanation. To protect the integrity of the research process and the validity of results, I will not be able to explain any of the other terms that are used in the questionnaire or give you any background on or state the reason for any of the questions. As you will agree, part of this study involves the determination of the familiarity of tourism decision-makers with some techniques and/or technical terms pertaining to marketing research. I will be happy to answer any questions that you may have after the official part of the interview is concluded.

You are welcome to keep your copy of the questionnaire after the interview and I will send you a copy of the report detailing the findings of this study on its publication.

Thank you again for taking time from your busy schedule for this interview. We will now commence.

SHOWCARD TWO

(Definition of Marketing Research)

PLEASE NOTE

THE TERM 'MARKETING RESEARCH' WILL BE TAKEN TO MEAN THE FOLLOWING DURING THE COURSE OF THIS INTERVIEW:

Marketing research is the systematic and objective search for and analysis of information relevant to the identification and solution of any problem in the field of marketing.

This question aims to explore your perception of the effect of marketing research activity on the actual number of units of turnover of your organisation (as distinct from the increase in revenue or profitability).

Number of units of turnover will be taken to mean the following for different industry sectors:

Accommodation organisation – Occupancy percentage

Foodservice organisation – Number of covers

Retail Travel, Tour operator– Number of tickets sold

Transport organisation – Number of passengers

Attractions / Events – Number of visitors

Industry support organisation – Number of clients

Non-profit industry organisation – Number of enquiries

QUESTIONS 6 AND 7

The Australian Bureau of Statistics classification system defines a small business in the service sector as having fewer than 20 employees.

QUESTION 66

If your organisation is non-profit, then this question aims to explore your perception of the effect of marketing research activity on the financial objectives of the organisation.

QUESTION 67

If your organisation is non-profit, then this question aims to explore your perception of the effect of marketing research activity on the stakeholder benefits. Stakeholders may be the financial members of your organisation as well as the larger community.

APPENDIX E

DESHPANDE AND ZALTMAN QUESTIONNAIRE

USE OF MARKET RESEARCH INFORMATION QUESTIONNAIRE

USE OF RESEARCH INFORMATION

A. Please indicate your extent of agreement with each of the following statements (using the scale below).

      1.   strongly agree

      2.   agree

      3.   neither agree nor disagree

      4.   disagree

      5.   strongly disagree

      6.   don't know

(1) Without this research information, the decisions made would have been very different.

(2) No decision would have been made without this research information.

(3) The majority of the research information from this project was not used.

(4) How successful would you say that this research project was in resolving the key issues for which the project was designed? (Please check one.)

      1   very successful

      2   moderately successful

      3   neither successful nor unsuccessful

      4   moderately unsuccessful

      5   very unsuccessful

      6   don't know

B. In your opinion, what proportion of this particular study need not have been done (for whatever reasons):

      _____ %

RESEARCH PURPOSE (FOR RESEARCHERS)

EXPLORATORY

Considering the problems or issues research was to address, please indicate your agreement or disagreement with the following in the space before each statement. (Please use the scale below.)

      1.   strongly agree

      2.   agree

      3.   neither agree nor disagree

      4.   disagree

      5.   strongly disagree

      6.   don't know

a. The research was intended to identify what the problems / key issues were.

b. The client intended the research to identify many different solutions to these issues.

c. The client intended the research to identify one clear solution to resolve these issues.

d. The client wanted a major focus of the research to be that of identifying which strategies would be unsuccessful.

e. The client expected the research would give their managers new ideas and strataegies.

f. The client relied upon many different sources of information to shed light on these issues.

g. The client was pretty flexible on their position concerning these issues.

CONFIRMATORY

a. Past experience was more likely to be relied on by client managers than new research to resolve these issues.

b. The client had a position on these issues before they were researched.

c. The client was strongly committed to a position on these issues.

d. The client seemed to have had a good idea of what the final results should look like.

e. The client expected any results from the project to be compatible with their intuition on these issues.

f. Independent of the research, the client felt their company would continue to do things as before.

g. The client intended the research to help legitimate positions already taken on these issues.

h. There was a belief by some of the client managers that the research would cast doubt on a policy or position other groups in the firm had taken concerning these issues.

FORMALISATION

In this last section, we would like to ask you the following questions about your organisation and the way that you see your job within the company as related to this specific research project. For each item, please answer as it applies to you and your organisation, using the answer categories as below.

1   definitely true

2   more true than false

3   more false than true

4   definitely false

5   not applicable

A.

(1) First, I felt that I was my own boss in most matters relating to the project.

(2) I could make my own decisions regarding the project without checking with anybody else.

(3) How things were done around here was left pretty much up to me.

(4) I was allowed to do almost as I pleased.

(5) I made my own rules on this job.

(6)   I was constantly being checked on for rule violations.

(7)   I felt as though I was constantly being watched to see that I obeyed all the rules.

(8)   There was no specific manual relating to this project.

(9)   There is a complete written job description for going about this task.

(10) Whatever situation arose, we had procedures to follow in dealing with it.

(11) Everyone had a specific job to do.

(12) Going through the proper channels in getting this job done was constantly stressed.

(13) The organisation kept a written record of everyone's performance.

(14) We had to follow strict operational procedures at all times.

(15) Whenever we had a problem, we were supposed to go to the same person for an answer.

CENTRALISATION

1   never

2   seldom

3   often

4   always

B.

(1)   How frequently did you usually participate in decisions on the adoption of new products?

(2)   How frequently did you usually participate in decisions on the modification of existent products?

(3)   How frequently did you usually participate in decisions to delete existent products?

1   definitely true

2   more true than false

3   more false than true

4   definitely false

5   not applicable

C.

(1)   There could be little action taken on this project until a superior approved a decision.

(2)   If I wished to make my own decisions, I would be quickly discouraged.

(3)   Even small matters on this job had to be referred to someone higher up for a final answer.

(4)   I had to ask my boss before I did almost anything.

(5)   Any decision I made had to have my boss' approval.

QUALITY (content)

Please indicate you agreement or disagreement on each of the following issues regarding the final report (if they apply) in the space before each statement.

1. strongly agree

2. agree

3. neither agree nor disagree

4. disagree

5. strongly disagree

6. don't know

(1) The technical quality of the research was high.

(2) There were many contradictory statements and findings.

(3) The conclusions / recommendations of the presentation followed from the data.

(4) The statistics were smokescreens for otherwise useless findings.

(5) The way the information gathered was appropriate.

(6) The results addressed very well the problems we had to solve.

(7) The information provided was not available elsewhere.

(8) The information provided was worth the money spent on it.

QUALITY (form)

(1) The language of the presentation was clear.

(2) There were too many tables / graphs / statistics.

(3) There was not enough interpretation or explanation of the findings.

(4) The analysis of the data was more complex than necessary.

(5) It was necessary for someone within the company to summarise the information before it could be used.

ABILITY TO IMPLEMENT RECOMMENDATIONS

(1) The presentation provided data but no explicit recommendations for action.

(2) There were more recommendations than could practically be implemented.

(3) The recommendations were easy to put into effect.

(4) The information was not on time for a pending decision.

(5) All recommendations were implemented.

POLITICAL ACCEPTABILITY OF RECOMMENDATIONS

(1) The implications of the findings were politically acceptable to you.

(2) The report reflected that the external researchers and marketing management were out of touch with each other.

(3) Some of the more negative results were softened in the presentation.

(4) The implications of the findings were politically acceptable to others in the organisation.

(5) The research results challenged existing institutional arrangements.

(6) The recommendations did not challenge the budget or resource allocation of the department.

SURPRISE

Referring to the research project that you have been describing, please indicate to what extent you agree or disagree with the following statements, from your perspective. (Please use the scale below.)

1.   strongly agree

2.   agree

3.   neither agree nor disagree

4.   disagree

5.   strongly disagree

6.   don't know

(a) The results were what we anticipated.

(b) The findings were counterintuitive.

(c) The results suggested issues that were unforeseen at the start of the project.

(d) The results from this research study supported decisions made on other grounds.

After Deshpande and Zaltman (1982)

APPENDIX F

AMOS MAXIMUM LIKELIHOOD OUTPUTS FOR SUBMODELS DEPICTED IN THE THESIS

OUTPUT FOR SUBMODEL 1

Thu Dec 30 16:07:40 1999

```
                Amos
          Version 3.61 (w32)

        by James L. Arbuckle
```

```
*******************************************
* Submodel 1                              *
*-----------------------------------------*
*                                         *
*                                         *
*******************************************
```

Serial number 55501773

```
User-selected options
---------------------

Output:

        Maximum Likelihood

Output format options:

        Compressed output

Minimization options:

        Sample moments
        Standardized estimates
        Implied moments for observed variables
        Squared multiple correlations
        Machine-readable output file
        No technical output

Sample size:     91


Your model contains the following variables


            eval                        observed    endogenous
            mrarr                       observed    endogenous
            budget                      observed    endogenous
            mrac_di                     observed    endogenous
            mrtec_di                    observed    endogenous

            xdemog                      observed    exogenous

            innov                       unobserved  endogenous

            e1                          unobserved  exogenous
            e2                          unobserved  exogenous
            e3                          unobserved  exogenous
            mrapp                       unobserved  exogenous
            e4                          unobserved  exogenous
            e6                          unobserved  exogenous
            e5                          unobserved  exogenous


                  Number of variables in your model:    14
                  Number of observed variables:          6
                  Number of unobserved variables:        8
                  Number of exogenous variables:         8
                  Number of endogenous variables:        6



Summary of Parameters

                 Weights  Covariances Variances    Means    Intercepts    Total
                 -------  ----------- ---------    -----    ----------    -----
        Fixed:      8          0          1          0          0           9
      Labeled:      0          0          0          0          0           0
    Unlabeled:      4          1          7          0          0          12
                 -------  ----------- ---------    -----    ----------    -----
        Total:     12          1          8          0          0          21


The model is recursive.



Sample Covariances

           xdemog   mrtec_di mrac_di  budget   mrarr    eval
           -------- -------- -------- -------- -------- --------
xdemog       3.202
mrtec_di     2.665   86.659
mrac_di      2.109   16.383   15.367
budget       0.286    2.756    0.971    0.406
```

```
mrarr         0.408   3.150   1.137   0.221   0.394
eval          0.442   5.401   2.418   0.269   0.347   1.201


Eigenvalues of Sample Covariances

    1.670e-01   3.386e-01   7.091e-01   2.872e+00   1.220e+01   9.095e+01


Condition number of Sample Covariances= 5.445280e+02



Sample Correlations

          xdemog  mrtec_di mrac_di  budget   mrarr    eval
          -------- -------- -------- -------- -------- --------
xdemog      1.000
mrtec_di    0.160   1.000
mrac_di     0.301   0.449   1.000
budget      0.251   0.465   0.389   1.000
mrarr       0.363   0.539   0.462   0.554   1.000
eval        0.225   0.530   0.563   0.386   0.505   1.000


Eigenvalues of Sample Correlations

    3.861e-01   4.154e-01   4.999e-01   7.043e-01   8.924e-01   3.102e+00


Condition number of Sample Correlations= 8.034521e+00

Determinant of sample covariance matrix =  1.2775e+02

Model: Your_model



Computation of Degrees of Freedom

                    Number of distinct sample moments:   21
            Number of distinct parameters to be estimated:   12
                                   ------------------------
                                   Degrees of freedom:    9



Minimum was achieved


Chi-square =    12.220
Degrees of freedom =    9
Probability level =     0.201

Maximum Likelihood Estimates
----------------------------



Regression Weights:                     Estimate    S.E.    C.R.     Label
-------------------                     --------   -------  -------  -------

        innov <---------- mrapp          3.370    0.611    5.518
        eval <---------- mrapp           1.000
        mrarr <--------- mrapp           0.620    0.100    6.177
        budget <-------- mrapp           0.528    0.099    5.340
        mrac_di <------- innov           1.000
        mrtec_di <------ innov           2.504    0.456    5.492


Standardized Regression Weights:      Estimate
-------------------------------       --------

        innov <---------- mrapp          1.000
        eval <---------- mrapp           0.707
```

```
                mrarr <---------- mrapp       0.765
                budget <--------- mrapp       0.641
                mrac_di <-------- innov       0.666
                mrtec_di <------- innov       0.702


Covariances:                                Estimate    S.E.      C.R.     Label
------------                                --------   -------   -------   -------

            mrapp <--------> xdemog           0.524     0.179     2.929


Correlations:                               Estimate
-------------                               --------

            mrapp <--------> xdemog           0.378


Variances:                                  Estimate    S.E.      C.R.     Label
----------                                  --------   -------   -------   -------

                              mrapp           0.599     0.169     3.542
                             xdemog           3.202     0.477     6.708
                                 e6           0.005
                                 e1           0.601     0.113     5.342
                                 e2           0.164     0.034     4.775
                                 e3           0.239     0.041     5.758
                                 e4          43.951     8.176     5.375
                                 e5           8.555     1.522     5.622


Squared Multiple Correlations:              Estimate
------------------------------              --------

                              innov           0.999
                           mrtec_di           0.493
                            mrac_di           0.443
                             budget           0.411
                              mrarr           0.585
                               eval           0.499

Implied Covariances

          xdemog   mrtec_di mrac_di  budget   mrarr    eval
          -------- -------- -------- -------- -------- --------
xdemog      3.202
mrtec_di    4.421   86.659
mrac_di     1.766   17.058   15.368
budget      0.276    2.668    1.066    0.406
mrarr       0.325    3.134    1.252    0.196    0.394
eval        0.524    5.058    2.020    0.316    0.371    1.201



Implied Correlations

          xdemog   mrtec_di mrac_di  budget   mrarr    eval
          -------- -------- -------- -------- -------- --------
xdemog      1.000
mrtec_di    0.265    1.000
mrac_di     0.252    0.467    1.000
budget      0.243    0.450    0.427    1.000
mrarr       0.289    0.537    0.509    0.490    1.000
eval        0.267    0.496    0.470    0.453    0.540    1.000

Summary of models
-----------------

              Model  NPAR      CMIN    DF          P    CMIN/DF
         ----------- ----  --------- --    --------- ----------
          Your_model   12     12.220   9      0.201      1.358
     Saturated model   21      0.000   0
  Independence model    6    167.045  15      0.000     11.136



              Model        RMR      GFI     AGFI       PGFI
```

```
----------------    ----------  ----------  ----------  ----------
      Your_model         0.435       0.956       0.897       0.410
  Saturated model        0.000       1.000
Independence model       3.997       0.522       0.331       0.373


                        DELTA1        RHO1      DELTA2        RHO2
             Model         NFI         RFI         IFI         TLI         CFI
----------------    ----------  ----------  ----------  ----------  ----------
      Your_model         0.927       0.878       0.980       0.965       0.979
  Saturated model        1.000                   1.000                   1.000
Independence model       0.000       0.000       0.000       0.000       0.000


             Model      PRATIO        PNFI        PCFI
----------------    ----------  ----------  ----------
      Your_model         0.600       0.556       0.587
  Saturated model        0.000       0.000       0.000
Independence model       1.000       0.000       0.000


             Model         NCP       LO 90       HI 90
----------------    ----------  ----------  ----------
      Your_model         3.220       0.000      16.567
  Saturated model        0.000       0.000       0.000
Independence model     152.045     114.157     197.391


             Model        FMIN          F0       LO 90       HI 90
----------------    ----------  ----------  ----------  ----------
      Your_model         0.136       0.036       0.000       0.184
  Saturated model        0.000       0.000       0.000       0.000
Independence model       1.856       1.689       1.268       2.193


             Model       RMSEA       LO 90       HI 90      PCLOSE
----------------    ----------  ----------  ----------  ----------
      Your_model         0.063       0.000       0.143       0.353
Independence model       0.336       0.291       0.382       0.000


             Model         AIC         BCC         BIC        CAIC
----------------    ----------  ----------  ----------  ----------
      Your_model        36.220      38.245      87.852      78.351
  Saturated model       42.000      45.542     132.355     115.728
Independence model     179.045     180.057     204.861     200.110


             Model        ECVI       LO 90       HI 90       MECVI
----------------    ----------  ----------  ----------  ----------
      Your_model         0.402       0.367       0.551       0.425
  Saturated model        0.467       0.467       0.467       0.506
Independence model       1.989       1.568       2.493       2.001


                       HOELTER     HOELTER
             Model         .05         .01
----------------    ----------  ----------
      Your_model           125         160
Independence model          14          17




Execution time summary:


       Minimization:       0.010
```

```
Miscellaneous:     0.449
   Bootstrap:      0.000
      Total:       0.459
```

OUTPUT FOR SUBMODEL 2

```
              Amos
        Version 3.61 (w32)

      by James L. Arbuckle
```

```
*******************************************
* Submodel 2                              *
*-----------------------------------------*
*                                         *
*                                         *
*******************************************
```

User-selected options

Output:

        Maximum Likelihood

Output format options:

        Compressed output

Minimization options:

        Sample moments
        Standardized estimates
        Implied moments for observed variables
        Squared multiple correlations
        Machine-readable output file
        No technical output

Sample size: 91

Your model contains the following variables

        mrac_di   observed   endogenous
        mrtec_di   observed   endogenous
        cost   observed   endogenous
        apprec   observed   endogenous
        attrib   observed   endogenous

        xdemog   observed   exogenous

        innov   unobserved endogenous

        e4   unobserved exogenous
        e6   unobserved exogenous
        e7   unobserved exogenous
        e8   unobserved exogenous
        e9   unobserved exogenous
        mratt   unobserved exogenous
        e5   unobserved exogenous

                Number of variables in your model: 14
                Number of observed variables: 6
                Number of unobserved variables: 8
                Number of exogenous variables: 8
                Number of endogenous variables: 6

Summary of Parameters

                Weights Covariances Variances   Means   Intercepts   Total
                ------- ----------- ---------   -----   ----------   -----
        Fixed: 8   0   1   0   0   9
      Labeled: 0   0   0   0   0   0
   Unlabeled: 4   1   7   0   0   12
                ------- ----------- ---------   -----   ----------   -----
        Total: 12   1   8   0   0   21

The model is recursive.

Sample Covariances

        xdemog   attrib   apprec   cost   mrtec_di mrac_di
        -------- -------- -------- -------- -------- --------
xdemog   3.202

```
attrib       -0.066    0.546
apprec        0.188    0.272    1.463
cost          0.269    0.147    0.516    0.796
mrtec_di      2.665    0.363    3.764    3.819   86.659
mrac_di       2.109    0.351    2.354    1.954   16.383   15.367



Eigenvalues of Sample Covariances

    4.133e-01    4.865e-01    1.164e+00    2.881e+00    1.234e+01    9.074e+01


Condition number of Sample Covariances= 2.195488e+02



Sample Correlations

          xdemog   attrib   apprec    cost     mrtec_di mrac_di
          -------- -------- -------- -------- -------- --------
xdemog     1.000
attrib    -0.050    1.000
apprec     0.087    0.305    1.000
cost       0.169    0.223    0.478    1.000
mrtec_di   0.160    0.053    0.334    0.460    1.000
mrac_di    0.301    0.121    0.496    0.559    0.449    1.000


Eigenvalues of Sample Correlations

    4.023e-01    4.842e-01    5.959e-01    8.278e-01    1.134e+00    2.555e+00


Condition number of Sample Correlations= 6.352406e+00

Determinant of sample covariance matrix =  7.5572e+02

Model: Your_model



Computation of Degrees of Freedom

                    Number of distinct sample moments:   21
         Number of distinct parameters to be estimated:  12
                                               ------------------------
                                               Degrees of freedom:    9



Minimum was achieved



Chi-square =    11.002
Degrees of freedom =    9
Probability level =     0.276

Maximum Likelihood Estimates
----------------------------



Regression Weights:                       Estimate    S.E.     C.R.     Label
-------------------                       --------   -------  -------  -------

          innov <---------- mratt         4.501     0.767     5.868
          mrac_di <-------- innov         1.000
          mrtec_di <------- innov         1.791     0.372     4.816
          cost <----------- mratt         1.000
          apprec <--------- mratt         1.157     0.222     5.221
          attrib <--------- mratt         0.270     0.131     2.060


Standardized Regression Weights:        Estimate
-------------------------------         --------
```

```
                 innov <---------- mratt         1.000
                 mrac_di <-------- innov         0.766
                 mrtec_di <------- innov         0.578
                 cost <---------- mratt          0.748
                 apprec <--------- mratt         0.638
                 attrib <--------- mratt         0.244


Covariances:                             Estimate    S.E.      C.R.     Label
------------                             --------   -------   -------   -------

           mratt <--------> xdemog        0.322     0.148     2.169


Correlations:                            Estimate
-------------                            --------

           mratt <--------> xdemog        0.270


Variances:                               Estimate    S.E.      C.R.     Label
----------                               --------   -------   -------   -------

                            mratt         0.445     0.122     3.648
                            xdemog        3.202     0.477     6.708
                            e6            0.005
                            e4           57.719     9.874     5.846
                            e7            0.351     0.079     4.425
                            e8            0.868     0.157     5.512
                            e9            0.514     0.078     6.603
                            e5            6.344     1.522     4.168


Squared Multiple Correlations:           Estimate
------------------------------           --------

                            innov         0.999
                            attrib        0.059
                            apprec        0.407
                            cost          0.559
                            mrtec_di      0.334
                            mrac_di       0.587

Implied Covariances

          xdemog   attrib   apprec   cost     mrtec_di mrac_di
          -------- -------- -------- -------- -------- --------
xdemog     3.202
attrib     0.087    0.546
apprec     0.372    0.139    1.463
cost       0.322    0.120    0.515    0.796
mrtec_di   2.596    0.968    4.151    3.588   86.659
mrac_di    1.449    0.541    2.318    2.004   16.160   15.367



Implied Correlations

          xdemog   attrib   apprec   cost     mrtec_di mrac_di
          -------- -------- -------- -------- -------- --------
xdemog     1.000
attrib     0.066    1.000
apprec     0.172    0.155    1.000
cost       0.202    0.182    0.477    1.000
mrtec_di   0.156    0.141    0.369    0.432    1.000
mrac_di    0.207    0.187    0.489    0.573    0.443    1.000

Summary of models
-----------------

            Model  NPAR      CMIN    DF            P    CMIN/DF
   ---------------- ----  --------- --    ---------  ---------
        Your_model    12    11.002   9        0.276      1.222
   Saturated model    21     0.000   0
 Independence model    6   115.039  15        0.000      7.669
```

Model	RMR	GFI	AGFI	PGFI
Your_model	0.237	0.959	0.904	0.411
Saturated model	0.000	1.000		
Independence model	3.896	0.648	0.508	0.463

	DELTA1	RHO1	DELTA2	RHO2	
Model	NFI	RFI	IFI	TLI	CFI
Your_model	0.904	0.841	0.981	0.967	0.980
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Your_model	0.600	0.543	0.588
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Your_model	2.002	0.000	14.653
Saturated model	0.000	0.000	0.000
Independence model	100.039	69.589	137.972

Model	FMIN	F0	LO 90	HI 90
Your_model	0.122	0.022	0.000	0.163
Saturated model	0.000	0.000	0.000	0.000
Independence model	1.278	1.112	0.773	1.533

Model	RMSEA	LO 90	HI 90	PCLOSE
Your_model	0.050	0.000	0.134	0.441
Independence model	0.272	0.227	0.320	0.000

Model	AIC	BCC	BIC	CAIC
Your_model	35.002	37.026	86.634	77.133
Saturated model	42.000	45.542	132.355	115.728
Independence model	127.039	128.051	152.854	148.104

Model	ECVI	LO 90	HI 90	MECVI
Your_model	0.389	0.367	0.529	0.411
Saturated model	0.467	0.467	0.467	0.506
Independence model	1.412	1.073	1.833	1.423

Model	HOELTER .05	HOELTER .01
Your_model	139	178
Independence model	20	24

Execution time summary:

```
  Minimization:    0.011
Miscellaneous:     0.384
    Bootstrap:     0.000
        Total:     0.395
```

OUTPUT FOR SUBMODEL 3

```
                 Amos
          Version 3.61 (w32)

          by James L. Arbuckle
```

```
*******************************************
* Submodel 3                              *
*-----------------------------------------*
*                                         *
*                                         *
*******************************************
```

```
          Serial number 55501773
```

User-selected options

Output:

          Maximum Likelihood

Output format options:

          Compressed output

Minimization options:

          Sample moments
          Standardized estimates
          Implied moments for observed variables
          Squared multiple correlations
          Machine-readable output file
          No technical output

Sample size: 91

Your model contains the following variables

          eval   observed   endogenous
          mrarr   observed   endogenous
          budget   observed   endogenous
          mrac_di   observed   endogenous
          mrtec_di   observed   endogenous
          cost   observed   endogenous
          apprec   observed   endogenous
          attrib   observed   endogenous
          enviro   observed   endogenous

          xdemog   observed   exogenous

          innov   unobserved endogenous

          e1   unobserved exogenous
          e2   unobserved exogenous
          e3   unobserved exogenous
          mrapp   unobserved exogenous
          e4   unobserved exogenous
          e6   unobserved exogenous
          e7   unobserved exogenous
          e8   unobserved exogenous
          e9   unobserved exogenous
          mratt   unobserved exogenous
          e5   unobserved exogenous
          e10   unobserved exogenous

               Number of variables in your model: 23
               Number of observed variables: 10
               Number of unobserved variables: 13
               Number of exogenous variables: 13
               Number of endogenous variables: 10

Summary of Parameters

               Weights Covariances Variances   Means   Intercepts   Total
               ------- ----------- ---------   -----   ----------   -----
       Fixed: 13   0   1   0   0   14
     Labeled: 0   0   0   0   0   0
   Unlabeled: 8   3   12   0   0   23
               ------- ----------- ---------   -----   ----------   -----
       Total: 21   3   13   0   0   37

The model is recursive.

```
Sample Covariances

          xdemog   enviro   attrib   apprec   cost     mrtec_di mrac_di
          -------- -------- -------- -------- -------- -------- --------
xdemog      3.202
enviro      0.168    0.731
attrib     -0.066    0.015    0.546
apprec      0.188    0.155    0.272    1.463
cost        0.269    0.157    0.147    0.516    0.796
mrtec_di    2.665    1.896    0.363    3.764    3.819   86.659
mrac_di     2.109    0.772    0.351    2.354    1.954   16.383   15.367
budget      0.286    0.040   -0.083    0.266    0.220    2.756    0.971
mrarr       0.408    0.044    0.023    0.309    0.266    3.150    1.137
eval        0.442    0.312    0.269    0.837    0.400    5.401    2.418

          budget   mrarr    eval
          -------- -------- --------
budget      0.406
mrarr       0.221    0.394
eval        0.269    0.347    1.201


Eigenvalues of Sample Covariances

    1.579e-01    1.937e-01    3.656e-01    5.110e-01    5.417e-01    7.249e-01
    1.441e+00    2.904e+00    1.253e+01    9.139e+01

Condition number of Sample Covariances= 5.788388e+02



Sample Correlations

          xdemog   enviro   attrib   apprec   cost     mrtec_di mrac_di
          -------- -------- -------- -------- -------- -------- --------
xdemog      1.000
enviro      0.110    1.000
attrib     -0.050    0.023    1.000
apprec      0.087    0.150    0.305    1.000
cost        0.169    0.206    0.223    0.478    1.000
mrtec_di    0.160    0.238    0.053    0.334    0.460    1.000
mrac_di     0.301    0.230    0.121    0.496    0.559    0.449    1.000
budget      0.251    0.073   -0.177    0.345    0.388    0.465    0.389
mrarr       0.363    0.082    0.050    0.407    0.475    0.539    0.462
eval        0.225    0.333    0.332    0.631    0.409    0.530    0.563

          budget   mrarr    eval
          -------- -------- --------
budget      1.000
mrarr       0.554    1.000
eval        0.386    0.505    1.000


Eigenvalues of Sample Correlations

    2.347e-01    3.496e-01    3.789e-01    4.768e-01    6.156e-01    6.350e-01
    8.801e-01    9.910e-01    1.379e+00    4.059e+00

Condition number of Sample Correlations= 1.729428e+01

Determinant of sample covariance matrix =  1.0750e+01

Model: Your_model



Computation of Degrees of Freedom

                Number of distinct sample moments:   55
        Number of distinct parameters to be estimated:   23
                                 -------------------------
                                 Degrees of freedom:   32



Minimum was achieved
```

```
Chi-square =    75.810
Degrees of freedom =   32
Probability level =     0.000

Maximum Likelihood Estimates
----------------------------


Regression Weights:                   Estimate    S.E.     C.R.    Label
-------------------                   --------   -------  -------  -------

          innov <---------- mrapp       2.660     1.151    2.310
          innov <---------- mratt       0.980     1.472    0.666
          innov <--------- enviro       0.429     0.291    1.471
           eval <---------- mrapp       1.000
          mrarr <---------- mrapp       0.571     0.087    6.584
         budget <--------- mrapp        0.476     0.088    5.409
        mrac_di <-------- innov         1.000
        mrtec_di <------- innov         2.187     0.384    5.701
           cost <---------- mratt       1.000
         apprec <--------- mratt        1.382     0.242    5.700
         attrib <--------- mratt        0.314     0.138    2.272


Standardized Regression Weights:      Estimate
--------------------------------      --------

          innov <---------- mrapp       0.786
          innov <---------- mratt       0.224
          innov <--------- enviro       0.133
           eval <---------- mrapp       0.741
          mrarr <---------- mrapp       0.740
         budget <--------- mrapp        0.607
        mrac_di <-------- innov         0.711
        mrtec_di <------- innov         0.654
           cost <---------- mratt       0.705
         apprec <--------- mratt        0.719
         attrib <--------- mratt        0.268


Covariances:                          Estimate    S.E.     C.R.    Label
------------                          --------   -------  -------  -------

        mratt <--------> xdemog         0.183     0.146    1.255
        mrapp <--------> xdemog         0.575     0.191    3.005
        mrapp <---------> mratt         0.455     0.105    4.311


Correlations:                         Estimate
-------------                         --------

        mratt <--------> xdemog         0.163
        mrapp <--------> xdemog         0.396
        mrapp <---------> mratt         0.889

Variances:                            Estimate    S.E.     C.R.    Label
----------                            --------   -------  -------  -------

                          mrapp         0.660     0.171    3.854
                          mratt         0.396     0.116    3.413
                         xdemog         3.202     0.477    6.708
                            e10         0.731     0.109    6.708
                             e6         0.005
                             e1         0.541     0.101    5.330
                             e2         0.178     0.033    5.347
                             e3         0.256     0.042    6.068
                             e4        48.448     8.118    5.968
                             e7         0.400     0.081    4.969
                             e8         0.708     0.147    4.802
                             e9         0.507     0.077    6.590
                             e5         7.382     1.297    5.689
```

```
Squared Multiple Correlations:          Estimate
-----------------------------           --------

                               enviro     0.000
                                innov     0.999
                               attrib     0.072
                               apprec     0.516
                                 cost     0.497
                             mrtec_di     0.427
                              mrac_di     0.506
                               budget     0.369
                                mrarr     0.547
                                 eval     0.550



Implied Covariances

           xdemog   enviro   attrib   apprec   cost     mrtec_di mrac_di
           -------- -------- -------- -------- -------- -------- --------
xdemog       3.202
enviro       0.000    0.731
attrib       0.058    0.000    0.546
apprec       0.253    0.000    0.172    1.463
cost         0.183    0.000    0.124    0.547    0.796
mrtec_di     3.740    0.685    1.098    4.826    3.493   84.614
mrac_di      1.710    0.313    0.502    2.206    1.597   16.534   14.941
budget       0.274    0.000    0.068    0.299    0.216    2.293    1.048
mrarr        0.329    0.000    0.082    0.359    0.260    2.750    1.257
eval         0.575    0.000    0.143    0.628    0.455    4.814    2.201

           budget   mrarr    eval
           -------- -------- --------
budget       0.406
mrarr        0.179    0.394
eval         0.314    0.377    1.201

Implied Correlations

           xdemog   enviro   attrib   apprec   cost     mrtec_di mrac_di
           -------- -------- -------- -------- -------- -------- --------
xdemog       1.000
enviro       0.000    1.000
attrib       0.044    0.000    1.000
apprec       0.117    0.000    0.192    1.000
cost         0.115    0.000    0.189    0.507    1.000
mrtec_di     0.227    0.087    0.161    0.434    0.426    1.000
mrac_di      0.247    0.095    0.176    0.472    0.463    0.465    1.000
budget       0.240    0.000    0.145    0.388    0.381    0.391    0.426
mrarr        0.293    0.000    0.176    0.473    0.464    0.476    0.518
eval         0.293    0.000    0.176    0.474    0.465    0.478    0.520

           budget   mrarr    eval
           -------- -------- --------
budget       1.000
mrarr        0.449    1.000
eval         0.450    0.548    1.000

Summary of models
-----------------

          Model  NPAR       CMIN   DF          P    CMIN/DF
---------------- ----  --------- --   --------- ----------
     Your_model    23     75.810  32      0.000      2.369
Saturated model    55      0.000   0
Independence model 10    320.855  45      0.000      7.130


          Model        RMR        GFI       AGFI       PGFI
---------------- ---------- ---------- ---------- ----------
     Your_model      0.436      0.859      0.757      0.500
Saturated model      0.000      1.000
Independence model   2.628      0.466      0.347      0.381
```

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Your_model	0.764	0.668	0.848	0.777	0.841
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Your_model	0.711	0.543	0.598
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Your_model	43.810	22.130	73.195
Saturated model	0.000	0.000	0.000
Independence model	275.855	222.727	336.471

Model	FMIN	F0	LO 90	HI 90
Your_model	0.842	0.487	0.246	0.813
Saturated model	0.000	0.000	0.000	0.000
Independence model	3.565	3.065	2.475	3.739

Model	RMSEA	LO 90	HI 90	PCLOSE
Your_model	0.123	0.088	0.159	0.001
Independence model	0.261	0.235	0.288	0.000

Model	AIC	BCC	BIC	CAIC
Your_model	121.810	128.215	232.519	202.560
Saturated model	110.000	125.316	374.739	303.097
Independence model	340.855	343.640	388.990	375.964

Model	ECVI	LO 90	HI 90	MECVI
Your_model	1.353	1.113	1.680	1.425
Saturated model	1.222	1.222	1.222	1.392
Independence model	3.787	3.197	4.461	3.818

Model	HOELTER .05	HOELTER .01
Your_model	55	64
Independence model	18	20

Execution time summary:

Minimization:	0.055
Miscellaneous:	0.422
Bootstrap:	0.000
Total:	0.477

OUTPUT FOR SUBMODEL 4

```
            Amos
      Version 3.61 (w32)

   by James L. Arbuckle
```

```
*******************************************
* Submodel 4                              *
*-----------------------------------------*
*                                         *
*                                         *
*******************************************
```

```
        Serial number 55501773
```

User-selected options

Output:

    Maximum Likelihood

Output format options:

    Compressed output

Minimization options:

    Sample moments
    Standardized estimates
    Implied moments for observed variables
    Squared multiple correlations
    Machine-readable output file
    No technical output

Sample size: 91

Your model contains the following variables

            eval   observed   endogenous
            mrarr   observed   endogenous
            budget   observed   endogenous
            mrac_di   observed   endogenous
            mrtec_di   observed   endogenous
            cost   observed   endogenous
            apprec   observed   endogenous
            attrib   observed   endogenous

            xdemog   observed   exogenous

            innov   unobserved endogenous

            e1   unobserved exogenous
            e2   unobserved exogenous
            e3   unobserved exogenous
            mrapp   unobserved exogenous
            e4   unobserved exogenous
            e6   unobserved exogenous
            e7   unobserved exogenous
            e8   unobserved exogenous
            e9   unobserved exogenous
            mratt   unobserved exogenous
            e5   unobserved exogenous

            Number of variables in your model: 21
            Number of observed variables: 9
            Number of unobserved variables: 12
            Number of exogenous variables: 12
            Number of endogenous variables: 9

Summary of Parameters

                Weights Covariances Variances   Means   Intercepts   Total
                ------- ----------- ---------   -----   ----------   -----
        Fixed: 12   0   1   0   0   13
      Labeled: 0   0   0   0   0   0
    Unlabeled: 7   3   11   0   0   21
                ------- ----------- ---------   -----   ----------   -----
        Total: 19   3   12   0   0   34

The model is recursive.

Sample Covariances

            xdemog   attrib   apprec   cost   mrtec_di mrac_di budget
            -------- -------- -------- -------- -------- -------- --------
xdemog   3.202
attrib   -0.066   0.546
apprec   0.188   0.272   1.463

```
cost            0.269    0.147    0.516    0.796
mrtec_di        2.665    0.363    3.764    3.819    86.659
mrac_di         2.109    0.351    2.354    1.954    16.383   15.367
budget          0.286   -0.083    0.266    0.220     2.756    0.971    0.406
mrarr           0.408    0.023    0.309    0.266     3.150    1.137    0.221
eval            0.442    0.269    0.837    0.400     5.401    2.418    0.269

                mrarr     eval
               -------- --------
mrarr           0.394
eval            0.347    1.201
```

Eigenvalues of Sample Covariances

```
    1.584e-01    2.179e-01    3.728e-01    5.135e-01    5.680e-01    1.433e+00
    2.903e+00    1.252e+01    9.134e+01
```

Condition number of Sample Covariances= 5.767989e+02

Sample Correlations

```
            xdemog   attrib   apprec    cost    mrtec_di mrac_di  budget
           -------- -------- -------- -------- -------- -------- --------
xdemog       1.000
attrib      -0.050    1.000
apprec       0.087    0.305    1.000
cost         0.169    0.223    0.478    1.000
mrtec_di     0.160    0.053    0.334    0.460    1.000
mrac_di      0.301    0.121    0.496    0.559    0.449    1.000
budget       0.251   -0.177    0.345    0.388    0.465    0.389    1.000
mrarr        0.363    0.050    0.407    0.475    0.539    0.462    0.554
eval         0.225    0.332    0.631    0.409    0.530    0.563    0.386

                mrarr     eval
               -------- --------
mrarr           1.000
eval            0.505    1.000
```

Eigenvalues of Sample Correlations

```
    2.529e-01    3.577e-01    3.799e-01    5.306e-01    6.156e-01    6.350e-01
    8.820e-01    1.374e+00    3.972e+00
```

Condition number of Sample Correlations= 1.570400e+01

Determinant of sample covariance matrix = 1.7849e+01

Model: Your_model

Computation of Degrees of Freedom

```
                    Number of distinct sample moments:   45
            Number of distinct parameters to be estimated:   21
                                        ------------------------
                                        Degrees of freedom:   24
```

Minimum was achieved

```
Chi-square =    60.412
Degrees of freedom =   24
Probability level =     0.000
```

Maximum Likelihood Estimates

```
Regression Weights:                       Estimate    S.E.      C.R.     Label
-------------------                       --------   -------   -------   -------

        innov <---------- mrapp             2.791     1.184     2.358
        innov <---------- mratt             0.928     1.534     0.605
         eval <---------- mrapp             1.000
        mrarr <---------- mrapp             0.556     0.084     6.613
       budget <--------- mrapp              0.464     0.086     5.406
      mrac_di <-------- innov               1.000
     mrtec_di <------- innov                2.166     0.372     5.823
         cost <---------- mratt             1.000
       apprec <--------- mratt              1.384     0.241     5.734
       attrib <--------- mratt              0.315     0.138     2.283


Standardized Regression Weights:          Estimate
-------------------------------           --------

        innov <---------- mrapp             0.811
        innov <---------- mratt             0.206
         eval <---------- mrapp             0.752
        mrarr <---------- mrapp             0.730
       budget <--------- mrapp              0.600
      mrac_di <-------- innov               0.723
     mrtec_di <------- innov                0.659
         cost <---------- mratt             0.705
       apprec <--------- mratt              0.719
       attrib <--------- mratt              0.268


Covariances:                              Estimate    S.E.      C.R.     Label
------------                              --------   -------   -------   -------

        mratt <--------> xdemog            0.183     0.146     1.256
        mrapp <--------> xdemog            0.580     0.193     2.997
        mrapp <---------> mratt            0.463     0.106     4.355


Correlations:                             Estimate
-------------                             --------

        mratt <--------> xdemog            0.163
        mrapp <--------> xdemog            0.393
        mrapp <---------> mratt            0.895

Variances:                                Estimate    S.E.      C.R.     Label
----------                                --------   -------   -------   -------

                        mrapp             0.678     0.172     3.936
                        mratt             0.395     0.116     3.417
                       xdemog             3.202     0.477     6.708
                           e6             0.005
                           e1             0.522     0.099     5.275
                           e2             0.184     0.034     5.460
                           e3             0.259     0.042     6.108
                           e4            48.970     8.239     5.943
                           e7             0.401     0.080     4.997
                           e8             0.706     0.147     4.815
                           e9             0.507     0.077     6.592
                           e5             7.337     1.307     5.616


Squared Multiple Correlations:            Estimate
------------------------------            --------

                        innov             0.999
                       attrib             0.072
                       apprec             0.517
                         cost             0.496
                     mrtec_di             0.435
                      mrac_di             0.523
                       budget             0.360
                        mrarr             0.533
                         eval             0.565
```

Implied Covariances

```
          xdemog   attrib   apprec   cost     mrtec_di mrac_di  budget
          -------- -------- -------- -------- -------- -------- --------
xdemog     3.202
attrib     0.058    0.546
apprec     0.254    0.173    1.463
cost       0.183    0.125    0.547    0.796
mrtec_di   3.873    1.134    4.977    3.595    86.659
mrac_di    1.788    0.523    2.297    1.660   17.398   15.368
budget     0.269    0.068    0.298    0.215    2.336    1.078    0.406
mrarr      0.322    0.081    0.356    0.258    2.799    1.292    0.175
eval       0.580    0.146    0.641    0.463    5.033    2.323    0.315
```

```
          mrarr    eval
          -------- --------
mrarr      0.394
eval       0.377    1.201
```

Implied Correlations

```
          xdemog   attrib   apprec   cost     mrtec_di mrac_di  budget
          -------- -------- -------- -------- -------- -------- --------
xdemog     1.000
attrib     0.044    1.000
apprec     0.117    0.193    1.000
cost       0.115    0.189    0.507    1.000
mrtec_di   0.232    0.165    0.442    0.433    1.000
mrac_di    0.255    0.181    0.484    0.475    0.477    1.000
budget     0.236    0.144    0.386    0.378    0.394    0.432    1.000
mrarr      0.287    0.175    0.470    0.460    0.479    0.525    0.438
eval       0.296    0.180    0.484    0.474    0.493    0.541    0.451
```

```
          mrarr    eval
          -------- --------
mrarr      1.000
eval       0.549    1.000
```

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Your_model	21	60.412	24	0.000	2.517
Saturated model	45	0.000	0		
Independence model	9	303.472	36	0.000	8.430

Model	RMR	GFI	AGFI	PGFI
Your_model	0.348	0.867	0.750	0.462
Saturated model	0.000	1.000		
Independence model	2.889	0.454	0.317	0.363

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Your_model	0.801	0.701	0.870	0.796	0.864
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Your_model	0.667	0.534	0.576
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Your_model	36.412	17.260	63.244

```
     Saturated model          0.000       0.000       0.000
 Independence model        267.472     215.577     326.841




              Model          FMIN          F0       LO 90       HI 90
     ----------------  ----------  ----------  ----------  ----------
         Your_model          0.671       0.405       0.192       0.703
     Saturated model          0.000       0.000       0.000       0.000
 Independence model          3.372       2.972       2.395       3.632




              Model         RMSEA       LO 90       HI 90      PCLOSE
     ----------------  ----------  ----------  ----------  ----------
         Your_model          0.130       0.089       0.171       0.001
 Independence model          0.287       0.258       0.318       0.000




              Model          AIC         BCC         BIC        CAIC
     ----------------  ----------  ----------  ----------  ----------
         Your_model        102.412     107.662     201.282     176.140
     Saturated model         90.000     101.250     301.864     247.989
 Independence model        321.472     323.722     363.844     353.069




              Model          ECVI       LO 90       HI 90       MECVI
     ----------------  ----------  ----------  ----------  ----------
         Your_model          1.138       0.925       1.436       1.196
     Saturated model          1.000       1.000       1.000       1.125
 Independence model          3.572       2.995       4.232       3.597




                        HOELTER     HOELTER
              Model         .05         .01
     ----------------  ----------  ----------
         Your_model           55          65
 Independence model           16          18




 Execution time summary:


          Minimization:      0.024
          Miscellaneous:      0.220
             Bootstrap:      0.000
                Total:      0.244
```

OUTPUT FOR FINAL MODEL

```
                  Amos
            Version 3.61 (w32)

          by James L. Arbuckle
```

```
*******************************************
* FinalModel                              *
*-----------------------------------------*
*                                         *
*                                         *
*******************************************
```

```
            Serial number 55501773
```

User-selected options

Output:

        Maximum Likelihood

Output format options:

        Compressed output

Minimization options:

        Sample moments
        Standardized estimates
        Implied moments for observed variables
        Squared multiple correlations
        Machine-readable output file
        No technical output

Sample size: 91

Your model contains the following variables

        eval   observed   endogenous
        mrarr   observed   endogenous
        budget   observed   endogenous
        mrac_di   observed   endogenous
        mrtec_di   observed   endogenous
        cost   observed   endogenous
        apprec   observed   endogenous
        attrib   observed   endogenous
        finance   observed   endogenous
        util   observed   endogenous

        xdemog   observed   exogenous

        innov   unobserved endogenous

        e1   unobserved exogenous
        e2   unobserved exogenous
        e3   unobserved exogenous
        mrapp   unobserved exogenous
        e4   unobserved exogenous
        e6   unobserved exogenous
        e7   unobserved exogenous
        e8   unobserved exogenous
        e9   unobserved exogenous
        mratt   unobserved exogenous
        e11   unobserved exogenous
        e12   unobserved exogenous
        e5   unobserved exogenous

                    Number of variables in your model: 25
                    Number of observed variables: 11
                    Number of unobserved variables: 14
                    Number of exogenous variables: 14
                    Number of endogenous variables: 11

Summary of Parameters

              Weights Covariances Variances   Means   Intercepts   Total
              ------- ----------- ---------   -----   ----------   -----
      Fixed: 14   0   1   0   0   15
    Labeled: 0   0   0   0   0   0
  Unlabeled: 9   3   13   0   0   25
              ------- ----------- ---------   -----   ----------   -----
      Total: 23   3   14   0   0   40

The model is recursive.

Sample Covariances

```
          xdemog    util    finance  attrib   apprec   cost     mrtec_di
          --------  -------- -------- -------- -------- -------- --------
xdemog     3.202
util       0.106    0.560
finance    0.216    0.492    1.293
attrib    -0.066    0.232    0.219    0.546
apprec     0.188    0.517    0.842    0.272    1.463
cost       0.269    0.244    0.516    0.147    0.516    0.796
mrtec_di   2.665    2.266    5.298    0.363    3.764    3.819    86.659
mrac_di    2.109    1.239    2.242    0.351    2.354    1.954    16.383
budget     0.286    0.102    0.201   -0.083    0.266    0.220     2.756
mrarr      0.408    0.176    0.316    0.023    0.309    0.266     3.150
eval       0.442    0.447    0.925    0.269    0.837    0.400     5.401

          mrac_di  budget   mrarr    eval
          -------- -------- -------- --------
mrac_di   15.367
budget     0.971    0.406
mrarr      1.137    0.221    0.394
eval       2.418    0.269    0.347    1.201
```

Eigenvalues of Sample Covariances

```
    1.490e-01    1.673e-01    2.935e-01    3.281e-01    4.827e-01    5.263e-01
    5.997e-01    1.915e+00    2.942e+00    1.270e+01    9.179e+01
```

Condition number of Sample Covariances= 6.160832e+02

Sample Correlations

```
          xdemog    util    finance  attrib   apprec   cost     mrtec_di
          --------  -------- -------- -------- -------- -------- --------
xdemog     1.000
util       0.079    1.000
finance    0.106    0.578    1.000
attrib    -0.050    0.419    0.260    1.000
apprec     0.087    0.571    0.612    0.305    1.000
cost       0.169    0.365    0.509    0.223    0.478    1.000
mrtec_di   0.160    0.325    0.501    0.053    0.334    0.460    1.000
mrac_di    0.301    0.422    0.503    0.121    0.496    0.559    0.449
budget     0.251    0.214    0.277   -0.177    0.345    0.388    0.465
mrarr      0.363    0.375    0.443    0.050    0.407    0.475    0.539
eval       0.225    0.545    0.742    0.332    0.631    0.409    0.530

          mrac_di  budget   mrarr    eval
          -------- -------- -------- --------
mrac_di    1.000
budget     0.389    1.000
mrarr      0.462    0.554    1.000
eval       0.563    0.386    0.505    1.000
```

Eigenvalues of Sample Correlations

```
    1.765e-01    3.175e-01    3.590e-01    4.218e-01    4.414e-01    5.836e-01
    6.249e-01    6.706e-01    8.924e-01    1.583e+00    4.929e+00
```

Condition number of Sample Correlations= 2.791893e+01

Determinant of sample covariance matrix = 2.4010e+00

Model: Your_model

```
Computation of Degrees of Freedom

                    Number of distinct sample moments:   66
        Number of distinct parameters to be estimated:   25
                                      -------------------------
                                      Degrees of freedom:   41




Minimum was achieved




Chi-square =   139.303
Degrees of freedom =   41
Probability level =     0.000

Maximum Likelihood Estimates
----------------------------




Regression Weights:                   Estimate   S.E.     C.R.     Label
-------------------                   --------   -------  -------  -------

            innov <---------- mrapp     2.023    1.038    1.949
            innov <---------- mratt     1.898    1.491    1.273
            util <----------- innov     0.167    0.030    5.545
            eval <----------- mrapp     1.000
            mrarr <---------- mrapp     0.522    0.077    6.737
            budget <--------- mrapp     0.423    0.080    5.260
            mrac_di <-------- innov     1.000
            mrtec_di <------- innov     2.104    0.374    5.627
            cost <----------- mratt     1.000
            apprec <--------- mratt     1.508    0.255    5.910
            attrib <--------- mratt     0.383    0.143    2.674
            finance <--------- util     0.879    0.131    6.722


Standardized Regression Weights:      Estimate
--------------------------------      --------

            innov <---------- mrapp     0.616
            innov <---------- mratt     0.406
            util <----------- innov     0.626
            eval <----------- mrapp     0.781
            mrarr <---------- mrapp     0.711
            budget <--------- mrapp     0.568
            mrac_di <-------- innov     0.717
            mrtec_di <------- innov     0.635
            cost <----------- mratt     0.675
            apprec <--------- mratt     0.750
            attrib <--------- mratt     0.312
            finance <--------- util     0.578


Covariances:                          Estimate   S.E.     C.R.     Label
------------                          --------   -------  -------  -------

            mratt <--------> xdemog     0.162    0.138    1.171
            mrapp <--------> xdemog     0.588    0.199    2.956
            mrapp <---------> mratt     0.467    0.107    4.381


Correlations:                         Estimate
-------------                         --------

            mratt <--------> xdemog     0.150
            mrapp <--------> xdemog     0.384
            mrapp <---------> mratt     0.906

Variances:                            Estimate   S.E.     C.R.     Label
----------                            --------   -------  -------  -------

                          mrapp        0.733    0.176    4.159
                          mratt        0.362    0.109    3.321
```

```
                              xdemog      3.202     0.477     6.708
                                 e6       0.005
                                e11       0.341     0.056     6.129
                                 e1       0.468     0.093     5.009
                                 e2       0.194     0.034     5.644
                                 e3       0.274     0.044     6.231
                                 e4      51.726     8.480     6.100
                                 e7       0.434     0.079     5.519
                                 e8       0.639     0.136     4.705
                                 e9       0.493     0.075     6.571
                                e12       0.861     0.128     6.708
                                 e5       7.478     1.300     5.752


        Squared Multiple Correlations:           Estimate
        ------------------------------           --------

                                  innov      0.999
                                   util      0.391
                                finance      0.334
                                 attrib      0.097
                                 apprec      0.563
                                   cost      0.455
                               mrtec_di      0.403
                                mrac_di      0.513
                                 budget      0.323
                                  mrarr      0.506
                                   eval      0.610



        Implied Covariances

                   xdemog     util   finance   attrib    apprec     cost   mrtec_di
                  -------- -------- -------- -------- -------- -------- --------
        xdemog       3.202
        util         0.249    0.560
        finance      0.219    0.492    1.293
        attrib       0.062    0.104    0.092    0.546
        apprec       0.244    0.410    0.360    0.209    1.463
        cost         0.162    0.272    0.239    0.139    0.546    0.796
        mrtec_di     3.150    2.766    2.430    1.316    5.178    3.433   86.659
        mrac_di      1.497    1.315    1.155    0.626    2.461    1.632   16.604
        budget       0.249    0.167    0.147    0.076    0.298    0.197    2.107
        mrarr        0.307    0.206    0.181    0.093    0.367    0.243    2.598
        eval         0.588    0.394    0.347    0.179    0.704    0.467    4.982

                   mrac_di   budget    mrarr     eval
                  -------- -------- -------- --------
        mrac_di     15.370
        budget       1.001    0.406
        mrarr        1.235    0.162    0.394
        eval         2.368    0.310    0.382    1.201


        Implied Correlations

                   xdemog     util   finance   attrib    apprec     cost   mrtec_di
                  -------- -------- -------- -------- -------- -------- --------
        xdemog       1.000
        util         0.186    1.000
        finance      0.108    0.578    1.000
        attrib       0.047    0.188    0.109    1.000
        apprec       0.113    0.453    0.262    0.234    1.000
        cost         0.101    0.407    0.235    0.211    0.506    1.000
        mrtec_di     0.189    0.397    0.230    0.191    0.460    0.413    1.000
        mrac_di      0.213    0.448    0.259    0.216    0.519    0.467    0.455
        budget       0.218    0.350    0.202    0.161    0.387    0.348    0.355
        mrarr        0.273    0.438    0.253    0.201    0.484    0.435    0.445
        eval         0.300    0.481    0.278    0.221    0.531    0.478    0.488

                   mrac_di   budget    mrarr     eval
                  -------- -------- -------- --------
        mrac_di      1.000
        budget       0.401    1.000
        mrarr        0.502    0.404    1.000
        eval         0.551    0.444    0.556    1.000
```

```
Summary of models
-----------------

              Model  NPAR        CMIN     DF          P    CMIN/DF
     ----------------  ----   ---------     --  ---------  ---------
           Your_model    25     139.303     41      0.000      3.398
      Saturated model    66       0.000      0
  Independence model    11     454.884     55      0.000      8.271


              Model         RMR         GFI        AGFI        PGFI
     ----------------  ----------  ----------  ----------  ----------
           Your_model       0.482       0.790       0.661       0.490
      Saturated model       0.000       1.000
  Independence model       2.517       0.374       0.249       0.312


                            DELTA1        RHO1      DELTA2        RHO2
              Model         NFI         RFI         IFI         TLI         CFI
     ----------------  ----------  ----------  ----------  ----------  ----------
           Your_model       0.694       0.589       0.762       0.670       0.754
      Saturated model       1.000                   1.000                   1.000
  Independence model       0.000       0.000       0.000       0.000       0.000


              Model      PRATIO        PNFI        PCFI
     ----------------  ----------  ----------  ----------
           Your_model       0.745       0.517       0.562
      Saturated model       0.000       0.000       0.000
  Independence model       1.000       0.000       0.000


              Model         NCP       LO 90       HI 90
     ----------------  ----------  ----------  ----------
           Your_model      98.303      66.178     138.029
      Saturated model       0.000       0.000       0.000
  Independence model     399.884     335.570     471.672


              Model        FMIN          F0       LO 90       HI 90
     ----------------  ----------  ----------  ----------  ----------
           Your_model       1.548       1.092       0.735       1.534
      Saturated model       0.000       0.000       0.000       0.000
  Independence model       5.054       4.443       3.729       5.241


              Model       RMSEA       LO 90       HI 90      PCLOSE
     ----------------  ----------  ----------  ----------  ----------
           Your_model       0.163       0.134       0.193       0.000
  Independence model       0.284       0.260       0.309       0.000


              Model         AIC         BCC         BIC        CAIC
     ----------------  ----------  ----------  ----------  ----------
           Your_model     189.303     196.996     312.022     277.075
      Saturated model     132.000     152.308     455.978     363.717
  Independence model     476.884     480.268     530.880     515.503


              Model        ECVI       LO 90       HI 90       MECVI
     ----------------  ----------  ----------  ----------  ----------
           Your_model       2.103       1.746       2.545       2.189
      Saturated model       1.467       1.467       1.467       1.692
  Independence model       5.299       4.584       6.096       5.336
```

```
                    HOELTER     HOELTER
           Model       .05         .01
    ----------------  ----------  ----------
          Your_model      37          42
   Independence model     15          17



   Execution time summary:


         Minimization:     0.060
        Miscellaneous:     0.391
            Bootstrap:     0.000
                Total:     0.451
```

APPENDIX G

NORMALITY CHECK OUTPUT FOR THE VARIABLES IN THE FINAL MODEL

ASSESSMENT OF NORMALITY

Variable	min	max	skew	c.r.		kurtosis	c.r.
xdemog	-4.016	1.990	-0.926	-3.607	-	0.054	-0.106
util	2.375	5.875	-0.725	-2.824		0.437	0.852
finance	1.000	6.000	-0.520	-2.023		0.188	0.366
attrib	2.833	6.000	-0.430	-1.674	-	0.201	-0.391
apprec	1.000	6.000	-0.859	-3.344		0.442	0.861
cost	1.750	6.000	-0.217	-0.845	-	0.430	-0.837
mrtec_di	0.000	35.000	0.285	1.109	-	0.778	-1.515
mrac_di	0.000	14.000	-0.830	-3.231	-	0.021	-0.042
budget	1.000	4.000	1.179	4.593		2.556	4.976
mrarr	1.000	3.000	-0.163	-0.636	-	0.580	-1.129
eval	1.000	6.000	-0.778	-3.031		0.058	0.112
Multivariate						4.435	1.251

Observations farthest from the centroid (Mahalanobis distance)

Observation number	Mahalanobis d-squared	p1	p2
90	26.923	0.005	0.350
33	24.932	0.009	0.209
47	23.655	0.014	0.141
5	19.931	0.046	0.612
72	19.352	0.055	0.567
11	19.279	0.056	0.406
27	17.526	0.093	0.755
22	17.400	0.097	0.662
7	16.934	0.110	0.680
46	16.764	0.115	0.610
69	16.565	0.121	0.554
80	16.511	0.123	0.447
82	16.336	0.129	0.393
30	15.985	0.142	0.414
40	15.885	0.145	0.342
88	15.845	0.147	0.258
42	15.498	0.161	0.289
76	14.620	0.201	0.568
63	14.616	0.201	0.466
35	14.510	0.206	0.413

55	14.357	0.214	0.387
21	14.309	0.216	0.316
73	14.297	0.217	0.238
20	14.098	0.228	0.239
15	13.563	0.258	0.397
2	13.545	0.259	0.318
44	13.152	0.283	0.429
59	13.075	0.288	0.381
57	13.021	0.292	0.323
43	12.709	0.313	0.402
68	12.485	0.328	0.440
14	12.481	0.329	0.357
51	12.036	0.361	0.526
12	12.016	0.362	0.451
75	11.964	0.366	0.397
9	11.747	0.383	0.441
23	11.370	0.413	0.587
1	11.324	0.417	0.532
10	11.200	0.427	0.525
19	10.964	0.446	0.591
18	10.857	0.455	0.577
32	10.834	0.457	0.508
74	10.713	0.468	0.503
67	10.585	0.479	0.504
87	10.467	0.489	0.499
49	10.411	0.494	0.453
91	10.328	0.501	0.426
60	10.309	0.503	0.358
50	10.159	0.516	0.375
54	10.145	0.517	0.306
28	10.055	0.525	0.287
66	9.813	0.547	0.362
89	9.391	0.586	0.571
64	9.152	0.608	0.654
31	9.118	0.611	0.596
61	9.063	0.616	0.552
85	8.998	0.622	0.513
78	8.756	0.644	0.602
70	8.629	0.656	0.609
81	8.534	0.665	0.592
13	8.333	0.683	0.651
25	8.295	0.687	0.594
8	8.239	0.692	0.547
39	8.130	0.702	0.538
38	7.890	0.723	0.626
3	7.621	0.747	0.728
84	7.497	0.758	0.729
29	7.364	0.769	0.735
24	7.313	0.773	0.686
65	7.261	0.778	0.632
34	7.251	0.778	0.543
36	7.243	0.779	0.449
62	6.949	0.803	0.572
4	6.803	0.815	0.580
45	6.515	0.837	0.689
56	6.437	0.843	0.644
53	6.370	0.848	0.585
52	6.348	0.849	0.487
16	6.036	0.871	0.608
58	5.948	0.877	0.553
6	5.935	0.878	0.435

83	5.798	0.887	0.408
41	5.674	0.894	0.365
26	4.959	0.933	0.737
17	4.818	0.940	0.690
37	4.676	0.946	0.629
71	4.300	0.960	0.706
79	4.162	0.965	0.604
86	3.619	0.980	0.720
48	3.025	0.990	0.782
77	1.095	1.000	0.993

APPENDIX H

MAKE-UP OF THE INITIAL SAMPLE

Hospitality and Tourism Organisations Listed in 'Australia's Top 500 Companies: 1997-1998' *(n=19)*

Adtrans Group (Hanrahan Restaurants)

American Express International

*Ansett Australia

*Crown Casino

*Flight Centre

*Hilton Hotels Australia

*Jetset Tours

*Jupiters Casino

*McDonald's Australia

*Mirvac Corporation

*P&O Holidays

*Qantas Airways Limited

*RACV Limited (Club and travel operations)

*Southern Pacific Hotels

STA Travel

*Spotless Services Limited

*Sydney Harbour Casino Holdings

*Thomas Cook

TriCon Restaurants International (Pizza Hut and KFC Restaurants)

Hospitality and Tourism Organisations Listed in 'Jobson's Year Book of Public Companies: 1997-98' *(n=26)*

*Accor Australia Pacific Corporation

*Australian Tourism Group

*Casinos Austria International Limited

*Club Crocodile Holdings Limited

Crown Limited

Jardine Matheson Holdings Limited (TriCon Restaurants)

Jupiters Limited

*Koala Corporation Australia Limited

Mirvac Limited

*Port Douglas Reef Resorts Limited

*Sydney Aquarium Limited

Sydney Harbour Casino Holdings Limited (Star City)

*Transmetro Corporation Limited (Metro Motor Inns)

Flight Centre Limited

*Greyhound Pioneer Australia Limited

Qantas Airways Limited

*Thakral Holdings Group Limited (All Seasons Group)

J. Boag and Son Limited

Adtrans Group Limited (Hanrahans Restaurants)

Reef Casino Trust

Queensland Tourism Industries Limited

Mandarin Oriental International Limited

*Kemayan Hotels and Leisure Limited

Islands Hotel Limited

Hamilton Island Limited

International Equities Corporation Limited (El Caballo Resort, WA)

(Total 45 – 3 Non-Australian operations – 8 doublings = 34)

(25 interviewed to 23.2.1998 – 74%)

* denotes appearance in both lists.

The Leading Accommodation Organisations in Australia

Chain Organisations

Accor Asia Pacific

All Seasons Group

*Australian Tourism Group

Euro-Asia Hotels

*Flag International

Hilton Hotels Australia

*Holiday Inns Australasia

Hyatt Hotels and Resorts

*Intercontinental Hotels

*ITT Sheraton

Kemayan Inns (Park Plaza)

Metro Motor Inns

Mirvac Hotels

RACV City Club

Radisson Hotel Group

*Rydges Hotels and Resorts

SPHC Hotels

*YWCA Travel Accommodation

Independent Hotels

*The Hotel Como

*Rockman's Regency Hotel

The Leading Foodservice Organisations

*TriCon Restaurants International (Pizza Hut, KFC)

*McDonald's Australia

*Spotless Services Limited

Leading Tourism Transport Organisations in Australia

Ansett Australia

*Greyhound Pioneer Australia

Qantas Airways

*V/Line Public Transport Corporation

Leading Travel Organisations

Concorde Travel

*Cunard Line

Harvey World Travel

*Flight Centre

*Jetset Tours

*P&O Cruises

STA Travel

Sunlover Holidays

*Thomas Cook

Traveland

Leading Casinos

*Casinos Austria

*Conrad Jupiters

Crown Limited

*Star City

Leading Attractions

*Australian Jockey Club

*Dreamworld

Healesville Sanctuary

*Movieworld

*Parks Victoria

Philip Island Nature Park

*Royal Botanic Gardens of Melbourne

*Royal Melbourne Zoological Gardens

*Seaworld

Sovereign Hill Museums Association

*Sydney Aquarium Limited

Victoria's Open Range Zoo at Werribee

*Victorian Arts Centre