Industrial Tourism: A Conceptual and Empirical Analysis

by

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DECLARATION

I certify that this thesis contains no material which has been accepted for the award of any other degree or diploma in any institute, college or university, and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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ABSTRACT

Industrial Tourism: A Conceptual and Empirical Analysis

Industrial tourism involves visits by tourists to operational industrial sites where the core activity of the site is 'non-tourism oriented. The study discusses the concept of industrial tourism within the context of tourism attraction theory, and tests empirically the extent to which visitors to industrial tourism attractions can be identified by using (a) a particular personality theory (Holland's 1985 theory of personality types), (b) demographics, and (c) past visitation.

Prior to conducting a major household survey, two preliminary studies were conducted. One study considered the range and type of industrial tourism attractions in Australia, while the other considered the applicability of Holland's theory to career choice and to tourism choice behaviour. The major household study found that there were some significant associations between the respondents' Holland personality types, and their tourism behaviour, for some attractions and some measures of behaviour. The study found that industrial tourism attractions are perceived as being different to other types of tourism attraction and that Holland's theory may be a useful means of predicting tourism choice behaviour but that other measures, such as demographics and type and size of travel party, should also be taken into consideration. The implications of the findings are discussed in relation to the marketing and other aspects of the management of industrial tourism attractions.

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CHAPTER ONE

INTRODUCTION

Introduction

Industrial tourism involves visits by tourists to operational sites where the core activity of the site is non-tourism oriented. In recent years there has been some attention to some forms of industrial tourism, such as farm and winery tourism, but there has been little attention to industrial tourism as a major form of tourism, from an academic perspective, either conceptually or managerially. This thesis addresses this gap by conceptualising industrial tourism within the context of tourism attraction theory. It is proposed that as industrial tourism attractions have, at their core, a non-tourism activity, they can be viewed as being fundamentally different to other types of attractions. Therefore, the thesis tested empirically the extent to which individuals perceive industrial tourism attractions as being different to other types of attractions.

From a managerial perspective it is useful to know the types of individuals who visit particular tourism attractions. Therefore, the thesis tested empirically tourism choice behaviour at attractions, to reveal the types of people who visit particular types of attractions. Tourists can be segmented by using a range of means such as demographics, psychographics, and personality. For this study the author chose personality, as determined by Holland's (1985b) Self-Directed Search, demographics and past visitation

to identify individual tourism choice behaviour at named tourism attractions, and, in particular, at industrial tourism attractions.

Holland's (1985a) theory of personality types is widely respected and well known. Holland, Powell and Fritzsche (1994) and Ross (1994) suggested that the application of Holland's theory to areas other than occupational choice (its original purpose), is worthy of research. Holland, Powell and Fritzsche (1994) noted that an important area of study would be to determine if different personality types search, not only for characteristic occupational clusters, but also for characteristic recreational activities. With respect to tourism behaviour in particular (rather than general recreational activities), Ross (1994, p. 31) suggested that, as the study of personality is still evolving, there could be "no more appropriate or useful study than personality as it illuminates tourist behaviour". Following a literature review, it would appear that, although earlier studies have considered Holland's personality theory and leisure activities, no empirical study has specifically examined the relationship between tourism behaviour, *per se*, and Holland personality types. Therefore, Holland's (1985a) theory of personality types was tested empirically to determine its usefulness in identifying the types of people who actually visit, are interested in visiting, and intend to visit named tourism attractions.

The findings of this study may be of interest to a number of groups including:
- academics researching tourism attractions. They may incorporate the definition of industrial tourism into the context of tourism attraction theory to create a more

comprehensive definition of attractions which includes non-tourism core attractions, that is, industrial tourism attractions;

- regional tourism organisations. They may find that the confirmation of the number and range of industrial tourism attractions in their region extends their perception of regional tourism products; and

- managers of tourism attractions. They may use the information on the types of people interested in visiting their properties in their promotional activities, for example, by using specialist magazines to promote their attraction.

In summary, the study fulfils three main aims. Firstly, it provides a conceptualisation of industrial tourism, which, to the knowledge of the author, has not been attempted before. Secondly, it tests empirically some of the ways in which industrial tourism attractions are perceived as being different to other types of tourism attractions. Thirdly, it tests the applicability of Holland's (1985a) theory of personality types in predicting tourism choice behaviour and compares its effectiveness with other means, such as demographics and past visitation.

Organisation of the Thesis

The thesis is divided into six chapters. Chapter One introduces the study and highlights the aims of the study. Chapter Two provides a review of the related literature by considering tourism attraction theory and, within this context, the concept of industrial

tourism. Chapter Three provides an overview of Holland's (1985a) theory of personality types and provides research propositions and hypotheses on industrial tourism attractions, and on the proposed relationships between personality, demographics, past visitation and tourism choice behaviour. Chapter Four considers the methodology of the study and the population used, and summarises the analysis carried out on the data. Chapter Five presents the findings of the survey in relation to tourism choice behaviour for all tourism attractions, initially, and then for industrial tourism attractions only. Chapter Six interprets the data and explains that the study empirically identifies industrial tourism attractions as being distinct from other attractions and that there were significant associations found between some Holland personality types, and tourism choice behaviour, for some attractions and some measures of behaviour. Chapter Six also provides recommendations for further study.

CHAPTER TWO

INDUSTRIAL TOURISM

Introduction

In Chapters Two and Three, a review and synthesis of the relevant literature is provided

to highlight issues relevant to the thesis. Chapter Two reviews the literature in relation to

the tourism attraction sector and the concept of industrial tourism. Then in Chapter Three,

an overview of Holland's (1985a) theory of personality types is provided, together with a

review of the application of the theory to areas other than occupational choice. Based on

the literature review, a range of research propositions and hypotheses is provided.

To create this literature review, extensive use was made of Victoria University of

Technology's library to locate relevant books, academic and trade journals and

dissertations. Any sources that the library did not hold were acquired by interlibrary loan,

interlibrary photocopy or by visiting the library holding the item, if located in Melbourne.

Literature concerning tourism attraction theory and typologies was found in academic

journals and books. However, a substantial amount of information regarding industrial

tourism attractions was found in trade journals. These articles gave practical advice to

readers on operating their own industrial tourism attraction and so were useful in the

review of the managerial implications of operating an industrial tourism attraction. For

the review of Holland's (1985a) theory of personality types it was necessary to refer to both the US and Australian versions of Holland's Self-Directed Search (Holland, 1985b; Holland, 1985c) to comprehend fully the research instrument and its adaptation to Australian respondents. To understand the history and development of the instrument and to interpret the findings it was necessary to refer to the Self-Directed Search Professional User's Guide (Holland, Powell and Fitzsche 1994). In addition, it was necessary to purchase multiple copies of the Self-Directed Search to allow the author to administer the instrument legally without breaching copyright regulations.

In regard to primary data on industrial tourism attractions in Australia, it was found that very few data exist. It was, therefore, necessary to conduct primary research into the range and type of facilities at industrial attractions and to categorise those attractions. The results of this exploratory research were published as a refereed conference paper (Frew and Shaw 1996) and represents one of the few pieces of empirical research that considers industrial tourism in the Australian context. In addition, following the literature review it was found that no satisfactory definition of industrial tourism existed. Therefore, a new definition of industrial tourism was devised that considers the core activity of the site.

The Attractions Sector

Conceptualisation of Tourism Attractions

Before discussing the concept of industrial tourism, it is necessary to provide an overview

of the conceptualisation of tourism attractions and the typologies that exist. Attractions

are a central component of the tourism industry, and Gunn (1988, p. 37) stated that

"without developed attractions, tourism as we know it could not exist; there would be

little need for transportation, facilities, services, and information systems". This

emphasises the importance of tourism attractions and highlights the need to understand

the range and type of attractions that exist.

Gunn (1988) conceptualised attractions by suggesting that an attraction is composed of

three important functional parts, which are the nucleus, the inviolate belt and the zone of

closure. The nucleus of an attraction is the prime element of an attraction, and is its raison

d'être. The inviolate belt is the setting through which the visitor passes to reach the

nucleus and is described as the frame for the feature. The zone of closure is the

surrounding area of the inviolate belt and contains the service centres. Pearce (1991)

discussed Gunn's (1988) model and agreed that tourism attractions can be understood by

a concentric ring model, where the nucleus is the core of the attraction, the inviolate belt

is the space needed to set the nucleus in a context, and, the zone of closure is the desirable

Figure 2.1: <u>Gunn's Model of a Tourism Attraction</u>
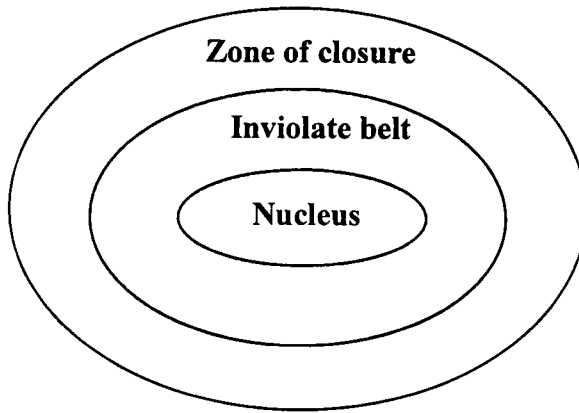
Source: Gunn (1988, p. 49).

tourism infrastructure, for example, transport, toilets and information (Figure 2.1). Leiper

(1990, p. 370) adapted MacCannell's (1976) definition of tourism attractions by stating

that a tourism attraction is a "system comprising three elements: a tourist, a sight, and a

marker", then developed this definition into a model in which he described a tourism

attraction as "a system comprising three elements: a tourist or human element, a nucleus

or central element, and a marker or informative element". He suggested that a tourism

attraction comes into existence when the three elements are connected, and described a

tourism attraction as a systemic arrangement of three elements: a person with touristic

needs, a nucleus (any feature or characteristic of a place a person might visit) and at least

one marker (information about the nucleus). It would appear that the four

conceptualisations of attractions outlined above overlap, in that MacCannell's (1976)

theory of sites and markers was built upon by Leiper (1990), while Gunn's (1988) theory

of nucleus and inviolate zones was built upon by Pearce (1991).

Attractions are, therefore, conceptualised in a number of different ways. However, the

similarity between each conceptualisation is that at each attraction there is a site or a

nucleus. As will be demonstrated in the next section of this chapter, this is also the case at

an industrial tourism attraction which has, at its nucleus, a non-tourism core activity

which is the production of goods and/or services. The secondary or non-core reason for

being in existence is the development of tourism. Therefore, all sites must have a nucleus,

but for pure tourism sites the nucleus is purely in relation to tourism, while at industrial

sites the nucleus exists for the production of non-tourism goods and/or services. It is the

aim of this thesis to demonstrate whether an attraction, which has at its core a non-

tourism nucleus, that is, an industrial tourism attraction, is of interest to certain types of

tourists and is identified as a distinctly different type of tourism attraction.

Tourism Attraction Typologies

Pearce (1991, p. 46) provided an operational definition of a tourism attraction as being a

"named site with a specific human or natural feature which is the focus of visitor and

management attention". With regard to the development of typologies of attractions, Lew

(1987) described how tourism attractions have been discussed and researched from the

following three perspectives: the ideographic definition and description of attraction types; the organisation and development of attractions; and the cognitive perception and experience of tourism attractions of different groups. When Lew (1987, p. 555) considered tourism attractions from an ideographic point of view (that is, the "concrete uniqueness of a site"), he divided attractions into three main types, namely, nature, nature-human interface, and human. He suggested that each of the three main types can be further divided into three subsets. The "nature" type can be divided into general environments, specific features, and inclusive environments. The "nature-human" interface set can be divided into observational, leisure nature, and participatory, and the third type, "human" can be divided into settlement infrastructure, tourist infrastructure, and leisure superstructure. Lew's typology appears to be a comprehensive typology as it incorporates all types of attractions, that is managed and unmanaged, and natural and human (Table 2.1).

Gunn's (1988) typology differs from Lew's in that when he divided tourism attractions into types, he considered the nature of the trip being experienced by the tourist. He believed that all attractions can be grouped into two major categories: "those intended for touring-circuit use and those for longer-stay use" (Gunn 1988, p. 53). This has a number of obvious weaknesses, not least of which is that attractions can appear in both categories, which blurs the distinction. In addition, the intention of visitors visiting regional areas can

Table 2.1: <u>Lew's Ideographic Tourist Attraction Typology</u>

Nature	Nature-Human Interface	Human

General Environments
1. Panoramas
    Mountains
    Sea Coast
    Plain
    Arid
    Island
	4. Observational
	    Rural/Agricultural
	    Scientific Gardens
	    Animals (zoos)
	    Plants
	    Rocks and
	    Archaeology
		7. Settlement Infrastructure
		    Utility types
		    Settlement Morphology
		    Settlement Functions
		        Commerce
		        Retail
		        Finance
		    Institutions
		        Government
		        Education and Science
		        Religion
		    People
		        Way of Life
		        Ethnicity

Specific Features
2. Landmarks
    Geological
    Biological
    Flora
    Fauna
    Hydrological
	5. Leisure Nature
	    Trails
	    Parks
	    Beach
	    Urban
	    Other
	    Resorts
		8. Tourist Infrastructure
		    Forms of Access
		        To and from a destination
		        Destination Tour
		        Routes
		    Information and Receptivity
		    Basic Needs
		        Accommodation
		        Meals

Inclusive Environments
3. Ecological
    Climate
    Sanctuaries
        National Parks
        Nature
        Reserves
	6. Participatory
	    Mountain Activities
	        Summer
	        Winter
	    Water Activities
	    Other Outdoor
	    Activities
		9. Leisure Superstructure
		    Recreation Entertainment
		        Performances
		        Sporting Events
		        Amusements
		    Culture, History and Art
		        Museums and
		        Monuments
		        Performances
		        Festivals
		        Cuisine

Source: Lew (1987, p. 558).

Table 2.2: <u>Gunn's Classification of Attractions</u>

Touring Circuit Attractions	Longer-Stay Attractions
Roadside scenic areas	Resorts
Outstanding natural areas	Camping areas
Camping areas	Hunting/water sports areas
Water touring areas	Organisation camp areas
Homes: friends/relatives	Vacation home complexes
Unusual institutions	Festival, event places
Shrines, cultural places	Convention, meeting places
Food, entertainment places	Gaming centres
Historic buildings, sites	Sports arenas, complexes
Ethnic areas	Trade centres
Shopping areas	Science/technology centres
Crafts, lore places	Theme parks

Source: Gunn (1988, p. 42).

change during their visit as they can move from being touring visitors to spending longer at one destination (Table 2.2).

Prentice (1993) created a typology of 23 categories of tourism attractions, that is based on the main subject presented at the attraction (Table 2.3). He suggested that the advantage of this is that attractions with like contents are grouped together, and by carrying out consumer surveys of tourists to such attractions it would be possible to "relate reasons for visiting, the benefits gained and other consumer characteristics to particular types of attractions" (Prentice 1993, p. 37). In other words, it is possible to "relate demand characteristics to supply characteristics through relating the characteristics of visitor segments to the attractions with the main subject type of the attractions" (Prentice 1993,

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Table 2.3: Prentice's Typology of Tourism Attractions

Type of Attraction	Description
Natural history attractions	Including nature reserves, nature trails, aquatic life displays, rare breeds centres, wildlife parks, zoos, butterfly parks, waterfowl parks, geomorphological and geological sites, including caves, gorges, cliffs, waterfalls.
Science based attractions	Including science museums, technology centres, "hands on" science centres, "alternative" technology centres.
Attractions concerned with primary production	Including agricultural attractions, farms, dairies, farming museums, vineyards, fishing, mining, quarrying, water impounding reservoirs.
Craft centres and craft workshops	Attractions concerned with hand made products and processes, including water and windmills, sculptors, potters, woodcarvers, hand worked metals, glass makers, silk working, lace making, handloom weaving, craft "villages".
Attractions concerned with manufacturing industry	Attractions concerned with the mass production of goods, including pottery and porcelain factories, breweries, cider factories, distilleries, economic history museums.
Transport attractions	Including transport museums, tourist and preserved railways, canals, civil shipping, civil aviation, motor vehicles.
Socio-cultural attractions	Prehistoric and historic sites and displays, including domestic houses, social history museums, costume museums, regalia exhibitions, furnishings museums, museums of childhood, toy museums.
Attractions associated with historic persons	Including sites and areas associated with writers and painters.
Performing arts attractions	Including theatres, street-based performing arts, performing arts workshops, circuses.
Pleasure gardens	Including ornamental gardens, period gardens, arboreta, model villages.
Theme parks	Including nostalgia parks, "historic" adventure parks, fairytale parks for children (but excluding amusement parks, where the principal attractions are exciting rides and the like).
Galleries	Particularly art galleries.
Festivals and pageants	Including historic fairs, festivals "recreating" past ages, countryside festivals of "rural" activities.

Table 2.3: <u>Prentice's Typology of Tourism Attractions (continued)</u>

Fieldsports	Traditional fieldsports, including fishing, hunting, shooting, stalking.
Stately and ancestral homes	Including palaces, country houses, manor houses.
Religious attractions	Including cathedrals, churches, abbeys, priories, mosques, shrines, wells, springs.
Military attractions	Including castles, battlefields, military airfields, naval dockyards, prisoner of war camps, military museums.
Genocide monuments	Sites associated with the extermination of other races or other mass killings of populations.
Towns and townscape	Principally historic townscape, groups of buildings in an urban setting.
Villages and hamlets	Principally "rural" settlements, usually of pre-twentieth century architecture.
Countryside and treasured landscapes	Including national parks, other countryside amenity designations, "rural" landscapes which may not be officially designated but are enjoyed by visitors.
Seaside resorts and "seascapes"	Principally seaside towns of past eras and marine "landscapes".
Regions	Including pays, lande, counties, or other historic or geographical areas identified as distinctive by their residents or visitors.

Source: Adapted from Prentice (1993, pp. 39-40).

p. 37). This is similar to the situation suggested in the present thesis, in that, individuals have a predisposition to visit attractions that relate to their personality type. Therefore, while a number of authors have conceptualised tourism attractions and have written about the typology of attractions, few authors have tested empirically these typologies. It is the aim of this thesis to address this neglected area, in a limited way in relation to a particular type of attraction.

Tourism Attraction Revisitation

The following section briefly discusses the importance of revisitation at tourism attractions. It is important to include such a discussion as it is hypothesised later in the thesis that, as with other products, prior visitation of an attraction (i.e., purchase of a product) has an influence on subsequent visitation (i.e., repurchase).

It is good management practice at many tourist attractions to encourage visitors to revisit. Encouraging revisitation is similar to non-tourism consumers being encouraged to repurchase a particular product to ensure the company has "a steady group of unwavering customers for its products" (Loudon and Della Bitta 1993, p. 563). The repeat visitation of a tourism attraction can be viewed as an example of consumer loyalty, when a destination or attraction is visited for a second or subsequent time. For many years, the study of consumer loyalty focussed on repeat purchasing behaviour as found in fast moving consumer goods such as toothpaste, where the customer is targeted for recurrent patronage of an identical product (brand, etc.). The scope of loyalty research has widened to include consumer goods with lower purchase frequency, such as cars and houses, and to include industrial goods. Beyond goods, loyalty in services has emerged as a major area of activity in recent years, both by practitioners and researchers (Backman and Crompton 1991; Selin et al. 1998). Tourism, broadly defined, is a principal services sector which has embraced loyalty-related marketing. Sectors of tourism which have

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introduced loyalty programs of various types have included transport (e.g., airlines and rental cars) and hospitality (e.g., accommodation and fast food).

A range of reasons has been provided to explain consumer loyalty at tourism destinations. The following is a summary of the reasons suggested for repeat visitation.

Repeat visitation:

- occurs when people in highly stimulating occupations seek somewhere where they will not be stimulated. This is known as "commonplace trips" (Bello and Etzel 1985, p. 20);

- occurs when individuals are wary of going somewhere new in case it is not as satisfactory as the destination with which they are familiar (Oppermann 1998a);

- may reflect recent visitation of the destination (Hughes 1995);

- may reflect habitual behaviour rather than active decision making (Backman and Crompton 1991, Selin et al 1998);

- may be due to the time constraints of the individuals in relation to their information search and evaluation of alternatives (Oppermann 1998b);

- may reflect the stage in travel career horizon as "past behaviour is a good predictor of future behaviour" (Oppermann 1998b, p. 18); and

- may be because this loyalty-type behaviour of an "informal group leader may influence the behaviour of other group members" (Loudon and Della Bitta 1993, p. 565).

Therefore, consumer loyalty in tourism, in the form of repeat visitation, may reflect that individuals have found a destination or attraction that meets all their needs, for example, family needs, relaxation, and personality congruity, and so it is not necessary to go anywhere new. In addition, the individuals may be familiar with the destination and so this may create a positive cognitive effect where, rather than the attraction losing its appeal, it remains of interest as it is familiar to the individuals, e.g., in terms of its layout and the experience they know they can have at the attraction. On the other hand, it may be that the attraction was originally chosen as it was of interest to the individuals which means they are interested in visiting or intend to visit again. It may be that an attraction can offer the visitor more activities than can be satisfied in one visit, and so the visitor has a need to revisit.

The common models of consumer behaviour suggest a direct, positive relationship between satisfaction with the consumption of a product, and subsequent repurchase of that same product. However, for many tourism attractions, it may be that there is a large novelty factor which acts against revisiting (repurchase), at least in the short term. Oppermann (1998b, p. 23) suggested that visitors to destinations who visit initially, but never return, are the type of individuals who are always visiting different destinations, as they are constantly striving for novelty and new experiences. However, the repeat visits may not reflect simply visitor type. Rather, they may reflect, principally, the type of

experience on offer. He suggested that even when "they had a very positive experience they will not return to the destination as there are other places to be visited and 'conquered'". A novelty seeking tourist has been defined as an individual who prefers destinations to be different, unusual, impressive, adventuresome, refreshing, or provide a change of pace (Wahler and Etzel 1985). Nunnally and Leonard (1973) supported this definition by suggesting that boredom, brought on by a lack of arousal stimuli, leads to diversive exploration to increase arousal, with the desire for novelty creating a desire to seek new and different experiences. Novelty factors play an important role in tourism with a number of empirical studies reporting that novelty seeking is a key motive for a number of tourists (Dann 1981; Crompton 1979; Leiper 1984). Therefore, lack of consumer loyalty or lack of repeat visitation of an attraction may reflect the individual's search for novelty, rather than lack of satisfaction with the experience. This aspect is acknowledged in the theme park sector, for example, where there is constant pressure to introduce new "rides" to encourage revisitation. Hence, although a consumer may have a highly satisfying experience at a tourism attraction, the consumer may decide deliberately not to revisit.

As described above, consumer loyalty can be described as repeated behaviour where the overt actions of an individual result in the repurchase of a product or revisitation of an attraction. However, consumer loyalty can be covert behaviour initially as the individual has the predisposition to revisit but only in the future, that is, an interest or intention in

the future to revisit. Consumer loyalty can be for a brand (i.e., a specific named offering)

loyalty can be for a product (i.e., a class). Consumer loyalty can form a pattern which can

have uniformity or it can happen only on certain occasions and can vary in frequency.

When discussing consumer loyalty it is important to consider the expected satisfaction of

the tourist which will reflect expectations, based on actual experience. In relation to

loyalty and novelty, expectations are less based on the actual experience and may be the

perception that a similar attraction has already been experienced. Recognition is needed

of the differences between active loyalty and habitual loyalty, and stochastic loyalty and

deterministic loyalty (Loudon and Della Bitta 1993).

The Concept of Industrial Tourism

In the previous section of Chapter Two, the concept and definition of tourism attractions

was provided. This was necessary to place the concept of industrial tourism within the

overall context of tourism attraction theories. In this section of Chapter Two, the concept

of industrial tourism is introduced and a definition is provided. A discussion is included

that highlights the links between industrial tourism and other types of tourism and

demonstrates that industrial tourism attractions exist on a variety of continua. The section

provides a review of terms that have been used to describe industrial tourism in the

academic environment and reviews the industrial tourism literature in trade journals. The

history and evolution of industrial tourism are considered and examples are provided

from Europe, the United States and Australia. The section then discusses the regional and

organisational consequences of operating industrial tourism attractions by considering the benefits for individual regions and individual organisations, and also considers the managerial implications. However, consideration is also given to why some industries choose not to develop as industrial tourism attractions. The objective of this section of Chapter Two, therefore, is to examine those tourism enterprises for which the core business is not tourism (that is, industrial tourism attractions) within the context of tourism attraction theory.

Definition of Industrial Tourism

Any definition of a tourism attraction should be sufficiently comprehensive to incorporate tourism attractions that have tourism as their core activity and those that are managed primarily for the production of non-tourism goods and/or services (that is, industrial tourism attractions). A definition that would cover both these types of tourism attractions is: A site that is open to the public, and *one* of its purposes is to provide a touristic experience. Its core business can be either the production of goods and/or services intended solely for its visitors, or the production of goods and/or services not intended solely for its visitors, but with facilities and products for tourists.

A range of terms has been used to describe the concept of industrial tourism but the definition used in this thesis is as follows: Industrial tourism involves visits by tourists to operational industrial sites where the core activity of the site is non-tourism oriented.

When describing the concept of industrial tourism, the term "industrial" has been chosen as it signifies that work is being carried out on the site and something is being produced, that is, goods and/or services. The term is based on the Standard Industrial Classification of "industry", as it demonstrates that industry does not only include the traditional manufacturing areas of mining and construction; agriculture, forestry and fishing; and transportation, communications, electric, gas and sanitary services; but, that it also includes services: retail trade; wholesale trade; and finance, insurance and real estate, and government services (Hill, Alexander and Cross 1975) (Figure 2.2). It is this meaning of industry that is used in the term "industrial tourism". Thus, the industries involved in industrial tourism can produce goods and/or services, they can be involved in the processing of raw materials or semi-processed inputs, they can have a large or small number of employees, and the processes can be automated and/or they can be labour intensive. The organisation can have public or private sector ownership and it can be profit or non-profit oriented.

To differentiate industrial tourism attractions from other types of tourism attractions it is necessary to consider the organisation's "core" business, that is, the principal reason the organisation is in existence or the central or essential part (Makins 1992). The use of "core" differs from Kotler and Armstrong's (1996, p. 274) suggestion that the core product is "the problem-solving services or core benefits that consumers are really buying when they obtain a product". Instead, the core product in the present study is closer to Mintzberg's (1988) definition of an operating core where the basic work of producing the

Figure 2.2: <u>Classification of "Industry" Based on the Standard Industrial Classification</u>
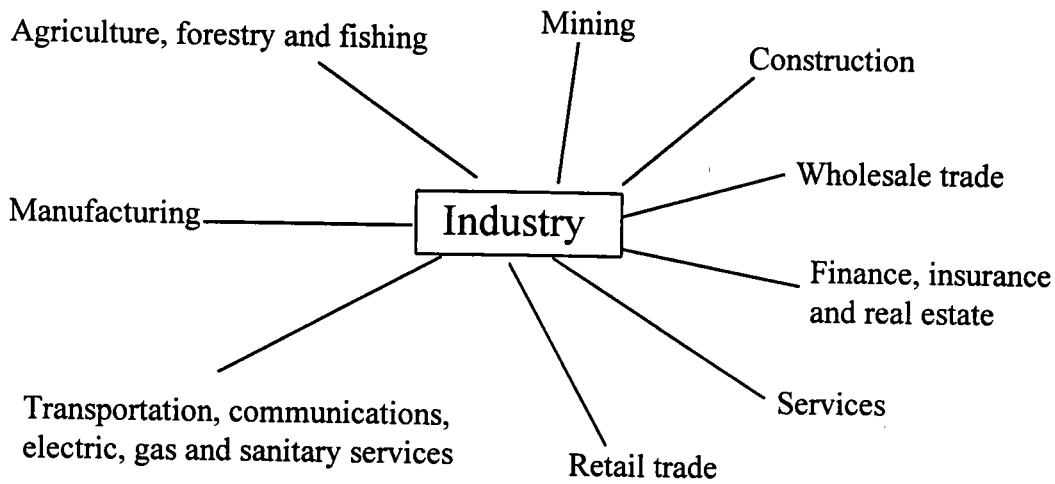
Source: Adapted from Hill, Alexander and Cross (1975).

organisation's goods and/or services is carried out. Therefore, the primary purpose (or

core activity) of an industrial tourism attraction is to produce non-tourism goods and/or

services for customers other than those members of the public allowed access at a

particular time, rather than encouraging public access. The Scottish Tourist Board (1991)

suggested that an attraction should be open to the public without prior booking. However,

some industrial tourism attractions require prior booking to allow arrangements to be

made to minimise visitors' interference with production, and to overcome any potential

safety or security problems.

To illustrate the range and type of industrial tourism attractions that exist, Carter (1991, p.

10) described industrial tourism as having four distinct categories:

i. "Everything's under control" - includes controversial industries such as nuclear energy. One reason managers of such industries would be interested in developing industrial tourism would be to regain lost credibility and to adjust public perception of their activity.

ii. "Wonders of the World" - examples of major projects such as civil engineering that are inspiring in their scale or their end product.

iii. "Shops with stories attached" - includes industries that are based on crafts or some luxury consumer product where the products are ones that visitors may buy anyway, such as luxury or ornamental items that are closely linked with the area being visited. Carter (1991, p. 10) also suggested that by opening up the factory, the manufacturing process becomes a part of the "shopping experience".

iv. "Real Work" or "Work Watching" - provides an opportunity to understand how modern life functions, and to see the work that goes into providing daily necessities such as milk or bread. Goffman (1959, p. 144) calls this the 'back region' of a tourist setting where tourists are permitted to view areas such as kitchens or factories. In this category there is the opportunity to witness the operation of service organisations such as Parliament and the Stock Exchange. There is also the opportunity to tour plants to view management practices in action. Lammers (1990, p. 85) called these types of tours "in-depth management tours" where, rather than the guide explaining how the company creates goods and/or services, the visitors are told how the company "trains, services, markets, manages and leads". For example, tours of the Lincoln Electric Company in Cleveland allowed visitors to learn about the company's incentive

management program that aimed to improve customer service, marketing and employee motivation (Lammers 1990).

To further elucidate and clarify the realm or domain of industrial tourism it is suggested that industrial tourism can be viewed as existing on a variety of continua. It is suggested that industrial tourism can be characterised in at least four different ways:

- the extent of automation of the industry;

- the extent of tangibility of the process being observed;

- the extent of involvement of the visitor; and

- the market for the goods and/or services.

Figure 2.3 shows that industrial tourism can be characterised by the extent of automation of the industry. On the left there are examples of small scale cottage industries such as jewellery makers and artists, while on the right there are examples of large scale, heavy industries that mass produce standardised products.

Industrial tourism can also be characterised by the extent of tangibility of the process being observed. On the left there are examples of sites that produce tangible products only, while on the right side there are examples of sites that produce only intangible products, i.e., services (Figure 2.4).

Industrial tourism can also be characterised by the involvement of the visitor in the production of the goods or services. On the left there are examples of sites where visitors are passively involved in the activity in that they are merely observing the production process. On the right there are examples of industrial tourism attractions that physically involve the visitor in the production process, for example, by being a member of a TV/radio studio audience; or, riding a horse to round up cattle (Figure 2.5).

Industrial tourism can also be characterised by the market for the goods and/or services, or the degree to which the products are created for the general public or for tourists only. On the extreme left, there are sites that create goods and/or services for the general public only, but there is no access for tourists (pure industry). Moving to the right, there are sites that create goods and/or services for both the general public and tourists, and there is limited access for tourists. This is industrial tourism under the present definition. Further to the right, there are sites that produce goods and/or services for tourists only (pure consumer tourism), for example, at an amusement park (Figure 2.6).

The terms "industrial tourism" and "consumer tourism" are similar terms to those used in marketing to distinguish between industrial marketing and consumer marketing. In industrial marketing, the product being marketed is for the use of industry in its further production of goods and/or services, while with consumer marketing, the product is for the immediate and sole use of the consumer. In this discussion, industrial tourism attractions are designed for both the production of non-tourism goods and/or services and

Figure 2.3 <u>Industrial Tourism Characterised by the Extent of Automation of the Industry</u>

Small scale production.
Craft goods,
e.g., jewellery makers, artists.

Mass produced. Large scale.
Manufactured goods.
Manufacturing, processing of
raw materials, construction.

<-->

Figure 2.4 <u>Industrial Tourism Characterised by the Extent of Tangibility of the Process</u>
<u>being Observed</u>

Tangible products.
Physical goods being produced,
e.g., at potteries, wineries.

Intangible products.
Services, e.g., tours of
parliament house, tours of
educational institutions.

<-->

Figure 2.5 <u>Industrial Tourism Characterised by the Involvement of the Visitor</u>

Passive involvement.
Watching the production process
without becoming otherwise physically
involved.

Active involvement.
Becoming physically
involved in some
aspect of production.

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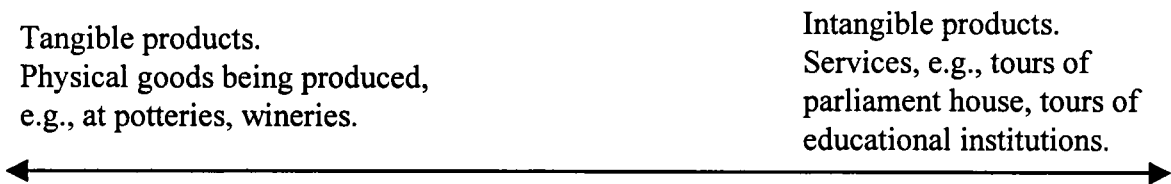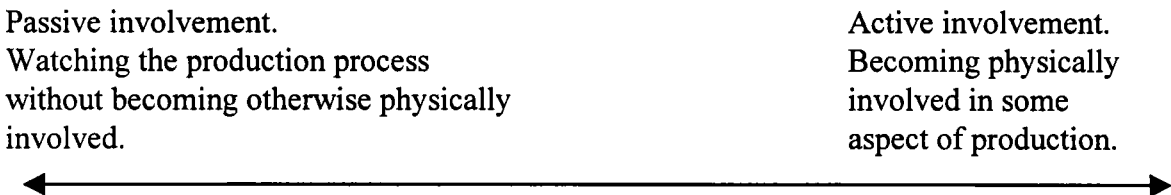
Figure 2.6 <u>Tourism Characterised by the Market for the Goods and/or Services</u>

<u>Pure Industry</u>

<u>Industrial Tourism</u>

<u>Pure Consumer</u>
<u>Tourism</u>

Production of goods and/or
services for the general
public only.
Tourists not admitted,
e.g., a site which is unsafe
and/or unsuitable for tourists
to visit such as an underground
mine which is prone to sudden
flooding.

Production of goods
and/or services for
the public and/or
tourists.
Limited admittance
to tourists,
e.g., a chocolate factory.

Production of goods
and/or services for
tourists only.
Tourists are admitted
but they do not experience
the "behind the scenes"
aspects of operating an
attraction,
e.g., an amusement park.

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Source: Author.

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for the benefit of tourists, while consumer tourism attractions are for the use of tourists only. At industrial tourism attractions, tourists do not participate in the production of the non-tourism goods and/or services if the participation is not requested. For example, tourists may be asked if they want to press a button on a machine or pull a lever as part of the production process. However, the tourists are not primarily involved in the production of the goods and/or services unless they have been invited by the organisation to do so, with their involvement being by invitation only. In contrast, at consumer tourism attractions the experience for the tourist may be based and, indeed, be dependent upon, the tourist's physical involvement and/or personal interaction with the tourism attraction employees (who are the service providers). For example, at Disneyland (a consumer tourism attraction), there is the face-to-face meeting with "Mickey Mouse" or one of the other Disney characters being played by a person. Therefore, the involvement of the tourist is the main element at the site and is fundamental to the existence of the attraction. This involvement of tourists at consumer tourism attractions reflects the fact that tourism services are intangible, are produced and consumed simultaneously, and therefore cannot be experienced completely before they are bought. This contrasts with the core product at industrial tourism attractions. If the core product is a physical good then it is "manufactured, put into inventory, distributed through multiple resellers, and consumed still later" (Kotler 1994, p. 467). If the core product is a service (for example, the New York Stock Exchange) then, although it is consumed simultaneously by the tourist, the reason it is being produced is for a purpose other than the consumption by the tourist. Therefore, as mentioned above, it is possible for industrial tourism to be considered as

existing on a continuum in relation to the extent to which products are created for the general public or for tourists only.

Lew (1987) quoted Schmidt (1979) who suggested that tourism attractions can be distinguished on the basis of those that are primarily intended for tourists, and those that are not designed for them. This distinction can be applied to industrial tourism sites that are not primarily intended for tourists (as they have a different core product) but can be adapted for tourist visitation later. Alternatively, a site for which the core business is not tourism can incorporate facilities for tourists from the time of the initial development of the site. In either case, the core activity of an industrial tourism attraction remains the production of non-tourism goods and/or services with the reason for the site's existence not primarily being tourists, but the site has the facilities to handle tourists. This view is supported by MacCannell (1976, p. 100; emphasis original) who described visiting the New York Stock Exchange, and suggested that there is no evidence that the "show is *for* the sightseer". Leiper (1990, p. 382) stated that "if no tourist ever visited the Tower of London it would not be thought of as a tourist attraction: the tourists are necessary parts". With industrial tourism attractions, if no tourist ever visited a site producing goods and/or services the site would still exist, in principle, as its core activity is not to cater for tourists. At any time the industrial tourism attraction can return to its core function, alone, which is the production of non-tourism goods and/or services, that is, tourism is not required for the organisation to exist, as its core function is not tourism. The question then arises: can any establishment producing goods and/or services become an industrial

tourism attraction? The answer is yes, as each site has the latent potential to become an attraction, and this potential will remain latent until the site develops facilities to handle tourists and receives its first tourist.

The discussion above highlights the potential size of the industrial tourism sector and, as MacCannell (1976, p. 54) stated, "potentially, the entire division of labor in society can be transformed into a tourism attraction". However, while all producers *could* engage in industrial tourism, not all necessarily should. For example, if viewing the production process is likely to alienate customers (such as has been suspected for some pet food manufacturing plants) some organisations may be well-advised to forego inviting visitors. Research is needed to support such decision making.

Comparison of the Industrial Tourism Definition with other Definitions

Yale (1991) and Dodd and Bigotte (1997) used the term industrial tourism in a way similar to the present definition. Yale (1991, p. 142) described industrial tourism as the presentation of "contemporary manufacturing processes", while Dodd and Bigotte (1997, p. 47) described industrial tourism as "visits by consumers to the site of a production facility and can include educational tours of the facility and tasting of the product that is produced". However, both of these descriptions are not as extensive as the present definition, as Yale limited industrial tourism to visits to manufacturing enterprises, and Dodd and Bigotte suggested that the visitors can "taste the product" which, again, has

limitations. Dodd and Bigotte also do not mention the production of services in the definition and suggest that the visitor must be a "consumer" of the particular product.

Other authors have used the following terms to describe aspects of industrial tourism: "agricultural tourism" "...an enterprise that produces and/or processes plants or animals and which also strives to attract visitors to enjoy the agricultural attributes of the operation and its site, and/or to purchase agricultural products produced or obtained by the enterprise" (Cox and Fox 1991, p. 18); "farm stays" "...guests can observe and occasionally participate in farm activities" (Pearce 1990, p. 338); "wine tourism" "...visitation to vineyards, wineries, wine festivals and wine shows for grape wine tasting and/or experiencing the attributes of a grape wine region" (Macionis 1996, p. 269); "work displays" "...examples of work displays include guided tours of banks, the telephone company, industrial plants" (MacCannell 1976, p. 36); "workplaces" "...to observe and understand the operations of other people's workplaces, and to shop for the products or mementos of the company" (McBoyle 1994, p. 517); "factory tourism" "...visits to working factories to see industry in action, mainly manufacturing industry" (Swarbrooke 1995, p. 51); "sideline tourism" "...organised activities mounted to appeal to tourists, but as sidelines, peripheral to the primary functions of non-tourism-oriented activities" (Kelly and Dixon 1991, p. 21).

Each of these terms has limitations in that it does not embrace the full range of possible sites. For example, the terms agricultural, farm, and wine tourism are limiting in that they

focus only on agriculturally-based industries, while factory tourism is limited in that it focuses mainly on manufacturing industry. Factory and plant tourism occurs when visitors tour manufacturing plants that produce goods, primarily. This is the traditional, major part of industrial tourism, but it is not the entirety of industrial tourism as it does not include tours of service providers as defined above. It would appear that Kelly and Dixon's (1991) description of "sideline tourism" is the closest any authors have come to the present definition of industrial tourism. However, the present author believes that the expression "sideline tourism" is not adequate to describe industrial tourism because of the connotations of the term "sideline". The term "sideline" is misleading as it suggests that the development of tourism at the site was an afterthought by management and can therefore be dismissed as not being worthy of attention. In contrast, the present author believes that, in the case of an industrial tourism attraction, although tourism is not the core activity of the organisation, it may still be very important from a management perspective and, as such, is worthy of attention and so should not be dismissed capriciously. The present author believes that the term "industrial tourism" is more appropriate as it not only denotes that something industrious is occurring, with goods and/or services actually being produced on the site, which is accessible to tourists, but it also has more appropriate connotations. Figure 2.7 illustrates the terms used to identify industrial tourism within the overall context of tourism, ranging from the general, i.e., generic types of tourism attractions and types of tourism, to the specific, i.e., specific named tourism attractions, and from consumer tourism, i.e., tourism attractions where tourists do not experience the "behind the scenes" aspects of operating an attraction, to

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industrial tourism, i.e., where tourists do experience the "behind the scenes" aspects of operating an attraction.

Industrial Tourism within Tourism Attraction Typologies

Inskeep (1991), Prentice (1993) and Swarbrooke (1995) incorporated industrial tourism into their typologies of tourism attractions. One of Inskeep's (1991) three categories of attractions is cultural attractions that are based on man's (or humankind's) activities. Inskeep then divided cultural attractions into archaeological, historical, and cultural sites; distinctive cultural patterns; arts and handicrafts; interesting economic activities; interesting urban areas; museums and other cultural facilities; and, cultural festivals and the friendliness of residents. It is the "interesting economic activities" that are relevant to this discussion. Inskeep's (1991, p. 83) description of interesting economic activities being "observed, described and sometimes demonstrated", has some similarities to industrial tourism. He provided examples of such activities as the operation of tea and rubber plantations and processing plants, the use of working elephants in a tropical forest, traditional fishing and agricultural techniques in many areas, and the operations of modern manufacturing plants. However, the definition provided in this thesis is different from Inskeep's for two main reasons. Firstly, the present definition also includes the production of services, some of which exist for less-obvious economic reasons, such as touring a public hospital, and secondly, under this definition industrial tourism never

Figure 2.7: <u>Four Components of Tourism</u>

General

Theme Parks

Sideline Tourism

Educational Tourism

Cultural Tourism

Agricultural Tourism

Industrial Heritage Tourism

Consumer Tourism ———————————————— **Industrial Tourism**

Work Watching

Factory Tours

Museum   Mine Tours

Farm Tours

Wine Tours   Factory visits by
business representatives

Parliament Tours

Disneyland   **Specific**   Tours of Ford Motor Company
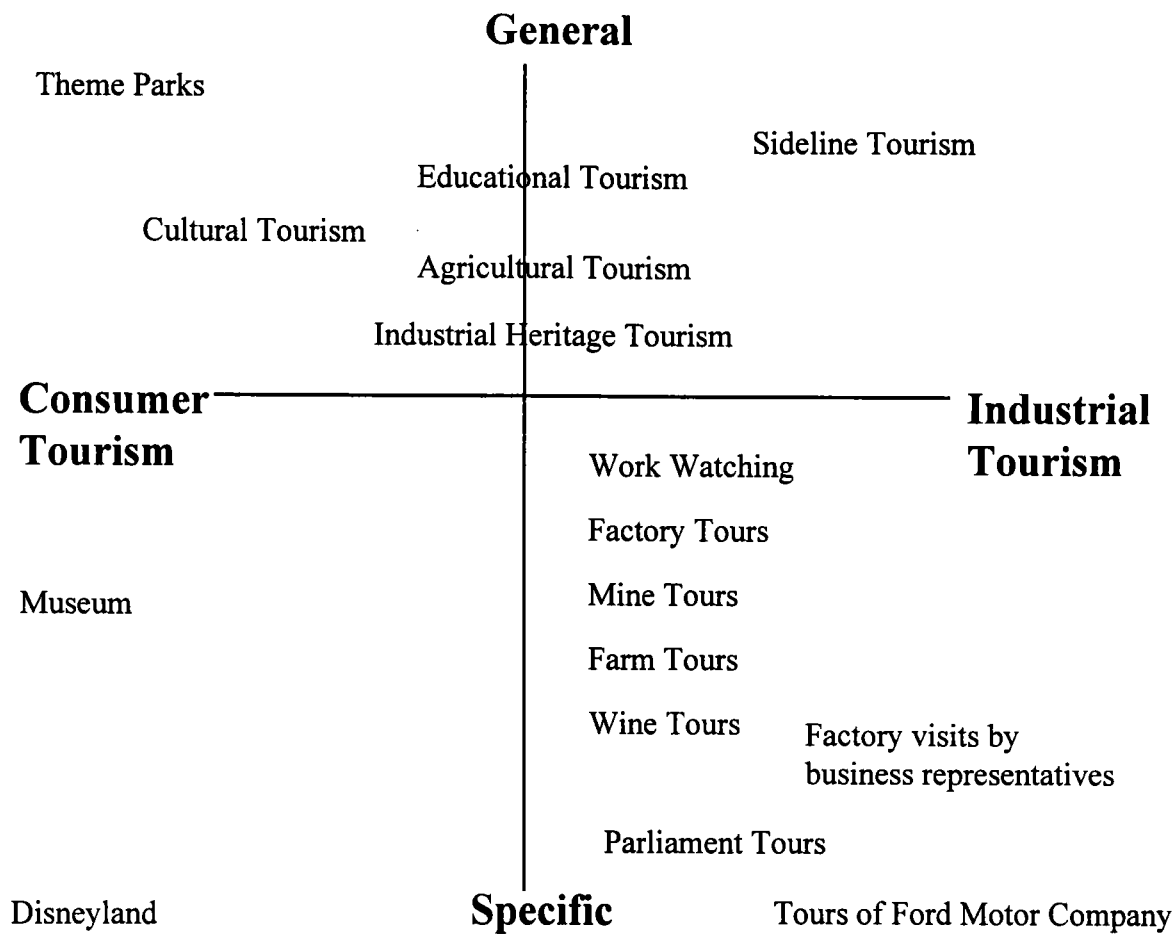
Source: Author.

includes only a demonstration, that is, it always involves the real or genuine production of

goods and/or services, even though demonstrations may be provided also.

Prentice's (1993) typology of 23 categories of tourism attractions includes five types of

attractions that incorporate examples of industrial tourism. They are: attractions

concerned with primary production, for example, farms, dairies, vineyards, and mining;

craft centres and craft workshops, for example, potters, woodcarvers, and lace making; attractions concerned with manufacturing industry, for example, factories, breweries, and distilleries; transport attractions, for example, canals, civil shipping, and civil aviation; and religious attractions, for example, cathedrals and churches (Table 2.3). As each of these types of attractions incorporates elements of industrial tourism, this helps to illustrate the range of industrial tourism attractions that exist. A weakness of Prentice's typology is that the global aspect of industrial tourism is not highlighted in these examples. That is, by specifying some categories, the impression is created that these categories comprise a complete inventory with distinctive characteristics, whereas this thesis argues for a broader perspective encompassing all goods and/or services, with the bases for subdivisions yet to be determined.

One of Swarbrooke's (1995, p. 4) four categories of attractions describes sites that have been "designed for a purpose other than attracting visitors". This category incorporates industrial tourism, as the site may have been designed principally for the purpose of producing non-tourism goods and/or services, rather than being primarily a consumer tourism attraction. This category is closest to the present definition as it suggests that the purpose of the site being in existence is a crucial element in differentiating it from other types of attractions, but the recognition that a duality of purpose may be present - not just a sole purpose - is not accentuated.

Although the various authors noted above include examples of industrial tourism in their discussion of typologies of attractions, there appears to be a lack of attention to industrial tourism from a conceptual standpoint. It is, therefore, suggested that most authors in the area of attraction research are fully aware that tourists visit operational industrial sites, that is, places where non-tourism goods and/or services are produced, but they have not developed the specific concept to a substantial extent or tested empirically the extent to which industrial tourism attractions are perceived to be different to other types of attractions. This empirical aspect is addressed in this thesis.

Relationship with Other Types of Tourism

When examining the concept of industrial tourism, it is necessary to be aware of its relationship to other types of tourism. Industrial tourism may be regarded as a form of special interest tourism where people travel because they "have a particular interest that can be pursued in a particular region or at a particular destination (Read 1980, p. 195). With special interest tourism the traveller's motivation and choice of destination are primarily determined by a particular special interest (Hall 1991). As a form of special interest tourism, industrial tourism has associations with educational tourism, and cultural and heritage tourism, which incorporates industrial heritage, agricultural, farm and winery tourism.

As suggested above, industrial tourism can be viewed as being an example of educational tourism. Educational tourism is an example of special interest tourism where visitors are motivated to travel, with learning being their primary objective (Kalinowski and Weiler 1992). Educational travel provides a chance to explore a chosen site firsthand and to experience an unfamiliar environment through interaction with qualified instruction. It can involve touring or visiting a single destination, can last a few days or several months and may be relatively formal or very loose and unstructured (Kalinowski and Weiler 1992). Industrial tourism and educational tourism overlap when a visitor tours a site that produces non-tourism goods and/or services and, by visiting such a site, has a learning experience. Educational tourism at an industrial site may occur in one of two ways. It may occur as a compulsory part of a formal learning program (such as a field trip to a factory as part of a university project on production methods), or it may occur informally, being non compulsory and not being part of a structured learning program.

Cultural tourism involves visiting other cultures and places to learn about their people, lifestyle, heritage and arts, in an informed way that genuinely represents those cultures and their historical contexts (Craik 1995, p. 6). Heritage tourism can be regarded as a subclass of cultural tourism (Prideaux and Kininmont 1997) and arises when tourists visit historic sites, buildings or monuments (Hall and Zeppel 1990). Industrial tourism occurs as an example of cultural and heritage tourism when tourists visit an operational site to view an aspect of humanity's achievements. For example, cultural and heritage tourists may be interested in visiting a power station that generates electricity from brown coal,

where that operation demonstrates some scientific (that is, cultural) advance, and it has some pioneering importance (for example, by being the first of its kind in the industry).

Industrial heritage tourism forms a distinctive subset of the wider field of heritage tourism and, as such, is concerned with the "development of touristic activities and industries on man-made sites, buildings and landscapes that originated with industrial processes from *earlier* periods" (Edwards and Llurdes 1996, p. 342; emphasis added). Therefore, industrial heritage is distinct from industrial tourism because the industrial site no longer produces goods, whereas in the present definition, the site must be producing goods and/or services. (Another reason may be that this definition appears not to include explicitly the production of services.) Similarly, Yale (1991) emphasised the difference between industrial tourism and industrial heritage by suggesting that while industrial heritage tourism is concerned with presenting redundant machinery, processes, buildings and ways of life, industrial tourism is about presenting contemporary manufacturing processes. She suggested that sometimes the two may overlap when a modern factory decides to open an on-site museum about the history of the industry, while also inviting visitors to tour the existing factory.

Industrial tourism also contains elements of agricultural tourism. An example of agricultural tourism would be a pineapple factory where the pineapples are grown and processed on the same site. This type of activity may be viewed as agribusiness tourism where the business has been mechanised to make it more commercially viable.

Agricultural tourism also incorporates the concept of farm tourism where active, working farms supplement their primary agricultural function with some form of tourism business (Pizam and Pokela 1980; Murphy 1985). The "tourism business" usually provides accommodation and meals for visitors and, similarly to agricultural tourism, provides the opportunity for visitors to become involved in some aspect of the farm's activities, such as viewing the processing of the farm product, for example, the packaging of tomatoes, or viewing the various agricultural methods of production, such as the ploughing of a field. In farm tourism, there may also be cross subsidisation in that the income from tourists visiting can allow the farm to continue its agricultural operations. When the farm business revives, the organisation could return to concentrate more fully on its core activity - the production of non-tourism goods and/or services.

Winery tourism is also an example of agricultural tourism and, therefore, industrial tourism. Dodd (1994) described winery tourism as visits to wineries that provide an opportunity for people to learn about the wine industry, try wines that are made at the winery, and purchase wine and other products sold in the tasting room. If the visit to the winery includes seeing where the wine is produced (that is, the vineyards), and/or seeing where the wine is stored or bottled, then it becomes a subset of industrial tourism.

Profile of Industrial Tourism Attractions

This section of Chapter Two begins with a discussion of the evidence of industrial

tourism attractions in various parts of the world, then focuses on the evidence from

Australia, and highlights the range and type of industrial tourism attractions that exist.

International Evidence of Industrial Tourism Attractions

Stevens (1988) suggested that industrial tourism has been in existence for at least a

hundred years, with visits to French vineyards and chocolate factories, Greek and Maltese

lace makers, and Dutch cheese factories and flower markets being the forerunners of

industrial tourism. MacCannell (1976, p. 57) provided the example of industrial tourism

in Paris at the turn of the century where sightseers were given tours of "the sewers, the

morgue, a slaughterhouse, a tobacco factory, the government printing office, a tapestry

works, the mint, the stock exchange, and the supreme court in session". In the United

States, industrial tourism has existed in various forms for many years, and has existed at

least since the early part of this century. For example, the Jack Daniel's Distillery in

Lynchburg, Tennessee, began offering tours when the plant opened in 1866. Similarly,

visitors began travelling to see the Hershey Chocolate Factory in Pennsylvania in 1904.

The visitors were able to view the factory and the various processes involved in

manufacturing the chocolate, and then they sampled some Hershey chocolate. Tours of

the chocolate factory continued until the mid-1970s when, due to health, safety, insurance

costs and operational pressures the company developed a simulated production line for visitors (Gelbert 1994). It should be noted that under the definition provided earlier, the Hershey Chocolate Factory is no longer an example of industrial tourism as visitors cannot visit the actual operations, rather, they visit a simulated exhibit. As explained earlier, farm tourism and wine tourism are also examples of industrial tourism and have been experienced in a variety of forms around the world for a number of years, but have only been recognised relatively recently as an important sector of the tourism industry (Dower 1973; Dumoulin, Naud and Ritchie 1977; Vogeler 1977; Pizam and Pokela 1980). (Table 2.4 provides examples of industrial tourism attractions from around the world.)

Research in the United Kingdom and elsewhere in Europe has suggested that industrial tourism has great potential and, perhaps rather optimistically, that it could soon be more popular among tourists than visiting parks and gardens (Menzies 1989). Some of the most famous examples of industrial tourism attractions illustrate that it can incorporate enterprises from services industries, and that large scale industrial tourism attractions are in existence today. At Universal Studios, California, arguably the world's largest and busiest motion picture and television studio, public tours have been organised since 1954, and nearly 75 million people have visited the "behind-the-scenes world of movie-making" (Gelbert 1994, p. 23). Similarly, tourists can not only visit the NBC television studios in Burbank, but they can also participate in the production of shows, such as the "Tonight Show", as members of the audience. In the example of Universal Studios, the

Table 2.4: <u>Examples of Industrial Tourism Attractions</u>

Name of industrial attraction	Facilities provided for visitors in addition to tour of site	Number of visitors per year
Cadbury World, Birmingham, UK (1)	Restaurant, cafe, gift shop	400,000
Toyota Motor Corporation, Japan (2)	Exhibition Hall, video	300,000
Guava processing plant Kauai, Hawaii (3)	Not known	300,000
Ben and Jerry's Homemade Inc., USA (Icecream Factory) (4)	Slide show, gift shop	170,000
Tupperware World Headquarters, Orlando, USA (5)	Not known	100,000
Villeroy and Boch, Saarland, Germany (Porcelain Factory) (6)	Video of factory operations	100,000
Wedgwood, Barlaston, UK (7)	Exhibition and demonstration area; cafe; shop	100,000
British Nuclear Fuel, Sellafield, Cumbria, UK (8)	Visitor Centre; multi-media show	100,000
W.R. Outhwaite and Ropemakers, North Yorkshire, UK (9)	Not known	75,000 - 100,000
Cumberland Pencils, Keswick, Cumbria, UK (10)	Not known	64,000
SEC Visitor Centre and Hazelwood Power Station, Victoria (11)	Exhibition; audio visual display	47,000
Ford Factory, Dagenham, UK (12)	Not known	25,000
Pineapple cannery Oahu, Hawaii (13)	Transport to and from factory; retail outlets	Not known

Sources:(1) Hirst 1993 (2) Business Japan 1988 (3) Cox and Fox 1991 (4) Lammers 1990 (5) Garfield 1987 (6) Hansen 1993 (7) Lilly 1984 (8) Tilson 1993 (9) and (10) Liddle 1989 (11) SEC Visitor Centre 1994 (12) Henly 1988 (13) Forest 1987.

theme park infrastructure and visitation levels have developed to the stage of overwhelming the movie craft purpose so that the original core business of film production has been replaced by tourism as the dominant or core business. Therefore, Universal Studios has moved from an industrial tourism attraction, with a non-tourism activity at its core, to a tourism attraction with a consumer tourism activity at its core.

It was estimated by the English Tourist Board (1990) that in England in 1990, 294 organisations operated as industrial tourism attractions, which represented around 6% of all attractions in England. Approximately 90% of the establishments involved in industrial tourism, had only been "active in the market since 1980" (Swarbrooke 1995, p. 77). In 1989, the English Tourist Board estimated that visitors to industrial tourism attractions numbered five million per annum and they predicted that the figure would grow to at least eight or nine million in the next few years. (Various characteristics of industrial tourism attractions in the UK are summarised in Table 2.5.) In France, it was estimated that in 1993 there were some 5,000 enterprises involved in industrial tourism, attracting over 10 million visitors per year, which is more than twice the number that visited such attractions in 1980. The most visited industrial tourism attractions in France in 1993 were power stations and food and alcohol producers (Swarbrooke 1995) (Table 2.6).

In the United States, as early as 1971-72, nearly 5,000 firms were listed as offering plant tours (U.S. Department of Commerce 1971). This number did not include tours that

Table 2.5: <u>Characteristics of Industrial Tourism Attractions in the UK</u>

Characteristics	
Main Reason for Tourists Visiting	Chance to see industry in action. Opportunity to buy.
Main Motivation for Involvement by Operators	Boosts corporate image and sales. Staff morale improvement. Additional income.
Size of Attractions	From workshops to massive factories, but visitors are allowed access to small areas usually.
Main Services and Facilities Offered	Factory tour. Retail outlet. Interpretation. Usually limited catering and visitor services.
Visitor Numbers	6000 to 120,000 to each attraction.
Admission Charged	Adult - 1.50 pounds average.
Opening Times	All year round but usually only Monday to Friday.
Length of Stay of Visitor	Relatively short (1-2 hours average).
Staff Required	Few, mainly part-time or part of duties of full-time factory employees.
Staff Training Required	Limited in-house training.
Turnover	20,000 pounds - 1.5 million pounds; 75% coming from retail.
Profit/Turnover Ratio	0-10% depending on the cost centre structure.
Marketing Budget	Average 4-6% of turnover.
Development Costs	15,000 pounds - 1 million pounds.
Other Points	Local benefits include protecting existing jobs through the extra income generated, and strengthening the local tourism product. Most attractions have been developed in the last 15 years.

Source: Adapted from Wooder (1992).

Table 2.6: <u>Most Visited Industrial Tourism Attractions in France in 1993</u>

Name of Attraction	Number of visitors received in 1993
Usine Maremotrice de la Rance, Brittany, EDF (Tidal Power Station)	350,000
Caves de Roquefort (Cheese Production)	200,000
Cusenier-Pernod-Ricard, Thuir (Food and Alcohol Production)	130,000
Benedictine, Fecamp (Alcohol Production)	123,000
Hennessey, Cognac (Alcohol Production)	88,000
Central EDF, Bort-Les-Orgues (Power Station)	72,000
Aerospatiale, Toulouse (Aircraft Factory)	60,000
Martell, Cognac (Alcohol Production)	60,000
Evian (Spa Water Production)	40,000
Peugeot, Sochaux (Car Factory)	36,000
Cointreau, St Barthelemy (Alcohol Production)	34,000
Total number of visitors received	1,193,000

Source: Swarbrooke (1995).

refused foreign visitors or tours to educational institutions, medical facilities and cultural institutions (Simonson 1974). However, this figure may not be highly accurate as the individual states which provided the information to the U.S. Travel Service had a tendency to include "practically every industry in their states" (Cronin 1971). The existence of an annual publication during the 1970's entitled "Plant Tours for International Visitors to the United States" (U.S. Department of Commerce 1971)

suggests, however, that the importance of industrial tourism was recognised early in the United States.

Gelbert's (1994) book provides a more up-to-date list of 438 attractions in the United States that he described as being either company museums, industry museums or industrial tours. Of the 438 entries, 211 are examples of industrial tourism attractions according to the definition given earlier. These sites are found all over the United States and represent an interesting cross section of industries. Gelbert (1994) divided the 211 examples of industrial sites open to the public in the United States into 12 different sectors which were food and beverage, industry, manufacturing, transportation, mining and refining, forest products, energy, communications, agriculture, business and labour, public services, fishing and health services (Table 2.7 lists the types of industries and the number of industrial sites for each category, estimated by the author). Similarly, Swarbrooke (1995) referred to a guide of industrial sites in Poitou Charentes and Aquitaine in Western France that divided industrial sites into similar categories (Table 2.8). From the above comparisons it would appear that there are similar patterns of industrial tourism attractions between and across countries.

Evidence of Industrial Tourism Attractions in Australia

To establish that industrial tourism attractions exist in Australia and to allow comparisons to be made, the author carried out an extensive literature search to try to find a

Table 2.7: <u>Division of Industrial Sites by Industry in the United States</u>

Type of Industry	Examples	Number of Examples
Agriculture	Farms; Ranching; Crops, e.g., Almonds, Citrus Fruit, Honey, Loganberries.	6
Business and Labour	Stock Exchange; Board of Trade.	3
Communications	Broadcasting; Movies; Publishing.	8
Energy	Nuclear Power; Locks and Dams.	11
Fishing	Maintenance of fishing vessels.	1
Food and Beverage	Beverages, e.g., tea; coffee. Breweries; Candymaking; Cheesemaking; Distilleries; Food Processing; Ice Cream; Meat Processing; Snack Foods.	103
Forest Products	Logging; Maple Industry; Paper.	10
Health Services	Medical Centre.	1
Industry	Glass; Milling; Potteries; Textiles.	25
Manufacturing	Cooperage; Tobacco; Tractors; Shoes: Candles.	17
Mining and Refining	Mines; Mining; Refining.	11
Public Services	Firefighting; Law enforcement.	2
Transportation	Aerospace; Automotive; Shipping.	13
Total Number of Industrial Tourism Sites Listed		**211**

Source: Adapted from Gelbert (1994).

Table 2.8: <u>Types of Industrial Tourism Sites in Western France</u>

Agriculture and Livestock Rearing	6	Baking and Milling	3
Alcohol and Liqueurs	8	Paper Production	5
Food Production (Mainly small scale)	12	Newspapers and the Media	5
Aquaculture (oysters, trout-rearing)	4	Science and Technology	7
Crafts and Traditional Trades	13	Tobacco Production	2
Builders and Building suppliers	4	Textile Production	5
Chocolate and Biscuits (large scale)	5	Barrel-Making	2
Electrical Products	2	Waste Disposal	2
Packaging Materials	1	Transport	4
Energy, including Electricity	7	Porcelain Production	1
Farming	1	Glass-Making	3
New Technology	1	Wine Production	16
		Total Number of Industrial Tourism Sites Listed	**119**

Source: Adapted from Swarbrooke (1995).

comprehensive listing of Australian industrial tourism attractions. However, such a list

does not exist. The Australian Bureau of Statistics carried out a survey on tourism

attractions in 1985 (Australian Bureau of Statistics 1990) which included some

information on some industrial tourism attractions, but a detailed listing of these

attractions is no longer available from the Australian Bureau of Statistics. The author

decided to examine the Royal Automobile Club of Victoria's publication entitled

Attractions Australia: Australia's Tourist Attractions Directory, that claimed to list "more than 1,900 towns featuring over 5,800 individual attractions", and to "provide the tourist with the ultimate guide to tourist attractions throughout Australia...the most comprehensive, up to date and accurate publication of its kind" (RACV 1993, p. xi). Using the operational definition of industrial tourism developed earlier, the author and a second researcher assessed each entry in *Attractions Australia* regarding its likely qualification as an industrial tourism attraction. The author and the second researcher codified the attractions independently. Although there was not complete agreement by the two coders, there was substantial agreement that several hundred entries were highly likely to fit the definition. The variables that were codified for each attraction included, where available, its name, postcode, core business activity, amenities offered to visitors, hours open per day, days open per week and/or year, admission charges, and whether guided tours were offered. The study concentrated on attractions in Victoria, New South Wales, the Australian Capital Territory and Queensland, and revealed that most industrial tourism attractions (56%) offered souvenirs or their products for sale to visitors. However, fewer than 20% provided a kiosk, or other amenities such as restaurants or playgrounds. Typically, attractions were open for at least six hours per day, every day of the year. However, only about one-third were listed explicitly as offering guided tours, although there was a wide range of different types of operations offering these tours. Approximately 80% of the attractions offered free admission to visitors, with the maximum adult fee charged by any attraction being $10.00. Therefore, by reviewing the attractions directory it was determined that, as in other countries, industrial tourism

attractions exist in Australia, they offer a range of facilities, and can be classified as a number of different types of attraction within the category of industrial tourism. (Appendix 1 lists the attractions identified as industrial, by their core business category, name, and postcode.)

The Management of Industrial Tourism Attractions

Earlier discussion in this thesis has conceptualised industrial tourism and has provided a definition by considering the core activity of the site. From a management perspective it is important to be aware of both the negative and positive impacts of developing industrial tourism and the operational implications. In this section of Chapter Two, industrial tourism is discussed from a managerial perspective by considering the consequences of developing industrial tourism and the systems that need to be considered to be able to operate effectively.

Following a detailed review, it appears that the literature on industrial tourism can be divided into two distinct types: general and trade press articles and books, and academic articles and books, with the bulk of the literature coming from the general and trade press. Newspaper feature articles on industrial tourism are common, especially involving the visitation of construction sites (variants on the "sidewalk superintendent" theme) and unusual locations such as cemetery visits (Seay 1997). Books about industrial tourism, especially containing directories of hundreds of attractions aimed at the tourist market,

have recently been published (see, for example, Axelrod and Brumberg 1997 and Gelbert 1994).

The articles on industrial tourism from the trade press (for example, Bowes and Saper 1994; Hinton 1996; Johnson 1994) can be divided into categories such as: those explaining the reasons to establish tours for the public, which usually propose that opening the site to the public is an excellent public relations exercise; those suggesting how best to organise successful tours and open days for the site; those considering factory outlets, which describe how to establish and maintain successful retail sales on site; those with a product focus, which are highly specialised and appear in specialty magazines designed for experts or enthusiasts of the product and so are very detailed and technical; and those with a "business tourist" focus, which discuss the professional benefit of visiting a particular site, such as for information exchange or to view good manufacturing methods or other aspects of management in operation. In the discussion that follows, reference is made to the managerial aspects of operating an industrial tourism attraction. The discussion is based on the reviewed articles from the trade press and discusses the benefits for an organisation of choosing to develop as an industrial tourism attraction and also why some industries choose not to develop. The section concludes with a discussion of the management philosophy at an industrial tourism attraction and the importance of developing at least two strategic business units, one for the core activity and one for the tourism activity.

Regional and Organisational Consequences of Industrial Tourism

For individual organisations, industrial tourism has the potential to provide both tangible and intangible benefits (Ryan 1989). These benefits can be summarised as being:

- An effective public relations exercise, with each visitor having the potential to become an enthusiastic ambassador for the firm (Rudd and Davis 1998). McBoyle (1994) suggested that through visiting a site, a bond is forged between the visitor and the product, and a strong psychological affiliation is created with the industry and its brands that helps to develop new customers and reinforces brand loyalty among existing patrons.

- A profitable means, if appropriate, of selling (in addition to standard products) the "seconds" or slightly imperfect goods that invariably occur in manufacturing, and thereby helping to overcome stock problems. This produces additional direct sales value and at smaller organisations, the selling of "seconds" may account for a large percentage of turnover, which may be vital to a company's profitability (Henly 1988).

- Strengthened staff morale because the increase in interest in the industry and the goods and/or services highlights the importance of their jobs.

- An increased number of job opportunities because of the increased demand and interest in the product, and the need for tour guides and souvenir shop attendants.

- The enhancement of the industry's image which can aid recruitment.

- The effective introduction of new products to sales representatives, or the creation of interest in a present line of products, and the publicity of company products or events to the media (Thomas 1984).

The introduction of industrial tourism can also generate revenue during traditional off-season periods. For example, at a "pick your own" berry farm, tourists may still be interested in visiting the site out of season to view the farm and buy the jams and pickles rather than necessarily picking the fruit. The concept of encouraging tourism to cover off-season periods is supported by Weaver and Fennell (1997), Pizam and Pokela (1980), and Frater (1983) who considered the reason farmers initially become involved in farm tourism. Weaver and Fennel (1997, p. 358) suggested that "the cost/price squeeze and associated crisis of agricultural overproduction have threatened the viability of the small-scale farm economy, prompting surviving farmers to seek financial stability through both on- and off-farm diversification". Therefore, from a financial perspective, the development of tourism at a site that produces non-tourism goods and/or services may have positive implications for cash flow as tourism could be encouraged in off peak periods which creates a counter cyclical situation. However, the success of a site would depend on the intrinsic attractiveness of the site's facilities if the core production process is not operating, as is observed for television studios and legislative buildings, even when not "in session".

Atkinson (1994, p. 24) noted that visitors gain access to organisations by way of one of three main routes: "pre-booked tours, daily timetabled tours open to casual visitors and specially arranged open days that may only occur once or twice a year". Specially arranged open days were the focus of a campaign by the English Tourist Board and local councils from 1988 to 1994 called "See Industry at Work" (Stevens 1988) to encourage organisations to develop as industrial tourism attractions. Among the schemes that were developed included Cheshire County Council's "Insight into Industry" (How 1994), Sheffield City Council's "Sheffield Factory Tours" (Diment 1994), Stoke-on-Trent City Council's "Do China in a Day" (Speakman and Bramwell 1992), and, Tees Valley Tourism's "The Valley at Work" (Wooder 1992).

Industrial tourism also has the potential to provide education for local schools and colleges. For example, Bishop and Coffman (1988) noted that for accountancy students the opportunity to tour a manufacturing plant provided an opportunity to observe operational problems associated with cost accumulation systems, product costing and cost control. Industrial tourism also has potential to benefit the local region. Benefits include the indirect employment created through the multiplier effect caused by the increased demand for goods and services (Mathieson and Wall 1992). The existence of attractions may encourage tourists to extend their stay in the region. By staying longer in the region the visitors will spend more money in local businesses. If visitors enjoy their experience they are likely to provide good word of mouth recommendation to friends and relatives and may be encouraged to visit the region again. With the successful development of tourism, the

region will gain a more positive image that may help to attract potential employers to the

region (Ashworth and Tunbridge 1990).

Reasons for Not Developing Industrial Tourism

For some organisations, the many development costs associated with the introduction of

industrial tourism mean that they choose not to open their doors to the public. Even the

development of a small visitor program results in the need to supply toilets, a reception area

and car parking. More ambitious programs require refreshment facilities, shops, viewing

galleries and exhibitions (Carter 1991). Most sites are not designed originally for visitors so

there are logistic and safety problems to overcome. To avoid visitor accidents there is a need

to install safe walkways, to cover any exposed machinery and provide clear fire exits. It is

also necessary to have adequate liability insurance to cover the risk of visitor injury while

on site. These points illustrate the importance of developing industrial tourism in a

controlled and planned manner to overcome these barriers. Some industrial sites were built

with visitor access in mind and incorporate raised walkways and viewing galleries. For

example, Yakult's manufacturing facility in Dandenong, Melbourne, was specifically

designed to accommodate tours. This was especially necessary because of the need for high

levels of hygiene at the plant. Other industrial sites which have become popular tourism

attractions, found that to comfortably incorporate visitors, it was necessary to close their

visitor operations temporarily in order to build improved visitor facilities.

There is the possibility of theft and tampering by tourists at industrial sites. There is also the risk of breaches of security and industrial espionage. Rolls-Royce in the UK, for example, receives many requests from people wishing to view the manufacture of jet engines. However, the Ministry of Defence (MoD), which is Rolls-Royce's biggest customer, does not encourage casual visitors and the few people who do receive permission to visit have to submit first a curriculum vitae to the MoD. In addition, the MoD may declassify the content of tours on occasions (Henly 1988). Treece (1995) suggested that one of the reasons that the Kellogg Company closed its cereal plants to visitors was that it caught people from rival companies taking photographs while on a public tour. Certain industries may choose not to develop industrial tours as they believe that the production process is not visually appealing to the visitors. Some processes occur behind covered machines and the visitor is unable to view the steps involved. For example, the marketing manager of Cadbury World pointed out that state of the art confectionery plants such as Cadbury's are simply "not interesting to watch" (Varlow 1990, p. 9).

Some organisations may see no benefit in developing industrial tourism as they view their products as being "destined for an industrial rather than a consumer market" (How 1994, p. 14). There may also be industrial relations concerns with companies whose employees work on piece-work rates, as the introduction of tours may interrupt production and disadvantage certain staff who have to adjust their work patterns to suit the visitors. For companies which are working to meet an important order, regular tour groups on the factory floor may slow production. In addition, a constant stream of visitors through the workplace closely

watching the production process may make workers feel uncomfortable, and Stevens (1988) suggested that, where there has been a provision of glass windows, some workers may feel they are in "goldfish bowls". This may create an unpleasant experience for both the visitor and the worker. Treece (1995, p. 30) suggested that in the United States "plant tours are on the wane" as many companies have decided to cut back on tours for some of the reasons outlined. Indeed, there has been a move in the United States to replace some plant tours with visits to company museums and visitor centres where people do not have the opportunity to view the actual production process. Instead, they see only the "'front region' rather than experiencing the 'back region'" (Goffman 1959, p. 144). There are obvious advantages for the company to separate the visitors from the production process but, for the visitor, the elimination of the "real life" element in the visit, may make the experience less fulfilling. Middleton and Parkin (1989, p. 48) suggested that it is almost always a mistake to deny contact with those engaged in production as it creates a simulated exhibit which, as it lacks a human dimension, can be "cold and rather shallow".

The Management Philosophy at an Industrial Tourism Attraction

There are two types of production present at an industrial tourism site, the tourism business and the core business. Therefore, management at such attractions has a different orientation towards tourism when compared to management at consumer tourism attractions, as tourism is complementary rather than core to its operations. The management task at the enterprise can be described as involving joint management, where

management is involved in two ventures requiring management simultaneously. This situation is often described as portfolio management where the organisation coordinates a portfolio of activities (Kotler 1994). To manage the tourism aspect at an industrial site in this way, sometimes there may be a need to have at least two strategic business units (SBUs). A strategic business unit is a single business or collection of related businesses that can be planned separately from the rest of the organisation, and which has its own set of competitors. It usually has a manager who is responsible for its strategic planning and profit performance and who controls most of the factors affecting profit (Kotler 1994). At industrial tourism attractions, at least one SBU is designed to cater for tourists, while others concentrate on the production of non-tourism goods and/or services. In the case of consumer tourism attractions, all their SBUs exist to cater for the needs and wants of tourists. At an industrial tourism attraction, at least one SBU may be regarded as the Core Strategic Business Unit (CSBU) while another could be named the Tourism Strategic Business Unit (TSBU). In the TSBU, decisions are made concerning the need to provide such visitor facilities as visitor parking, food and beverage outlets, and a souvenir/gift shop. Decisions are also made on the development of the tour product and tour group liaison.

With the development of tourism at an industrial site, there may be the emergence of incompatible objectives with conflict arising between the need to produce effectively non-tourism goods and/or services, and allowing visitors to view the site. For example, the TSBU may want to bring large groups of tourists to the site and this may conflict with

the CSBU's plan to use more space to increase production. The TSBU may try to move the visitors' viewing area closer to the CSBU's production line, but the CSBU workers may resent the increasing "fishbowl" effect. There may, therefore, be a need for compromise between the SBUs. To decide which objective to pursue, management may want to classify the SBUs by profit potential and so may use some of the common business portfolio evaluation models such as the Boston Consulting Group's growth-share matrix which considers the dollar-volume size of each business, its market growth rate, and relative market share, or the General Electric model which rates the business in terms of market attractiveness and business strength (Kotler 1994). Kotler (1994, p. 83) suggested that most business units pursue a mix of objectives including "profitability, sales growth, market-share improvement, risk containment, innovativeness, reputation and so on". This is similar to the justifications given for the development of a TSBU, in that many organisations develop industrial tourism for a number of reasons, which, as discussed earlier, can range from public relations exercises to making a profit from direct sales.

The involvement in tourism also places demands on the enterprise in other ways, such as in functional areas like cost accounting, and in organisational behavioural areas such as the management of organisational and employee culture. Cost accounting provides cost information to management for planning, control and decision-making purposes and is concerned with both the costing of services as well as manufactured goods (Glautier and Underdown 1988). It is a challenge to the management of an industrial tourism attraction

to ensure that adequate cost accounting is established to identify the relevant costs attributable to the CSBU and the TSBU. In particular, the traditional problems of joint costs will need to be addressed, such as the cost to be charged to the TSBU for the use of the CSBU's observable production process as the TSBU's essential tourist "product". Even an extreme approach, such as attempting to adopt a direct-cost-only system, to match direct expenses on visitor services with direct revenues received from visitors, risks ignoring the intangible but fundamental purpose given for much industrial tourism, that is, the overall public relations benefit to the total organisation. A further implication of this aspect (the fact that many industrial tourism operations have low or no entrance fees, and although offering consumer products for sale to tourists, rely largely on cross-subsidisation from the core business in return for their public relations benefit for financial viability), is that attempts to apply quantitative measures to enterprises to determine their "industrial" versus "consumer" tourism status are fraught with imprecision. For example, the application of a modified "tourism ratio" (Smith 1988), which computes the ratio of tourist-derived revenue to total organisational revenue as an indicator of the degree of tourism involvement of an organisation, is likely to be misleading as the organisational revenue accruing due to the tourism operation is often deliberately reduced (via minimal entrance fees) and difficult to estimate (such as determining the return on investment in informal public relations activities).

Further, questions of cultural compatibility would seem to be inevitable when, in extreme but not uncommon circumstances for industrial tourism, managers of capital goods

producers are working with consumer services marketers in the one organisation and exploiting the same production process. As Porter (1985) has observed, cooperation can be difficult to achieve if business units have differing cultures. In fact, much of the literature on strategic management focuses on the criteria for efficient agglomeration of SBUs, usually from the perspective of acquiring existing SBUs. Relatively little literature examines the issues confronting management as it contemplates diversifying into a new and somewhat remote arena. For example, Quinn, Mintzberg and James (1988, p. 309) state that organisations moving into unrelated businesses "almost always use acquisition". However, this is not the case at an industrial tourism attraction where the diversification comes from within the organisation and may result in the need to establish a new SBU. There would seem to be a need to re-assess the guidelines to move away from the inherent warning to avoid dissimilar ventures, and to move toward formulating constructive approaches that recognise the need to accommodate non-traditional SBU partners. There may well be scope for contracting out ("outsourcing") the management of the TSBU to specialists, analogous to the arrangements of hotel property owners with hotel management firms. This suggestion is reinforced by the experience of many industrial operators who claim not to have had "the time" to attend to prospective industrial tourism ventures. An instructive case history analysed by Leiper (1995) illustrates the contrasting entrepreneurial approaches adopted by two wineries, one of which embraced industrial tourism to the point of tourism eventually becoming its principal SBU, while the other winery deliberately rejected extensive tourism developments. Leiper also illustrates the ramifications for other aspects of the marketing

mix, beyond product policy, of a tourism-oriented stance. For example, if wineries choose to sell wines to visitors at discounted prices, this is likely to lead to channel conflict with the existing wholesalers and retailers of its wines, with a consequent loss in marketing support for the winery. (This situation is analogous to that experienced by airlines with travel agents, when travellers are encouraged to deal directly with the airline principals, often via pricing incentives.)

Potential Visitors to Industrial Tourism Attractions

Based on the number and type of industrial tourism attractions that exist around the world and the number of visitors to those sites, it would appear that tourists are interested in viewing industry or "watching how other people work" (McBoyle 1994, p. 571). People are, it would seem, fascinated by the size and scale of the operation, the equipment used and the employees' work environment. Viewing the production of goods and/or services provides an interesting juxtaposition of activities, being "essentially recreation in the workplace, where work and leisure meet" (Green 1994, p. 16). Although industrial tourism represents an overlap between work and leisure, it may also provide an important understanding of humanity because the establishments that are being visited, and the activities which they contain represents a society's most important institutions as they include aspects of law, economy and industry (MacCannell 1976). If the visitor can view the whole production process, the experience could be described as the complete chain of processes from

"conceptualisation to consumption" or from the "cradle to the grave", as the processes viewed may reflect many aspects of human life.

From the visitor's perspective, an industrial tourism attraction can offer some kind of physical experience (Johnson 1991). People are interested in visiting sites offering experiences where they can become involved to some extent (Martin and Mason 1993), and an industrial tourism attraction provides tourists with this opportunity. McIntosh (1972, p. 111) suggested that a large proportion of travellers, and particularly international travellers, are "intellectually curious about the economy of any state or country". Kelly and Dixon (1991, p. 22) supported this idea and suggested that where economic bases and lifestyle vary throughout the country, tourists should be given the opportunity to "identify the factors (climatic, topographic, historical, political) which contribute to regional variations". McIntosh and Goeldner (1990, p. 161) suggested that tourism organisations should encourage tours to factories and processing plants "when such visits are appropriate and pleasant experiences".

Industrial tourism attractions may be of interest to people who have worked directly in the manufacturing industry and are interested in various manufacturing processes or to people who are unaccustomed to the industrial environment and are eager to discover more about the operations. Speakman and Bramwell (1992, p. 2) suggested that part of the success of factory tourism is that it "provides a taste of the real thing, a chance to experience the smells, noise and sights of manufacturing that are often not encountered in everyday life".

Industrial tourism is also attractive because it can overcome the disparity between the image which many people may have in their minds of the production process, and the realities of modernised industries.

The interest in industrial sites reflects the growing number of tourists who wish to be educated during their visit through experiential and participative tours (Martin and Mason 1993), rather than passively viewing scenery and landmarks. Martin and Mason (1993) suggested that visitors in the future will be increasingly selective about the attractions that they choose to visit. The emphasis is likely to be more on visiting with a purpose, and going to an attraction because it offers something of particular interest or relevance to the visitor, rather than just because the destination exists and there is time to be occupied. As a result of visitors' more purposeful visiting, Martin and Mason (1993) suggested that there will probably be a shift in the popularity of different types of attraction, with a possible movement of visits from passive to active attractions and from fun to learning (Figure 2.8). Similarly, a survey by Cox and Fox (1991) of agricultural tourists asked attraction operators why they thought visitors came to their attractions. The reason cited 84% of the time was that the attraction was of personal interest to the visitor. This reason was also given 51% of the time as the most important reason for visitors coming (Table 2.9). Consequently, industrial tourism attractions may have the potential to attract visitors who are interested in particular aspects of an attraction. This is supported by Beeho and Prentice (1997, p. 76) who emphasised that visitors arrive at tourism attractions with their own unique personal agendas that reflect the individuals' interests. They suggested that tourism attractions

Figure 2.8: <u>Predicted Move from Passive to Active Attractions and from Fun to Learning</u>

FUN ⟶ LEARNING

ACTIVE   Amusement parks   Science centres
                                         Hands-on museums
                                         New wildlife attractions

PASSIVE   Entertainment centres   Traditional museums
                                         Historic houses
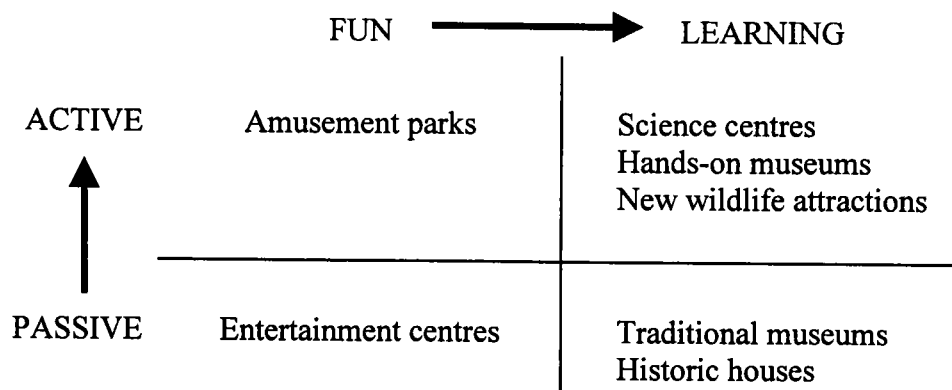
Source: Leisure Consultants (1990).

Table 2.9: <u>Reasons for Visiting Agriculturally Based Leisure Attractions</u>

Reason	Percentage of Attractions	Percentage of Respondents citing this reason as most important
Personal interest	84	51
Good value	62	13
Convenient location	52	2
Buy goods	51	13
Part of tour package	37	10

Source: Cox and Fox (1991, p. 25).

should "create, provide and maintain an experience which is able to attract a visitor's attention, stimulate interest and meet visitor expectations".

By providing a review of the literature, this section of Chapter Two has conceptualised and defined industrial tourism and has highlighted the status of industrial tourism attractions and the opportunities inherent in it, as well as the emerging threats associated with aspects of legal liability, industrial relations, and security. Australian organisations can learn from both the positive and negative experiences of overseas organisations to enable them to develop industrial tourism in a controlled and planned manner. Information from existing industrial tourism attractions suggests that to ensure visitors have a fulfilling experience, organisations must be prepared to provide a range of facilities, such as raised walkways and souvenir shops, and to introduce some interpretation of the experience to ensure that the visitors develop a greater appreciation and understanding of the site. Interpretation can be viewed as "any activity which seeks to give visitors information about the place they are visiting…and can enhance the quality of visitor experiences. It adds value to tourism products and encourages visitors to stay longer at the attraction" (Pearce, Morrison and Rutledge 1998, p. 279). Clearly, the field is worthy of careful research and study, with the objective of advancing the theoretical understanding of industrial tourism, and improving the ability of management across the spectrum, from feasibility assessment, to operating policies, and to performance review and enhancement.

Chapter Two has provided an overview of the concept of industrial tourism within the context of tourism attraction theory. The literature review demonstrated that industrial tourism has existed for a number of years and categorised the various types of industrial tourism attractions that exist.

CHAPTER THREE

HOLLAND'S THEORY OF PERSONALITY TYPES

Introduction

In Chapter Two the concept of industrial tourism was introduced and discussed. It was

suggested that one of the reasons why people visit industrial tourism attractions is that

they are personally interested in the attraction. It would be useful for managers of tourism

attractions to be aware of the types of people who visit particular types of attractions, as it

would be helpful in their marketing campaigns. In Chapter Three, it is suggested that

Holland's (1985a) theory of personality types may be a useful means of identifying the

type of people who visit particular types of tourism attractions. Therefore, this chapter

begins with a very brief overview of personality theories in general, and identifies

Holland's (1985a) theory as an example of a trait theory. The chapter then looks in detail

at one particular personality theory, that is, Holland's (1985a) theory of personality type

and its two main test instruments, the Vocational Preference Inventory and the Self-

Directed Search. A justification is provided of why Holland's personality theory was

chosen for this particular study, and a brief overview of another well-known, and well-

respected personality theory, the Myers-Briggs Type Indicator, is presented as a

comparison with Holland's theory.

Chapter Three then considers the application of Holland's theory to behaviour other than occupational choice, that is, career choice and leisure choice. Consideration is then given to the relationship between personality and leisure activities, with particular reference to the application of Holland's theory to leisure behaviour, and because Holland devised an instrument to apply his personality theory to leisure activities, this chapter includes a review of Holland's Leisure Activities Finder (Holmberg, Rosen and Holland 1990). A subset of leisure activities is, arguably, tourism, and so the chapter considers the relationship between personality and leisure-type tourism behaviour. This relationship is at the heart of the discussion, as it considers tourist attraction choice behaviour. A review is then provided of previous research on the application of personality theories to tourism behaviour and of applying Holland's theory to tourism behaviour.

The chapter introduces personality and gender, and tourism behaviour and gender, and considers the relationship between personality, gender, and tourism behaviour. It also considers the influence of other demographics on tourism choice behaviour. Chapter Three ends with the provision of a list of propositions and hypotheses that attempt to relate Holland's theory to tourism choice behaviour. The suggestion is made that Holland's theory can be successfully applied to tourism choice behaviour and, in particular, tourism choice behaviour at industrial tourism attractions. Therefore, the focus of Chapter Three is on the application of one theory of personality to the prediction of tourism choice behaviour.

Brief Overview of Personality Theories

The following discussion provides a brief sketch of some of the important aspects of major personality theories and concentrates on trait theory in particular. Madrigal (1995) suggested that there are five distinct perspectives of personality theories, which are psychoanalytic and neoanalytic; cognitive; humanistic/existential; socio-behaviouristic; and trait. In the (Freudian) psychoanalytic approach, behaviour is seen primarily to be energised and directed by innate and unconscious forces. Cognitive development theory emphasises learning as a function of development in that personality develops through "an invariant sequence of stages which everyone goes through in the same order, though not at the same rate" (Iso-Ahola 1980, p. 203). The humanistic/existential theory considers the tendency to actualise one's inherent potentialities and to achieve authentic being (Maddi 1996). The socio-behaviouristic theory suggests that individual differences in behaviour are due to the variety of learning conditions that the individual has encountered, so that the growth of personality is a function of learning (Iso-Ahola 1980). Trait theory explains personality as a complex and differentiated structure of traits. A trait is described as a "mental structure" that accounts for regularity and consistency in behaviour (Cattell 1950). Loudon and Della Bitta (1993, p. 305) suggested that trait theory is useful as it has demonstrated adequate utility for predicting behaviour among the general population.

Holland's (1985a) personality theory, which is applied in the present study, can be described as an example of a trait theory. The idea for the typology resulted from Holland's (1973, 1985a) frequent observation that several broad classes account for most human interests, traits and behaviours. He suggested that the six types developed in his typology are analogous in some ways to the types proposed by earlier researchers, but he believes that his theory is most consistent with Staats' (1981) theory of social behaviourism where the six types are "models of six common clusters of personality or behavioural repertoires that occur in our society" (Holland 1985a, p. 18). Therefore, the following discussion provides an overview of an example of a trait theory, that is, Holland's theory of personality types and its applicability to tourism choice behaviour.

Holland's Theory of Personality Types

Holland (1973, 1985a) developed a typology of six personal orientations to life: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C). He defined each of the six different personality types in terms of its characteristic activities, interests, and competencies (Table 3.1 summarises Holland's Personality Typology).

Holland devised a hexagonal model to illustrate the relationship between each personality type and to describe the concepts of consistency and differentiation (Figure 3.1). Consistency is the degree of relatedness of types within a person. For example, the personality pattern of RI is more consistent than CA, or has a high consistency pattern.

Table 3.1: <u>Holland's Personality Typology</u>

Type	Personality
Realistic	Possesses mechanical and athletic ability and lacks social competencies; values money, power, status and other concrete things. Is inclined to be asocial, conforming, frank, genuine, materialistic, persistent, uninsightful, and uninvolved. Preferred vocations: Automotive engineer; Boiler maker; Electrician; Farmer
Investigative	Possesses mathematical and scientific ability and lacks leadership ability: values science. Is inclined to be analytical, cautious, critical, complex, curious, independent, intellectual, introspective, precise, rational, and unassuming. Preferred vocations: Chemist; Computer operator; Laboratory technician; Mathematics teacher
Artistic	Possesses artistic and musical ability; values aesthetic qualities. Is inclined to be emotional, expressive, idealistic, imaginative, impulsive, intuitive, non-conforming, original, and sensitive. Preferred vocations: Actor/Actress; Artist; Interior decorator; Photographer
Social	Possesses social competencies; likes to help others. Has teaching ability and lacks mechanical and scientific ability; values social and ethical activities and problems. Is inclined to be co-operative, empathic, friendly, generous, helpful, idealistic, patient, sociable, tactful, and warm. Preferred vocations: Funeral director; Librarian; Minister/Priest; Social Science teacher
Enterprising	Possesses leadership and speaking skills and lacks scientific ability; values political and economic achievement. Is inclined to be adventurous, agreeable, ambitious, energetic, extroverted, optimistic, self-confident, and sociable. Preferred vocations: Contractor; Lawyer; Radio/TV announcer; Real estate sales person
Conventional	Possesses clerical and numerical ability; values business and economic achievement. Is inclined to be conforming, conscientious, defensive, inflexible, methodical, obedient, orderly, thrifty, and unimaginative. Preferred vocations: Bookkeeper; Key punch operator; Post office clerk; Typist

Source: Adapted from Kelso (1986).

Figure 3.1: Holland's Hexagonal Model for Defining the Psychological Resemblances Among Types and Environments and Their Interactions.
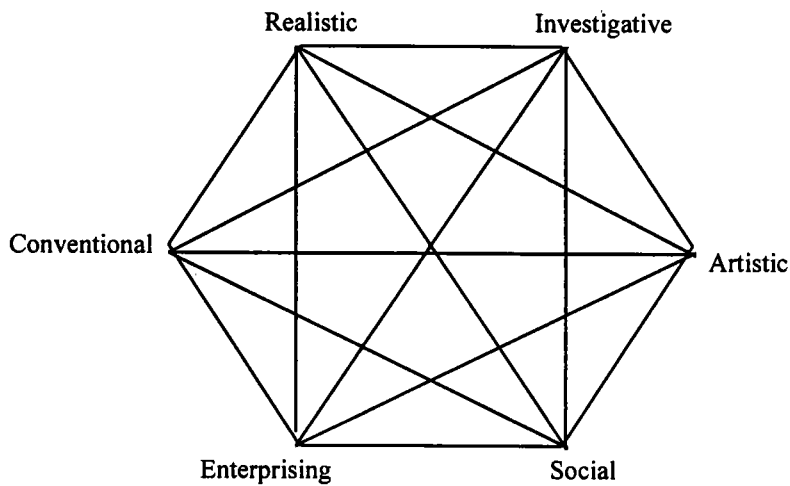
Source: Holland (1985a, p. 29).

Other examples of high consistency patterns are RC, IA, AI, and SE. Low consistency

patterns are RS, IE, AC, and SR, and middle consistency patterns are IS, IC, AR, and SC.

Differentiation is the extent to which a personality pattern is defined. A well-

differentiated pattern is one that resembles a single type very closely (Kelso 1986).

Undifferentiated or poorly defined personality types are people who resemble several of

the six types to about the same degree. Thus, Holland believed that the dominant features

of an individual's personality, represented by his or her type, are the major influence on

his or her choice of vocation. Holland, in extending the theory, believed that personality

types flourish in congruent environments. A congruent environment is one that provides opportunities and rewards that match an individual's preferences and abilities, for example, a Realistic type in a Realistic environment (Holland 1985a). He said that because the "personality types and the environmental models share a common set of constructs, it is possible ..... to predict the outcome of pairing people and environments" (Holland 1985a, p. 34). Therefore, if a certain personality type is placed in a similar environment then there should be "a number of desirable outcomes, such as work satisfaction, achievement, and vocational stability" (Holland 1985a, p. 35).

If Holland's theory is applied to a tourism situation then the personality type (that is, the dominant feature of an individual's personality) may motivate the person to visit the attraction but the consistency and differentiation of the personality pattern will reflect the level of satisfaction derived from the visit.

In response to reviewers who suggested that there must exist more than six kinds of vocational interests, Holland noted that the evidence strongly suggests that there are only four to eight independent kinds of vocational interests and only four to eight different kinds of occupations. He suggested that factor analysis demonstrated that a "limited number of factors account for the individual differences in vocational interests and occupational data" (Holland, Powell and Fritzsche 1994, p. 52). However, he also admitted that the use of six types is a compromise, as six types and their permutations are "easy to comprehend, interpret, and use in practice and research" (Holland, Powell and

Fritzsche 1994, p. 52). He suggested that, although six may not be the correct number, and there is no precise way to determine that number, it is close to the average number obtained by a wide range of diverse methods and data over a long period of time (Holland, Powell and Fritzsche 1994, p. 52).

To make practical use of his typology, Holland initially devised the Vocational Preference Inventory (VPI) (Holland 1958, 1973) and then the Self-Directed Search (SDS) (Holland 1977, 1985b), both of which identify a person's personality and are used as guides to educational and vocational planning. However, the VPI is oriented more to the needs of vocational counsellors engaged in one-to-one counselling, while the SDS relies more on the person's initiative and self-direction as it is self-scored (Holland 1985d). The Vocational Preference Inventory (1985e) is a personality-interest inventory composed entirely of occupational titles. The subjects complete the inventory by indicating the occupations they find interesting and appealing, and those which they dislike or find uninteresting (Holland 1985e). The Vocational Preference Inventory records 11 different aspects, which are the six personality types of Realistic, Investigative, Artistic, Social, Enterprising, and Conventional, and five other dimensions, namely Self-control, Masculinity-Femininity, Status, Acquiescence and Infrequency (which measure atypical vocational preference and help to identify individuals who have been uncooperative or have given random responses) (Holland 1985d).

Holland made the following assumptions in the development of the Vocational Preference Inventory:

- The choice of an occupation is an expressive act that reflects a person's motivation, knowledge of the occupation in question, insight and understanding of self and abilities (Holland 1985d).

- People perceive occupational titles in stereotyped ways. Occupational stereotypes or generalisations are stable over long periods of time and are relatively independent of occupational experience or sex of the perceiver (Holland 1985a).

- Different occupations furnish different kinds of gratification or satisfactions and require different abilities, identifications, values, and attitudes. This assertion has extensive empirical support from studies that relate vocational interests to personality variables, psychiatric status, values, and attitudes (Holland 1985d).

- Interest inventories are essentially personality inventories. Interest and personality inventories are identical in principle and provide similar information about the person, although their content is quite diverse. Both kinds of inventories reveal how the person perceives self and milieu (Holland 1985d).

Holland (1985d, p. 2) pointed out that these assumptions "are crucial, for they are fundamental to the reliability and validity of the inventory".

In the Self-Directed Search (1977, 1985b), individuals answer a series of questions that help them determine which occupations are most suited to their personality type. A three-letter code is produced for each individual, showing the three highest-ranked personality

types for that individual, in order, such as "ESC". In the Self-Directed Search (SDS)

respondents indicate which activities they would like to do and which they dislike doing

or would be indifferent to. Examples of the activities listed under the RIASEC headings

include (with Holland's categories in parentheses): "To use metalworking or machine

tools" (R); "Work on a scientific project" (I); "Read or write poetry" (A); "Help others

with their personal problems" (S); "Head a group in accomplishing some goal" (E); and,

"Keep detailed records of expenses" (C).

Respondents then indicate which activities they can do well or competently and which

activities they have never performed or perform poorly. Examples of competencies

include: "I can repair furniture" (R); "I can interpret simple chemical formulae" (I); "I can

sketch people so that they can be recognised" (A); "I can plan entertainment for a party"

(S); "I have acted as leader for some group presenting suggestions or complaints to a

person or authority" (E); and, "I can file correspondence and other papers" (C).

Respondents also indicate which occupations in the list interest or appeal to them, or

those which they dislike or find uninteresting. The occupations listed include: carpenter

and radio operator (R); zoologist and astronomer (I); journalist, playwright, and composer

(A); speech therapist, and high school teacher (S); salesperson, and hotel manager (E);

and, bookkeeper and bank teller (C). Respondents also rate themselves on a list of traits

when compared to other persons of their own age. The abilities listed are: mechanical

ability and manual skills (R); scientific and maths ability (I); artistic and musical ability

(A); teaching and friendliness (S); sales and managerial skills (E); and, clerical and office skills (C).

Once the SDS has been completed, the respondent adds up the scores for each part of the questionnaire and arrives at a three-letter summary code. Holland's Occupations Finder (1985c) (which lists 1,156 occupations) is then used to locate the occupations that correspond to the respondent's summary code. If no identical code is found then occupations are sought in the Occupations Finder that are similar to the summary code. As Holland, Powell and Fritzsche (1994, p. 3) noted, "by indicating the three types a person resembles most, the three-letter Summary Code allows for complexity of personality and reduces some of the problems inherent in categorising a person as a single type".

Justification for Selecting Holland's Personality Theory

Tracey and Rounds (1993) noted that Holland's (1973, 1985a) theory of vocational personalities and work environments is widely considered one of the most influential career development theories and occupational taxonomies in vocational psychology. It was estimated by Hyland and Muchinsky (1991) that from 1973 to 1990, approximately 700 studies were directed toward various aspects of Holland's (1973, 1985a) theory. Taylor et al. (1979) noted that Holland (1973) has summarised over 100 of these studies with more than 90 providing some support for his formulations.

In a critical review of the 1985 version of the SDS, Daniels (1989, p. 736) stated that Holland's purpose of providing vocational counsellors with a "self-administered, self-scored, and self-interpreted vocational counselling tool" had been achieved. He suggested that the SDS represented a popular means for conducting a search for the proper person-environment match.

As Holland (1985a, p. 24) pointed out:

> "Although there seems to be no one best method to assess a person's personality type, the Vocational Preference Inventory, the Self-Directed Search, and the use of current preference or occupation have either produced more coherent results or have special advantages by virtue of their simplicity or theoretical construction".

Holland's model, therefore, probably represents one of the most thoroughly researched classification schemes in all of applied psychology (Eberhardt and Muchinsky 1984). The theory is operational (the main constructs are well-defined) and has generated a wide range of supportive data (Walsh, Craik and Price 1992). It has been described as a well-researched, practical and highly recognisable career development theory and Miller (1991, p. 364) suggested that "numerous clones of Holland's taxonomy abound in the career development marketplace, testifying to the practicality of Holland's theory". Tinsley (1992, p. 109) noted that the *Journal of Vocational Behavior* currently receives "more manuscripts examining aspects of Holland's theory than any other topic", while

Norman (1994, p. 21) noted that Holland's theory is "tough, practical, compact and useful". Holland's (1973, 1985a) theory specifically measures "interests". This is relevant in the present study as it provides the opportunity to challenge the constant assumption that people visit attractions in which they are "interested". In addition, Holland's (1973, 1985a) theory has not previously been directly applied to tourism which means that this study involves the useful, novel application of a well-regarded tool.

As the SDS was adapted for use in the Australian environment, the present study was able to use the Australian version of the SDS. In the adaptation of the SDS for the Australian environment, changes were made to the terminology, vocabulary, and phraseology where necessary, and several inappropriate items in the self-assessment booklet were replaced entirely. Lokan (1994) noted that advice was sought from several careers teachers and vocational psychologists. In addition, about 50 students in Years 9 and 10 from two different types of school were asked for suggestions concerning out-of-date, inappropriate, or unintelligible items. As a result, most changes were made to the occupational titles with some changes being made in each of the six RIASEC categories (Lokan 1994).

As mentioned earlier, the present study was designed to identify individuals who would be pre-disposed to visit certain types of tourism attractions, and in particular, industrial tourism attractions. In addition, the study was designed to determine if industrial tourism attractions are viewed as being distinctly different from other types of attractions and if

industrial tourism patrons are different from patrons of other types of attractions. Therefore, the study required a surrogate measure to determine how people behave. Although Holland's (1985a) personality theory was originally designed as a guide for occupational choice, it is suggested that the theory can be applied as a guide for tourism choice behaviour, as they are both overt, tangible, manifestations of personality.

Overview of Myers-Briggs Type Indicator

Murphy, Conoley and Impara (1994) noted that there are 669 different commercially published tests currently available to measure personality. One of the better known personality tests is the Myers-Briggs Type Indicator (MBTI). Plog (1994, p. 215) described the MBTI as a "very-easy-to-administer test" which requires little time to be administered and "is not obnoxious to respondents". In the same way that Holland created the SDS based on his theory, so Myers and Briggs created the MBTI based on Jung's (1933) theory of psychological types.

McGuiggan (1998, p. 7) summarised the Myers-Briggs Type Indicator as follows:

"The MBTI describes a person's personality on four dichotomous dimensions indicating a person's preference for source of psychological energy (extraversion versus introversion), perception (sensing versus intuition), making judgements (thinking versus feeling), and orientation to the outer world (judging versus perceiving). The four preferences combine to generate 16 personality types. The

MBTI questionnaire is a forced-choice, self-report inventory, virtually self-administering and designed for use with normal subjects. The questions consist of behavioural preferences and a number of preferred self-descriptive adjectives. Each individual question is designed to elicit a preference for one of the four dimensions. The responses for each question are weighted and a total score for each of eight preferences recorded. The scores are then converted to a preference score for each of the four scales that reflect the relative preference for one pole over the other (taking omissions into account). These four preferences indicate a person's MBTI type".

As with Holland's SDS, Plog (1994, p. 216) noted that the MBTI can be very useful in a psychographic-based research setting and that the dimensions are useful for determining the types of people who are attracted to specific kinds of advertising or who like to participate in selected activities at destinations. He also suggested that it is useful generally in situations that require "greater understanding of the psychology of travellers". However, Plog (1994, p. 216) suggested that the weakness in the MBTI is that "the interpretation of these dimensions requires the analyst to have a strong background in personality theory and clinical research". This contrasts with Holland's SDS which is easily interpreted and understood.

The Application of Holland's Theory

Holland, Powell and Fritzsche (1994) reported that Holland's typology and its tools (the classification, the SDS, and the VPI) lent themselves to applied and basic research in education, business, psychology, and sociology, and highlighted the wide range of research activity that has stemmed from the theory and its typological origins. They indicated also that the SDS, in its published form or with minor changes, has been used successfully with males and females; inner-city, suburban, and rural high school children; college students; young children; and employed and unemployed adults. The following discussion demonstrates that Holland's theory of personality type and the SDS have been successfully applied, not only to career counselling, but to other areas such as educational and leisure choice.

Personality Theory and Career Choice

Rosen, Holmberg, and Holland (1991) derived the Educational Opportunities Finder to be used in conjunction with the SDS. The Educational Opportunities Finder lists over 750 post-secondary fields of study by Holland code. The listing includes "technical and vocational training programs as well as community and baccalaureate college majors" (Holland, Powell and Fritzsche 1994, p. 11). Once the respondent has completed the SDS, reference is made to the Educational Opportunities Finder to "find educational opportunities, primarily programs of study in post-secondary educational institutions, that

are consistent with his or her Holland Summary (or occupational) Code" (Rosen, Holmberg, and Holland 1991, p. 3).

The following paragraph explains how the Educational Opportunities Codes were derived:

"Holland summary codes were assigned to each program of study by one of several methods. Many were derived from the occupation that is associated with the program (for example, the Holland code for Air Traffic Controller was assigned to the program of study of Air Traffic Control). Some programs (for example, Agricultural Business) had no exactly corresponding occupation. In these cases, the NOICC Master Crosswalk, Version 4.0 (National Crosswalk Service Center 1994) was used to identify the most nearly corresponding occupations, from which the code was derived. In a few cases, codes were identified on the basis of the professional judgment of two from a panel of three professional career counsellors. The second edition of the Dictionary of Holland Occupational Codes (Gottfredson and Holland 1989) and the 1994 edition of the Occupations Finder of the Self-Directed Search (Holland 1994) were the sources for the occupational summary codes" (Holland, Powell and Fritzsche 1994, p. 21).

The application of Holland's theory to educational choice was demonstrated during the pilot study for the present study. The author examined the distribution of Holland codes within a group of university students, to try to establish which codes were represented and

the degree of homogeneity of the codes within the group, and hence the relationship between Holland codes and career choice as indicated by tertiary course selection. This objective was of interest in itself, in terms of an initial characterisation of Australian tourism students. However, it also was pursued as a means of 'calibrating' the usage of Holland's approach to the larger issue of tourism behaviour. That is, if the more traditional application of Holland were supported (the prediction of occupational or educational choice), then a form of concurrent validation would be indicated for the results obtained in relation to tourism choice behaviour. In addition, the pilot study was designed, not only to apply Holland's theory to educational choice, but to give the author practice in using the SDS and to test the effectiveness of the instrument in an Australian environment.

Figure 3.2 illustrates the proposed relationship between personality, career choice, and tourism behaviour. It was not intended to pursue, directly, the possible career choice - tourism behaviour linkage in the pilot study and the proposed personality - tourism behaviour linkage, tested as part of the pilot study, is discussed later in this chapter. Therefore, the research hypothesis for this part of the pilot study was that personality, as represented by Holland codes, is related to career choice, as represented by the Holland codes of the university degree program being pursued.

The subjects for the pilot study were 32 second year students who were studying for a Bachelor of Business degree in Tourism Management at a Victorian university. The

Figure 3.2 <u>The Relationship Between Personality Type, Career Choice, and Tourism</u>
<u>Behaviour</u>

Personality $\Longrightarrow$ **Career Choice**

⇑
⇓

Personality $\Longrightarrow$ **Tourism Behaviour**
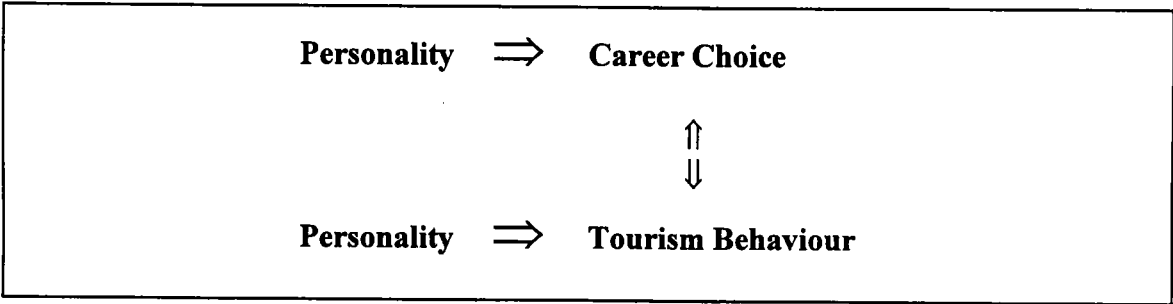
Source: Author.

majority of students were aged between 18 and 24 years, and 78% were female. To

determine the subjects' personality types, the Australian version of the SDS was

completed. A three-letter Summary Code was obtained for each subject from the three

highest summary scores for that subject on the SDS.

The pilot study revealed that the respondents had substantially homogeneous Holland

codes, with the four most common three-letter codes containing the same three letters,

viz., E, S, and C (Table 3.2). [It may be recalled that Holland's typology of six different

personal orientations to life was: Realistic (R), Investigative (I), Artistic (A), Social (S),

Enterprising (E), and Conventional (C).] As may be seen, 20 subjects of the sample of 32

(or 63%) shared these three letters, and overall, of the 96 letters involved in the 32 three-

letter codes, 83 were E (30), S (29), and C (24).

Table 3.2 Holland Codes in the Australian Sample

Holland Three-letter Code	Frequency	Percentage	Cumulative Percentage
ESC	8	25	25
CES	5	16	40
SEC	4	13	53
CSE	3	9	63
ASE	2	6	69
CSA	1	3	72
CSI	1	3	75
EAC	1	3	78
EAS	1	3	81
ESA	1	3	84
ICE	1	3	87
REI	1	3	90
SAE	1	3	93
SEA	1	3	96
SEI	1	3	100
Total	32	100	100

Source: Author.

In order to interpret these findings, it was necessary to know the comparable proportions

of codes in a broader population. That is, do some Holland codes occur more frequently

than others in the total population? Holland, Powell, and Fritzsche (1994) noted that

some codes do occur more frequently than others, with the distribution of SDS codes

(one-, two- and three-letter) across the six categories being extremely uneven. If the

relevant population in this present case is taken to be university or college undergraduate

students, then it is possible to gain some perspective from Table 3.3, although data from

the United States have been used for comparison because Australian data are not

Table 3.3: <u>Distribution of First-Letter Summary Codes for University and High School Students</u>

Holland Code	United States of America College Students			Australian High School Students		
	Male (%)	Female (%)	Average (%)	Male (%)	Female (%)	Average (%)
Realistic	20	2	11	52	2	27
Investigative	16	9	13	19	9	14
Artistic	10	12	11	5	17	11
Social	26	53	40	12	59	36
Enterprising	24	11	18	7	4	6
Conventional	4	13	9	5	10	8
n =	399	716		847	922	

Source: Adapted from Holland, Powell, and Fritzsche (1994) and Lokan (1994).

available for the broad population (the normative sample for Australia being high school students rather than college students).

It appears that the small Australian student sample in the pilot study was not radically different to the large US sample, in that some Holland codes are far more likely to be identified than others (such as 'S'), and that there are sex-related differences in code proportions (although any sex-related differences were not statistically significant in the Australian data, and were not pursued further in the pilot study). However, it would appear that in the pilot study the females studying for a degree in business are different to females in general, in terms of their first code. The dominant 'S' code in US college females may be because more females traditionally study humanities than business related

courses. Table 3.4 indicates that the three-letter codes for the three major university disciplines are somewhat distinct and Figure 3.3 illustrates that only one letter of each of the three-letter discipline codes corresponds to that of the next discipline. This demonstrates that each discipline is substantially different to the next in terms of Holland code. This supports the argument that the respondents in the pilot study were reflective of students studying for a Business degree, rather than a non-business-oriented degree, and is consistent with the Australian results of Taylor and Kelso (1973). However, it is noteworthy that the supposed Holland code for Travel-Tourism Management (ESR) was not recorded for any of the subjects in the Australian sample. In fact, the 'R' code appeared only once in one three-letter code for the entire sample.

Although the results of the pilot study were not conclusive, due principally to the small sample size and its restriction to tourism management students, the hypothesis was supported in that Holland's personality type did seem to characterise the respondents in terms of their manifest career (course) choice. In that light, the pilot study was valuable. Clearly, as the sample was not representative of the whole population, especially as the group was substantially homogeneous in relation to the Holland types, this pilot study confirmed the need for the main survey to have a larger sample size, ensuring the inclusion of more males so that a comparison could be made between males and females.

Table 3.4: <u>Holland Codes for Three Major University Disciplines</u>

Discipline	Subject Name	Holland Code
Science	Physics	IRE
	Chemistry	IRE
	Biology	IRE
Humanities	Humanities	SAI
	Philosophy	SAI
Business	Business	ESC
	Travel-Tourism Management	ESR

Source: Adapted from Rosen, Holmberg and Holland (1991).

Figure 3.3: <u>The Relationship Between the Holland Three-Letter Codes for the Major University Disciplines</u>
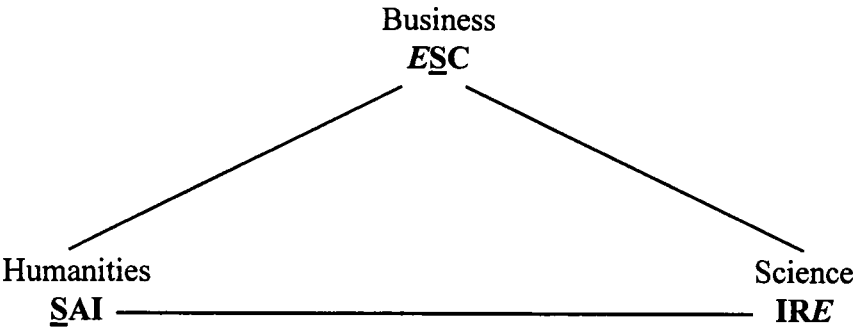
Source: Adapted from Rosen, Holmberg and Holland (1991).

Personality Theory and Leisure Behaviour

This section provides a review of research into the application of personality to leisure activities and then, in particular, the application of Holland's theory to leisure behaviour and to tourism behaviour.

Argyle (1996, p. 4) defined leisure as a general category of behaviour which has certain common themes, that is, the "enjoyment of freely chosen activities carried out for no material gain". Similarly, Beard and Ragheb (1983) defined leisure activities as non-work activities where the individual is under no obligation to participate. These activities can be either active or inactive and may include sports, outdoor activities, social activities, watching television, or reading. Iso-Ahola (1980, p. 201) suggested that "personal experiences establish and modify one's perceived competence which, within the confines of optimal arousal, determines which leisure activities are chosen (if freedom of choice is given)".

Madrigal (1995) noted that various authors have related personality to leisure activity decisions (for example, Allen 1982; Driver and Knopf 1977; Howard 1976; Martin and Myrick 1976; Melamed 1977; and, Moss, Shackelford, and Stokes 1969). Mannell (1984) suggested that most studies of personality as a predictor of leisure behaviour have used general personality inventories to measure individual differences, but that there is a lack of a theoretical approach that could identify leisure-specific personality differences that

may help in understanding leisure behaviour. Nias (1985) also criticised these studies by saying that most of them demonstrated that the relationship between leisure behaviour and personality was not very robust. Similarly, Iso-Ahola (1980) criticised most of these early studies for lacking definitional clarity in variable operationalisations, for failing to rely on theory for the inclusion of specific activities, and for lacking consistency in measuring personality. Recently, McGuiggan (1998) used the Myers-Briggs Type Indicator to test leisure preferences and found that the ability of the MBTI scales to explain leisure attribute preference varied from scale to scale with not all attributes of leisure equally likely to be influenced by personality. Therefore, it would appear that, although researchers have considered the relationship between leisure behaviour and personality there has been to date, limited evidence to support such a relationship. However, this may be due to the lack of an acceptable personality measurement.

Holland's Personality Theory and Leisure Behaviour

A secondary assertion by Holland is that personality types flourish in congruent environments, which suggests that the more an environmental pattern resembles a personality pattern, the more a person will find the environment reinforcing and satisfying. Since a congruent environment comprises, in part, people who have "similar interests, competencies, values, traits and perceptions" (Holland 1985a, p. 49), there is a greater likelihood that a person will participate in those situations or have a greater interest in those environments, than in incongruent environments. A logical extension of

this notion would appear to be that, if the perception of a tourism attraction is that it has a congruent environment for certain types of people, then there will interest among people of those types to visit that environment. Norman (1994) reviewed the six Holland types and six parallel environments and, based on research by Hanson and Campbell (1985) and Walsh and Holland (1992), developed an overview of the types of environments which Holland types would prefer (Table 3.5).

Although the majority of the empirical work has been focused on the use of Holland's theory in education and business, studies have applied Holland's theory to nonvocational aspects of a person's life, to investigate Holland's belief that a person's "personality pattern determines a person's choice of nonvocational activities and recreations" (Holland 1985a, p. 32). It is this relationship that is considered in this thesis.

Following a literature review, it would appear that there are at least 20 studies that have applied Holland's theory to avocational aspects of a person's life. (The term "avocational" is used in this context to describe behaviour other than vocational behaviour.) Much of the empirical research which has used Holland's theory as a basis for measurement and interpretation, and has applied the theory to avocational aspects, focused on testing the following:

- the validity of applying Holland's categories to leisure activities (Taylor et al. 1979; Cairo 1979);

Table 3.5: <u>The Activities and Environments Preferred by Holland Types</u>

Type	Preferred Activities and Environment
Realistic	Like activities and people who represent interest areas such as the outdoors and nature; mechanical, construction and repair activities; and military activities. Preferable environments - the outdoors, and sometimes rural areas.
Investigative	Prefer achievement-oriented environments which stimulate Investigative activities and allow a freedom of work styles, and where other Investigative people predominate - places such as universities, research laboratories, and medical and computer related facilities.
Artistic	Drawn to beauty and aesthetics. Like places where artistic action is stimulated, and where other Artistic people are. The Artistic environment must be unstructured and flexible, where self-expression is allowed. The Artistic environment fosters artistic achievements and competencies, such as places where artistic skills are taught, artistic items are housed, displayed, performed or created.
Social	Prefer environment to stimulate engagement in social activities and foster social competencies, where they can perform their skills and preferred behaviours. Prefer environment to be populated with many other Social people, so they can interact with, or entertain, others. These places may be schools, community agencies, organisations, meetings or special events.
Enterprising	Preferred environments are organisations of people, places where powerful or influential people are, or where they can be involved with entertaining, competition or buying and selling. Such places may be conventions or clubs, large or independently owned businesses, expensive resorts, sporting events, or markets, where the environment rewards display of such Enterprising values and goals as status, power and money.
Conventional	Prefer activities that require attention to detail and accuracy. These include collecting and organising materials, procedures, making models, charts and graphs, maintaining records and financial ledgers, writing reports, and operating business-type machinery. They are not comfortable with ambiguous situations, preferring to know exactly what is expected.

Source: Adapted from Norman (1994).

- the relationship between Holland's personality types, vocational and avocational choices, and life satisfaction (Campbell 1973; Melamed 1977 and 1986; Melamed and Meir 1981; Graef 1986; Chesson 1986; Pusz 1993; Melamed, Meir and Samson 1995; Meir, Melamed and Abu-Freha 1990; Parker 1990);

- the relationship between Holland personality types and the specific selection of leisure activities, i.e., non-work, preference-behaviours (Miller and Tobacyk 1987);

- the relationship between occupational preferences (as derived by the SDS), leisure preferences and sensation seeking (Schenk 1996);

- the extent to which Holland's leisure or vocational measures of interests are congruent with a respondent's self-estimated personality (Randolph 1992);

- the differences between leisure participants by Holland personality type (Norman 1994); and,

- the stability of avocational interests by Holland personality type (Varca and Shaffer 1982; Warren, Winer and Dailey 1981).

All the studies except one (Campbell 1973) demonstrated support for the use of Holland's personality type in predicting leisure activities. This lack of support may be because Campbell used an earlier version of the VPI which has since undergone a number of revisions to substantially improve and update it, with the last three versions requiring changes to only a few items "as it became increasingly difficult to improve the item pool" (Holland 1985d, p. 3). In addition, Holland (1985d) states that the VPI interest scales now

demonstrate concurrent or predictive validity equal to, or exceeding, the concurrent or predictive validities of other scales.

Some of the studies which applied Holland's theory to avocational aspects, allowed respondents to list their preferred leisure activities without providing any prompts, whereas other studies developed a list of leisure activities and asked the respondents to indicate which was their favourite. For example, in the study by Taylor et al. (1979), a Leisure Checklist was developed of 36 leisure activities. The respondents were asked to indicate those leisure activities that they enjoyed. The list was made up of leisure activities taken from Holland's Self-Directed Search (six from each category). Therefore, in none of these studies were tourism activities explicitly included in the list of activities. It was, therefore, only incidental that tourism activities were included in some of the studies, as they were not asked for explicitly. For example, in the study by Taylor et al. (1979), the activities listed in the Leisure Checklist mainly included activities which occur around the home such as: "Reading books and magazines on scientific or technical subjects (I)"; "Writing short stories or poetry (A)"; "Following politics in the newspapers or on radio or TV (E)"; "Tidying up sheds, cupboards, drawers, etc. (C)"; "Making things like model aircraft, dresses, etc., using patterns or instruction kits (R)"; and, "Watching and listening to "in-depth" reports or documentaries on radio and TV (I)". However, the list also included activities which could be defined as tourism activities if people travelled away from their place of normal residence to participate in the activity, such as: "Bushwalking, hiking, camping (R)"; "Attending sports events, pop concerts, films, etc.,

with a group of friends (S)"; "Visiting scientific and/or technical displays, fairs or museums (I)"; and, "Visiting art galleries, exhibitions, plays, or concerts (A)".

In 1990, Holmberg, Rosen, and Holland developed the Leisure Activities Finder (LAF) which is a taxonomy of leisure activities based on Holland codes. By developing the LAF Holland confirmed the applicability of the theory to the identification of appropriate leisure activities and confirmed the need for a way of identifying the most appropriate leisure activities. The 760 leisure activities in the LAF are divided into groups with labels such as Collections, Nature, or Entertainment. Subjects calculate their Holland codes by completing either the SDS or the VPI. Subjects then locate the leisure activities which correspond to their Holland codes from the LAF, in order to identify those activities that would seem to be suitable. For example, the leisure activities listed under Investigative Activities are: Acrobatic flying; Amateur archaeologist; Amateur radio; Animal breeding; Cat breeding; Darkroom processing; Dog breeding; Endangered animals and/or plants; Hang gliding; Historical canals; Horse breeding; and, Hot-air ballooning. Miller (1991) tested the effectiveness of the LAF by having students write down a leisure activity and then separately complete the SDS and work out their leisure activity taken from the LAF. When the two codes were compared there was a high degree of agreement between the two sets of codes.

Similarly to leisure activities, tourism activities use discretionary time but tourism includes "any activity concerned with the temporary short-term movement of people to

destinations outside the places where they normally live and work, and their activities during their stay at these destinations" (Tourism Society 1979, p. 70). However, a tourism activity does not need to involve an overnight stay. Therefore, daytrips can also be included as tourism if the person travels to a destination outside their home area. The more the participation in an activity involves travelling to a destination or the greater the distance travelled to reach the destination, the more likely the activity will be a tourism related activity rather than simply a general leisure activity. Although the LAF is a substantial collection of activities, it contains very few 'tourism' activities, as such. Similarly, in the study by Taylor et al. (1979), the activities such as bushwalking and camping did not require the respondent to indicate the distance travelled to participate in the activity or the travelling time to the destination. Therefore, these studies arguably considered Holland and leisure activities, but not Holland and tourism behaviour.

Personality Theory and Tourism Behaviour

Madrigal (1995) suggested that Plog (1972) was the first person to conduct research on personality type as it applies to tourism behaviour. Plog (1974, 1990, 1991) delineated personality types along a continuum ranging from allocentrism to psychocentrism. Ross (1994) noted that allocentric travellers are thought to prefer exotic destinations, unstructured vacations rather than packaged tours, and more involvement with local cultures. Psychocentrics are thought to prefer familiar destinations, packaged tours, and "touristy" areas. Leiper (1995) noted that Smith (1991) has argued persuasively that

Plog's theory is defective, based on flawed research. Similarly, a study by Nickerson (1989) found that Plog's conceptual travel model was not supported by the data. Hoxter and Lester (1988) also tested Plog's theory. Their results were opposite to those predicted by Plog in that, although Plog asserted that psychocentrics would be nervous and inhibited, their study found that "psychocentric females may be more likely to be stable extroverts" (Hoxter and Lester 1988, p. 177). In addition, McDonnell (1994) re-tested Plog's theory and also found that the theory was flawed. Griffith and Albanese (1996) found some support for Plog's model. However, their respondents were a homogeneous group of undergraduate students with a modal age of 23, at the young, single stage of the family life cycle, so the study had inherent limitations. Therefore, support can be given to Leiper's (1995) suggestion that Plog's theory is merely a teleology, which is useful as a description, but not as an explanation.

Some authors have related personality to travel decisions. Nickerson and Ellis (1991) used Fiske and Maddi's (1961) activation theory of personality development to develop more types of travellers. They described the personality types in terms of destination preferences, travel companions, interactions with local cultures, degree of activity participation, and other distinguishing characteristics. Ross (1994) suggested that the findings of the Nickerson and Ellis (1991) survey show that some personality theories may be useful in explaining tourism phenomena.

Holland's Personality Theory and Tourism Behaviour

Following a literature review, the present author believes that no empirical study has specifically examined the relationship between tourism behaviour, *per se*, and Holland personality types. The principal objective of this thesis, therefore, was to begin the process of addressing this gap. As mentioned above, since Holland's theory extends into environmental settings and a person's "personality pattern determines a person's choice of nonvocational activities and recreations" (Holland 1985a, p. 32), a logical extension of this notion would appear to be that, if a tourism attraction is perceived to have created a congruent environment for certain types of people, then people of those types will be interested in that environment. From a tourism perspective, a person's personality type may be reflected in the choice of holiday destination and the type of activities participated in during the holiday. In addition, a tourist's level of satisfaction with, and enjoyment of, his or her experience may reflect the consistency and differentiation of his or her personality type and the congruency of the environment. If personality is reflected in occupational choice, then personality may also be reflected in the type of tourism experience chosen. Tourists select holidays and activities that interest them. Thus, the destinations chosen and the types of activities participated in while on holiday may reflect a tourist's personality type. For example, a person who chooses to travel with a small group of people to museums and art galleries may be a Social/Artistic type.

In the pilot study for the present study, the author not only examined the Holland codes of university students as discussed earlier, but also tested empirically the applicability of Holland's personality theory to tourism behaviour. To determine their preferred tourist attractions, the subjects in the pilot study were asked if they had ever visited each of a set of 30 named attractions, if they were interested in visiting the attraction in the future, and how likely they were to visit the attraction in the next 12 months (or when it was available next). The list of events included all the events that Tourism Victoria regards as Victoria's hallmark events, whilst the list of attractions included a diverse range of tourism attractions around Victoria (Tourism Victoria 1995). Most of the attractions and events included on the list were Melbourne-based as it was seen as important that the respondents were able to relate to the items on the list.

Three 'involved academics' or 'judges' who have an understanding of the Holland types, were asked to consider the list of named attractions and to rank the three Holland environmental types which most closely characterised each named attraction. As a reminder of the Holland codes, the judges were provided with a brief table which summarised the six environmental types. To reconcile the results of the exercise, a weighting system similar to those which have been used elsewhere for processing Holland codes was applied to the judges' scores, where 1=100, 2=50, and 3=25, suggesting that each number was "twice as influential as the succeeding one" (Kwak and Pulvino 1982, p. 232). By using this process it was possible to produce an overall, indicative Holland code for each member of the set of attractions. Respondents reported

their actual visitation to 30 named attractions on a dichotomous scale (1 = never visited; 2 = visited), and their degree of interest in visiting, and intention to visit those 30 attractions, on separate series of 1-7 scales (high scores indicated greater interest or intention). Table 3.6 lists the attractions, their Holland codes, the number of code letters in common with the dominant 'ESC' code of the sample respondents, and the mean values for the sample on the variables for actual visitation, interest in visiting, and intention to visit. Table 3.6 is ordered by decreasing value of the 'visited' variable, to illustrate the way in which the data were analysed (analogous tables for the other two variables are not shown).

The set of 30 attractions was split at the median of the 'visited' variable (1.13). The total number of common codes for the upper 15 attractions (for this variable, 15 out of 45 possible, that is, the maximum possible commonality was three letters per attraction) was compared with the number of common codes for the lower 15 attractions (for this variable, 17 out of 45), to see if the sample had visited more attractions with similar codes than with dissimilar codes. The result, 15:17, was marginal, so that a null hypothesis could clearly not be rejected. For the 'interest' variable, the ratio of more interested to less interested was 19:13, while for the 'intention' variable, the ratio was 16:16 for the two groups. Obviously, there was little apparent relationship between code similarity and intention to visit, but there may have been some relationship between the degree of code sharing and the overall interest in visiting the attractions.

Table 3.6: <u>Holland Codes for Attractions and Tourism Behaviour</u>

Name of Attraction	Holland Code of Attraction	Frequency of Common Letter (ESC)	Visited Mean	Interest Mean	Intention Mean
Melbourne Moomba Festival	ASE	2	1.9	4.8	4.1
Royal Agricultural Society of Victoria Show (Melbourne Show)	RIS	1	1.8	4.8	4.5
Sovereign Hill, Ballarat	ISR	1	1.8	4.1	2.7
Penguin Parade, Phillip Island	IRS	1	1.7	4.8	3.3
National Gallery, Melbourne	AIR	0	1.7	4.0	3.0
Puffing Billy, Belgrave	RIS	1	1.7	4.3	3.0
Ford Australian Open Tennis, Melbourne	RSA	1	1.6	5.0	4.3
Rialto Towers Observation Deck, Melbourne	IRA	0	1.4	5.5	4.5
Parliament House, Melbourne	IRE	1	1.4	2.8	2.0
Behind the scenes tour of the Melbourne Cricket Ground	IRC	1	1.4	4.0	3.1
Scienceworks Museum, Melbourne	RIC	1	1.3	3.9	2.4
Spring Racing Carnival	SEI	2	1.3	4.5	3.3
Australian Football League Grand Final, Melbourne	SCI	2	1.2	5.3	3.1
International Arts Festival, Melbourne	ASI	1	1.2	4.3	3.2
Backstage tour of the Victorian Arts Centre, Melbourne	IAR	0	1.1	4.0	2.7
Formula One Grand Prix, Melbourne	RSA	1	1.1	4.6	3.2
"Pick-your-own" Fruit and Berry Farm, Drouin West	RIS	1	1.1	3.0	2.8
Melbourne Food and Wine Festival	SAE	2	1.1	4.9	3.5
Our World of Money, Craigieburn (Australian Mint)	REC	2	1.1	3.5	2.3
Bells Beach Surf Classic, Bells Beach	SAI	1	1.1	4.2	2.5
Tour of Western Wastewater Treatment Plant, Werribee	RIC	1	1.1	1.8	1.3
Australian Motorcycle Grand Prix	RIS	1	1.1	3.3	2.2
Bendigo Pottery, Bendigo	RIA	0	1.1	3.2	2.3
Tour of the Australian Stock Exchange, Melbourne	CEI	2	1.1	3.4	2.2
De Bortoli Winery, Dixons Creek	IRS	1	1.1	3.4	2.2
Bureau of Meteorology, Melbourne	CIR	1	1.0	3.2	1.9
Australian International Air Show, Avalon	RIA	0	1.0	3.9	2.7
Victorian Tapestry Workshop, South Melbourne	AIS	1	1.0	2.3	1.7
A Commonwealth or Olympic Games	SIC	2	1.0	6.4	2.0
Powerworks (Formerly tour of SEC power plant), Morwell	RIC	1	1.0	3.0	2.4

Source: Author.

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In order to examine the relationship between the Holland codes of individual subjects and their overall tourism behaviour, the sample was divided into two groups, the first comprising those 20 subjects with three-letter codes containing all three of E, S, and C (regardless of the order of the letters), and the second group comprising the remaining 12 subjects with at least one letter not being E, S, or C. In an attempt to provide some global indications of tourism behaviour, scores on three summate variables were computed for each respondent across the entire subsets of 30 visitation, interest, and intention variables. That is, for example, for each respondent, his or her scores on all 30 attractions were added to produce a total score on visitation across all 30 attractions. This summate score was a measure of 'visitation activity overall' for that person. Similarly, adding each person's 'interest in visiting' scores produced an 'interest in tourism overall' measure, while adding the 'planning to visit' scores produced an 'intention to engage in tourism overall' measure. The three summate variables were recoded into dichotomous variables (split on median values) to enable chi-square analyses to be performed against the two-group split on Holland codes.

The results of the chi-square testing were statistically significant for actual visitation, but not for interest or intention. Those subjects with 'all-ESC' codes were more likely to have visited more tourism attractions than were the residual group. It is not immediately obvious why this should be so, particularly in the sense that the groups should differ on one of the summates but not on the other two.

At the level of individual respondent and individual attraction, chi-square analyses of group membership (all-ESC, or not-all-ESC) against dichotomous visitation, interest, and intention, produced very few statistically significant differences between the two groups. Regarding actual visitation, all-ESC was associated with lower visitation to Parliament and Scienceworks, and higher visitation to Puffing Billy. All-ESC was associated with higher interest in visiting the National Gallery, the Royal Show, and Moomba, but lower interest in visiting Scienceworks. All-ESC was associated with lower intention to visit the National Gallery and the Berry Farm, but higher intention to go to the AFL Grand Final.

Initially, it should be noted that, although these relationships were statistically significant ($p < 0.05$), in the context of 30 relationships being examined in each subset of variables (for example, 30 attractions against actual visitation), the proportion of statistically significant relationships found was low (3/30; 4/30; and 3/30). This raises doubt about the underlying reality of the apparent differences, as at the 0.05 level, five per cent of the apparently significant relationships could, in fact, be spurious.

At face value, there was some support for the Holland approach in that the all-ESC subjects had both lower visitation to Scienceworks as well as lower interest in visiting it, which is consistent with the notion of an 'incongruent' environment not attracting particular personality types. However, Scienceworks was actually assessed as having one common code (C), as do Science courses (E). Explanation is required of the finding of high ESC interest in visiting the National Gallery, but low intention to visit. The Gallery

was coded as AIR, i.e., with no common codes with ESC. Overall, there was little consistency between the nominated codes for each attraction, and the degree of differential behaviour by the respondents.

As mentioned earlier, the results of the pilot study were not intended to be conclusive, due principally to the small sample size and its restriction to tourism management students. Rather, the results were intended to provide an indication of the usefulness of the Holland approach to the study of tourism choice behaviour. The pilot study showed that there was some support for the hypothesis, in that there were some distinctions apparent in relation to aspects of tourism choice behaviour, although the main benefit of the pilot study in this respect was to reinforce the need to adopt a multifaceted approach to behavioural assessment.

Tourism Behaviour and Demographics

Breathnach et al. (1994, p. 57) suggested that conventionally, in gender studies research, where there has been no allowance made for gender differences, this is because of a gender bias that "subsumes female behaviour into that of the dominant male pattern". However, it is suggested that in the present study, gender, as well as other demographics should be taken into account when considering tourism choice behaviour.

In the leisure area, there has been a number of studies that have considered gender differences in leisure participation (for example, Firestone and Shelton 1994; Henderson 1994; Shaw 1994; and Jackson and Henderson 1995). However, only a small number of tourism researchers has considered gender, as a basis for segmentation, in tourism (for example, Norris and Wall 1994; Swain 1995; McGehee, Loker-Murphy and Uysal 1996). McGehee, Loker-Murphy and Uysal (1996) examined the differences in push and pull motivational factors according to gender. Push factors can be viewed as a specific component of personality but push factors are only one of an array of internal characteristics, being only a small component in the overall personality type of an individual.

Gender-based research was used when applied to business travellers (Tunstall 1989; Lutz and Ryan 1993; and McCleary, Weaver and Lan 1994) and the general conclusion of these particular studies was that there were differences in travel behaviour between males and females, but there were also many similarities. Slavik and Shaw (1996) noted that this highlighted the importance of using gender as a variable to identify not only what differences exist, but also the degree of difference.

Regarding the relationship between gender and tourism behaviour, Kinnaird and Hall (1994, p. 5) suggested that, since tourism is a process constructed out of gendered societies, "all aspects of tourism-related development and activity embody gender relations". They suggested that women's and men's differential experience of various

recreational activities, and the socialisation of girls and boys to enjoy and participate in gender-specific activities, have an influence on motivation and behaviour. Kinnaird and Hall (1994) also noted that all societies, whether acting as host or guest, embody a changing set of gender perceptions, stereotypes and relations, and articulate these as part of their individual notions of "reality". This has implications for the marketing of tourism and for the motivation for the guests to visit. In the present study it is proposed that there is a relationship between an individual's personality and gender and their tourism choice behaviour. Figure 3.4 illustrates the proposed relationship between personality and gender and tourism choice behaviour.

In relation to research into the influence of stage in family life cycle in tourism choice behaviour, Hudson (1998, p. 166) noted that "the perspective of life cycle has proven to be a useful conceptual and analytical framework to investigate the experience of leisure constraints and support for strategies to alleviate them". Two researchers (Lawson 1991; and Fodness 1992) found that stage of the family life cycle was influential in travel behaviour, and other recent studies in this area considered the tourism behaviour of the over 50s (Javalgi, Thomas and Rao 1992; and Zimmer, Brayley and Searle 1995). With regard to the influence of occupations, Melamed and Meir (1981) demonstrated that people in congruent occupations see their preferred leisure activities as an extension of the kind of activities they engage in at work. The study also demonstrated that people in incongruent occupations compensate for this situation by selecting compensatory leisure activities (Holland 1985a). From a tourism choice behaviour perspective, a person's

Figure 3.4: The Relationship Between Personality, Gender, and Tourism Behaviour
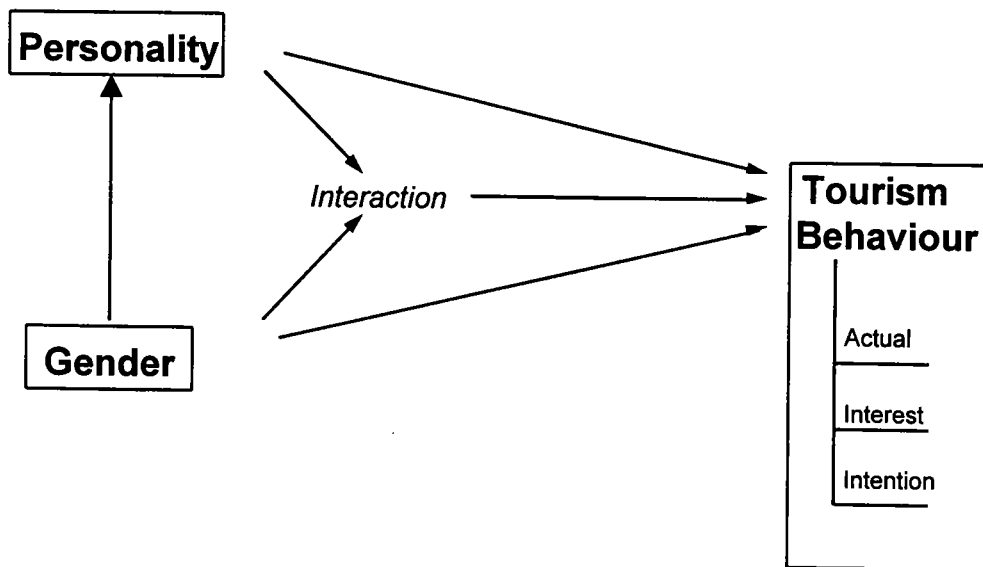
Source: Author.

personality type and the congruence of his or her occupation may be reflected in the choice of tourism destination and the type of activities participated in during the tourism period. For example, an office worker who has an artistic personality may be motivated to visit museums and art galleries during his or her leisure time.

Norman (1994, p. 70) stated that other researchers (Bergier 1982, Dottavio, O'Leary and Koth 1980; Field and O'Leary 1973; Howard 1976; Howard and Crompton 1984; Iso-Ahola 1980; Kelly 1980, 1989; Proctor 1962; Romsa and Girling 1976; Snepenger and

Crompton 1985) found that the variables of age, gender, education, and income were poor discriminators of leisure behaviour. He suggested that because the recreation literature suggested that activity styles are driven by more than demographic variables, that "other aspects of participants of activities, or characteristic opportunities of activities, may be more useful in determining who participates in which activities". In the present study, demographics, personality and past visitation will all be taken into account in predicting tourism choice behaviour.

The following section of this chapter offers some research propositions which attempt to apply Holland's theory of personality types to tourism behaviour. Preceding each proposition, the reader should include the caution of "Other things being equal", for example, age, gender, ethnicity, geography, social class, physical assets or liabilities, educational level attained, and intelligence (Holland 1985a, p. 12).

Research Questions

Based on the preceding literature review, the following two research questions and two research propositions were developed:

R 1   Are industrial tourism attractions distinctly different in terms of other types of tourism attraction?

R 2   To what extent are the following useful in identifying tourism choice behaviour in relation to industrial tourism attractions:

  - Holland's personality theory?

  - Demographics?

  - Past visitation to named tourism attractions?

Research Propositions

P 1   Groups of visitors to certain types of tourism attraction have similar personality patterns.

As outlined above, by knowing a person's personality type it is possible to hypothesise on his or her preferred holiday destination and the types of activities participated in. Holland (1985a, p. 16) believed that "types are attracted to types". Therefore, it is suggested that groups of people with similar personalities travel together to visit attractions, and participate in activities in which they are all interested.

P 2   When the environment at a tourism attraction resembles a certain personality pattern, it is likely to attract its associated personality type.

Holland (1985a) believed that types flourish in congruent environments and suggested that the more an environmental pattern resembles a personality pattern, the more it

attracts its associated personality type. Since a congruent environment is made up of

people who have "similar interests, competencies, values, traits and perceptions"

(Holland 1985a, p. 49), then a visitor to that environment is likely to be interested in the

environment. If a tourism attraction has a congruent environment by allowing a certain

type of person to dominate, then more of that similar type of person will be interested in

the environment and is more likely to visit. Similarly, from a behavioural perspective,

Holland (1985a, p. 50) suggested that the interaction of a differentiated person and a

differentiated environment will be the "most predictable and intense" because a "well

defined (predictable, and therefore understandable) person is interacting with a well-

defined environment that has a focused influence".

Hypotheses

Based on the preceding literature review, research questions and research propositions,

the following seven hypotheses were developed:

H 1   Industrial tourism attractions are distinctly different in terms of other types of

        attractions.

H 2   Personality (as represented by Holland codes), is related to tourism choice

        behaviour, as represented by:

              (a) actual visitation of named tourism attractions

(b) the degree of interest in visiting named tourism attractions, and

(c) the degree of intention to visit named tourism attractions.

H 3   Gender is related to tourism choice behaviour, as represented by:

(a) actual visitation of named tourism attractions

(b) the degree of interest in visiting named tourism attractions, and

(c) the degree of intention to visit named tourism attractions.

H 4   There is a variation in the number of statistically significant relationships between named industrial tourism attractions and tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions

(b) the degree of interest in visiting named industrial tourism attractions, and

(c) the degree of intention to visit named industrial tourism attractions.

H 5   Demographics (as represented by gender, occupation, age, education, number of dependent children, marital status, and income) and personality (as represented by Holland code), are related to tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions

(b) the degree of interest in visiting named industrial tourism attractions, and

(c) the degree of intention to visit named industrial tourism attractions.

H 6   Demographics (as represented by gender, occupation, age, education, number of dependent children, marital status, and income) as well as personality (as represented by Holland code), are related to tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions

(b) the degree of interest in visiting named industrial tourism attractions, and

(c) the degree of intention to visit named industrial tourism attractions.

N.B. H5 and H6 are subtly different in that H5 considers demographics and personality separately, while H6 considers demographics plus personality simultaneously.

H 7   For industrial tourism attractions, there is a direct relationship between actual visitation of named attractions and:

(a) the degree of interest in visiting named industrial tourism attractions, and

(b) the degree of intention to visit named industrial tourism attractions.

Conclusion

This section of Chapter Three suggests that Holland's theory of personality types can be used to explain tourism choice behaviour as it suggests that an attraction must be of personal interest to individuals and reflect their personality type before they are interested in visiting or intend to visit. As mentioned above, surprisingly few studies have considered the relationship between personality and tourism choice behaviour, and demographics and tourism choice behaviour. Further, to the knowledge of the author, there have been no studies that have considered the interactive relationship between personality, demographics, and tourism choice behaviour. The present study attempts to address that gap. Therefore, the focus of this thesis is the conceptualisation of industrial tourism and testing empirically to determine if industrial tourism attractions are perceived as being distinct from other types of attractions. The thesis also tests the applicability of one theory of personality (Holland's personality theory) to the prediction of tourism choice behaviour, and considers the potential association between demographics and personality as it relates to tourism choice behaviour.

Summary

Chapter Three provided an overview of Holland's personality theory and the application of the theory to leisure activities. The chapter demonstrated that Holland's personality theory is a highly respected theory which has high levels of reliability. Research

propositions and hypotheses were advanced which consider the relationship between tourism choice behaviour at tourism attractions and Holland's personality theory. The next chapter in this thesis is a review of the methodology used to address the research questions and explains how the data were collected and analysed.

CHAPTER FOUR

METHODOLOGY

Introduction

Chapters Two and Three identified the literature that exists in relation to tourism attraction theory, the concept of industrial tourism, Holland's personality theory and the application of Holland's theory to leisure activity choice. It was demonstrated that there are gaps in the literature in relation to the empirical testing of the concept of industrial tourism and in testing Holland's personality theory in relation to tourism choice behaviour. Therefore, this study is designed to generate primary data to answer the research questions in those areas.

Chapter Four describes the primary data that were sought and how the subjects in the sample were selected. The chapter describes when the survey was conducted and how the data were gathered. The chapter also identifies the statistical treatments that were used in the analyses of the data and identifies the techniques and approaches that were used to establish research validity and reliability. The chapter also explains how missing data were dealt with and why some data were excluded from the analysis. It also explains how the occupational responses were coded. Therefore, Chapter Four details the research process.

Pilot Study

In any study it is important to establish reliability. Reliability is described by Zikmund (1994, p. 288) as "the degree to which measures are free from error and therefore yield consistent results". As reliability can be measured by applying tests to the research instrument, the following section describes the range of reliability tests that were carried out in the present study.

Prior to the main survey, a pilot study using the whole questionnaire was conducted using a convenience sample of university students. A substantial part of the questionnaire was made up of the SDS. However, it was still considered desirable that the whole questionnaire be pretested. Pretesting was carried out on a group of second year students who were studying for a Bachelor of Business degree in Tourism Management at Victoria University of Technology. Amendments were made to the questionnaire based on their responses. Overall, the pretesting revealed that:

- the questionnaires could be administered in less than 45 minutes;

- the format was clear and logical; and

- the questions were not ambiguous.

To ensure that the respondents spent a minimal amount of time on the completion of the questionnaire, the SDS was shortened by the removal of a number of non-essential pages. Lokan (1994) stated that there are certain constraints that govern adaptation of a well-

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known and well-tried instrument such as the SDS. She suggested that the most obvious of these are that the adaptor should endeavour to keep the same dimensions and items as are in the original version, and that changes should be made only for good reasons. The following discussion justifies using a shortened version of the SDS and shows that, by removing the non-essential pages, the dimensions of the original version were unchanged.

The coversheet of the SDS explained the general concepts of the SDS to subjects and contained space for subjects to fill in their name, age, sex, date, school or organisation and class. The present study did not require the subject's name, date, school, organisation or class. Information on the subject's age and sex was gathered later in the questionnaire with other demographic details. Therefore, the coversheet was omitted.

The second page of the SDS asked the subjects to indicate their Occupational Daydreams. This element is useful when individuals complete the questionnaire themselves as they can compare their daydream occupation with the occupations suggested on completion of the SDS. However, this section was not necessary for the present study, as completion of the SDS was to indicate the subjects' personality type rather than for career counselling purposes. Holland, Powell and Fritzche (1994) stated that another version of the SDS, called Form CP, designed for use with professionals and adults in transition, also excluded the Occupational Daydreams page as it was deemed less valuable for professionals with employment histories. Therefore, as the individuals were not being tested for occupational counselling, the author felt justified in excluding this page as it

did not affect the main questionnaire. Therefore, the page on Occupational Daydreams was omitted.

Page nine of the SDS was omitted as it was designed for the subjects to organise their answers. In addition, pages 10, 11 and 12 entitled "What Your Summary Code Means", "Some Next Steps", and "Duplicate Summary Page" respectively, were omitted as they were deemed not to be necessary for the study. Therefore, a total of six pages were omitted from the SDS. However, each of these pages was either unnecessary in the present study, viz., "Some Next Steps"; "Duplicate Summary Page"; respondent's contact details; or were deemed not valuable, i.e., "Occupational Daydreams". Appendix 2 contains a blank copy of the complete SDS with all the original pages included.

Following the completion of the pilot study questionnaire, the respondents were asked to provide feedback on its content and layout. Based on their feedback and subsequent review of the questionnaire, two minor amendments were made. The first amendment was in relation to Question Four of the questionnaire. Question Four asked respondents to indicate the number of people who had accompanied them during their most recent visit to a tourism attraction. However, if the most recent visit to an attraction was as part of a large group, the respondents had difficulty in accurately completing the table provided. It was, therefore, decided to include a filter question if the size of the group was more than six people. Respondents in the main study with more than six people in their group then completed a slightly different section. The second amendment was in relation to the

question of age of the respondent as it was found to be more appropriate to include a range of age groups in the questionnaire rather than asking for the respondent's specific age.

The SDS has an internal-comparison reliability which can be tested after the study has been conducted. In the SDS the same types of questions are repeated four times, i.e., the subjects repeatedly indicate which activities and interests they can do well or competently in relation to the six personality types. Therefore, if respondents score highly in Realistic Interests they are likely to score highly in Realistic Competencies. Thus, the repeated questions in the SDS could be viewed as "internal-comparison reliability (comparing the responses among the various items on a multiple-item index designed to measure a homogeneous concept" (Tull and Hawkins 1984, p. 241). By checking the respondents' results before the analysis, the criterion validity of the SDS could be confirmed. As discussed earlier, the pilot study found that the sample had the Holland personality type reflective of students studying for a Business degree, rather than a non-business oriented degree. Therefore, the pilot study confirmed the internal comparison reliability of the SDS in an Australian environment, with the traditional application of Holland's theory in the prediction of occupational or educational choices, being supported.

Subjects

It was necessary for this study to generate data from a large number of respondents to ensure a high degree of external validity and to be able to carry out multivariate statistical analyses of the data. This would be especially important when the data were subdivided into cells for clustering. It was, therefore, believed that 500 respondents were needed to create a statistically defensible sample.

Table 4.1 lists the sample sizes needed for a range of population sizes. It demonstrates that for a city with a population of more than 500,000, to achieve a confidence level of 95 per cent and a reliability of less than five per cent error, a sample of more than 306 was required. Therefore, the subjects were 500 adult Melbourne residents (aged 18 or above). Adults, aged 18 or above, were selected as it was believed that by 18 years of age individuals make their own choices about their tourism behaviour and have independent sources of finance. Melbourne was selected as the city from which to gather the data as Melbourne offers a large population of 3.2 million residents (Tourism Victoria 1995) in which to gain a good cross-section of different types of people. Although the SDS is a self-completion instrument, it was decided to conduct face-to-face household interviews rather than posting the questionnaires to respondents. Household interviews were chosen for the following reasons:

- use of the SDS relies on a person to be nearby to answer any queries that may arise. Holland, Powell and Fritzsche (1994, p. 15) noted that "the SDS is most effective

Table 4.1: <u>Means of Determining Sample Size when Size of the Population is Known</u>

Size of Population	Sample Size for Reliabilities of:			
	± 1% Point	± 2% Point	± 3 % Point	± 5% Point
1,000	*	a	353	235
2,000	*	760	428	266
3,000	*	890	461	278
4,000	*	938	479	284
5,000	*	984	491	289
10,000	3,288	1,091	516	297
20,000	3,935	1,154	530	302
50,000	4,461	1,195	538	304
100,000	4,669	1,210	541	305
500,000 to ∞	4,850	1,222	544	306

* In these cases, more than 50 percent of the population is required in the sample. Since the normal approximation of the hypergeometric distribution is a poor approximation in such instances, no sample value is given.

Source: Zikmund 1994, p. 412.

when it is taken at home, in a library, in a private office, or wherever a person can concentrate and work independently. Private settings appear to be conducive to greater involvement, fewer scoring errors, and most beneficial outcomes".

- the interviewers were able to use Show Cards of non-SDS questions to speed up the time taken to complete the questionnaire.

- the interviewer was there to probe and provide explanations on the other parts of the questionnaire which would ensure fewer missing data. Zikmund (1994) noted that an important characteristic of personal interviews is the opportunity to probe, where the interviewer asks for clarification or expansion of answers to standardised questions. It,

therefore, provides the opportunity for respondents to enlarge on, clarify or explain answers.

In the interests of speed and quality, it was decided to appoint a team of professional interviewers to execute the questionnaire, entirely under the direction of the author. The author was able to secure funding from the Faculty of Business and the Centre for Hospitality and Tourism Research at Victoria University of Technology that allowed the desired sample size to be surveyed and allowed a professional team of interviewers, from a reputable Melbourne marketing research firm, to be employed.

A random cluster sampling design was used to select the starting points for the survey. The purpose of random cluster sampling is to "sample economically while retaining the characteristics of a probability sample" (Zikmund 1994, p. 374). The starting points were drawn from Melbourne households within the Melbourne Statistical Division, as provided by the Australian Bureau of Statistics in the latest Census of 1991. It was decided to have 100 starting points and conduct five interviews at each start point to generate 500 respondents from 100 locations. The 100 starting point locations created a geographic spread of respondents across the Melbourne Statistical Division to ensure that the sample was as "heterogeneous as the population itself" (Zikmund 1994, p. 375). In addition, as only five interviews were conducted at each start point, it allowed 100 neighbourhoods to be sampled. This avoided interviewing many residents in a small number of geographic neighbourhoods who "tend to have the same socioeconomic status" (Zikmund 1994, p.

376).

A team of 12 professional interviewers was employed to conduct the personal interviews. The interviews were conducted from 16 November 1996 to 5 December 1996, over a period of 20 days. Prior to the interviews being conducted, discussions occurred between the author and the marketing research company, to determine the best method of achieving a satisfactory response rate. It was decided that the interviews were to be conducted between 10 am and 6 pm during weekends to ensure a high response rate, with a good cross-section of the population being at home at that time. However, to complete the interviews in as short a period as possible (especially as it was nearing Christmas), it was decided also to interview people during weekday evenings, between 4 pm and 9 pm. It was felt that the closer to Christmas the interviews were carried out, the higher the rate of refusal, or the greater number of householders not being at home. Table 4.2 lists the interview days and number of interviews conducted on each day.

On the interview days, a starting point was provided to each interviewer and was marked on the interviewer's callsheet. The interviewers, working individually, called at the first available private dwelling and then, keeping their left shoulder to the wall, proceeded around the block. If the interviewers had not completed the quota for the area on the first block, and they had arrived back at the starting address, then they crossed the street and started door knocking on the second block, again walking with their left shoulder to the wall. To gain 500 interviews, the team of 12 interviewers visited 4,099 households. Of

Table 4.2: Date and Number of Interviews Conducted

Dates in 1996	Number of interviews achieved on each day
Saturday 16 November	46
Sunday 17 November	51
Monday 18 November	19
Tuesday 19 November	15
Wednesday 20 November	13
Thursday 21 November	6
Friday 22 November	15
Saturday 23 November	67
Sunday 24 November	30
Monday 25 November	22
Tuesday 26 November	20
Wednesday 27 November	21
Thursday 28 November	11
Friday 29 November	15
Saturday 30 November	61
Sunday 1 December	39
Monday 2 December	19
Tuesday 3 December	15
Wednesday 4 December	3
Thursday 5 December	12
Total	500

Source: Author.

those households, 2,002 residents were not at home, 1,274 residents refused to be interviewed, and 323 residents were non-qualifiers, that is, people who work in marketing research or were underage, housesitters, drunk, or senile. The researchers would call back if a suitable person was not at home, or, if the suitable person was busy, they would call back later in the day. Validation and auditing were conducted by the research contractor. Every questionnaire was checked to ensure it was complete, accurate, and consistent and

that probing had been done correctly. Auditing also included analysis of call sheets. Ten to 20 per cent of each interviewer's work was validated by re-contacting the respondents, either by telephone or by in-field checks.

Experience has shown that in household interviews, it is the female of the household who most often completes any door-to-door interviews. In the survey there was a need for a balance between the number of males and females interviewed. Therefore, the interviewers were instructed that in situations where there was a choice between interviewing the male or female of the household, the interviewers should choose to interview the male. If the householder was busy when the interviewers initially called at the house, the interviewers were instructed to ask if they could call back later, or when it was more convenient. The interviews ranged in length from 35 to 50 minutes. The interviewers were instructed to reassure the householder about the confidentiality of the data collected.

For the survey to be successful, it was necessary for the respondent to seriously consider the questions and to give honest, considered and frank responses. It was also important for the interviewer to be able to promptly and consistently clarify any questions and ensure that no questions were left unanswered. To ensure that the 12 interviewers understood how to best conduct the survey, a briefing session was conducted by the author on the Thursday prior to the commencement of the field work. During the briefing session, the author emphasised that, since some of the sections were of a personal nature,

the interviewers should scan the completed questionnaires to ensure that all sections had been completed rather than be seen by the respondents to read their responses. Appendix 3 contains a copy of the briefing notes provided to the interviewers prior to the commencement of the survey.

The provision of Show Cards as part of the questionnaire allowed the respondent to follow the sequence of questions and greatly enhanced the smooth flow of the interview. The Show Cards used were for the following parts of the questionnaire:

- The list of attractions;

- Whether the respondent had actually visited, was interested in visiting, or intended to visit named tourism attractions;

- With whom they visited the most recently visited attraction;

- The gender of each person in the group;

- The age group of each person in the group;

- The relationship of people in the group to the respondent;

- Satisfaction with present job;

- Suitability to present job;

- Age category;

- Highest education level achieved;

- Marital status;

- Number, age and gender of dependent children living at home; and

- Total family income from all sources.

For some of the questions, the interviewers recorded the comments on behalf of the respondents by filling in the boxes or writing down their response on the answer sheet. However, for the SDS, the respondents completed the sections themselves.

Research Methodology

This section of Chapter Four discusses the data needed to answer the research questions, the means of obtaining the data, and the type of research instrument that was used to gather the data, that is, the questionnaire. The section then describes the selection and analysis of data to obtain information to answer each research question.

In this study, the dependent variables (that is, the variables that are to be predicted or explained) are the actual visitation of, interest in visiting, and intention to visit named tourism attractions and, in particular, industrial tourism attractions. The independent variables (that is, the variables that are expected to influence the dependent variable) are the personality of the respondent as generated by the SDS, demographics (that is, the respondent's gender, occupation, age, education, number of dependent children, marital status, and income) and actual visitation (that is, the extent to which actual visitation influences interest in visiting and intention to visit).

The Data Needed

It was necessary to have information on demographics to test the extent to which demographics influence decision making in tourism choice behaviour. It was also necessary to have information on both non-industrial tourism attractions and industrial tourism attractions, as this would demonstrate if respondents identified industrial tourism attractions as being different, when cluster analysis was carried out.

To determine individual preference based on personality, it was necessary to have data on respondents' overt and covert behaviour, that is, actual visitation (overt), interest in visiting (covert) and intention to visit (covert). It is suggested that this would reveal respondents' planned behaviour without the influence of demographics. If only actual visitation were measured, this would not show how individuals would behave if they had no restrictions on their tourism choice behaviour, such as time and money. For example, individuals may not have actually visited an attraction because, at present, they care for young children at home and do not have the time to visit attractions. However, if individuals were asked if they are interested in visiting, or intend to visit named tourism attractions, this may reveal a different set of responses, and may more fully reflect an individual's personality.

<u>The Means of Obtaining the Data</u>

The questionnaire involved both self-completed and interviewer-asked questions. The questionnaire was divided into three sections which were as follows: tourism attraction visitation, i.e., actual visitation, interest in visiting and intention to visit; a shortened version of the Australian SDS (as described earlier), and demographics. To determine their preferred tourism attractions, respondents reported their actual visitation of 31 named attractions on a dichotomous scale (1= never visited, 2 = visited), and their degree of interest in visiting, and intention to visit those 31 attractions in the next 12 months (or when they were available next), on a separate series of 1-7 scales (high scores indicated greater interest or intention). The three measures of tourism behaviour captured overt and covert behaviour, past and future behaviour, and the relationship between stages in the consumer decision making process. Subjects also provided demographic data which included: gender, occupation, age, education, number of dependent children, marital status, and household income.

In general, the attractions chosen for use in the study were ones that appeared in a list of the leading State tourism attractions, and included events (Tourism Victoria 1995), and 12 industrial tourism attractions. Virtually all of the attractions and events were in Victoria with the majority being Melbourne-based, as it was important that the respondents were able to relate to the items on the list. For example, the attractions listed included the National Gallery of Victoria, the Australian Football League (AFL) Grand

Final, the Melbourne International Comedy Festival, Sovereign Hill (Ballarat), the Moomba Festival, and industrial tourism attractions such as Bendigo Pottery (Bendigo).

The Location of the Data

The data which relate to Research Question One, "Are industrial tourism attractions distinctly different from other types of tourism attractions", are based on the factor and cluster analysis carried out on the interest in visiting and intention to visit all attractions. The data which relate to Research Question Two, "To what extent are Holland's theory of personality type, demographics and past visitation useful in identifying tourism choice behaviour at industrial tourism attractions", are based on the proportion of statistically significant results from the following analysis:

- the relationship between Holland code and actual visitation, interest in visiting and intention to visit;

- each individual demographic variable and actual visitation, interest in visiting, and intention to visit, plus combinations of demographics and the three measures of actual, interest, and intention; and,

- using actual visitation as an independent variable and considering it in relation to interest in visiting and intention to visit.

The analysis is therefore based on responses from three sources: Section A, Questions 1-34; personality codes generated by the SDS; and the demographics. Appendix 4 contains a blank copy of the complete, original questionnaire. (It should be noted that to overcome

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the high cost of field data collecting and to obtain a research grant for this project, Sections D and E of the questionnaire contain questions included by a colleague at Victoria University of Technology that were used in a separate project. Thus, Sections D and E of the questionnaire contain questions on List of Values and Psychographics that do not apply to the present study. However, the remaining questions were developed under the direction of the author and are relevant to the study.)

Screening of the Data

Data considered in this thesis relate to the original survey data. Some of the data were rejected, not because the data did not support the hypotheses, but because of their quality. When a whole questionnaire was rejected it was because of partial responses, rather than the respondents not providing the "proper answer". The following discussion justifies the rejection of the data.

Cases with Holland Missing Values

Of the 500 cases, there were 57 cases that had Holland missing values, that is, the respondent had not answered sections of the SDS in relation to Activities, Competencies, Occupations and/or Self Estimates. There were eight cases that had more than four Holland missing values. Of these eight cases, each had between 14 and 84 Holland missing values. As these responses were crucial to the analysis, it was decided to omit

these eight cases. There were 45 cases where the number of Holland missing values ranged from one to four (Table 4.3). (There were no cases with Holland missing values between four and 14.) Rather than omit all 45 cases, it was decided to carry out a norming or normative exercise. Therefore, for each of the cases with one to four Holland missing values, the mean score of "likes" or "yeses" for that sub-section was calculated and a new sub-total was allocated, if necessary. This created a mean score for the sub-section with the Holland missing value and so allowed those cases to be used in the analysis. This exercise provided a new overall sub-total for each of the 45 cases. For example, if a case had a missing value in the Activities sub-section of the SDS, the mean score for the sub-section was generated by multiplying the possible questions in the sub-section Activities by the number of "likes" or "yeses" given and dividing by the total number of questions answered.

The following formula was generated and used:

Mean score for sub-section =

> Possible questions in sub-section
>
> <u>Multiplied by the number of "likes" or "yeses" given in sub-section</u>
>
> Total number of questions answered.

If the sub-section score was more than the original, then the new score was placed in the total of the sub-section. Of the 45 cases, there were 28 cases where, following the use of the formula, changes were made to the Holland sub-total. Of the 28 cases, there were five

Table 4.3: <u>Cases with Between One and Four Holland Missing Values</u>

Number of Holland Missing Values	Number of cases
1	29
2	12
3	3
4	1
Total	45

Source: Author.

cases that had two changes in sub-total, that is, there were 33 changes made to sub-totals.

Of the 500 cases, two respondents had not completed the Holland Self-Estimate question. One subject had not completed three Holland Self-Estimates. Since the Holland Self-Estimates make up a large proportion of the total Holland personality score it was decided to omit this case. The other subject had not completed one Holland Self-Estimate, which was a Self-Estimate on Artistic Ability. It was, therefore, decided to create a response for this question based on the previous answers provided in the SDS to questions on Artistic Activities, Competencies and Occupations. The following formula was generated:

Self-Estimate for Artistic Ability =

Total number of Artistic "likes" or "yeses" provided by respondent

<u>Multiplied by highest score provided in Self-Estimate section</u>

Total number of Artistic answers possible

Therefore, Self-Estimate for Artistic Ability = (3 x 7) divided by 32 = 0.7 ~ 1. For this

case, the number 1 was allocated for the Self-Estimate for Artistic Ability.

In developing the formula shown above, a correlation was run. It was noticed that there are substantial differences in the sample between the totals provided in the Activities, Competencies and Occupations section and the Self-Estimates section. This may reflect a weakness in Holland's theory. This weakness is discussed in the Recommendations for Further Study in Chapter Six.

For the 29 cases (including the Self-Estimate case) which had been allocated new subtotals, it was necessary to compute new Holland totals for those cases. Holland totals are created when all the six sub-totals in the SDS are totalled to give a result such as, R = 28; I = 27; A = 12; S = 5; E = 6; and, C = 26. The sub-totals are then listed in numerical order, to provide the respondent's code. In this example, the respondent's three-letter code would be RIC. The Holland total is created when the first three sub-totals are added together. In this example, the Holland code is 28 + 27 + 26 = 81. Of the 29 cases that had new sub-totals, there were seven cases where it was necessary to change the order of the six letter personality score. Once the changes were made to those seven cases, two new six letter personality scores were created.

This section of Chapter Four has discussed in detail the techniques that were used to deal with cases that had Holland missing values, and it was explained that of the 57 cases with Holland missing values, nine cases were omitted.

Cases with Tied Scores

In the sample, there were 27 cases that had tied first and second place scores. In other words, when the sub-totals in the SDS were totalled, the code was tied for first and second place, for example, a respondent may have scored 25 for Artistic and 25 for Social. In this study, only the first Holland letter code was needed for analysis. Therefore, it was necessary to decide, in those instances of tied scores, which code should be listed first. To determine how best to deal with tied scores, reference was made to Holland, Powell and Fritzsche (1994) SDS Professional User's Guide and Lokan (1994) SDS Australian Edition.

Holland, Powell and Fritzche (1994) stated that, based on the standard error of measurement, Holland scores, which have differences less than eight, should be regarded as trivial because they are within the limits of measurement error. They suggested that in practice when looking at an SDS profile, a researcher should assume that scores are the same unless they differ by at least eight. However, from an Australian perspective, in the Australian norming sample, the standard error of measurement values obtained for the Australian SDS were half to one point lower than those reported by Holland (1985b), so it is suggested that a difference between scores should be seven points or more to be "reasonably likely to indicate a meaningful difference" (Lokan 1994, p. 15). Therefore, tied scores in the present sample should be considered equal since they have the same score. However, Lokan reports that in the Australian norming sample it was decided to

assign the letter of a tied pair of scores in random order, as determined by the computer (Lokan 1994, p. 15). Thus, for this study, it would have been acceptable to randomly assign a score to the 27 cases with tied first and second place scores. However, it was decided not to do this for the following reasons:

- The present project analyses the usefulness of Holland's theory in describing tourism behaviour, rather than considering Holland's theory itself;

- The 27 cases with tied scores represent only 5.5% of the total sample, i.e., a relatively small proportion of cases;

- The present study does not consider respondents with imprecise codes. Instead the study prefers pure Holland codes;

- Following a review of the literature, it would appear that Holland provides unsatisfactory instructions for researchers on how best to deal with tied scores. Strahan and Severinghaus (1992, p. 261) noted that "formal methods for handling ties have never (*sic.*) been established in the 40 years of research on Holland's (1985a) theory". In the SDS Professional Manual, Holland, Powell and Fritzche (1994) suggested using a random order for the allocation of the tied scores and do not attempt to redefine them. In addition, other authors have been silent on how they have dealt with tied scores. Because of the lack of instructions provided by Holland and others, it was decided to omit the 27 cases with tied Holland scores.

To summarise the screening of data, of the 500 original cases, there were eight that had between 14 and 84 Holland missing values. As these responses were crucial to the

analysis it was decided to omit these eight cases. One further case had omitted three Holland Self-Estimates. Since Holland Self-Estimates make up a large proportion of the total Holland personality score, it was decided to omit this case. Of the remaining 491 cases, there were 27 that had tied first and second place scores in their Holland total scores. It was decided to delete these 27 cases. Therefore, a total of 36 cases were omitted giving a new data set of 464 cases. The following discussion is based on the results of running the analysis using the 464 useable responses.

The Treatment of the Data

There was a high degree of confidence that there were no errors in the final data base. A six-letter code was obtained for each subject derived from the SDS. This six-letter code was then shortened to the first letter code giving the respondent a one-letter code, that is, either R, I, A, S, E, or C. The statistical software package Statistical Package for Social Sciences (SPSS) (Norusis and SPSS Inc. 1990) was chosen to analyse the results. As most of the data were quantitative in nature, they were coded and entered directly into SPSS. The only data that required any numeric coding work were in relation to coding of the respondents' occupation.

In relation to present occupation, the respondents listed a certain job as their occupation and detailed their job tasks. Based on the named occupation and the listed job tasks, reference was made to the Australian version of Holland's Occupational Finder (Holland

1985c) and the closest occupation was found. In the Australian Occupational Finder, in brackets is listed the equivalent numeric code from the Australian Standard Classification of Occupations (ASCO). This document was referred to and the closest occupation was noted. As a result, each occupation then matched a major occupation group provided by ASCO. ASCO is a systematic multi-purpose classification and dictionary of occupations in Australia that contains 6500 occupational titles, and detailed information for about 30 per cent of these (Lokan 1994). The allocation of a code to a respondent's occupation, as described here, is similar to the system used by Rosen, Holmberg and Holland (1991) to develop the Educational Opportunities Code, as they referred to a national list of educational programs, and used the professional judgment of career counsellors.

Although there are nine major occupational groups provided by ASCO, it was decided to collapse this to seven groups to allow analysis of variance to be conducted. As a result, each respondent in the sample had an occupation that matched one of seven major occupational groups. (Unemployed, retired and home duties people were categorised by their last named occupation.) Table 4.4 compares the major ASCO occupational groups with the collapsed version.

Data Analysis

The following summarises the analysis that was carried out using SPSS. To determine if industrial attractions are considered to be distinctly different from other types of

Table 4.4: <u>Major ASCO Occupational Groups and the Collapsed Version</u>

Major ASCO Groups	Collapsed Version
Managers and Administrators	Managers and Administrators
Professionals	Professionals and Associate Professionals
Associate Professionals	
Tradespersons and Related Workers	Tradespersons and Related Workers
Advanced Clerical and Service Workers	Elementary, Intermediate and Advanced, Clerical, Sales and Service Workers
Intermediate Clerical, Sales and Service Workers	
Elementary Clerical, Sales and Service Workers	
Intermediate Production and Transport Workers	Intermediate Production and Transport Workers
Labourers and Related Workers	Labourers and Related Workers
	Students

Source: Department of Employment and Industrial Relations and Australian Bureau of Statistics, 1983 (Major ASCO Occupational Groups); Author (Collapsed version).

attraction, factor and cluster analysis was carried out on all the named tourism attractions, using interest in visiting and intention to visit. To test the stability of the results of the cluster analysis, the analysis was run several times on SPSS using a random selection of half the cases.

In relation to the data concerning Holland code, frequency tables were obtained to show the range and distribution of Holland personality types. This allowed a comparison to be made with norming samples. When considering the relationship between personality type and tourism choice behaviour for all attractions (including industrial tourism attractions), the mean scores were generated for actual visitation, interest in visiting and intention to

visit, and these were cross tabulated with Holland personality type. The results were tested using chi-square analysis for nominal data (actual visitation) and analysis of variance for the interval data (interest and intention). Chi-square analysis was chosen as it is a useful test that statistically determines significance in the analysis of frequency distributions (Zikmund 1994). The "mean", as used here, is simply an index value which shows the proportion of respondents reporting that they had visited a particular attraction. The value of the index ranges from 1.0 (no-one had visited) to 2.0 (everyone had visited), and is computed as if it were a mean, based on the dichotomous responses available to the respondents (1 = not visited, and 2 = have visited). Analysis of variance was chosen as it is the appropriate statistical tool to analyse the effects of one treatment variable on an interval-scaled dependent variable. To determine the influence of gender on tourism choice behaviour, a contingency table was generated for actual visitation of all attractions by males and females. Chi-square analysis was carried out to determine the relationship between gender and actual visitation for all attractions. Chi-square analysis was also carried out to determine the relationship between actual visitation of named attractions by gender, and Holland personality type. T-tests were carried out on the interest in visiting and intention to visit by gender and Holland personality type. Mean scores were generated for actual visitation, interest in visiting and intention to visit each attraction and were ranked in order of preference for each attraction.

The study then moved from considering all attractions, to concentrating on industrial tourism attractions only. The 12 industrial tourism attractions used in the survey were:

Bendigo Pottery, Bendigo

Tour of Parliament House, Melbourne

Behind the scenes tour of the Melbourne Cricket Ground (MCG)

Powerworks (Formerly the tour of the SEC power plant), Morwell

Backstage tour of the Victorian Arts Centre, Melbourne

De Bortoli Winery, Dixons Creek

Tour of the Australian Stock Exchange, Melbourne

"Pick-your-own" Fruit and Berry Farm, Drouin West

Our World of Money, Craigieburn (Australian Mint)

Tour of Western Wastewater Treatment Plant, Werribee

Victorian Tapestry Workshop, South Melbourne

Bureau of Meteorology, Melbourne.

To determine whether Holland personality type, demographics, or past visitation were useful measures in identifying tourism choice behaviour, it was necessary to investigate the proportion of statistically significant results which each measure generated by using chi-square analysis for nominal data (actual visitation) and one-way analysis of variance for interval data (interest and intention). For example, if one-way analysis of variance on gender revealed a higher proportion of statistically significant results than Holland's theory of personality type, then it is suggested that gender is a more useful measure to identify tourism choice behaviour than Holland's theory of personality type.

With regard to demographics, it was necessary to determine which of the following demographics had a higher proportion of statistically significant results, that is, gender, occupation, age, income, education, number of dependent children, and marital status. It was also necessary to consider a combination of each demographic to determine if there were interactive relationships. This analysis determined which combination has a higher proportion of statistically significant results. In addition, it was necessary to include Holland code in each of these combinations to determine the proportion of statistically significant results, that is, once the individual demographics had been analysed, each of the combinations of interactive relationships and the Holland variable were analysed (Table 4.5). Table 4.5 therefore summarises the analysis that was carried out on the demographic variables. Initially, analysis was conducted on Holland code plus two other demographic variables simultaneously using chi-square analysis for actual visitation, and analysis of variance for interest in visiting and intention to visit. Then, analysis was carried out on two demographic variables simultaneously without including the Holland code using chi-square analysis for actual visitation and analysis of variance for interest in visiting and intention to visit.

As the variable for actual visitation has a nominal scale, chi-square analysis was used to determine the proportion of statistically significant relationships between actual visitation of the 12 industrial tourism attractions and each of the seven demographics and the Holland code in turn, i.e., Holland code, gender, occupation, age, education, number of

Table 4.5: <u>All Possible Interactive Relationships Between Two or More of the</u> <u>Relevant Variables</u>

Holland Code and Gender and Age
Holland Code and Gender and Number of Dependent Children
Holland Code and Gender and Marital Status
Holland Code and Gender and Education
Holland Code and Gender and Income
Holland Code and Gender and Occupation
Holland Code and Age and Number of Dependent Children
Holland Code and Age and Marital Status
Holland Code and Age and Education
Holland Code and Age and Income
Holland Code and Age and Occupation
Holland Code and No. of Dependent Children and Marital Status
Holland Code and Number of Dependent Children and Education
Holland Code and Number of Dependent Children and Income
Holland Code and Number of Dependent Children and Occupation
Holland Code and Marital Status and Education
Holland Code and Marital Status and Income
Holland Code and Marital Status and Occupation
Holland Code and Education and Income
Holland Code and Education and Occupation
Holland Code and Income and Occupation
Gender and Age (No Holland code)
Gender and Number of Dependent Children (No Holland code)
Gender and Marital Status (No Holland code)
Gender and Education (No Holland code)
Gender and Income (No Holland code)
Gender and Occupation (No Holland code)
Age and Number of Dependent Children (No Holland code)
Age and Marital Status (No Holland code)
Age and Education (No Holland code)
Age and Income (No Holland code)
Age and Occupation (No Holland code)
Number of Dependent Children and Marital Status (No Holland code)
Number of Dependent Children and Education (No Holland code)
Number of Dependent Children and Income (No Holland code)
Number of Dependent Children and Occupation (No Holland code)
Marital Status and Education (No Holland code)
Marital Status and Income (No Holland code)
Marital Status and Occupation (No Holland code)
Education and Income (No Holland code)
Education and Occupation (No Holland code)
Income and Occupation (No Holland code)

Source: Author.

dependent children, marital status, and income. Then, chi-square analysis was used to determine the proportion of statistically significant relationships between actual visitation of the 12 industrial tourism attractions and Holland code, plus each of the seven demographics in turn, i.e., Holland code and gender, Holland code and age, Holland code and education, Holland code and income, Holland code and number of dependent children, Holland code and marital status, and Holland code and occupation. Using SPSS, only one variable and one control variable can be analysed simultaneously when using chi-square analysis so it was impossible, using chi-square analysis, to analyse all the demographics and Holland codes simultaneously for actual visitation. Therefore, this part of the analysis was taken as far as it could be and the results are reported in the next chapter.

As the variables for interest in visiting and intention to visit have interval scales, one-way analysis of variance was used to determine the proportion of statistically significant relationships between interest in visiting and intention to visit the 12 industrial tourism attractions, and each of the seven demographics and Holland code in turn, i.e., Holland code, gender, occupation, age, education, number of dependent children, marital status, and income. Simple factorial analysis of variance was used to determine the proportion of statistically significant relationships between interest in visiting and intention to visit the 12 industrial tourism attractions and Holland code plus each of the seven demographics in turn, i.e., Holland code and gender, Holland code and age, Holland code and education, Holland code and income, Holland code and number of dependent children, Holland and

gender, Holland and marital status, and Holland code and occupation.

The demographic variables in this study, i.e., gender, age, education, income, number of dependent children, marital status and occupation, used nominal scales. Analysis of variance was used on the demographic nominal data, as Iversen and Norpoth (1976, p. 8) state that "analysis of variance is usually the appropriate method when the groups of observations are created by using a nominal level variable as the independent variable in the study. Using SPSS version 6.1, three demographics were analysed at a time for interest in visiting and intention to visit. Simple factorial analysis of variance was used to determine the proportion of statistically significant relationships between interest in visiting and intention to visit industrial tourism attractions, and each of the possible combinations of two independent demographic variables plus Holland code. The simple factorial analysis of variance was used to determine the proportion of statistically significant relationships between interest in visiting and intention to visit industrial tourism attractions and each of the possible combinations of two demographic variables but not using Holland code (Table 4.5). Finally, in relation to the influence of past visitation on tourism choice behaviour, one-way analysis of variance was used to determine the proportion of statistically significant relationships between interest in visiting and intention to visit and actual visitation.

Summary

This chapter discussed the adaptation of the questionnaire based on the pilot study, the subjects used, the cleaning of the data and the treatment of the data. The chapter also outlined the statistical techniques used to analyse the data. The next chapter reports the findings of the research.

CHAPTER FIVE

RESULTS

Introduction

In this chapter the results of the statistical analysis are reported. The chapter begins by reporting the results of the cluster and factor analysis carried out on the interest in visiting and intention to visit all 31 named tourism attractions. The chapter then reports the range and distribution of Holland personality types in the sample, and the relationship between personality and tourism behaviour, gender and tourism behaviour, and the combination of personality, tourism behaviour and gender. Then the chapter focuses on the results of analysis using industrial tourism attractions only, and considers the influence of Holland code, demographics and past visitation. Thus, Chapter Five reports only the results of the statistical analysis, while Chapter Six provides interpretation of the results.

Results Using All Attraction Variables

Attitude towards Industrial Tourism

The following discussion addresses Research Question One regarding some of the ways in which industrial tourism attractions are perceived as being different to other types of tourism attractions. Prior to using cluster analysis, exploratory factor analysis was used on the data. The goal of factor analysis is to identify the underlying dimensions or regularity

in phenomena (Zikmund 1994, p. 585), and to identify the "not-directly-observable factors based on a set of observable variables" (Norusis and SPSS Inc. 1993, p. 48), where the variables chosen "must be related to each other for the factor model to be appropriate" (Norusis and SPSS Inc. 1993, p. 50). However, using more than one variable at a time often results in the variables and factors not appearing to be "correlated in any interpretable pattern" (Norusis and SPSS Inc. 1993, p. 63). Therefore, in the present study, factor analysis was conducted on the basis of one variable at a time, i.e., firstly, interest in visiting, then intention to visit, as this allowed the meaningful factors associated with each individual variable to be identified. In addition, using only one variable at a time, avoided the need to carry out factor rotation which is often required when many variables are analysed simultaneously. Aldenderfer and Blashfield (1984, p. 20) state that variables to be used for analysis "should be chosen within the context of an explicitly stated theory that is used to support the classification [and that] the theory is the basis for the rational choice of the variables to be used in the study". In the present study, the measures "interest in visiting" and "intention to visit" were used as a basis for grouping attractions because "interest" measures covert behaviour and may more fully reflect an individual's personality. "Intention to visit" also measures covert behaviour but may reflect the influence of external restrictions such as time, money and some demographics. Table 5.1 and Table 5.2 illustrate the factor analysis carried out on the measures "interest in visiting" and "intention to visit". Therefore, exploratory factor analysis was carried out on the data to identify the grouping of attractions. (Apart from Table 5.3, the tables and figures in this chapter were generated by the author, based on the results of the study.)

Table 5.1 demonstrates that there were eight factors in relation to "interest in visiting". Of the 12 industrial tourism attractions in the list of 31 attractions, six industrial tourism attractions are in Factor 1 and the factor is not contaminated with any other type of attraction. Factor 8 contains two more industrial tourism attractions, only. Therefore, of the 12 industrial tourism attractions, eight appear in two separate factors that contain no other type of attraction. The remaining four industrial attractions appear in Factors 3, 4, 5 and 6. The industrial tourism attraction, Backstage tour of the Victorian Arts Centre, appears in Factor 3 with other examples of "arts" attractions, such as the International Festival of the Arts and one science-based attraction, Scienceworks. The industrial tourism attraction, Behind the scenes tour of the Melbourne Cricket Ground (MCG), appears in Factor 4 with other examples of sporting events, such as the AFL Grand Final and the Ford Australian Open Tennis. The industrial tourism attraction, Bendigo Pottery, appears in Factor 6 with other examples of family-oriented attractions. The industrial tourism attraction, De Bortoli Winery, appears in Factor 7 with other examples of food and wine based attractions, such as the Melbourne Food and Wine Festival. Therefore, in relation to "interest in visiting", eight of 12 industrial tourism attractions appear in two separate factors, while the remaining four attractions appear in factors where their distinguishing features correspond to those of the other attractions.

Table 5.2 demonstrates that there were five factors with more than two attractions in relation to "intention to visit". Of the 12 industrial tourism attractions in the list of 31 attractions, eight industrial tourism attractions are in Factor 1 that is contaminated by only

Table 5.1: Factor Analysis of Interest in Visiting Tourism Attractions

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Bureau of Meteorology, Melbourne	0.68	0.05	0.23	-0.06	0.00	0.11	-0.04	0.14
Our World of Money, Craigieburn (Australian Mint)	0.68	0.18	-0.05	-0.03	0.08	0.18	0.08	0.11
Tour of Wastewater Treatment Plant, Werribee.	0.67	0.08	0.00	0.02	0.13	-0.02	0.07	0.08
Tour of Parliament House, Melbourne	0.65	-0.10	0.14	0.31	-0.02	0.06	0.07	-0.07
Tour of the Australian Stock Exchange	0.58	0.01	0.13	0.32	-0.01	0.01	0.01	0.05
Powerworks (tour of SEC power plant), Morwell	0.50	0.13	0.11	-0.18	0.23	0.14	0.08	0.29
Australian Motorcycle Grand Prix	0.08	0.79	-0.12	0.15	0.14	0.06	0.08	-0.10
Australian Formula One Grand Prix, Melbourne	-0.09	0.70	-0.17	0.33	0.05	0.10	0.13	-0.09
Australian International Air Show, Avalon	0.33	0.63	0.16	-0.02	0.14	0.12	-0.18	-0.03
Bells Beach Surf Classic, Bells Beach	0.04	0.54	0.11	0.15	0.19	-0.03	0.01	0.28
International Festival of the Arts, Melbourne	0.15	-0.01	0.71	0.16	0.24	-0.13	0.24	0.07
Backstage tour of the Victorian Arts Centre, Melbourne	0.16	0.14	0.69	0.07	-0.02	0.10	-0.06	0.35
National Gallery of Victoria, Melbourne	0.15	-0.22	0.65	-0.01	-0.07	0.18	0.14	-0.04
Scienceworks Museum, Melbourne	0.41	0.01	0.42	-0.11	0.04	0.34	0.03	-0.41
Australian Football League Grand Final, Melbourne	-0.01	0.24	-0.04	0.68	0.13	0.01	0.19	-0.11
Ford Australian Open Tennis, Melbourne	-0.00	0.05	0.07	0.62	0.16	-0.04	0.25	0.12
Behind the scenes tour of the MCG	0.23	0.23	0.08	0.61	-0.05	0.18	-0.15	0.02
A Commonwealth or Olympic Games	0.03	0.30	0.17	0.41	0.38	0.02	-0.07	0.11
Moomba Festival, Melbourne	0.10	0.16	-0.03	0.08	0.72	0.09	0.09	-0.07
Melbourne International Comedy Festival	-0.06	0.14	0.46	0.14	0.59	-0.08	0.12	0.03
RAS of Victoria Show (Melbourne Show)	0.14	0.21	-0.00	0.03	0.58	0.23	-0.05	0.17
Sovereign Hill, Ballarat	0.10	0.10	0.10	-0.03	0.04	0.72	0.11	-0.07
Puffing Billy, Belgrave	0.09	0.01	-0.06	0.19	0.30	0.56	-0.08	0.25
Penguin Parade, Phillip Island	0.12	-0.05	-0.13	0.23	0.45	0.49	-0.01	-0.09
Bendigo Pottery, Bendigo	0.12	0.08	0.22	-0.18	-0.08	0.49	0.39	0.23
Rialto Towers Observation Deck, Melbourne	0.13	0.15	0.17	0.36	0.03	0.36	-0.26	0.12
De Bortoli Winery, Dixons Creek	0.10	-0.03	0.13	0.11	-0.05	0.11	0.73	0.15
Melbourne Food and Wine Festival, Melbourne	0.09	0.08	0.29	0.10	0.42	-0.04	0.65	-0.08
Spring Racing Carnival, Melbourne	0.09	0.37	-0.03	0.31	0.16	-0.05	0.52	0.03
Victorian Tapestry Workshop, South Melbourne	0.33	-0.09	0.25	0.11	-0.17	0.11	0.16	0.58
"Pick-your-own" Fruit and Berry Farm, Drouin West	0.38	0.01	0.07	-0.04	0.29	0.07	0.14	0.57

one other type of attraction, which is the last item in the factor. Considering the factor loading of the one non-industrial tourism attraction in Factor 1, it is noted that the factor loading is low and very nearly appears in Factors 4 or 5. The remaining four industrial attractions appear in Factors 2, 3, and 4, with two industrial tourism attractions appearing in Factor 4. Similarly to the "interest in visiting" variable discussed earlier, the industrial tourism attraction, Behind the scenes tour of the MCG, appears in Factor 2 with other examples of sporting events, such as the Bells Beach Surf Classic and the Australian Formula One Grand Prix. However, the MCG attraction is the last item in the factor with a very low factor loading and it very nearly appears in the first factor that contains the eight industrial tourism attractions. In addition, similarly to the "interest in visiting" variable discussed earlier, the industrial tourism attraction, Backstage tour of the Victorian Arts Centre, appears in Factor 3 with other examples of "arts" attractions, such as the National Gallery of Victoria and the Melbourne International Comedy Festival. However, as with the MCG attraction, the tour of the Arts centre is the last item in the factor, with a very low factor loading, and it also very nearly appears in the first factor that contains the eight industrial tourism attractions. The industrial tourism attractions De Bortoli Winery and Bendigo Pottery appear in Factor 4 with other examples of attractions outside Melbourne. These two industrial tourism attractions are the last items in the factor, with Bendigo Pottery very nearly appearing in the first factor. Therefore, in relation to intention to visit, eight of 12 industrial tourism attractions appear in the first factor with the remaining four appearing in three factors, where their distinguishing features correspond to those of the other attractions.

Table 5.2: Factor Analysis of Intention to Visit Tourist Attractions

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
Bureau of Meteorology, Melbourne	0.71	-0.02	0.09	0.14	0.03	0.07	0.11
Tour of Wastewater Treatment Plant, Werribee	0.63	0.17	0.05	0.02	0.07	0.07	-0.00
Tour of Parliament House, Melbourne	0.61	0.11	0.16	0.26	-0.00	0.17	-0.20
Our World of Money, Craigieburn (Australian Mint)	0.60	0.10	-0.10	0.18	0.27	0.13	-0.08
Powerworks (tour of SEC power plant), Morwell	0.58	0.04	0.02	0.13	0.27	-0.22	0.13
Victorian Tapestry Workshop, South Melbourne	0.58	0.01	0.26	-0.00	-0.08	-0.02	0.15
"Pick-your-own" Fruit and Berry Farm, Drouin West	0.55	-0.01	0.22	0.11	0.19	-0.11	0.34
Tour of the Australian Stock Exchange	0.54	0.16	0.18	0.08	-0.05	0.30	-0.11
Scienceworks Museum, Melbourne	0.39	-0.20	0.21	0.31	0.31	0.16	-0.01
Australian Motorcycle Grand Prix	0.09	0.78	-0.09	0.01	0.24	-0.00	0.08
Australian Formula One Grand Prix, Melbourne	-0.04	0.72	-0.09	0.15	0.14	0.09	-0.02
Australian Football League Grand Final, Melbourne	-0.00	0.71	0.17	0.20	-0.06	0.12	0.03
Bells Beach Surf Classic, Bells Beach	0.10	0.57	0.16	-0.11	0.07	-0.07	0.30
Spring Racing Carnival, Melbourne	0.09	0.51	0.25	0.10	0.06	0.02	-0.24
A Commonwealth or Olympic Games	0.17	0.49	0.18	-0.03	0.35	-0.07	0.01
Ford Australian Open Tennis, Melbourne	0.06	0.46	0.42	0.14	-0.00	0.18	-0.25
Behind the scenes tour of the MCG	0.33	0.45	0.07	0.12	-0.12	0.39	0.25
International Festival of the Arts, Melbourne	0.17	0.09	0.80	-0.02	0.09	0.06	0.03
Melbourne International Comedy Festival	0.01	0.23	0.66	-0.04	0.31	-0.04	0.31
National Gallery of Victoria, Melbourne	0.20	-0.24	0.59	0.25	-0.01	0.23	-0.03
Melbourne Food and Wine Festival, Melbourne	0.10	0.31	0.59	0.17	0.28	-0.14	-0.13
Backstage tour of the Victorian Arts Centre, Melbourne	0.39	0.09	0.48	0.04	-0.06	0.03	0.31
Sovereign Hill, Ballarat	0.19	0.05	0.01	0.58	0.11	0.12	0.06
Penguin Parade, Phillip Island	0.10	0.23	0.05	0.55	0.18	0.05	0.19
De Bortoli Winery, Dixons Creek	0.21	0.17	0.37	0.47	-0.07	-0.24	-0.18
Bendigo Pottery, Bendigo	0.41	0.02	0.14	0.42	0.08	-0.35	0.07
Moomba Festival, Melbourne	0.05	0.23	0.19	0.11	0.74	-0.01	-0.04
RAS of Victoria Show (Melbourne Show)	0.12	0.12	0.09	0.19	0.57	0.17	0.10
Australian International Air Show, Avalon	0.40	0.40	-0.09	-0.11	0.36	0.07	0.11
Rialto Towers Observation Deck, Melbourne	0.18	0.12	0.08	0.09	0.21	0.42	0.09
Puffing Billy, Belgrave	0.16	0.08	0.07	0.391	0.08	0.20	0.35

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As the factor analysis revealed evidence of the grouping of industrial tourism attractions, it was decided to carry out cluster analysis to confirm these results. The goal of cluster analysis is to identify homogeneous groups that have a likeness within groups but a difference between groups. The two dendrograms (Figures 5.1 and 5.2) illustrate the results of the hierarchical cluster analysis carried out on the variables "interest in visiting" and "intention to visit". The unbroken lines running horizontally across the page indicate where the clusters are divided. An examination of the dendrogram for interest in visiting revealed approximately five clusters overall, and a single outlier (the Commonwealth or Olympic Games, which is obviously a very special event). The first cluster contains 11 of the 12 examples of industrial tourism attractions, and is not contaminated with any other attraction. The second cluster contains five examples of sporting events. The next cluster contains three examples of other sporting related attractions, including the remaining industrial attraction, the tour of the MCG, as well as the event of a game of football being played at the MCG. The next cluster contains three examples of festivals. The final cluster contains eight "family" type, mass or general attractions or events.

The dendrogram for intention to visit also revealed approximately five clusters overall. The first cluster contains all 12 examples of the industrial tourism attractions and is not contaminated with any other attractions. The next cluster contains three examples of sporting events outside central Melbourne, while the third cluster contains four examples of sporting events in Melbourne. The next cluster contains three examples of general events, and the final cluster contains family-oriented attractions and festivals. Recognising that the focus of this thesis is industrial tourism, the clustering of the other

Figure 5.1: Dendrogram for Interest in Visiting using All 464 Cases

Rescaled Distance Cluster Combine

Name of Attraction	Num	0	5	10	15	20	25

Powerworks (tour of SEC power plant), Morwell — 6
Tour of Wastewater Treatment Plant, Werribee — 18
Bureau of Meteorology, Melbourne — 8
Our World of Money, Craigieburn (Mint) — 11
"Pick-your-own" Fruit and Berry Farm, Drouin — 7
Victorian Tapestry Workshop, South Melbourne — 12
Tour of the Australian Stock Exchange — 15
Bendigo Pottery, Bendigo — 4
Tour of Parliament House, Melbourne — 14
Backstage tour of the Victorian Arts Centre — 16
De Bortoli Winery, Dixons Creek — 2
Australian Formula One Grand Prix, Melbourne — 22
Australian Motorcycle Grand Prix — 25
Bells Beach Surf Classic, Bells Beach — 29
Australian International Air Show, Avalon — 31
Spring Racing Carnival, Melbourne — 20
Behind the scenes tour of the MCG — 17
AFL Grand Final, Melbourne — 28
Ford Australian Open Tennis, Melbourne — 19
International Festival of the Arts, Melbourne — 21
Melbourne International Comedy Festival — 26
Melbourne Food and Wine Festival, Melbourne — 24
National Gallery of Victoria, Melbourne — 3
Scienceworks Museum, Melbourne — 9
RAS of Victoria Show (Melbourne Show) — 23
Moomba Festival, Melbourne — 27
Sovereign Hill, Ballarat — 1
Penguin Parade, Phillip Island — 5
Puffing Billy, Belgrave — 10
Rialto Towers Observation Deck, Melbourne — 13
A Commonwealth or Olympic Games — 30

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Figure 5.2: Dendrogram for Intention to Visit using All 464 Cases

Rescaled Distance Cluster Combine

Name of Attraction	Num
Powerworks (tour of SEC power plant), Morwell	6
Tour of Wastewater Treatment Plant, Werribee	18
"Pick-your-own" Fruit and Berry Farm, Drouin	7
Bureau of Meteorology, Melbourne	8
Victorian Tapestry Workshop, South Melbourne	12
Our World of Money, Craigieburn (Mint)	11
Tour of the Australian Stock Exchange	15
Bendigo Pottery, Bendigo	4
Tour of Parliament House, Melbourne	14
Backstage tour of the Victorian Arts Centre	16
De Bortoli Winery, Dixons Creek	2
Behind the scenes tour of the MCG	17
Australian Motorcycle Grand Prix	25
Bells Beach Surf Classic, Bells Beach	29
Australian International Air Show, Avalon	31
Australian Formula One Grand Prix, Melbourne	22
AFL Grand Final, Melbourne	28
Ford Australian Open Tennis, Melbourne	19
Spring Racing Carnival, Melbourne	20
RAS of Victoria Show (Melbourne Show)	23
Moomba Festival, Melbourne	27
A Commonwealth or Olympic Games	30
Sovereign Hill, Ballarat	1
Penguin Parade, Phillip Island	5
Puffing Billy, Belgrave	10
International Festival of the Arts, Melbourne	21
Melbourne International Comedy Festival	26
Melbourne Food and Wine Festival, Melbourne	24
National Gallery of Victoria, Melbourne	3
Scienceworks Museum, Melbourne	9
Rialto Towers Observation Deck, Melbourne	13

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attractions will not be explored here.

As a means of testing the clustering, the cluster analysis was run several times using random samples of half the cases. The four dendrograms produced by running half the cases (Figures 5.3, 5.4, 5.5, and 5.6) illustrate the results of the hierarchical cluster analysis carried out using half the cases, twice with interest in visiting, and twice with intention to visit. An examination of these dendrograms reveals that in both the interest examples, the first cluster contains 11 of the 12 examples of industrial tourism attractions, and is not contaminated with any other attraction. The second interest dendrogram contains all industrial tourism attraction examples plus the Spring Racing Carnival. The second cluster in both interest in visiting dendrograms contains five events in one dendrogram and seven sporting events plus the MCG tour in the other. In the intention dendrogram, the first cluster contains 11 examples of industrial tourism attractions, and is not contaminated with any other attraction. The next cluster contains three examples of sporting events outside Melbourne, plus the MCG tour. In the second run for intention, the first cluster contains all 12 industrial examples and is not contaminated with any other attraction. The second cluster contains four examples of sporting events held in Melbourne. Therefore, the cluster analysis using half the cases supports the cluster analysis using all the cases.

Figure 5.3: First Dendrogram for Interest in Visiting using a Random Sample of Half the Cases

```
                          Rescaled Distance Cluster Combine

Name of Attraction

                         0         5        10        15        20        25
                   Num   +---------+---------+---------+---------+---------+

Powerworks (tour of SEC power plant), Morwell      6
Tour of Wastewater Treatment Plant, Werribee      18
"Pick-your-own" Fruit and Berry Farm, Drouin       7
Bureau of Meteorology, Melbourne                   8
Our World of Money, Craigieburn (Mint)            11
Victorian Tapestry Workshop, South Melbourne      12
Tour of Parliament House, Melbourne               14
Tour of the Australian Stock Exchange             15
Bendigo Pottery, Bendigo                           4
Backstage tour of the Victorian Arts Centre, Melbourne   16
De Bortoli Winery, Dixons Creek                    2
Australian Formula One Grand Prix, Melbourne      22
Australian Motorcycle Grand Prix                  25
Spring Racing Carnival, Melbourne                 20
Bells Beach Surf Classic, Bells Beach             29
Australian International Air Show, Avalon          31
Behind the scenes tour of the MCG                 17
AFL Grand Final, Melbourne                        28
Ford Australian Open Tennis, Melbourne            19
International Festival of the Arts, Melbourne      21
Melbourne International Comedy Festival            26
Melbourne Food and Wine Festival, Melbourne       24
RAS of Victoria Show (Melbourne Show)             23
Moomba Festival, Melbourne                        27
Penguin Parade, Phillip Island                     5
Puffing Billy, Belgrave                           10
Sovereign Hill, Ballarat                           1
National Gallery of Victoria, Melbourne            3
Scienceworks Museum, Melbourne                     9
Rialto Towers Observation Deck, Melbourne         13
A Commonwealth or Olympic Games                   30
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Figure 5.4 Second Dendrogram for Interest in Visiting using a Random Sample of Half the Cases

Rescaled Distance Cluster Combine

Name of Attraction	Num
Powerworks (tour of SEC power plant), Morwell	6
Tour of Wastewater Treatment Plant, Werribee.	18
Our World of Money, Craigieburn (Australian Mint)	11
"Pick-your-own" Fruit and Berry Farm, Drouin West	7
Bureau of Meteorology, Melbourne	8
Victorian Tapestry Workshop, South Melbourne	12
Tour of the Australian Stock Exchange	15
Tour of Parliament House, Melbourne	14
Bendigo Pottery, Bendigo	4
Backstage tour of the Victorian Arts Centre, Melbourne	16
De Bortoli Winery, Dixons Creek	2
Spring Racing Carnival, Melbourne	20
Australian Formula One Grand Prix, Melbourne	22
Australian Motorcycle Grand Prix	25
Bells Beach Surf Classic, Bells Beach	29
Australian International Air Show, Avalon	31
Ford Australian Open Tennis, Melbourne	19
Australian Football League Grand Final, Melbourne	28
Behind the scenes tour of the MCG	17
Penguin Parade, Phillip Island	5
Puffing Billy, Belgrave	10
National Gallery of Victoria, Melbourne	3
Scienceworks Museum, Melbourne	9
Sovereign Hill, Ballarat	1
Rialto Towers Observation Deck, Melbourne	13
RAS of Victoria Show (Melbourne Show)	23
Moomba Festival, Melbourne	27
International Festival of the Arts, Melbourne	21
Melbourne International Comedy Festival	26
Melbourne Food and Wine Festival, Melbourne	24
A Commonwealth or Olympic Games	30

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Figure 5.5: First Dendrogram for Intention to Visit using a Random Sample of Half the Cases

Rescaled Distance Cluster Combine

Name of Attraction	Num
Victorian Tapestry Workshop, South Melbourne	12
Tour of Wastewater Treatment Plant, Werribee.	18
Bureau of Meteorology, Melbourne	8
Our World of Money, Craigieburn (Australian Mint)	11
Powerworks (tour of SEC power plant), Morwell	6
"Pick-your-own" Fruit and Berry Farm, Drouin West	7
Tour of the Australian Stock Exchange	15
Bendigo Pottery, Bendigo	4
Tour of Parliament House, Melbourne	14
Backstage tour of the Victorian Arts Centre, Melbourne	16
De Bortoli Winery, Dixons Creek	2
Australian Motorcycle Grand Prix	25
Bells Beach Surf Classic, Bells Beach	29
Australian International Air Show, Avalon	31
Behind the scenes tour of the MCG	17
International Festival of the Arts, Melbourne	21
Melbourne International Comedy Festival	26
Melbourne Food and Wine Festival, Melbourne	24
National Gallery of Victoria, Melbourne	3
Scienceworks Museum, Melbourne	9
Sovereign Hill, Ballarat	1
Penguin Parade, Phillip Island	5
Puffing Billy, Belgrave	10
Australian Formula One Grand Prix, Melbourne	22
Australian Football League Grand Final, Melbourne	28
Spring Racing Carnival, Melbourne	20
Ford Australian Open Tennis, Melbourne	19
RAS of Victoria Show (Melbourne Show)	23
Moomba Festival, Melbourne	27
A Commonwealth or Olympic Games	30
Rialto Towers Observation Deck, Melbourne	13

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Figure 5.6 Second Dendrogram for Intention to Visit using a Random Sample of Half the Cases

Rescaled Distance Cluster Combine

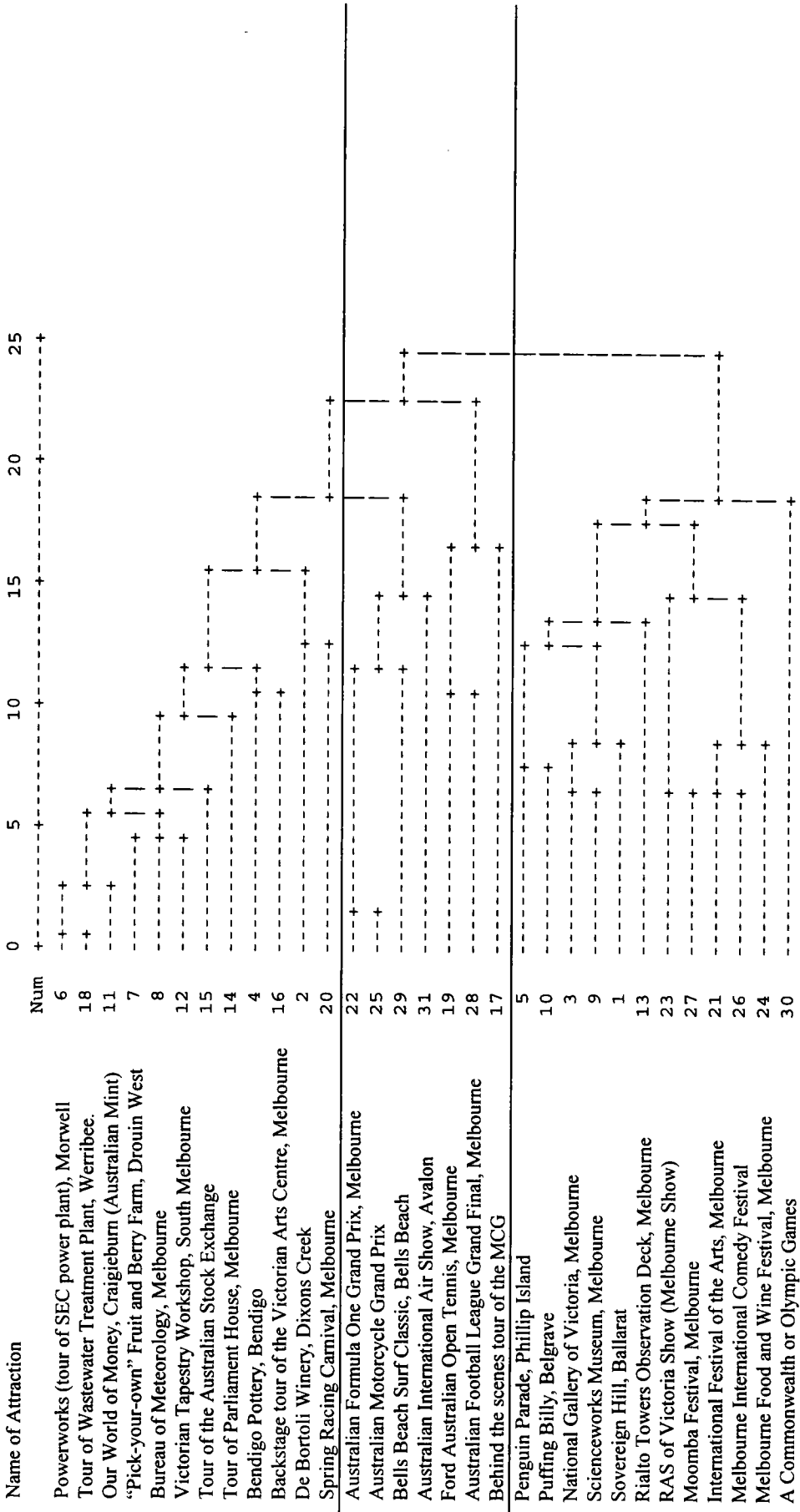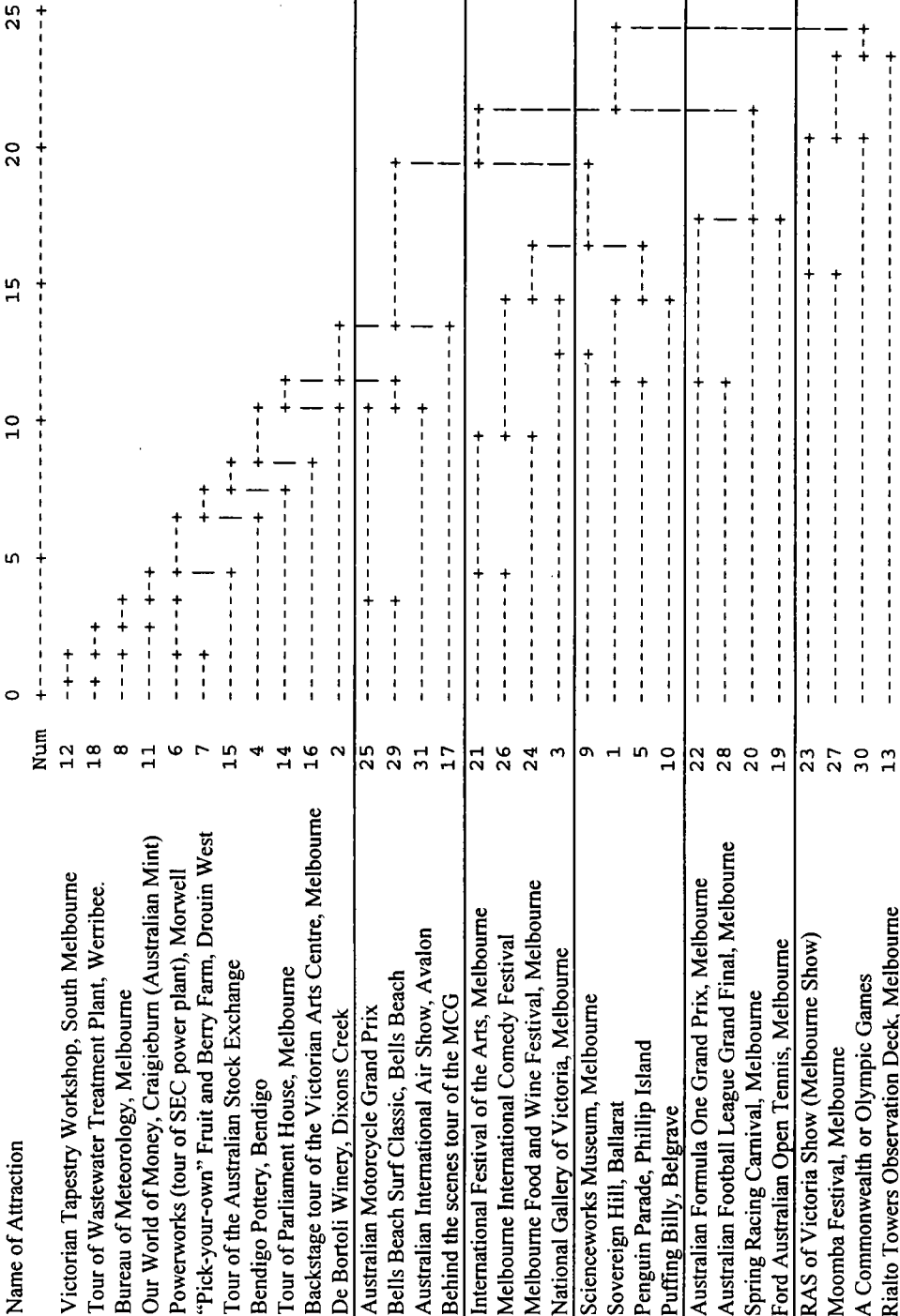| Name of Attraction	Num
"Pick-your-own" Fruit and Berry Farm, Drouin West	7
Bureau of Meteorology, Melbourne	8
Powerworks (tour of SEC power plant), Morwell	6
Our World of Money, Craigieburn (Australian Mint)	11
Victorian Tapestry Workshop, South Melbourne	12
Tour of Wastewater Treatment Plant, Werribee.	18
Bendigo Pottery, Bendigo	4
Tour of Parliament House, Melbourne	14
Tour of the Australian Stock Exchange	15
De Bortoli Winery, Dixons Creek	2
Backstage tour of the Victorian Arts Centre, Melbourne	16
Behind the scenes tour of the MCG	17
Australian Motorcycle Grand Prix	25
Bells Beach Surf Classic, Bells Beach	29
Australian International Air Show, Avalon	31
Spring Racing Carnival, Melbourne	20
International Festival of the Arts, Melbourne	21
Melbourne International Comedy Festival	26
Melbourne Food and Wine Festival, Melbourne	24
Australian Formula One Grand Prix, Melbourne	22
Australian Football League Grand Final, Melbourne	28
Ford Australian Open Tennis, Melbourne	19
Sovereign Hill, Ballarat	1
Penguin Parade, Phillip Island	5
Puffing Billy, Belgrave	10
National Gallery of Victoria, Melbourne	3
Scienceworks Museum, Melbourne	9
Rialto Towers Observation Deck, Melbourne	13
RAS of Victoria Show (Melbourne Show)	23
Moomba Festival, Melbourne	27
A Commonwealth or Olympic Games	30

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The Range and Distribution of Holland Personality Types

The study revealed that the respondents had diverse Holland codes, with the most common first letter being S (Social), with 43.3% (201) of respondents with this code. [It may be recalled that Holland's typology of six different personal orientations to life was: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C)]. The next most frequent first letters were R (Realistic), with 14.2% (66) of respondents, and C (Conventional) with 13.6% (63) of respondents (Table 5.3). In order to validate these findings, as with the pilot study, it is desirable to know the comparable proportions of codes in a broader population. That is, do some Holland codes occur more frequently than others in the total population? Holland, Powell, and Fritzsche (1994) noted that some codes do occur more frequently than others, with the distribution of SDS codes (one-, two- and three-letter) across the six categories being extremely uneven. If the relevant population in this present case were adult males and females, then it is possible to gain some perspective from Table 4.3, although data from the United States is used for comparison because Australian data were not available for the broad population.

The Australian sample comprised 54% females and 46% males, overall. In relation to gender differences, the most common first letter for male respondents was R (Realistic), with 28.4% (60) of male respondents with this code. The most common first letter for female respondents was S (Social), with 59.3% (150) of female respondents with this code. This is comparable to the US finding.

Table 5.3: <u>Distribution of First Letter Summary Code for Adult Males and Females in the US 1994 Norming Sample and the Present Study</u>

Personality Type	Adult Males in US Sample		Adult Females in US Sample		Total in US sample	
	f	%	f	%	f	%
Realistic	81	32.3	25	6.2	106	16.2
Investigative	29	11.6	20	4.9	49	7.5
Artistic	16	6.4	38	9.4	54	8.2
Social	43	17.1	200	49.4	243	37.0
Enterprising	57	22.7	40	9.9	97	14.8
Conventional	25	10.0	82	20.3	107	16.3
Total	251	100.0	405	100.0	656	100.0

Personality Type	Adult Males in Present Sample		Adult Females in Present Sample		Total in Present sample	
	f	%	f	%	f	%
Realistic	60	28.4	6	2.4	66	14.2
Investigative	35	16.6	15	5.9	50	10.8
Artistic	14	6.6	32	12.6	46	9.9
Social	51	24.2	150	59.3	201	43.3
Enterprising	29	13.7	9	3.6	38	8.2
Conventional	22	10.4	41	16.2	63	13.6
Total	211	100.0	253	100.0	464	100.0

Source: Adapted from Holland, Powell, and Fritzsche (1994) (US Norming Sample); Author (Present Study).

<u>Personality and Tourism Behaviour</u>

To address Research Question Two regarding the extent to which Holland's theory of personality types is useful in identifying tourism choice behaviour, at the aggregate level, a 31 x 3 matrix of mean scores was generated of attractions (31) by behavioural measure (actual visitation, interest in visiting, and intention to visit) (Table 5.4). The influence of

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Table 5.4: Holland Code of Respondents who Visited, were Interested in Visiting, and Intended to Visit Tourism Attractions

Name of Attraction (Listed in decreasing order of mean actual visitation)	Total			Social			Realistic			Investigative			Enterprising			Conventional			Artistic		
	A	Ir	In	A	Ir	In	A	Ir	In	A	Ir	In	A	Ir	In	A	Ir	In	A	Ir	In
Moomba Festival, Melbourne	1.8	4.2	3.9	1.8	4.2	4.0	1.8	3.9	3.6	1.9	4.5	4.0	1.8	4.5	4.1	1.8	4.3	3.7	1.8	3.8	3.6
Sovereign Hill, Ballarat	1.8	4.5	3.3	1.8	4.6	3.4	1.8	4.6	3.5	1.7	4.0	3.0	1.7	4.6	3.4	1.8	4.6	3.2	1.8	4.3	3.2
Penguin Parade, Phillip Island	1.8	4.6	3.9	1.8	4.6	3.9	1.7	4.6	4.0	1.6	4.5	3.9	1.8	5.5	4.3	1.8	4.5	3.7	1.9	4.5	3.6
RAS of Victoria Show (Melbourne Show)	1.8	4.2	3.7	1.8	4.2	3.8	1.8	4.1	3.4	1.7	4.0	3.4	1.8	4.4	4.1	1.7	4.1	3.5	1.8	4.5	3.8
National Gallery of Victoria, Melbourne	1.8	4.5	4.0	1.7	4.5	3.9	1.6	4.2	3.6	1.8	4.6	4.1	1.7	4.6	3.9	1.8	4.1	3.5	1.9	5.6	5.4
Puffing Billy, Belgrave	1.8	4.3	3.7	1.8	4.4	3.8	1.7	3.9	3.4	1.7	4.3	3.4	1.8	5.0	4.2	1.8	4.2	3.6	1.7	3.8	3.6
Scienceworks Museum, Melbourne	1.4	4.7	4.0	1.4	4.6	4.1	1.5	4.6	3.9	1.5	5.2	4.2	1.5	4.3	3.6	1.4	4.6	3.8	1.4	4.7	3.8
Spring Racing Carnival, Melbourne	1.4	3.4	3.0	1.4	3.4	2.9	1.4	2.9	2.8	1.3	3.1	2.8	1.5	4.2	3.9	1.3	3.6	3.2	1.5	3.1	2.8
Rialto Towers Observation Deck, Melbourne	1.4	4.5	4.1	1.4	4.4	4.0	1.4	4.7	4.3	1.3	4.7	3.9	1.4	5.0	4.5	1.4	4.9	4.3	1.4	3.8	3.5
Australian Football League Grand Final, Melbourne	1.4	3.9	3.2	1.4	3.7	3.1	1.4	4.5	4.0	1.4	3.7	2.9	1.5	4.9	4.2	1.3	4.2	3.1	1.3	3.2	2.6
Bendigo Pottery, Bendigo	1.4	3.1	2.5	1.4	3.3	2.6	1.3	2.7	2.3	1.3	2.9	2.2	1.4	2.7	2.2	1.5	3.4	2.4	1.3	3.4	2.8
Ford Australian Open Tennis, Melbourne	1.3	3.8	3.3	1.3	3.6	3.1	1.3	2.7	2.6	1.4	4.2	3.6	1.5	5.1	4.7	1.5	4.3	3.5	1.3	3.8	3.4
Tour of Parliament House, Melbourne	1.3	3.4	2.8	1.3	3.6	2.8	1.2	3.1	2.6	1.2	3.3	2.8	1.4	3.5	3.1	1.3	3.4	2.8	1.3	3.3	2.7
International Festival of the Arts, Melbourne	1.3	3.7	3.3	1.2	3.6	3.1	1.1	2.6	2.4	1.3	4.2	3.6	1.3	4.0	3.7	1.3	3.7	3.3	1.5	4.8	4.4
Melbourne International Comedy Festival	1.2	3.9	3.5	1.2	3.8	3.3	1.1	3.2	2.6	1.4	4.8	4.1	1.3	4.7	4.4	1.2	3.8	3.2	1.3	4.5	3.9
Melbourne Food and Wine Festival, Melbourne	1.2	3.8	3.3	1.2	3.7	3.3	1.2	3.2	2.7	1.3	3.7	3.3	1.2	4.6	4.1	1.2	3.6	3.3	1.3	4.2	4.0
Behind the scenes tour of the MCG	1.2	3.2	2.7	1.2	3.1	2.6	1.2	3.6	3.2	1.2	2.9	2.6	1.2	3.5	2.9	1.1	3.3	2.6	1.1	2.7	2.3
Australian International Air Show, Avalon	1.2	3.3	2.7	1.1	2.8	2.4	1.2	3.9	3.3	1.2	4.1	3.3	1.2	3.8	3.1	1.2	3.3	2.7	1.2	2.9	2.5
Australian Formula One Grand Prix, Melbourne	1.2	3.3	2.9	1.1	2.8	2.5	1.3	4.2	3.8	1.1	2.8	2.4	1.3	4.8	4.3	1.1	3.7	3.1	1.1	2.9	2.5
Powerworks (tour of SEC power plant), Morwell	1.1	2.3	1.9	1.1	2.0	1.7	1.3	2.6	2.1	1.2	2.7	2.1	1.1	2.5	2.4	1.1	2.2	1.7	1.2	2.3	1.9
Backstage tour of the Victorian Arts Centre, Melbourne	1.1	3.3	2.6	1.1	3.2	2.5	1.1	2.9	2.5	1.1	3.3	2.4	1.1	3.3	2.8	1.2	3.9	2.8	1.3	3.8	3.3
A Commonwealth or Olympic Games	1.1	4.9	4.0	1.1	4.6	3.7	1.1	4.7	3.8	1.1	5.1	4.4	1.1	6.0	5.0	1.2	5.4	4.5	1.2	4.7	3.8
De Bortoli Winery, Dixons Creek	1.1	2.6	2.2	1.1	2.5	2.1	1.1	2.1	1.8	1.1	3.1	2.5	1.2	3.0	2.6	1.1	2.6	2.1	1.1	2.6	2.3
Bells Beach Surf Classic, Bells Beach	1.1	2.4	2.0	1.1	2.3	1.9	1.1	2.4	2.0	1.1	2.9	2.4	1.1	2.5	2.2	1.1	2.6	2.0	1.1	2.3	1.9
Tour of the Australian Stock Exchange	1.1	2.9	2.4	1.1	2.9	2.3	1.1	2.6	2.0	1.1	2.9	2.5	1.2	3.2	2.6	1.1	2.7	2.3	1.3	3.6	2.8
"Pick-your-own" Fruit and Berry Farm, Drouin West	1.1	2.7	2.2	1.1	2.8	2.3	1.0	2.3	1.9	1.1	2.6	2.3	1.1	2.4	2.1	1.1	3.0	2.6	1.1	2.8	2.2
Our World of Money, Craigieburn (Australian Mint)	1.1	2.8	2.3	1.1	2.8	2.2	1.1	3.5	2.9	1.1	2.9	2.3	1.1	2.8	2.4	1.1	2.7	2.1	1.1	2.5	1.9
Tour of Wastewater Treatment Plant, Werribee.	1.1	2.1	1.9	1.1	2.0	1.8	1.1	2.2	2.0	1.1	2.8	2.3	1.1	1.8	1.5	1.1	1.9	1.7	1.1	2.2	1.9
Australian Motorcycle Grand Prix	1.1	2.6	2.2	1.1	2.2	2.0	1.1	3.1	2.6	1.1	2.3	2.1	1.0	3.9	3.3	1.0	2.8	2.2	1.1	2.3	2.1
Victorian Tapestry Workshop, South Melbourne	1.1	2.7	2.2	1.0	2.9	2.2	1.0	2.3	2.0	1.0	2.5	2.2	1.0	2.2	2.0	1.0	2.8	2.2	1.2	3.4	2.7
Bureau of Meteorology, Melbourne	1.1	2.9	2.3	1.1	2.8	2.3	1.1	2.6	2.1	1.0	3.4	2.1	1.1	2.9	2.3	1.1	3.2	2.4	1.1	3.1	2.4

Key:
A = Actual Visitation
Ir = Interest in Visiting
In = Intention to Visit

Holland personality type on each of these 93 results was analysed using chi-square testing for the nominal data (actual visitation) and analysis of variance for the interval data (interest and intention). Statistically significant differences at the 0.05 level were found for 32 of the 93 instances. That is, approximately one-third of the 93 combinations showed significant relationships between Holland personality type and aspects of tourism choice behaviour.

An inspection of the particular personality types affecting the observed differences revealed that there was a substantial degree of face validity in the results. For example, "Artistic" respondents had the highest mean scores on all three measures for the National Art Gallery and the International Festival of the Arts, but the lowest for two measures for a football event, that is, the AFL Grand Final. The International Comedy Festival showed the lowest mean scores on all three measures for "Realistic" respondents, but high scores for "Investigative" personality types. "Enterprising" respondents had the highest mean scores on all three measures for the Australian Formula One Grand Prix, while "Investigative" respondents showed low scores. In Table 5.4, the attractions are listed in decreasing order by mean actual visitation, rather than in alphabetical order by name, to illustrate the type of data analysis.

Table 5.5, which lists the attractions by mean value of actual visitation, interest in visiting and intention to visit by personality code, also demonstrates some face validity. For example, for each of Holland's six codes, the interest in visiting a Commonwealth or

Table 5.5: Holland Codes of Responsents ranked by Mean Value

Total Mean						Mean by Social Code						Mean by Realistic Code					
Actual		Interest		Intention		Actual		Interest		Intention		Actual		Interest		Intention	
Moomba	1.8	Olympic	4.9	Rialto	4.1	Moomba	1.8	Olympic	4.7	Sciwks	4.1	Moomba	1.8	SovHill	4.6	Rialto	4.2
SovHill	1.8	Penguin	4.6	NatGall	4.0	SovHill	1.8	Sciwks	4.6	Moomba	4.0	SovHill	1.8	Rialto	4.6	Penguin	4.0
Penguin	1.8	Sciwks	4.6	Sciwks	4.0	Penguin	1.8	SovHill	4.5	Rialto	4.0	Penguin	1.7	Olympic	4.6	Sciwks	3.9
Show	1.8	Rialto	4.6	Olympic	4.0	Show	1.8	Penguin	4.5	Penguin	3.9	Show	1.7	Penguin	4.5	AFL	3.9
NatGall	1.7	NatGall	4.5	Moomba	3.9	Puffing	1.8	NatGall	4.4	Show	3.9	Puffing	1.7	Sciwks	4.5	FormOne	3.8
Puffing	1.7	SovHill	4.5	Penguin	3.9	NatGall	1.8	Puffing	4.4	NatGall	3.9	NatGall	1.6	AFL	4.3	Olympic	3.8
Sciwks	1.4	Puffing	4.3	Show	3.7	Spring	1.4	Rialto	4.4	Puffing	3.8	Sciwks	1.5	NatGall	4.2	NatGall	3.6
Rialto	1.4	Moomba	4.2	Puffing	3.7	Sciwks	1.4	Moomba	4.2	Olympic	3.7	Rialto	1.4	FormOne	4.2	Moomba	3.5
Spring	1.4	Show	4.2	ComFest	3.4	Rialto	1.4	Show	4.2	SovHill	3.3	Spring	1.4	Show	4.1	SovHill	3.5
AFL	1.4	AFL	3.9	SovHill	3.3	BendPot	1.4	AFL	3.7	FoodWin	3.3	AFL	1.4	Puffing	4.0	Puffing	3.5
BendPot	1.4	ComFest	3.9	FordOpn	3.3	AFL	1.3	ComFest	3.7	ComFest	3.2	BendPot	1.3	AirShow	3.9	Show	3.4
FordOpn	1.3	FordOpn	3.8	ArtFest	3.3	FordOpn	1.3	FoodWin	3.7	AFL	3.1	FordOpn	1.3	Moomba	3.8	AirShow	3.3
Parlmt	1.3	ArtFest	3.7	FoodWin	3.3	Parlmt	1.3	Parlmt	3.6	FordOpn	3.1	FormOne	1.3	MCG	3.6	MCG	3.1
ArtFest	1.3	FoodWin	3.7	AFL	3.2	ArtFest	1.2	FordOpn	3.5	ArtFest	3.1	Powerwk	1.3	MonWld	3.5	MonWld	2.9
ComFest	1.2	Parlmt	3.4	Spring	3.0	ComFest	1.2	ArtFest	3.5	Spring	2.9	Parlmt	1.2	ComFest	3.2	Spring	2.7
MCG	1.2	Spring	3.3	FormOne	2.9	MCG	1.2	Spring	3.3	Parlmt	2.8	ComFest	1.2	BikeGP	3.2	ComFest	2.7
FoodWin	1.2	AirShow	3.3	Parlmt	2.7	FoodWin	1.2	BendPot	3.3	BendPot	2.6	MCG	1.2	Parlmt	3.1	Parlmt	2.6
AirShow	1.2	FormOne	3.3	MCG	2.7	AirShow	1.1	ArtCent	3.2	MCG	2.6	AirShow	1.2	FoodWin	3.1	FoodWin	2.6
FormOne	1.2	ArtCent	3.2	AirShow	2.7	FormOne	1.1	MCG	3.1	ArtCent	2.5	Bells	1.2	Spring	2.9	BikeGP	2.6
PowerWk	1.1	MCG	3.1	ArtCent	2.6	Powerwk	1.1	DeBorto	3.0	FormOne	2.4	Sewage	1.2	ArtCent	2.9	ArtCent	2.5
Olympic	1.1	BendPot	3.1	BendPot	2.5	Olympic	1.1	FormOne	2.9	AirShow	2.4	ArtFest	1.1	BendPot	2.7	FordOpn	2.4
ArtCent	1.1	DeBorto	3.0	DeBorto	2.4	ArtCent	1.1	AirShow	2.8	DeBorto	2.4	FoodWin	1.1	FordOpn	2.7	ArtFest	2.4
DeBorto	1.1	Meteor	2.9	MonWld	2.3	DeBorto	1.1	Berry	2.8	Berry	2.3	Olympic	1.1	Powerwk	2.7	BendPot	2.2
Bells	1.1	MonWld	2.8	Meteor	2.3	Bells	1.1	MonWld	2.8	MonWld	2.2	ArtCent	1.1	Meteor	2.6	Powerwk	2.2
StockEx	1.1	Berry	2.7	StockEx	2.2	StockEx	1.1	Tapest	2.8	Tapest	2.2	DeBorto	1.1	ArtFest	2.6	Meteor	2.1
Berry	1.1	Tapest	2.7	Berry	2.2	Berry	1.1	Meteor	2.7	Meteor	2.2	StockEx	1.1	DeBorto	2.6	DeBorto	2.0
Sewage	1.1	StockEx	2.6	BikeGP	2.2	Sewage	1.1	StockEx	2.5	StockEx	2.2	MonWld	1.1	Bells	2.4	Bells	2.0
MonWld	1.1	BikeGP	2.6	Tapest	2.2	MonWld	1.1	Bells	2.4	BikeGP	2.1	BikeGP	1.1	Berry	2.3	Sewage	2.0
BikeGP	1.1	Bells	2.4	Bells	2.0	BikeGp	1.1	BikeGP	2.2	Bells	2.0	Meteor	1.1	Sewage	2.3	Berry	1.9
Tapest	1.1	PowerWk	2.3	Sewage	1.9	Tapest	1.1	Powerwk	2.0	Sewage	2.0	Berry	1.0	Tapest	2.2	Tapest	1.9
Meteor	1.1	Sewage	2.1	PowerWk	1.9	Meteor	1.1	Sewage	2.0	Powerwk	2.0	Tapest	1.0	StockEx	2.1	StockEx	1.8

Table 5.5: Holland Codes of Responsdents ranked by Mean Value (continued)

Mean by Investigative Code						Mean by Enterprising Code						Mean by Conventional Code					
Actual		Interest		Intention		Actual		Interest		Intention		Actual		Interest		Intention	
Moomba	1.8	Sciwks	5.2	Olympic	5.2	Moomba	1.8	Olympic	6.2	Olympic	5.2	Moomba	1.8	Olympic	5.4	Rialto	4.4
NatGall	1.8	Olympic	5.1	Sciwks	5.1	Show	1.8	Penguin	5.5	FordOpn	4.9	SovHill	1.8	Rialto	4.9	Olympic	4.4
SovHill	1.7	NatGall	4.7	Moomba	4.7	SovHill	1.7	FordOpn	5.4	Rialto	4.7	Penguin	1.8	SovHill	4.5	Moomba	3.7
Show	1.7	Rialto	4.7	NatGall	4.7	Penguin	1.7	Rialto	5.3	Show	4.4	NatGall	1.8	Sciwks	4.5	Penguin	3.7
Puffing	1.7	ComFest	4.7	ComFest	4.7	NatGall	1.7	Puffing	5.0	Puffing	4.4	Puffing	1.8	Penguin	4.4	Puffing	3.7
Penguin	1.6	Penguin	4.6	Penguin	4.6	Puffing	1.7	AFL	5.0	ComFest	4.3	Show	1.7	Puffing	4.4	Sciwks	3.7
Sciwks	1.5	Moomba	4.5	Rialto	4.5	AFL	1.6	SovHill	4.7	FormOne	4.2	Sciwks	1.4	Moomba	4.3	Show	3.4
AFL	1.4	Puffing	4.2	ArtFest	4.2	Spring	1.6	NatGall	4.7	AFL	4.2	Rialto	1.4	FordOpn	4.2	NatGall	3.4
FordOpn	1.4	ArtFest	4.2	FordOpn	4.2	Sciwks	1.5	FoodWin	4.7	FoodWin	4.1	BendPot	1.4	NatGall	4.1	FordOpn	3.4
ComFest	1.4	FordOpn	4.1	Show	4.1	Rialto	1.4	FormOne	4.7	Penguin	4.1	FordOpn	1.4	AFL	4.1	FoodWin	3.3
Rialto	1.3	SovHill	4.0	Puffing	4.0	FordOpn	1.4	Show	4.6	Moomba	4.0	Spring	1.3	Show	4.0	ArtFest	3.2
Spring	1.3	Show	4.0	FoodWin	4.0	BendPot	1.4	Sciwks	4.6	NatGall	4.0	AFL	1.3	ArtCent	3.8	SovHill	3.1
BendPot	1.3	AirShow	4.0	AirShow	4.0	Parlmt	1.3	ComFest	4.6	Sciwks	3.9	Parlmt	1.3	ComFest	3.7	ComFest	3.1
ArtFest	1.3	AFL	3.8	SovHill	3.8	ArtFest	1.3	Moomba	4.4	Spring	3.9	ArtFest	1.3	FormOne	3.7	Spring	3.0
Parlmt	1.2	FoodWin	3.7	AFL	3.7	ComFest	1.3	Spring	4.1	ArtFest	3.8	ComFest	1.2	ArtFest	3.6	AFL	3.0
FoodWin	1.2	Parlmt	3.3	Spring	3.3	StockEx	1.3	ArtFest	4.1	SovHill	3.4	AirShow	1.2	Spring	3.5	FormOne	3.0
AirShow	1.2	Meteor	3.3	Parlmt	3.3	MCG	1.2	AirShow	4.0	AirShow	3.3	Olympic	1.2	FoodWin	3.5	ArtCent	2.8
MCG	1.1	ArtCent	3.2	MCG	3.2	FoodWin	1.2	BikeGP	3.8	BikeGP	3.3	ArtCent	1.1	MCG	3.4	Parlmt	2.7
FormOne	1.1	Spring	3.1	DeBorto	3.1	AirShow	1.2	MCG	3.4	Parlmt	3.2	MCG	1.1	BendPot	3.3	MCG	2.7
Powerwk	1.1	StockEx	3.1	StockEx	3.1	FormOne	1.1	Parlmt	3.3	MCG	2.8	FoodWin	1.1	Parlmt	3.3	AirShow	2.7
Olympic	1.1	BendPot	2.9	Meteor	2.9	DeBorto	1.1	DeBorto	3.3	ArtCent	2.7	FormOne	1.1	AirShow	3.3	Berry	2.5
ArtCent	1.1	MCG	2.9	FormOne	2.9	Powerwk	1.1	ArtCent	3.1	DeBorto	2.6	Powerwk	1.1	Meteor	3.3	BendPot	2.4
DeBorto	1.1	DeBorto	2.9	ArtCent	2.9	Olympic	1.1	Meteor	3.0	MonWld	2.5	DeBorto	1.1	Berry	3.2	DeBorto	2.3
Bells	1.1	Bells	2.9	Bells	2.9	ArtCent	1.1	MonWld	2.8	Powerwk	2.5	Bells	1.1	Tapest	3.0	Meteor	2.3
StockEx	1.1	MonWld	2.8	Berry	2.8	Bells	1.1	BendPot	2.7	StockEx	2.4	StockEx	1.1	BikeGP	2.8	Tapest	2.2
Berry	1.1	FormOne	2.7	BendPot	2.7	Berry	1.1	StockEx	2.7	Meteor	2.4	Berry	1.1	DeBorto	2.7	BikeGP	2.1
Sewage	1.1	Berry	2.7	Sewage	2.7	Sewage	1.1	Powerwk	2.5	BendPot	2.3	MonWld	1.1	Bells	2.6	StockEx	2.0
MonWld	1.1	Sewage	2.7	MonWld	2.7	MonWld	1.1	Bells	2.5	Bells	2.2	Sewage	1.1	MonWld	2.6	MonWld	2.0
BikeGP	1.1	Powerwk	2.6	BikeGP	2.6	BikeGP	1.0	Berry	2.5	Berry	2.1	Meteor	1.1	StockEx	2.6	Bells	1.9
Tapest	1.0	Tapest	2.5	Powerwk	2.5	Tapest	1.0	Tapest	2.1	Tapest	2.0	BikeGP	1.0	Powerwk	2.5	Sewage	1.7
Meteor	1.0	BikeGP	2.4	Tapest	2.4	Meteor	1.0	Sewage	1.8	Sewage	1.5	Tapest	1.0	Sewage	2.1	Powerwk	1.6

Table 5.5: <u>Holland Codes of Responsdents ranked by Mean Value (continued)</u>

		Mean by Artistic Code				
Actual		**Interest**		**Intention**	
Moomba	1.9	NatGall	5.6	NatGall	5.4
SovHill	1.9	ArtFest	4.9	ArtFest	4.5
Penguin	1.9	Sciwks	4.7	ComFest	4.2
NatGall	1.9	ComFest	4.7	FoodWin	4.0
Show	1.8	Olympic	4.7	Show	3.9
Puffing	1.7	Penguin	4.5	Moomba	3.7
ArtFest	1.5	Show	4.5	Sciwks	3.7
Sciwks	1.4	SovHill	4.4	Olympic	3.7
Rialto	1.4	FoodWin	4.3	Puffing	3.6
Spring	1.4	Moomba	4.0	Penguin	3.5
AFL	1.3	FordOpn	3.9	Rialto	3.5
BendPot	1.3	ArtCent	3.9	FordOpn	3.4
FordOpn	1.3	Puffing	3.8	SovHill	3.3
Parlmt	1.3	Rialto	3.7	ArtCent	3.2
ComFest	1.3	DeBorto	3.6	Spring	2.8
FoodWin	1.3	BendPot	3.4	BendPot	2.8
ArtCent	1.3	Tapest	3.4	DeBorto	2.8
AirShow	1.2	Parlmt	3.2	Tapest	2.7
Powewk	1.2	Meteor	3.2	AFL	2.5
Olympic	1.2	Spring	3.1	Parlmt	2.5
DeBorto	1.2	AFL	3.0	AirShow	2.4
Tapest	1.2	AirShow	2.9	Meteor	2.4
MCG	1.1	Berry	2.9	MCG	2.3
FormOne	1.1	FormOne	2.8	FormOne	2.3
Bells	1.1	MCG	2.6	Berry	2.3
StockEx	1.1	StockEx	2.6	StockEx	2.2
Berry	1.1	MonWld	2.5	BikeGP	2.1
MonWld	1.1	Bells	2.4	Powewk	1.9
Sewage	1.1	BikeGP	2.3	Bells	1.9
BikeGP	1.1	Powewk	2.3	MonWld	1.9
Meteor	1.1	Sewage	2.0	Sewage	1.8

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Olympic Games is high, as it appears in the top five places for each code. This suggests that there is a high interest among all personality types to visit a Commonwealth or Olympic Games. For the respondents with a "Social" code, any attraction with mechanical elements appears near the bottom of the list, for example, the Australian International Air Show, Our World of Money, the Australian Motorcycle Grand Prix and the tour of Powerworks. In comparison, the "Realistic" respondents list these attractions higher in the table. This suggests that for "Social" respondents the actual visitation, interest in visiting and intention to visit is low for any attractions with mechanical elements, whereas for "Realistic" respondents it is high.

Gender and Tourism Behaviour

The analysis to determine the relationship between the gender of the respondents and tourism choice behaviour showed that, in the chi-square analysis on actual visitation of the named attraction by gender, seven out of the 31 (23%) attractions showed a level of significance of less than 0.05. In the t-test on the interest in visiting the named attraction by gender, nine out of the 31 (29%) attractions showed a level of significance of less than 0.05. In the t-test on the intention to visit the named attraction by gender, 10 out of the 31 (33%) attractions showed a level of significance of less than 0.05 (Table 5.6). The attractions for which all three tourism measures showed gender differences were the AFL Grand Final, the MCG Tour, the Australian Formula One Grand Prix, and the Australian Motorcycle Grand Prix, which all had higher male mean scores.

Table 5.6: Gender of (and Level of Statistical Significance of Differences Between) Respondents who Visited, were Interested in Visiting, and Intended to Visit the Individual Named Attractions (Ranked by Level of Visitation)

Named Attraction (Listed in decreasing order of mean actual visitation)	Number of Actual Visits			Level of Significance		
	Female	Male	Total	A	In	It
Moomba Festival, Melbourne	219	183	402			
Sovereign Hill, Ballarat	217	171	388			
Penguin Parade, Phillip Island	219	169	388	0.04		
Royal Agricultural Society of Victoria Show (Melbourne Show)	216	169	385		0.03	0.02
National Gallery of Victoria, Melbourne	207	167	374			0.04
Puffing Billy, Belgrave	207	166	373			
Scienceworks Museum, Melbourne	106	103	209			
Spring Racing Carnival, Melbourne	98	93	191			
Rialto Towers Observation Deck, Melbourne	104	84	188			
Australian Football League Grand Final, Melbourne	84	99	183	0.01	0.00	0.00
Bendigo Pottery, Bendigo	97	79	176		0.00	
Ford Australian Open Tennis, Melbourne	86	86	172			
Tour of Parliament House, Melbourne	78	63	141			
International Festival of the Arts, Melbourne	78	55	133			
Melbourne International Comedy Festival	62	47	109			
Melbourne Food and Wine Festival, Melbourne	55	40	95			
Behind the scenes tour of the Melbourne Cricket Ground (MCG)	37	55	92	0.00	0.00	0.00
Australian International Air Show, Avalon	38	45	83		0.00	0.00
Australian Formula One Grand Prix, Melbourne	28	48	76	0.00	0.00	0.00
Powerworks (Formerly tour of SEC power plant), Morwell	31	41	72	0.04		
Backstage tour of the Victorian Arts Centre, Melbourne	42	26	68			
A Commonwealth or Olympic Games	34	33	67			
De Bortoli Winery, Dixons Creek	38	24	62			
Bells Beach Surf Classic, Bells Beach	34	24	58			0.03
Tour of the Australian Stock Exchange	19	31	50	0.02		
"Pick-your-own" Fruit and Berry Farm, Drouin West	20	21	41			
Our World of Money, Craigieburn (Australian Mint)	27	13	40		0.00	0.00
Tour of Western Wastewater Treatment Plant, Werribee	20	19	39			
Australian Motorcycle Grand Prix	7	22	29	0.00	0.00	0.00
Victorian Tapestry Workshop, South Melbourne	18	10	28		0.00	0.00
Bureau of Meteorology, Melbourne	12	15	27			

Personality, Tourism Behaviour, and Gender

The results of the analysis to determine the gender and Holland code of the respondents in relation to actual visitation, interest in visiting, and intention to visit, are summarised in Table 5.7. In the chi-square analysis on actual visitation of the named attraction by gender and Holland code, 16 out of the 186 (9%) results showed a level of significance of less than 0.05. In the t-test on the interest in visiting the named attraction by gender and Holland code, 21 out of 186 (11%) results showed a level of significance of less than 0.05, and in the t-test on the intention to visit the named attraction by gender, 19 out of 186 (10%) of the outcomes showed a level of significance of less than 0.05.

In taking the traditional 0.05 threshold of statistical significance, the expectation would be that approximately five of every 100 results would present as statistically significant, even if that were not actually the case. Hence, if in a large study such as this present study, only up to five per cent of the results appeared to be significant, those results could be unreliable. However, if more than five per cent of results are significant, then those results are likely to be reliable, but should be interpreted cautiously. Therefore, in the present study, there does seem to be a relationship between the gender and Holland code of respondents and the attractions that they have visited, are interested in visiting, or intend to visit, for some attractions. From a broad perspective, as illustrated by reading across the rows of Table 5.7, some attractions exhibited greater personality-gender interactions, such as the Behind the scenes tour of the MCG, the Australian International

Table 5.7: Statistically Significant Relationships Between Gender and Holland Code of Respondents and Actual Visiation, Interest in Visting, and Intention to Visit Tourism Attractions

Name of Attraction (significance <0.05 indicated by "s") (Listed in decreasing order of mean actual visitation)	Actual Visitation						Interest in Visiting						Intention to Visit					
	S	R	I	E	C	A	S	R	I	E	C	A	S	R	I	E	C	A
Moomba Festival, Melbourne																		
Sovereign Hill, Ballarat																		
Penguin Parade, Phillip Island													s					
RAS of Victoria Show (Melbourne Show)	s												s					
National Gallery of Victoria, Melbourne									s						s			
Puffing Billy, Belgrave						s	s						s					
Scienceworks Museum, Melbourne														s				
Spring Racing Carnival, Melbourne					s			s						s				
Rialto Towers Observation Deck, Melbourne																s		
AFL Grand Final, Melbourne				s			s			s			s			s		
Bendigo Pottery, Bendigo							s				s							
Ford Australian Open Tennis, Melbourne																		
Tour of Parliament House, Melbourne																		
International Festival of the Arts, Melbourne																		
Melbourne International Comedy Festival		s																
Melbourne Food and Wine Festival, Melbourne	s							s										
Behind the scenes tour of the MCG						s			s		s						s	
Australian International Air Show, Avalon						s				s		s	s			s		
Australian Formula One Grand Prix, Melbourne													s			s		s
Powerworks (tour of SEC power plant), Morwell					s													
Backstage tour of the Victorian Arts Centre																		
A Commonwealth or Olympic Games								s	s					s				
De Bortoli Winery, Dixons Creek		s																
Bells Beach Surf Classic, Bells Beach																		
Tour of the Australian Stock Exchange					s													
"Pick-your-own" Fruit and Berry Farm, Drouin				s												s		
Our World of Money, Craigieburn (Mint)		s										s						
Tour of Wastewater Treatment Plant, Werribee.	s																	
Australian Motorcycle Grand Prix		s					s	s					s	s				
Victorian Tapestry Workshop, South Melbourne						s	s	s	s				s	s				
Bureau of Meteorology, Melbourne	s						s		s									

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Air Show, and the Australian Motorcycle Grand Prix (higher male propensity); and the Tapestry Workshop and Puffing Billy (higher female propensity). However, eight of the 31 attractions displayed no such interactions at all, suggesting that they may be generically attractive, or at least mass market attractions, such as the Sovereign Hill heritage attraction and the Moomba Festival.

Results Using Industrial Tourism Attraction Variables Only

<u>Summary of Analysis of Industrial Tourism Attractions</u>

The analysis that was carried out using the variables for industrial attractions is summarised in Table 5.8. It is demonstrated there that the proportion of statistically significant relationships between industrial tourism attractions and actual visitation, interest in visiting and intention to visit ranged from 7.1% to 11.5%. Of the 600 cells generated for actual visitation, 49 (8%) were statistically significant. Of the 1008 cells generated for interest in visiting without using Holland code, 132 (13%) were statistically significant. Of the 1008 cells generated for intention to visit without using Holland code, 72 (7.1%) were statistically significant. Of the 1692 cells generated for interest in visiting using Holland code, 195 (11.5%) were significant. Of the 1692 cells generated for intention to visit using Holland Code, 136 (8%) were significant.

It would be expected that all the industrial attractions should have approximately the

Table 5.8: <u>Summary of Analysis of Industrial Tourism Attractions</u>

Type of Analysis	Dependent Variables	Total Number of Cells Generated	Total Number of Statistically Significant Cells	Percentage
Chi-square	Actual	600	49	8.0
ANOVA	Interest (with Holland Code)	1692	195	11.5
ANOVA	Interest (without Holland Code)	1008	132	13.0
ANOVA	Intention (with Holland Code)	1692	125	7.4
ANOVA	Intention (without Holland Code)	1008	72	7.1
Total		5580	573	10.0

same proportion of statistically significant relationships in relation to actual visitation, interest in visiting and intention to visit, if all attractions were viewed as being similar. In other words, if there were no differences in the proportion of significant results, then the sample is equally interested (or uninterested) in visiting the attractions or equally intending (or not intending) to visit these attractions, i.e., they share the same view of the attraction in regard to tourism visitation. On the other hand, if there are no differences between the attractions it can be suggested that, in relation to actual visitation, interest in visiting and intention to visit, the attractions are mass types of attractions or are very unattractive. Reading across Table 5.8 it can be seen that the number of statistically significant relationships differs in each case of actual visitation, interest in visiting and intention to visit.

Table 5.9 lists, in descending order, the total number of significant results for actual

visitation, interest in visiting and intention to visit industrial tourism attractions. Based on

Table 5.9, the industrial tourism attraction that had the highest proportion of significant

results for actual visitation was De Bortoli Winery; for interest in visiting, it was

Victorian Tapestry Workshop; and for intention to visit, it was the tour of the MCG. At

the other end of the scale, the industrial tourism attraction that had the lowest proportion

of significant results for actual visitation was the Bureau of Meteorology; for interest in

visiting, it was the tour of the Wastewater Treatment Plant and Our World of Money; and

for intention to visit, it was the Backstage tour of the Victorian Arts Centre.

Relationship between Demographics, Holland Code and Industrial Tourism Attractions

Table 5.10 demonstrates that when individually analysing Holland personality code and

each of the demographics in turn, the proportion of statistically significant results for

actual visitation was the same for Holland code, education and marital status. For interest

in visiting and intention to visit, the highest proportion of statistically significant results

was for gender. Income had the lowest proportion of significant results in relation to

interest in visiting and intention to visit. However, the differences between the highest

and next highest proportion are not great. It is, therefore, necessary to look at deeper

relationships between the variables by considering the following: the influence of Holland

code plus each of the seven demographics (Table 5.11), the influence of Holland plus two

Table 5.9: <u>Total Number of Statistically Significant Relationships between Actual Visitation, Interest in Visiting and Intention to Visit for each Industrial Tourism Attraction</u>

Name of Attraction (Listed in decreasing order of total number of statistically significant relationships)	Actual	Interest	Intention	Total
Victorian Tapestry Workshop, South Melbourne	6	58	32	96
Behind the scenes tour of the MCG	5	29	41	75
Powerworks (tour of SEC power plant), Morwell	3	33	25	61
"Pick-your-own" Fruit and Berry Farm, Drouin	2	36	23	61
Tour of the Australian Stock Exchange	6	19	29	54
De Bortoli Winery, Dixons Creek	10	28	4	42
Bendigo Pottery, Bendigo	8	31	2	41
Backstage tour of the Victorian Arts Centre	2	32	1	35
Bureau of Meteorology, Melbourne	0	26	5	31
Our World of Money, Craigieburn (Mint)	1	9	20	30
Tour of Parliament House, Melbourne	3	21	5	29
Tour of Wastewater Treatment Plant, Werribee.	3	9	8	20
Total	49	331	195	575

Table 5.10: <u>Statistically Significant Relationships for Actual Visitation, Interest in Visiting and Intention to Visit Industrial Tourism Attractions for Holland and Demographics</u>

Variable	Actual	Interest	Intention	Total
Holland code	3	3	2	8
Gender	2	4	4	10
Occupation	1	3	2	6
Age	2	3	1	6
Education	3	4	1	8
Number of Dependent Children	0	1	0	1
Marital Status	3	1	3	7
Income	1	0	0	1
Total	15	19	13	47

Table 5.11: <u>Statistically Significant Relationships for Actual Visitation, Interest in Visiting and Intention to Visit Industrial Tourism Attractions for both Holland and each of the Demographics</u>

Variable	Actual	Interest	Intention	Total
Holland Code and Gender	5	8	4	17
Holland Code and Occupation	9	9	10	28
Holland Code and Age	4	10	7	21
Holland Code and Education	6	7	3	16
Holland Code and Number of Dependent Children	4	7	5	16
Holland Code and Marital Status	4	3	2	9
Holland Code and Income	2	4	3	9
Total	34	48	34	116

other demographics (Table 5.12), and the influence of two demographics without Holland (Table 5.13).

Table 5.11 demonstrates that when analysing Holland code plus each of the other demographics in turn, the highest proportion of statistically significant results for actual visitation was Holland code and occupation. For interest in visiting, the highest proportion of statistically significant results was for Holland code and age. For intention to visit, the highest proportion of statistically significant results was for Holland code and occupation. Table 5.12 demonstrates that when analysing Holland plus two other demographics, the highest proportion of statistically significant results for Interest in visiting was for Holland code and gender and education. For intention to visit, the highest proportion of statistically significant results was for Holland code and age and income. Again, the differences between the highest and next highest proportion are not great.

Table 5.12: <u>Statistically Significant Relationships for Interest in Visiting and Intention to Visit Industrial Tourism Attractions for Holland Code and two Demographics</u>

Variable	Interest	Intention	Total
Holland Code and Gender and Age	10	8	18
Holland Code and Gender and Number of Dependent Children	10	4	14
Holland Code and Gender and Marital Status	9	7	16
Holland Code and Gender and Education	11	6	17
Holland Code and Gender and Income	8	3	11
Holland Code and Gender and Occupation	10	5	15
Holland Code and Age and Number of Dependent Children	3	0	3
Holland Code and Age and Marital Status	7	3	10
Holland Code and Age and Education	10	5	15
Holland Code and Age and Income	9	9	18
Holland Code and Age and Occupation	7	5	12
Holland Code and Number of Dependent Children and Marital Status	4	3	7
Holland Code and Number of Dependent Children and Education	0	0	0
Holland Code and Number of Dependent Children and Income	3	0	3
Holland Code and Number of Dependent Children and Occupation	7	2	9
Holland Code and Marital Status and Education	6	4	10
Holland Code and Marital Status and Income	6	7	13
Holland Code and Marital Status and Occupation	6	6	12
Holland Code and Education and Income	8	4	12
Holland Code and Education and Occupation	10	5	15
Holland Code and Income and Occupation	3	3	6
Total	147	89	236

Table 5.13: Statistically Significant Relationships for Interest in Visiting and Intention to Visit Industrial Tourism Attractions for two Demographics (No Holland)

Variable	Interest	Intention	Total
Gender and Age	13	8	21
Gender and Number of Dependent Children	4	0	4
Gender and Marital Status	5	3	8
Gender and Education	10	5	15
Gender and Income	7	5	12
Gender and Occupation	7	2	9
Age and Number of Dependent Children	1	0	1
Age and Marital Status	2	1	3
Age and Education	9	4	13
Age and Income	3	4	7
Age and Occupation	8	4	12
Number of Dependent Children and Marital Status	1	0	1
Number of Dependent Children and Education	0	0	0
Number of Dependent Children and Income	1	0	1
Number of Dependent Children and Occupation	7	1	8
Marital Status and Education	6	3	9
Marital Status and Income	2	0	2
Marital Status and Occupation	9	9	18
Education and Income	8	2	10
Education and Occupation	11	6	17
Income and Occupation	2	2	4
Total	116	59	175

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However, it is noted that there are no statistically significant results for Holland code, dependent children and education. Table 5.13 demonstrates that when analysing two other demographics without the influence of Holland, the highest proportion of statistically significant results for interest in visiting was for gender and age. For intention to visit, the highest proportion of statistically significant results was for family situation and occupation. When considering the total proportion of results for both interest and intention, it would appear that gender and age have the greatest proportion of statistically significant results.

Relationship between Actual Visitation and Interest in Visiting and Intention to Visit Industrial Tourism Attractions

In earlier analysis, the variable actual visitation was used as a dependent variable (that is, a variable that is to be predicted or explained). However, in this part of the analysis, actual visitation was used as an independent variable (that is, a variable that is expected to influence the dependent variable). Therefore, to consider Research Question Two in relation to the influence of past visitation, it was necessary to consider the extent to which actual visitation makes a difference in relation to interest in visiting and intention to visit industrial tourism attractions (Table 5.14).

Table 5.14 Statistically Significant Relationships Between Actual Visitation and Interest in Visiting and Intention to Visit

Name of Attractions (Listed in decreasing order of mean actual visitation)	Bendi Pot		Parlmt		MCG		Power Works		Art Centre		Debort Winery		Stock Ex		Berry Farm		Money World		Waste Water Plant		Tapest Works		Bur of Met	
	It	In	It	In	It	In	It	In	It	In	It	In	It	In	It	In	It	In	It	In	It	In	It	In
Bendigo Pottery, Bendigo	Y																							
Tour of Parliament House, Melbourne			N	N											Y	Y								
Behind the scenes tour of the MCG			Y	Y	Y	Y			Y										Y	Y			Y	
Powerworks (tour of SEC power plant), Morwell																Y								
Backstage tour of the Victorian Arts Centre	Y						Y		Y						Y	Y								
De Bortoli Winery, Dixons Creek											Y	Y			Y	Y			N					
Tour of the Australian Stock Exchange									Y															
"Pick-your-own" Fruit and Berry Farm, Drouin									Y	Y					Y	Y								
Our World of Money, Craigieburn (Mint)	Y								Y								Y							
Tour of Wastewater Treatment Plant, Werribee.						Y			Y	Y	Y								Y	Y				
Victorian Tapestry Workshop, South Melbourne																					Y	Y		
Bureau of Meteorology, Melbourne									Y	Y						Y					Y	Y		

Key:

Y = Higher mean value for actual visitation

N = Lower mean value for actual visitation

Shaded Cells = Statistically significant relationship between actual visitation and interest in visiting and intention to visit the same attraction.

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The shaded cells in Table 5.14 illustrate the instances when there is a relationship between actual visitation of an attraction and interest in visiting and/or intention to visit the same attraction (that is, revisitation). The attractions that are shaded are: Bendigo Pottery, Behind the scenes tour of the MCG, Backstage tour of the Victorian Arts Centre, De Bortoli Winery, "Pick-your-own" Fruit and Berry Farm, Tour of Wastewater Treatment Plant, and Victorian Tapestry Workshop. The attractions where there are no relationships are: Powerworks, Tour of the Australian Stock Exchange, Our World of Money, and Bureau of Meteorology. There was a negative relationship for the Tour of Parliament House for both interest in visiting and intention to visit. Therefore, there appears to be a pattern of visitation in relation to actual visitation, and interest in visiting and intention to visit industrial tourism attractions.

Summary

This chapter presented the results of the analysis, and considered all attractions initially, and then concentrated on the results for industrial tourism attractions only. The chapter considered the results in relation to Holland code and demographics and the influence of actual visitation on interest in visiting and intention to visit.

CHAPTER SIX

DISCUSSION AND RECOMMENDATIONS FOR FURTHER STUDY

Introduction

The editorial interpretations and comments in this chapter are based on the statistical

analysis in Chapter Five. The major interpretations in this chapter are concerned with the

identification of industrial tourism attractions as a distinguishable type of tourism

attraction, and the relationship between Holland's theory and tourism choice behaviour.

The conclusions for all hypotheses are reviewed and final conclusions, based on the

findings, are discussed for all hypotheses. The chapter considers the results within the

parameters of the study and suggests how the results might be useful to the tourism

industry. The chapter includes recommendations for further study and makes specific

recommendations for additional research that might be undertaken.

Interpretation of the Relationships between Variables

H 1   Industrial tourism attractions are distinctly different in terms of other types of

attractions.

For interest in visiting the 31 named tourism attractions, factor analysis revealed there

were eight separate types of attractions. The major attraction grouping for interest in

visiting was for industrial tourism attractions which appeared in two factors, each of

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which contained industrial tourism attractions and no other type of attractions. For intention to visit the 31 named tourism attractions, there were five factors containing more than one attraction, with the major attraction grouping again, being for industrial tourism attractions. It may be recalled that the measures "interest in visiting" and "intention to visit" were used as a basis for grouping attractions because "interest" measures covert behaviour and may more fully reflect an individual's personality, while "intention to visit" also measures covert behaviour but may reflect the influence of external restrictions such as time, money and some other demographics. Therefore, from factor analysis, it is apparent that there is an underlying regularity in the grouping of industrial tourism attractions. The aim of factor analysis is to summarise the information contained in a large number of variables into a smaller number of factors (Zikmund 1994). Therefore, it is demonstrated by using factor analysis, that for these respondents, industrial tourism attractions are identifiable types of attractions.

From the dendrograms created by cluster analysis, it is apparent that there is a striking degree of coherence in the sample's grouping of the industrial tourism attractions. However, a test of coherence, such as may be provided through an examination of within and between group variability, was not conducted. Although the respondents were not prompted in any way to view the industrial tourism attractions as being primarily industrial tourism attractions, it may be inferred that the fundamental basis for segregating industrial tourism attractions from the other attractions, in a broad set of diverse attractions, is their industrial character. The set of industrial tourism attractions is internally heterogeneous on many obvious characteristics, such as focussing on goods or

services, primary or secondary or tertiary industry sector, public or private sector ownership, location in Melbourne or regional Victoria, and being of specialist or generalist interest, just as the attractions are in the other clusters. Hence, it may be argued that these attributes are not determinant in the perceptual classification schema operating here.

The omission of just one industrial tourism attraction from the primary cluster on the interest variable (but none on the intention variable) may be understood in the context of another Melbourne Cricket Ground (MCG)-related attraction being presented to respondents for assessment, with a strong link being formed between the two items (the AFL Grand Final and the tour of the MCG) on the notion of "MCG-ness". Of greater impact is probably the extreme homogeneity of the industrial tourism attraction clusters, which exclude all other attractions.

H 2 Personality (as represented by Holland codes), is related to tourism choice behaviour, as represented by:

       (a) actual visitation of named tourism attractions

       (b) the degree of interest in visiting named tourism attractions, and

       (c) the degree of intention to visit named tourism attractions.

The study found that the proportion of Holland codes in the present study is comparable to the US norming survey which also used Holland's personality theory with a group of adults. It is, therefore, inferred that the sample represents an acceptable cross-section of

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Holland types which can be used for analysis. The study found that there were some significant associations between the respondents' Holland personality types, and their tourism behaviour for some attractions and some measures of behaviour. For example, Table 5.4 demonstrated that Artistic respondents visit artistic type attractions, e.g., the National Gallery, but Realistic types have low interest in visiting and intention to visit the Comedy Festival, and Table 5.5 showed that the Olympic/Commonwealth Games had negligible actual attendance, but the highest average level of interest in attending, and yet very low average intention to attend. This could demonstrate the effect of the high cost and inaccessibility of the Games, compared to other Victorian attractions, in discouraging planning to visit, although the hypothetical 'interest' variable is still functioning independently of 'reality'. That is, potential tourists are capable of distinguishing between covert and abstract orientations towards tourism attractions, and the still-covert but more concrete conative or intentionality of planning to visit within a given timeframe. This distinction has been operationalised for some time in recurring commercial research programs which ask different questions about each of these aspects of tourism behaviour, and accentuates the need to avoid simplistic, single-measure assessments of tourism behaviour. Taking the analysis further, visiting the observation deck of the Rialto building had only moderate visitation (probably due to its recency of opening), but high levels of interest and intention. The ready accessibility, both geographically and economically, of this attraction, can facilitate the reconciliation of the interest-intention variables, in contrast to the Games case.

The thesis has shown that Holland codes do make a difference in the types of attraction visited, when certain types of Holland personality types visit certain attractions. However, there are occasions when Holland codes do not make a difference. The thesis, therefore, considered other factors such as demographics and past visitation.

H 3 Gender is related to tourism choice behaviour, as represented by:

(a) actual visitation of named tourism attractions

(b) the degree of interest in visiting named tourism attractions, and

(c) the degree of intention to visit named tourism attractions.

The study found that gender is related to who actually attends sporting events and sporting related events, such as the industrial tourism attraction, behind the scenes tour of the MCG, and the Australian Formula One Grand Prix (Table 5.6). Similarly, Table 5.7 demonstrated that gender influenced interest in visiting and intention to visit an attraction such as the industrial tourism attraction, the Victorian Tapestry Workshop. Thus, in relation to gender and all named tourism attractions, the study found that there were some significant associations between the respondents' gender and their tourism behaviour for some attractions and some measures of behaviour.

After considering the relationship between personality and gender in relation to all attractions, the analysis focused on the relationship between personality, demographics and tourism choice behaviour for industrial tourism attractions only. Thus, Hypothesis 4 considered the total number of statistically significant relationships between actual

visitation, interest in visiting and intention to visit industrial tourism attractions, and Hypothesis 5 considered demographics and personality and tourism choice behaviour at industrial tourism attractions. Hypothesis 6 considered demographics as well as personality and tourism choice behaviour at industrial tourism attractions, and finally, Hypothesis 7 considered past visitation and tourism choice behaviour, also at industrial tourism attractions.

H 4   There is a variation in the number of statistically significant relationships between named industrial tourism attractions and tourism choice behaviour, as represented by:

   (a) actual visitation of named industrial tourism attractions

   (b) the degree of interest in visiting named industrial tourism attractions, and

   (c) the degree of intention to visit named industrial tourism attractions.

The study demonstrated that there are differences between the total number of statistically significant relationships for tourism choice behaviour and industrial tourism attractions (Table 5.9). The industrial tourism attraction which had the highest proportion of significant results for actual visitation was De Bortoli Winery. The winery is located in Dixons Creek, which is 62 kilometres north east from Melbourne city centre and it is one of a number of popular Yarra Valley wineries. The Yarra Valley is one of the biggest wine growing regions in Australia and is noted for its hospitality (RACV 1995). Consequently, a high number of Melbourne residents travel, for day trips and weekends,

to the Yarra Valley to visit the wineries and sample the wine before returning to Melbourne.

The highest proportion of significant results for interest in visiting was the Victorian Tapestry Workshop. The workshop, which is internationally renowned, allows visitors to see weavers producing large handwoven tapestries for use in public buildings and small tapestries for use in private collections and gifts (RACV 1995). Therefore, many people have an interest in visiting the site to view the tapestry and, because the workshop is only three kilometres from Melbourne city centre, it is easily accessible.

The highest proportion of significant results for intention to visit was the behind the scenes tour of the MCG, which is described as "a tour through the hallowed stadium" (RACV 1995, p. 2) and so may reflect the sample's interest in sporting activities as a whole. Earlier analysis of the sample revealed that 39% of all respondents had actually attended the AFL Grand Final, so it can be suggested that the sample may be interested in visiting the behind the scenes tour at the MCG as this is where the AFL Grand Final is staged. From a locational perspective the MCG is in Richmond which is only three kilometres east of Melbourne city centre (RACV 1995), so it is easily accessible for the visitor. In addition, the MCG is a culturally important destination in Melbourne because of its historical links with great sporting events in cricket and Australian Rules Football, and it was the setting for the 1956 Olympics.

The lowest proportion of significant results for actual visitation was for the Bureau of Meteorology. The Bureau of Meteorology is only open from Monday to Friday, 9am to 5pm, and it is not open during public holidays or at the weekends (RACV 1995). Therefore, there is a limited amount of time to actually visit the attraction, which may explain the low proportion of statistically significant results for actual visitation. In addition, there may be a lack of awareness that the facility is open to the public. The lowest proportion of significant results for interest in visiting was for the Wastewater Treatment Plant and the Australian Mint. The low number of significant relationships may reflect a lack of awareness of the sites as potential visitor attractions, or may reflect no opinion in that respondents were neither interested or uninterested, or had low intention or no intention to visit. The lowest proportion of significant results for intention to visit was the backstage tour of the Victorian Arts Centre. This may reflect the fact that the backstage tours are only available twice on Sunday afternoons and have to be booked in advance. Therefore, they require a certain amount of planning before visitation can occur.

H 5   Demographics (as represented by gender, occupation, age, education, number of dependent children, marital status, and income) and personality (as represented by Holland code), are related to tourism choice behaviour, as represented by:

(a) actual visitation of named industrial tourism attractions

(b) the degree of interest in visiting named industrial tourism attractions, and

(c) the degree of intention to visit named industrial tourism attractions.

The study found that when considering demographics and Holland code (as individual variables), and tourism choice behaviour, the highest proportion of statistically significant results for interest and intention was for gender (21%), and the next highest was for Holland code (17%) and education (8%) (Table 5.10). However, as the differences between the highest and next highest are not great, it is difficult to determine with confidence which variable is more important. It was, therefore, essential to look at deeper relationships between variables by considering different combinations of relevant variables.

H 6   Demographics (as represented by gender, occupation, age, education, number of dependent children, marital status, and income) as well as personality (as represented by Holland code), are related to tourism choice behaviour, as represented by:

   (a) actual visitation of named industrial tourism attractions

   (b) the degree of interest in visiting named industrial tourism attractions, and

   (c) the degree of intention to visit named industrial tourism attractions.

The study demonstrated that, of the various combinations, Holland code and occupation had the highest proportion of significant results. It is not surprising that there are statistically significant results for Holland code and occupation because, as discussed in Chapter Three, Holland's personality theory was originally developed to help respondents

predict their most suited occupation. In this case, as both actual visitation and intention to visit have high scores in relation to Holland code and occupation, this confirms Holland's applicability to occupational choice.

In Tables 5.11, 5.12 and 5.13, gender, age, education and occupation have a higher proportion of statistically significant results than other demographics. With regard to the use of Holland personality type, taking Holland code out of the analysis did not make much difference to the total interest in visiting or intention to visit level. Therefore, it would appear that Holland code has an equal possibility of making a difference or not making a difference, with 236 statistically significant results using Holland code and 175 statistically significant results without using Holland code.

H 7   For industrial tourism attractions, there is a direct relationship between actual visitation of named attractions and:

(a) the degree of interest in visiting named industrial tourism attractions, and

(b) the degree of intention to visit named industrial tourism attractions.

Table 5.14 revealed a pattern of attraction revisitation, when using actual visitation as an independent variable. Of the 12 industrial tourism attractions, there were seven which had a positive relationship between actual visitation and interest in visiting. Only one of the 12 had a negative relationship for interest in visiting. For intention to visit, of the 12 industrial tourism attractions there were five which had a positive relationship between

actual visitation and intention to visit. Only one of the 12 had a negative relationship for intention to visit.

Consumer loyalty in tourism (in this case, attraction revisitation) occurs for a number of reasons, such as habitual behaviour or time restrictions in evaluating alternatives. The following discussion presents explanations for consumer loyalty for the industrial tourism attractions in the study which demonstrated repeat visitation, by considering the type of experience provided at the attraction and the type of products on offer.

In the present study, five of the seven attractions which had repeat visitation, these being, Bendigo Pottery, the Fruit and Berry Farm, De Bortoli Winery, the backstage tour of the Victorian Arts Centre, and the Victorian Tapestry Workshop have products that change frequently. For example, the Fruit and Berry Farm grows more than 120 varieties of fruits and berries which change according to the season, with berries available in December, and fruit available in February (Edwards 1998, p. 31). Similarly, at De Bortoli Winery there is the opportunity to sample the particular wines from different vintages and to sample the award-winning wines. Bendigo Pottery frequently introduces new products and then encourages the visitors to "purchase traditional ceramic tableware at factory prices" (Discover Bendigo 1996, p. 6). In each of the three cases, the large incidence of repeat visitation may be partly because people return there to buy consumable goods. During the backstage tour of the Victorian Arts Centre it is possible to see the sets of the current productions in the various theatres which change regularly. Therefore, visitors can see different sets of the opera, ballet and dramatic theatre each time they visit. At the

Victorian Tapestry Workshop, every couple of months the tapestries being made are completed and new ones are begun. When the individuals visit, they may see a tapestry in the style of an aboriginal scene being made, then on their next visit they may see a tapestry which has an illustration of early farm workers in Australia. An attraction, therefore, which changes its exhibits or other products frequently, provides a new experience each time an individual visits. Therefore, for these particular industrial tourism attractions, the variety of products on view, and the changing nature of these products may be one explanation for the revisitation. Frequent product change is similar to the situation at theme parks where new rides are introduced periodically to encourage repeat visitation, especially among the local population.

The remaining attractions which demonstrated repeat visitation were the behind the scenes tour of the MCG and the Wastewater Treatment Plant. The MCG is a popular attraction which reflects the high level of general interest in AFL football and sporting events in Melbourne (from where the sample was taken). Therefore, the interest in visiting and intention to revisit the MCG may reflect this general interest in sport in Melbourne. In addition, if an individual's favourite team has won the league that year then that person may have more of an interest in visiting, and learning more about the team's history, than in other years.

The Wastewater Treatment Plant is an example of an attraction in the category of Real Work, as discussed in Chapter Two, where visitation to a site which deals with the basic necessities of society helps the visitor understand "how modern life functions" (Carter

1991, p. 10). In this case, the Real Work is the treatment and disposal of human waste. The individual visitors to the Wastewater Treatment Plant may have found their visit interesting and wanted to return to learn more, or may have found that there was not enough time during their initial visit to experience everything. It may only be in the second or subsequent visit that they are fully satisfied with their visit. On the other hand, for the Wastewater Treatment Plant, and all the other examples above, it could be that individuals who are initially interested in a particular attraction will always be interested in that particular attraction and intend to revisit, as it personally appeals to them. In addition, even if they have visited it quite recently, they would remain interested in revisiting or intend to revisit.

There is a statistically significant negative relationship between actual visitation of Parliament House and interest in visiting and intention to visit Parliament House. This suggests that if individuals have actually visited Parliament House, then they have lower interest in visiting or intention to visit in the future, compared with people who have not visited. Parliament House could be described as a static attraction in that its displays and exhibits are unchanging. People who have visited may be less likely to visit than people who have not visited, as the experience may be expected to be similar to, or the same as, the previous visit.

To summarise the support for the Hypotheses:

- H1 was supported for the identification of industrial tourism attractions as distinct from other types of attractions;

- H2, H3 and, H4 received some support;

- H5 was not supported; and

- H6 and H7 received some support.

Recommendations for Further Study

The following recommendations are based on the interpretations. The results of this thesis

should not be interpreted beyond the parameters of the study. Although the results are

applicable to the outcomes of the study as it was conducted, any small change in the

parameters might have resulted in different outcomes. For example, selection of

attractions that were lesser known may have revealed different levels of interest in

visiting or intention to visit. Therefore, any generalisation beyond the study itself would

be unwise.

From this study it has been concluded that people perceive industrial tourism attractions

as being distinctly different from other types of attractions, and that tourism choice

behaviour is influenced in different degrees by personality type, some demographics and

past visitation. It is suggested that parallel studies can be conducted in other regions of

Australia. If further research conducted in a substantial number of other regions finds

similar conclusions, it may be possible to generalise the findings of all such studies by

concluding that industrial tourism attractions are distinctly different from other types of

attractions and that tourism choice behaviour in relation to industrial tourism attractions

can by identified, to a degree, by an individual's personality type, demographics and past visitation.

Chapter Three demonstrated that there was an uneven mix of previous research in this field. Some areas, such as testing Holland's theory, have had a great deal of research conducted, but other areas, such as the application of Holland's theory to tourism choice behaviour, are under-researched, as is the conceptualisation and identification of industrial tourism attractions. Both of these under-researched areas present opportunities for those interested in pursuing research in those areas. There is, therefore, a need for further research in the following areas:

- to test empirically the range and extent of industrial tourism attractions in Australia. Industrial tourism is under-researched. Systematic research is required to identify the principal components and distinguishing features of industrial tourism operations, to document and enumerate their presence, and to locate industrial tourism more explicitly in the general tourism system.

- the importance of demographics in influencing tourism choice behaviour at particular tourism attractions.

- comparison of the effectiveness of Holland's personality theory and other personality tests, such as Myers-Briggs Type Indicator, to predict tourism choice behaviour.

- the importance of "loyalty" in relation to tourism choice behaviour. It was shown in the thesis that people's attitudes toward specific industrial tourism attractions may be predicted by their visitation history. Future research could consider the extent to which loyalty in tourism is related to the type of attraction that is being visited. For

example, there may be different levels of loyalty shown between an unchanging static product such as a surf beach, compared to a changing, dynamic product such as a theme park.

- the relationship between Holland's personality type and the level of revisitation. McNeal (1973) suggests that an insecure personality might find security in "sticking" with the same brands. Similarly, Jacoby and Chestnut (1978, p. 2) suggested that "repeated purchase of the same brand by the same consumer does not just happen; rather it is the direct consequence of something underlying the consumer's behaviour".

- the relationship between occupations (the original Holland focus) and tourism behaviour, especially as this avenue of occupational identification of potential tourists could be more amenable to widespread, non-intrusive implementation than would be the specific administration to people of written Holland tests.

- the management of industrial tourism attractions. For example, what determines the success of an industrial tourism attraction? If a visitor can only view the site rather than touch or taste the product, does this mean the attraction will be less successful? Does an industrial tourism attraction need to be visually appealing to be successful? To what extent are the guides at an industrial tourism attraction important? What is it that affects the satisfaction of visitors? For example, should the guides be ex-employees, or employed because of their presentation and interpretation skills? In other words, what are the issues that affect the nature and attractiveness of the experience?

A useful research project would be to test the validity of excluding the Self-Estimates section of the SDS in the calculation of an individual's code. Daniels (1989) suggested that in three of the sections (Activities, Competencies, and Occupations), the typology serves as a framework for listing items (each item in each section has an assigned value of one). In the Self-Estimates section, however, the types become items, and the items may have an assigned value ranging from one to seven. Such a practice maximises the weighted value of the very thing (occupational type) that is being determined. Daniels (1989, p. 738) noted that "it is conceivable, that the sum of the Self-Estimates could total 14, which is more than 25% of even the largest possible score, and which may represent up to 100% of an obtained score. It also raises questions about the necessity of including all the items from each of the other sections". In addition, Daniels (1989) stated that because the sections do not contain the identical number of items, they contribute unequally to the total scores. In the Australian version of the SDS, the Activities section has nine items, Competencies has nine items, Occupations has 14 items, and Self-Estimates have two items (worth a maximum of seven points). Daniels (1989, p. 737) stated that "because raw scores rather than standard scores are used to calculate the total score for each type, Occupations contributes more to the total than either Self-Estimates, Activities, or Competencies, and Self-Estimates contributes more than either Activities or Competencies". He suggested that such a scoring system places undue emphasis on fantasy as opposed to experience, in that an individual's Self-Estimates is rated higher than an individual's interest or ability in relation to Activities and Competencies. Therefore, a future research project could rerun the SDS with and without the Self

Estimates and Occupational Scores to determine the extent to which they affect the results.

Practical Application of Findings

The thesis has established that people, in general, perceive industrial tourism attractions as different to other attractions. This finding has not been reported previously, based on a broad empirical study. From this finding, it is suggested that managers of industrial tourism attractions could approach the management of the site differently to tourism-core sites by developing two main strategic business units, the core SBU and the tourism SBU. The following discussion summarises the practical implications of developing industrial tourism at a site and highlights the need for a tourism SBU.

The tourism strategic business unit (TSBU) at an industrial tourism attraction should be responsible for the tour program and should consider the age, educational background and experience of the visitor by selecting the most appropriate medium to convey the information to the visitor, e.g., signs, tape recordings, tour guides, videos, photographs or models. The TSBU should consider facilities to be installed, which could include a viewing gallery where the visitor can "oversee the full production in the workshop" (Wooder 1992, p. 3). Raised walkways could be installed to allow the visitor to view the whole process from a good, safe vantage point. The TSBU may need to consider installing a glass or perspex screen to protect the visitor from the potentially dangerous manufacturing process. A protective screen would allow the visitors to stand very close to

the process but at the same time protect them from danger. The screen would also eliminate the potential for tampering by visitors and would also reduce hygiene concerns in food processing plants. A shop could be provided at the site to allow the sale of factory seconds and souvenirs which are based around the company name and logo, for example, baseball caps which sport the company logo. The retail shop could be placed at the end of the tour, as it is at the conclusion of the tour that the visitors will be more appreciative of the care and attention that is involved in producing the product and they may be enthusiastic to buy an example of the product. During a tour, tourists may enjoy wearing hard-hats, overalls, safety glasses, or boots as it increases the authenticity of their experience and confirms that they are entering an area that is dangerous or risky. Through the provision of such facilities as those described above, organisations in Australia would have the potential to develop as successful industrial tourism attractions which can have long term public relations benefits for the organisation, can provide a useful source of income and can help their regions develop as tourist destinations.

Contributions of the Study

The new knowledge derived from the study may be applied by the managers of industrial tourism attractions. These managers may apply the results in their marketing activities, as the study showed that industrial attractions are perceived as being distinctly different from other types of attractions. As the study also showed that past visitation is important, managers of tourism attractions could apply this result in their customer service plans, by

improving the provision of service while the customer is visiting, to encourage repeat visitation.

Some of the preceding discussion has focused on the "supply-side" of industrial tourism, that is, the definition and creation of the industrial tourism product and aspects of managing multiple SBUs. However, the majority of the preceding discussion concentrated on the "demand-side", or market perspective, in relation to the extent to which consumers perceive industrial tourism attractions as different to other attractions, and conversely, the extent to which tourists can be distinguished by their personality type. This is the essence of market segmentation, and fundamental to determining whether a collection of consumers in a market amount to a feasible market segment, or simply a hypothetical market segment (Leiper 1995). The marketing literature suggests that before a subset of consumers is a feasible market segment, four conditions should be satisfied to warrant serious attention: that these consumers be sufficiently valuable, easily identified, possess distinctive needs, and be economically accessible (Kotler 1994). This thesis attempts to identify the type of people who would constitute markets for industrial tourism attractions by considering their personality type.

The results of this thesis have implications for target marketing, especially the role of specialist media in providing access to potential tourists identifiable by their personality types and gender. If tourism attractions can, indeed, be profiled in the same manner as people in terms of their Holland codes, then congruent people-attraction pairs could be identified, and communication could be facilitated between management and potential

consumers via media known to cater for those specific types of people. There may also be a need to create differentiated advertising campaigns targeted at different market segments. For example, it may be appropriate for an attraction to create a marketing brochure aimed at, say, Artistic Females, and another at Investigative Males to appeal to those particular types of people. However, how can operators encourage the right type of person to pick up the right leaflet? Arguably, one of the central issues is that tourism products are by their nature multi-market products with the same product being enjoyed by different types of people in different ways. Thus, the dangers inherent in target marketing are that, too narrow a market sector may be attracted, which may threaten the financial viability of the attraction. In addition, marketing messages based on targeting have the task of not only attracting but also dissuading potential visitors (i.e., if certain people do not enjoy the product, the operator does not want them to visit as they may be among the dissatisfied who spread the word, thereby dissuading people who might enjoy the product). In contrast, if the product is generically attractive, the operator may wish to attract many groups. Therefore, the marketing message must be general. Thus, it would appear that there are disadvantages as well as advantages in narrowly based marketing appeals, with cases when it is appropriate to use narrow target marketing and other times when it is inappropriate.

The findings of this thesis suggest that it may be necessary to adopt a more multifaceted approach to behavioural assessment, i.e., ensuring that there is a consideration of other possible moderators, including demographic aspects such as income, the number of

dependent children, the stage in the family life cycle, and occasional travel party size and composition, and the relevance of travel history and familiarity with various attractions.

The results of this study imply that to successfully apply Holland's theory to the prediction of tourism behaviour, it is important to be aware of the "unit of analysis" being considered, that is, if the individual or the travel party is being considered. For example, the Holland code of the travel party may fluctuate by occasion, e.g., a travel party may agree to visit an attraction chosen by one person in the group today, on condition that they will visit another person's choice of attraction tomorrow. This could reflect the dominance of some people in the travel party over others. In relation to families as travelling parties, it may be incorrect to characterise a family by a single family code as the code may tend to fluctuate depending on the coalitions that exist within the family, that is, on different occasions there will be different sub groups within the family. For example, on some occasions the males of the families may form a sub-group and decide to lobby the group to attend a football match, and on other occasions the young people in the family may want to visit the beach rather than go shopping. This reflects the importance of travel party decision making and the importance of reviewing studies which have considered this aspect of tourism behaviour. For example, Thornton, Shaw and Williams (1997, p. 287), in a study of tourist parties in the UK, found that children influenced the behaviour of tourist parties "either through their physical needs ... or through their ability to negotiate with parents". Thus, Holland's theory, which was originally designed to deal with individuals rather than with groups, needs to be adapted to group characterisation. In addition, when estimating the codes of tourism attractions,

rather than using experts or judges as done in the pilot study and when devising the codes for the Occupational Finder (Holland 1985c, 1994), the Educational Opportunities Finder (Rosen, Holmberg and Holland 1991) and the Leisure Activities Finder (Holmberg, Rosen and Holland 1990), there is a strong argument that the consumers themselves, i.e., the tourists, should be asked to characterise the attractions, where the consumers are provided with a list of attractions and information on Holland's theory and asked to provide a code.

Conclusion

This thesis has demonstrated that Holland's theory has some applicability to the prediction of tourism choice behaviour. From a theoretical perspective, Holland's is an acceptable theory to apply to tourism choice behaviour as it is a well-recognised and well-respected theory, with hundreds of studies having used Holland's theory and shown it to have good validity. In tourism, researchers often look for a surrogate measure of how a person behaves and so Holland's personality theory may be a useful theory to apply to tourism choice behaviour. However, when considering the types of attractions visited it is necessary to realise that tourists may visit different types of attractions when their travel party changes, and when they have a variety of needs to satisfy.

The conceptualisation presented in this thesis emphasises the desirability of considering many forms of tourism as components of a fundamental category of tourism, this being industrial tourism. It is somewhat paradoxical that this major type of tourism is derived

from a position of subordination to the non-tourism activities of organisations. However, the magnitude of the phenomenon, both in terms of the number of current operations and certainly in terms of the number of potential operations and their social and economic impact, made it imperative that it be addressed as the focus of this thesis within the domain of the management of tourism attractions.

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AUSTRALIAN INDUSTRIAL TOURISM ATTRACTIONS

Business Activity	Postcode	Name
Winery	2320	Hunters Estate Cellars and Winery
	2320	McWilliams Mount Pleasant Winery
	2320	Parker Wines
	2320	Rothbury Estate
	2330	Arrowfield Winery
	2705	Lillipilly Estate Winery
	3099	Lovegrove Winery
	3115	Kellybrook Winery
	3116	Halcyon Daze Vineyard
	3140	Blanchet Winery
	3221	Mt Anakie Winery
	3221	Staughton Vale Vineyard
	3377	Montara Winery
	3377	Mt Langi Ghiran Vineyards
	3429	Craiglee Vineyard
	3429	Goona Warra Winery
	3467	Chateau Remy
	3467	Mt Avoca Vineyard
	3467	Redbank Winery
	3550	Balnarring Vineyard
	3550	Chateau Leamon
	3644	Heritage Farm Wines
	3644	Plunketts Winery
	3688	Gehrigs Winery
	3691	Schmidts Strawberry Winery
	3747	Pennweight Winery
	3747	Sorrenberg Vineyard
	3761	Diamond Valley Vineyard
	3770	Coldstream Hills
	3770	Domaine Chandon Vineyard
	3770	St Huberts Wines
	3770	Yarra Yering Vineyard
	3793	Monbulk Winery
	3875	Nicholson River Winery
	3926	Hofferts Balnarring Estate Winery
	4382	Ballandean Estate Winery
	4382	Robinsons Family Vineyards

Business Activity	Postcode	Name
Agricultural-other	2214	Blue Gum Farm
	2258	Palmdale Stud
	2448	Big Fat Worm farm
	2450	Big Banana Leisure Park
	2477	Summerland House with no Steps
	2480	Macadamia Magic
	2483	Pioneer Plantation
	2484	Avocado Adventureland
	2534	Alne Bank
	2536	Brooklands Deer Farm
	2577	Sharply Vale Fruit World
	2627	Gaden Trout Hatchery
	2640	Haberfields Milk Pty Ltd
	2700	John Lake Centre
	2729	Oasis Coloured Sheep farm
	3268	Charmwoods Rotary Dairy
	3268	Parfett Farm
	3305	Alcoa Landcare Regional Seed Bank
	3333	Happy Hens Egg World
	3352	Lal Lal Estate
	3380	Overdale Sheep Station
	3400	Black Range Farm
	3400	The Wool Factory
	3500	Sultana Sam
	3550	Bendigo Woollen Mills
	3550	Mohair Farm
	3593	Brackenhurst Farm
	3631	Le-Bella Ostriches
	3644	Matate Deer Farm
	3713	Snobs Creek Fish Hatchery
	3747	Beechworth Trout Farm
	3764	Farm Educational Tours
	3792	Nutgrove
	3795	Tulip Farm
	3797	Rhiannon Farm
	3818	Oakbank Angoras
	3871	Erinae Lavender
	3925	Australian Dairy Centre
	4285	Woollahra Farm World
	4715	Cotton Ginnery
	4805	Chilli Land Coffee Plantation
	4883	Wetherby Station

Business Activity	Postcode	Name
Pick-your-own-fruit	3097	Olakuna
	3107	Pettys Orchard
	3113	Aumann Family Orchard
	3115	Cathella
	3115	P Colella Nominees
	3152	Bushy Park Orchard
	3152	Jenkins Orchard
	3350	Oppenheims Strawberry Farm
	3468	Lonarch View Berries
	3793	Mountain blueberries
	3795	Jim Chapmans U-Pick Farm
	3795	RL Chapman and Sons
	3912	Winton Farm
	3977	Cameron Farm
Manufacturing	2370	Historic Steam Powered Brickworks
	2600	Royal Australian Mint
	2630	The Clog Maker
	2644	Bingi Boomerangs
	2880	Broken Hill Mint
	3064	Our World of Money
	3071	Northcote Pottery
	3280	Textiles
	3304	CSR Softwoods Dartmoor
	3400	Hartlands Eucalyptus Factory
	3500	Old Opal Store
	3564	Red Gum Works
Mining	2804	Junction Reef Gold Mine
	2834	Big Opal Bazaar
	2880	Day Dream Mine
	4717	BHP Australian Coal Mine
Other transforming	2264	Eraring Power Station
	2630	Tumut No.2 Power Station
	2720	Tumut No.3 Power Station
	3699	Kiewa Hydro-Electric Scheme
	3840	Morwell Visitor Centre - SEC
	4805	Salt Works

Business Activity	Postcode	Name
Services	2000	Parliament House
	2083	Historic Riverboat Postman
	2600	Australian Defence Force Academy
	2600	Parliament House
	2880	Royal Flying Doctor Service
	2880	School of the Air
	3000	Parliament House
	3000	Stock Exchange
	4000	Australian Stock Exchange
	4000	City Hall
Sport/entertainment	2000	Sydney Opera House
	2617	Australian Institute of Sport
	4101	Queensland Performing Arts Centre
Food production	2455	Honey Place
	2546	ABC Cheese Factory
	2550	Bega Cheese Factory
	2705	Letona Fruit Cannery
	2705	Quelch Juice Factory
	2850	Mudgee Honey Company
	3101	Wedges
	3277	Cheese World
	3350	The Wallace Cheesery
	3463	Muckleford Meadows Honey Farm
	3550	Rifle Brigade Pub Brewery
	3630	SPC - Shepparton Preserving Company
	3717	Historic Cheese Factory
	3871	Grand Ridge Brewery
	3996	Australian Dried Fruit Sales
	4000	Popcorn Factory
	4069	Licoriceland
	4207	Rum Distillery
	4670	Rum Distillery

Business Activity	Postcode	Name
Art/craft	2315	Studio Thirty Two
	2370	Golden Wattle Glass Works
	2444	Old World Timber Art
	2577	Kangaroo Valley Woodcrafts
	2580	Old Goulburn Brewery
	2640	Albury Pottery
	2785	Inconstant Street Pottery
	3220	Downunda Weaving Studio
	3400	Pottery Workshop
	3469	Oasis Crystal
	3550	Bendigo Pottery
	3630	Redburn Potteries
	3636	Gordon Studio Glassblowers
	3831	Tarago River Cheese Company
	3875	Black Cockatoo Pottery
	3885	Black Marble Hut
	3950	Gooseneck Pottery
	3954	Pedros Pottery
	4670	Schmeiders Cooperage Craft Centre
Other	2601	Telecom Tower
	2602	Canberra Observatory
	2611	Mt Stromlo Observatory
	2620	Tidbinbilla Space Tracking Station
	2870	CSIRO Radio Telescope

Number of cases listed - 171

Source: RACV (1993).

THE COMPLETE SELF-DIRECTED SEARCH
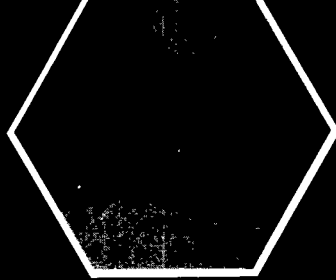
AUSTRALIAN
EDITION

The
Self-Directed
Search™

A Guide to Educational and Vocational Planning

by John L. Holland, Ph.D.

This booklet may help you explore what occupation to follow. If you have already made up your mind about an occupation, it may support your idea or suggest other possibilities. If you are uncertain about what occupation to follow, the booklet may help you to locate a small group of occupations for further consideration. Most people find that completing this booklet is helpful and fun. If you follow the directions carefully, page by page, you should enjoy the experience. Do not rush: you will gain more by approaching the task thoughtfully. Use lead pencil, so you can erase easily.

Name _____

Age _____ Sex _____ Date _____

School or Organization _____ Class _____
(if applicable)

_____

_____

Occupational Daydreams

1. List below the occupations you have considered in thinking about your future. List the careers you have just thought about as well as those you have discussed with others. Try to give a history of your tentative choices and daydreams. Put your most recent job choice on Line 1 and work backwards to the earlier jobs you have considered.

Occupation   **Code**

1. _____ ☐ ☐ ☐

2. _____ ☐ ☐ ☐

3. _____ ☐ ☐ ☐

4. _____ ☐ ☐ ☐

5. _____ ☐ ☐ ☐

6. _____ ☐ ☐ ☐

7. _____ ☐ ☐ ☐

8. _____ ☐ ☐ ☐

2. Now use the *Occupations Finder.* Locate the three-letter code for each of the occupations you just wrote down. This search for occupational codes will help you learn about the many occupations in the world. This task usually takes from 5 to 15 minutes, and will help you get more out of using the *Self-Directed Search.*

If you can't find the exact occupation in the *Occupations Finder,* use the occupation that seems most like your occupational choice.

If you are in a hurry, do the coding after you have completed the rest of this booklet.

Activities

Put a cross, like this ⊠, in the box under 'L' for each activity you **like** (or **would like**) to do. Put a cross in the box under 'D' for each one you would **dislike** doing, or would not care about one way or the other.

		L	D
R	Repair cars	☐	☐
	Fix mechanical things	☐	☐
	Build things with wood	☐	☐
	Drive a truck or tractor	☐	☐
	Use metalwork or machine tools	☐	☐
	Work on a drag car or motor bike	☐	☐
	Take a Trade or Engineering course	☐	☐
	Take a Woodwork course	☐	☐
	Take a Motor Mechanics course	☐	☐

Total No. of L's ☐

		L	D
I	Read scientific books or magazines	☐	☐
	Work in a laboratory	☐	☐
	Work on a scientific project	☐	☐
	Work with a chemistry set	☐	☐
	Read about special subjects on my own	☐	☐
	Solve maths or chess puzzles	☐	☐
	Build a small computer	☐	☐
	Take a Physics course	☐	☐
	Take a Biology course	☐	☐

Total No. of L's ☐

		L	D
A	Sketch, draw, or paint	☐	☐
	Go to or act in plays	☐	☐
	Play in a band, group, or orchestra	☐	☐
	Practise a musical instrument	☐	☐
	Go to recitals, concerts, or musicals	☐	☐
	Take portrait photographs	☐	☐
	Read plays	☐	☐
	Read or write poetry	☐	☐
	Take an Art course	☐	☐

Total No. of L's ☐

3

S

	L	D
Write letters to friends	☐	☐
Attend religious services	☐	☐
Belong to clubs	☐	☐
Help others with their personal problems	☐	☐
Take care of children	☐	☐
Go to parties	☐	☐
Go dancing	☐	☐
Attend meetings and conferences	☐	☐
Make new friends	☐	☐

Total No. of L's ☐

E

	L	D
Discuss politics	☐	☐
Influence others	☐	☐
Operate my own service or business	☐	☐
Take part in a sales conference	☐	☐
Be on the committee of a group	☐	☐
Supervise the work of others	☐	☐
Meet important people	☐	☐
Lead a group in accomplishing some goal	☐	☐
Participate in a political campaign	☐	☐

Total No. of L's ☐

C

	L	D
Type papers or letters for yourself or for others	☐	☐
Add, subtract, multiply, and divide numbers in business, or bookkeeping	☐	☐
Operate business machines of any kind	☐	☐
Keep detailed records of expenses	☐	☐
File letters, reports, records, etc.	☐	☐
Write business letters	☐	☐
Take a Business course	☐	☐
Take a Bookkeeping course	☐	☐
Take a Business Maths course	☐	☐

Total No. of L's ☐

Competencies

Put a cross, like this ⊠, in the box under Y for 'Yes' for each activity you can do **well** or **competently**. Put a cross under N for 'No' for each activity you have **never done** or do **poorly**.

	Y	N
R		
I have used carpentry power tools such as an electric saw, lathe or sander	☐	☐
I have operated power tools such as a drill press or grinder or sewing machine	☐	☐
I can refinish furniture or woodwork	☐	☐
I can read blueprints	☐	☐
I can do simple electrical repairs	☐	☐
I can repair furniture	☐	☐
I can do mechanical drawings	☐	☐
I can do simple repairs on a TV set	☐	☐
I can do simple plumbing repairs	☐	☐

Total No. of Y's ☐

	Y	N
I		
I can name three foods that are high in protein content	☐	☐
I understand the "half-life" of a radioactive element	☐	☐
I can use logarithmic tables	☐	☐
I can use a microscope	☐	☐
I can identify three constellations of the stars	☐	☐
I can describe the function of the white blood cells	☐	☐
I can interpret simple chemical formulae	☐	☐
I understand why most man-made satellites do not fall to the earth	☐	☐
I have participated in a Science Fair or competition	☐	☐

Total No. of Y's ☐

	Y	N
A		
I can play a musical instrument	☐	☐
I can participate in two- or four-part choral singing	☐	☐
I can perform as a musical soloist	☐	☐
I can act in a play	☐	☐
I can make good flower arrangements	☐	☐
I can sketch people so that they can be recognized	☐	☐
I can do a painting or sculpture	☐	☐
I can make pottery	☐	☐
I can design clothing, posters, or furniture	☐	☐

Total No. of Y's ☐

	Y	N
I am good at explaining things to others	☐	☐
I have participated in charity or benefit drives	☐	☐
I cooperate and work well with others	☐	☐
I am competent at entertaining people older than myself	☐	☐
I can teach children easily	☐	☐
I can plan entertainment for a party	☐	☐
I am good at helping people who are upset or troubled	☐	☐
I am a good judge of personality	☐	☐
I can be a good host or hostess	☐	☐

Total No. of Y's [ ]

	Y	N
I have been elected to an office in school, college or university	☐	☐
I can supervise the work of others	☐	☐
I have unusual energy and enthusiasm	☐	☐
I am good at getting people to do things my way	☐	☐
I have acted as leader for some group presenting suggestions or complaints to a person in authority	☐	☐
I have won an award for work as a salesperson or leader	☐	☐
I have organized a club, group, or gang	☐	☐
I know how to be a successful leader	☐	☐
I am a good debater	☐	☐

Total No. of Y's [ ]

	Y	N
I can type 40 words a minute	☐	☐
I can operate a duplicating or adding machine	☐	☐
I can file correspondence and other papers	☐	☐
I have held an office job	☐	☐
I can do a lot of paper work in a short time	☐	☐
I can operate a word processor	☐	☐
I can use simple data processing equipment such as a keypunch	☐	☐
I can post credits and debits	☐	☐
I can keep accurate records of payments or sales	☐	☐

Total No. of Y's [ ]

Occupations

This is an inventory of your feelings and attitudes about many kinds of work. Show the occupations that **interest** or **appeal** to you by putting a cross, like this ☒, in the box under 'Y' for 'Yes' for each one. Show the occupations that you **dislike** or find **uninteresting** by putting a cross in the box under N for 'No' for each one.

	Y	N		Y	N
Aircraft Mechanic	☐	☐	Sociologist	☐	☐
Forest Ranger	☐	☐	Secondary School Teacher	☐	☐
Motor Mechanic	☐	☐	Probation Officer	☐	☐
Carpenter	☐	☐	Speech Therapist	☐	☐
Bulldozer Driver	☐	☐	Marriage Guidance Counsellor	☐	☐
Surveyor	☐	☐	School Principal	☐	☐
Construction Site Inspector	☐	☐	Playground Leader	☐	☐
Service Station Attendant	☐	☐	Social Studies Teacher	☐	☐
Sheep Station Hand	☐	☐	Social Worker	☐	☐
Railway Engine Driver	☐	☐	Hospital Attendant	☐	☐
Machinist	☐	☐	Youth Leader	☐	☐
Wool Classer	☐	☐	Psychiatric Nurse	☐	☐
Fruit Grower	☐	☐	School Counsellor	☐	☐
Electrician	☐	☐	Physiotherapist	☐	☐

Total R Y's ☐   **Total S Y's** ☐

	Y	N		Y	N
Biologist	☐	☐	Stockbroker	☐	☐
Astronomer	☐	☐	Buyer	☐	☐
Medical Laboratory Technician	☐	☐	Advertising Executive	☐	☐
Pharmacist	☐	☐	Sales Representative	☐	☐
Zoologist	☐	☐	Television Producer	☐	☐
Chemical Engineer	☐	☐	Office (Personnel) Manager	☐	☐
Agricultural Scientist	☐	☐	Business Consultant	☐	☐
Writer of Scientific Reports	☐	☐	Restaurant Manager	☐	☐
Editor of a Scientific Journal	☐	☐	Radio or TV Announcer	☐	☐
Geologist	☐	☐	Shopkeeper (e.g. milk bar)	☐	☐
Botanist	☐	☐	Real Estate Agent	☐	☐
Scientific Research Assistant	☐	☐	Public Relations Officer	☐	☐
Physicist	☐	☐	Sports Promoter	☐	☐
Veterinarian	☐	☐	Sales Manager	☐	☐

Total I Y's ☐   **Total E Y's** ☐

	Y	N		Y	N
Poet	☐	☐	Bookkeeper	☐	☐
Orchestra Conductor	☐	☐	Business Studies Teacher	☐	☐
Musician	☐	☐	Insurance Clerk	☐	☐
Author	☐	☐	Chartered Accountant	☐	☐
Commercial Artist	☐	☐	Credit Officer	☐	☐
Freelance Writer	☐	☐	Bank Teller	☐	☐
Music Arranger	☐	☐	Tax Consultant	☐	☐
Portrait Painter	☐	☐	Stock/Inventory Controller	☐	☐
Concert Singer	☐	☐	Business Machine Operator	☐	☐
Composer	☐	☐	Financial Analyst	☐	☐
Sculptor	☐	☐	Cost Estimator	☐	☐
Playwright	☐	☐	Pay Clerk	☐	☐
Cartoonist	☐	☐	Bank Inspector	☐	☐
Interior Decorator	☐	☐	Word Processor Operator	☐	☐

Total A Y's ☐   **Total C Y's** ☐

Self-Estimates

1. Rate yourself on each of the following traits as **you really think you are when compared with other persons your own age**. Give the most accurate estimate of **how you** see yourself. Circle the appropriate number and **avoid rating yourself the same in each ability**.

	Mechanical Ability	Scientific Ability	Artistic Ability	Teaching Ability	Sales Ability	Clerical Ability
High						
Average						
Low						
	R	**I**	**A**	**S**	**E**	**C**

	Manual Skills	Maths Ability	Musical Ability	Friend-liness	Managerial Skills	Office Skills
High						
Average						
Low						
	R	**I**	**A**	**S**	**E**	**C**

How to Organize Your Answers

Start on page 3. Count how many times you said L for 'Like'. Record the number of L's or Y's for each group of Activities, Competencies, or Occupations on the lines below.

Activities (pp. 3-4)
    ____ R   ____ I   ____ A   ____ S   ____ E   ____ C

Competencies (pp. 5-6)
    ____ R   ____ I   ____ A   ____ S   ____ E   ____ C

Occupations (p. 7)
    ____ R   ____ I   ____ A   ____ S   ____ E   ____ C

Self-Estimates (p. 8)
(What number did
you circle?)
    ____ R   ____ I   ____ A   ____ S   ____ E   ____ C

    ____ R   ____ I   ____ A   ____ S   ____ E   ____ C

Total Scores
(Add the five R scores,
the five I scores, the
five A scores, etc.)
    ____ R   ____ I   ____ A   ____ S   ____ E   ____ C

The letters with the three highest numbers indicate your summary code. Write your summary code below. (If two scores are the same or tied, put both letters in the same box.)

Summary Code

         [ ]   [ ]   [ ]
       Highest   2nd   3rd

What Your Summary Code Means

The summary code is a simple way of organizing information about people and jobs. Although it is only an estimate, your summary code can be used to discover how your special pattern of interests, self-estimates, and competencies resembles the patterns of interests and competencies that many common occupations demand. In this way, your summary code locates suitable **groups** of occupations for you to consider.

It is important that you search the *Occupations Finder* for every possible ordering of your three-letter code. For example, if you are a CRI, search for all the CRI, CIR, RIC, RCI, ICR and IRC occupations by completing Steps 1 and 2 below.

Step 1. Use the *Occupations Finder* and locate the occupations whose codes are **identical** with yours. For instance, if your summary code is ECS, occupations with codes of ECS are **identical** with yours. List some of these occupations below. Go on to Step 2, whether or not you find an occupation with a code identical to yours.

Occupation	EL	PE	OJ[a]	Occupation	EL	PE	OJ

Step 2. Make a list of some occupations whose summary codes **resemble** yours. For instance, if your code is IRE, search the *Occupations Finder* for occupations with all possible arrangements of IRE. Look for occupations with codes of IER, RIE, REI, EIR and ERI. (If your summary code includes a tie such as RIEA, you must look up more combinations such as RIE, RIA, REA, etc.) Start by writing down the five other possible letter arrangements of your summary code.

Summary Code   **Similar Codes**

Occupation	EL	PE	OJ	Occupation	EL	PE	OJ

[a] For an explanation of these terms please refer to the *Occupations Finder.*

Some Next Steps

1. The SDS, or any vocational interest inventory, is most useful when it reassures you about your vocational choice or reveals new possibilities worthy of your consideration. If it fails to support a choice or an anticipated job change, don't automatically change your plans. Instead, do some investigation to make sure you understand the career you have chosen and the occupations suggested by the SDS.

2. Compare your summary code with the codes for your Occupational Daydreams on page 2. They should be similar, but it is not necessary that your SDS code matches your aspirational or job code — **letter for letter**. Occupations tolerate a variety of types. It is probably important that your three-letter code at least resembles the three-letter code of your favourite occupational choice. An example would be if your SDS code were IRE, and the occupation you aspired to were coded **RIC**. Other examples of strong to moderate resemblance would include occupational codes of **RIA, EIR,** and **RSI**. If you can see no relation between your SDS code and your preferred choice, you should think further about your choice and discuss your potential satisfaction for that occupation with a counsellor, a teacher, or a friend.

3. Investigate the educational requirements for the occupations that interest you. Go back to the *Occupations Finder* and find out how much education or training is required for each of the occupations you listed earlier. Where could you obtain the required training? Is it financially possible? Is it reasonable in terms of your learning ability, age, family situation?

4. Consider any health or physical limitations that might affect your choice.

5. Seek more information about occupations from career reference centres, career education or vocational guidance, school counsellors, libraries, labour unions, employment services and occupational information files. Talk to people employed in the occupations in which you are especially interested. Most people enjoy talking about their work. Remember, however, that they may have personal biases, and it is worth talking to several people in the same occupation. Try to obtain part-time work experience that is similar to the activities in the occupations you are considering. Read articles and books that describe occupations or attempt to explain current scientific knowledge about the choice of an occupation. (Some suggestions can be found in the *You and Your Career* booklet.)

6. Remember that your results on the SDS are affected by many factors in your background — your sex, your age, your parents' occupations, ethnic or racial influences, and so on. For example, because society often encourages men and women to aspire to different vocations, women receive more S, A, and C codes than men, while men obtain more I, R, and E codes. Yet we know that almost all jobs can be successfully performed by members of either sex. If your codes differ from your Occupational Daydreams, keep these influences in mind; they may account for the differences, and you will then need to think about how strongly you wish to do something similar to, or different from, what is more commonly done by others of your background or sex.

7. Remember: no one but you can make your vocational decision. Our knowledge of careers is too limited to provide you with a single, exact choice, but we can help you focus on some of the more likely possibilities.

Duplicate Summary Page

Use this page to provide a copy of your summary sheet for your counsellor, careers teacher, or yourself.

Name _____

Age _____ Sex _____ Date _____

Step 1. List the occupations whose codes are **identical** with yours as you did on the summary sheet (page 10). Go to Step 2, whether or not you have an occupation with a code identical to yours.

Occupation	EL	PE	OJ	Occupation	EL	PE	OJ

Step 2. Copy your summary code, similar codes and list of occupations with education level, previous experience and on-the-job training, from your summary sheet (page 10).

Summary Code   Similar Codes

_____   ___ ___ ___ ___ ___ ___ ___

Occupation	EL	PE	OJ	Occupation	EL	PE	OJ

APPENDIX 3

INTERVIEWER BRIEFING NOTES

VICTORIA UNIVERSITY TOURISM RESEARCH

INTERVIEWER BRIEFING NOTES

BACKGROUND

The aim of this project is to study the influence that an individual's personality, values system and psychographic characteristics have on that person's selection of leisure and tourism activities. Improved understanding of these influences will enable consumer behaviour to be predicted more accurately and will assist tourism operators in developing products that are more relevant for different market segments.

In order that findings from this study can be generalised to Melbourne's population as a whole, it has been decided to survey 500 residents selected randomly from the Melbourne area. A questionnaire that involves both self-complete and interviewer-asked questions has been developed and pilot tested. This questionnaire contains the following seven sections:

A.   Tourist attraction and event visitation history and interest.
B.   Information on the most recently visited attraction and travel party.
C.   Some personality questions.
D.   Values system.
E.   Activities, Interests and Opinions.
F.   Occupation.
G.   Demographics.

The questionnaire should take about 35 minutes to complete and it is vitally important that all questions are answered. Since some of the sections are of a personal nature, it is important that the interviewers simply scan the completed questionnaires to ensure that all sections have been completed rather than being seen by the respondents to read their responses.

The next part of these briefing notes provides specific information relating to each section of the questionnaire.

SECTION A.

This section asks the respondent to consider 33 different tourist attractions and events and asks:

    -has the respondent visited or attended them?

    -what interest does the respondent have in visiting or attending them?

    -how likely is the respondent to visit or attend them in the coming year(s)?

The interviewer interacts with the respondent in this section and uses Cards 1 to 8 to obtain three responses to each of the 34 attractions and events listed. The attractions and events are listed on Cards 1, 3, 5 and 7 and the relevant response options are displayed on Cards 2, 4, 6 and 8.

The procedure for obtaining responses in this section is as follows:

Display Cards 1 and 2.

Say **"I am going to ask you about your attendance at a number of attractions. Please look at the first attraction listed on Card 1 which is Sovereign Hill, Ballarat. Using the response formats on Card 2, please tell me"**:

"(a) Have you ever visited this attraction?"

Interviewer circles the appropriate response (1 for No and 2 for Yes) on the answer sheet.

"(b) How interested are you in visiting this attraction in the future?"

Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Extremely uninterested</u> to 7 for <u>Extremely interested</u>.

"(c) How likely are you to visit this attraction within the next 12 months?"

Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Definitely will not visit</u> to 7 for <u>Definitely will visit</u>.

This procedure is repeated for each of the 13 attractions listed on Card 1.

Display Cards 3 and 4.

Say **"I am now going to ask you about your participation on tours of a number of attractions. Please look at the first attraction tour listed on Card 3 which is a tour of Parliament House. Using the response formats on Card 4, please tell me"**:

"(a) Have you ever participated in a tour of this attraction?"

Interviewer circles the appropriate response (1 for No and 2 for Yes) on the answer sheet.

"(b) How interested are you in touring this attraction in the future?"

Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Extremely uninterested</u> to 7 for <u>Extremely interested</u>.

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"(c) How likely are you to tour this attraction within the next 12 months?"
Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Definitely will not visit</u> to 7 for <u>Definitely will visit</u>.

This procedure is repeated for each of the five attraction tours listed on Card 3.

Display Cards 5 and 6.
Say **"I am now going to ask you about your attendance at a number of events. Please look at the first event listed on Card 5 which is the Ford Australian Open Tennis. Using the response formats on Card 4, please tell me"**:
"(a) Have you ever attended this event?"
Interviewer circles the appropriate response (1 for No and 2 for Yes) on the answer sheet.

"(b) How interested are you in attending this event in the future?"
Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Extremely uninterested</u> to 7 for <u>Extremely interested</u>.

"(c) How likely are you to attend this event within the next 12 months?"
Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Definitely will not visit</u> to 7 for <u>Definitely will visit</u>.

This procedure is repeated for each of the 13 events listed on Card 5.

Please note that since items 30 and 31 (Airshow and Olympics) are events that are not held every year, the "12 months" referred to in the third part of the question should be changed to "4 years".

Display Cards 7 and 8.
Say **"I am now going to ask you about your attendance at non-specific events in particular event categories. Please look at the first event category listed on Card 7 which is Major Sporting Event held in Victoria. Using the response formats on Card 8, please tell me"**:
"(a) Have you ever attended an event in this category not previously listed?"
Interviewer circles the appropriate response (1 for No and 2 for Yes) on the answer sheet.
If the answer is 2, say **"Please specify the name of the event attended"**.
Interviewer writes the name of the event on the answer sheet.

"(b) How interested are you in attending this type of event in the future?"

Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Extremely uninterested</u> to 7 for <u>Extremely interested</u>.

"(c) How likely are you to attend this type of event within the next 12 months?"

Interviewer circles the appropriate response on the answer sheet using the scale ranging from 1 for <u>Definitely will not visit</u> to 7 for <u>Definitely will visit</u>.

This procedure is repeated for each of the three event categories listed on Card 7.

SECTION B.

The purpose of this section is to identify the most recent attraction or event that the respondent has visited and then to collect information on the travel party, and whether the visit was part of a day trip or a trip involving at least one overnight stay. This section requires the interaction of the interviewer and the use of Cards 9, 10 and 11.

Q1. Card 9.
Say **"Referring to the attractions and events listed on the previous Cards and summarised on Card 9, please indicate the <u>one</u> attraction or event which you <u>most recently</u> visited"**.
(Even if the respondent has not visited the attraction for five years or longer, this is still regarded as the most recent visit).
Record the number of the attraction or event on the answer sheet and then skip to Q3.
If the respondent has not visited an attraction or event on Card 9, go to Q2.
If the respondent has been able to complete Q1, skip to Q3.

Q2. If the respondent has <u>not</u> visited any of the attractions or events on Card 9 say. **"If you have <u>not</u> visited any of the attractions or events on Card 9, please name the attraction or event which you have most recently visited"**
Record the name of the attraction or event on the answer sheet and go to Q3.

Q3. Card 10.
For all respondents say **"Referring to Card 10, which of the categories best describes your most recent visit to an attraction or event?"**
Record the respondent's answer by circling the appropriate response on the answer sheet.
If the respondent's answer to Q3 was 1, skip to Q7.
If the respondent's answer to Q3 was 2, 3 or 4, skip to Q6.
If the respondent's answer to Q3 was 5, go to Q4 and Q5.

Q4. Say **"How many people were in the group?"**
Record the respondent's answer on the answer sheet.

Q5. Say **"Please describe the type of group where type of group includes age group, gender mix and basis for the group such as social group, special interest group, school group or the like."**
Record the respondent's answer on the answer sheet.
Skip to Q7.

Q6. Card 11.

For the respondents who answered Q1 with the numbers 2, 3 or 4 present Card 11 and say **"Referring to Card 11, please indicate the age range, gender and relationship to you of each person who accompanied you on your most recent visit to an attraction or event."**
Record the respondent's answers on the answer sheet and go to Q7.

Q7. For all respondents say **"Was your visit to this attraction or event part of a day trip or part of a trip which involved an overnight stay or longer?"**
Record the respondent's answer on the answer sheet.

SECTION C.

The objective of this section of the questionnaire is to gain insights into the respondent's personality using part of a well known questionnaire known as Holland's Personality Inventory. It is to be completed independently by the respondents. In order to save time, it is important that the respondents do not total their scores for each subsection.

Say, **"The next part of the survey is all about your preferred interests and activities. It will take a few minutes to complete and should be done without my input. However, I can clarify the instructions. Please answer as honestly and frankly as possible and do not rush this section. Please ensure that you place a cross in a box beside each question. It is not necessary to count the total number of crosses at the end of each section. While you are completing it I will carry out some paperwork. Please let me know when you have completed it and we can move on to the next section."**

Whilst the respondent is completing this section of the questionnaire, the interviewer should answer Q6 and Q7 in Section G on that section's answer sheet. The questions are:

Q6.   Record the respondent's home address on the answer sheet.

Q7.   Record the gender of the respondent on the answer sheet using 1 for <u>male</u> and 2 for <u>female</u>.

Collect Section C once the respondent has completed it.

SECTION D.

This section is to be completed by the respondent without input from the interviewer and its purpose is to identify the values that respondents regard as guiding principles in their lives.

There are two versions of this section of the questionnaire, each with the questions in a different order. The two versions can be identified by the notations V1 or V2 in brackets after the heading Section D. It is important that the two versions are alternated between respondents and that a register of the number of each version is maintained on the last page of the Interviewer Briefing Notes.
Pass Section D to the respondent.

Say: **"On the first page, please circle a number on each of the 20 lines of this question indicating your support for the particular value as a guiding principle in your life. On the second page, please use the numbers 1, 2 and 3 to indicate the three values that you regard as most important. Please ensure that <u>only</u> three of the values are noted with the numbers 1, 2 and 3. Please let me know when you have completed it and we can move on to the next section."**
Collect Section D once the respondent has completed it.

SECTION E.

The purpose of this section is to gain an understanding of the respondent's "activities, interests and opinions". Pass Section E to the respondent.

Say: **"Please read carefully each of the statements in this section and indicate your level of agreement with each statement by circling a number on the scale 1 to 7, where 1 represents <u>strongly disagree</u> and 7 represents <u>strongly agree</u>. Although some statements may appear irrelevant to you, it is important that you address each item accurately. Please let me know when you have completed it and we can move on to the next section."**

Collect Section E once the respondent has completed it.

SECTION F.

The aim of this section is to collect information on the respondent's occupation and the specific tasks that this occupation involves. This section involves the interviewer in asking the questions using Card 12.

Q1. Say **"What is your present occupation. Please give me your full title".**
Record title of occupation on the answer sheet. If the person is unemployed or retired, ask him/her for details of his/her last occupation. Home duties is classed as an occupation.
If the respondent is a student or has never worked, note this on the answer sheet and skip to Section G.

Q2. Say **"What are the main tasks that you usually perform in that occupation?"**
Record full details of the occupation. For example, looking after children at a day care centre; teaching secondary school students; making cakes and pastries; operating a leather tanning machine; learning to make tools and dies. For managers, record the main activities managed.
It is crucial that the interviewer elicits from the respondents details about the tasks that are performed in their occupation.

Q3. Card 12
Say **"Referring to the top scale on Card 12, please indicate how satisfied you are with your present job"**
If the respondent indicated in Q1 that he/she is unemployed or retired, ask this question in relation to his/her last occupation.
Record the respondent's answer by circling the appropriate number on the answer sheet.

Q4. Say **"Referring to the bottom scale shown on Card 12, please indicate the extent to which you feel you are well suited to your present job"**
If the respondent indicated in Q1 that he/she is unemployed or retired, ask this question in relation to his/her last occupation.
Record the respondent's answer by circling the appropriate number on the answer sheet.

SECTION G.

This purpose of this section is simply to collect basic demographic data on the respondent. The questions are to be asked by the interviewer using Cards 13, 14, 15, 16 and 17.

Q1.   Card 13
Say: **"Referring to Card 13, please indicate the age category into which you fall".**
Record the response on the answer sheet.

Q2.   Card 14.
Say: **"Referring to Card 14, please indicate the category which represents the highest education level that you have achieved".**
Record the response on the answer sheet.
If the respondent happens to be a student, record the level at which he/she is currently studying.

Q3.   Card 15.
Say: **"Referring to Card 15, please indicate your family situation".**
Record the response on the answer sheet.

Q4.   Card 16.
Say: **"Referring to Card 16, please indicate the gender and age of each dependent child living at home. A dependent child is one not in full time employment."**
Record the response on the answer sheet.

Q5.   Card 17.
Say: **"Referring to Card 17, please indicate the <u>total family income</u> from all sources. Total family income refers to the total of income earned by all members of the family including wages, salaries, interest, dividends, pensions and profits".**
Record the response on the answer sheet.

The following two questions should be completed by the interviewer whilst the respondent is completing Section C.

Q6.   Record the respondent's home address on the answer sheet.

Q7.   Record the gender of the respondent on the answer sheet using 1 for <u>male</u> and 2 for <u>female</u>.

The questionnaire is now complete. Thank the respondent for his/her assistance.

APPENDIX 4

BLANK COPY OF ORIGINAL QUESTIONNAIRE

IDENT #:

START TIME	FINISH TIME	TOTAL INT MIN

PROJECT NAME: TOURISM

**CODE AT END
OF INTERVIEW**

F	M
1	2

EDITED BY: _____ #: _____

VALIDATED BY: _____ #: _____

PROJECT #: 103 6880

DATE: NOVEMBER

QUOTA CHECK - SUPERVISOR ONLY						
1	2	3	4	5	6	7
8	9	10	11	12	13	14

Good morning/afternoon/evening, my name is......................and I am an interviewer
for Wells Australasia, the Market Research Company. I am here to ask if you would
assist in a research project being conducted by Victorian University into aspects of
tourism behaviour. Agreeing to participate in this study will contribute to our
understanding of tourism behaviour. May I speak to the person in the household, who is
18+, whose birthday is next.

INT NAME: _____ INT #: _____

LOCATION:

START POINT...

RESPONDENTS NAME: _____

TELEPHONE #: _____   _____
                (STD)

I certify that this interview was conducted according to the Code of Professional
Behaviour ICC/ESOMAR and has been checked for completeness.

INT NAME: _____ INT #: _____

SIGNED: _____ DATE: _____

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Display Cards 1 and 2.
Say **"I am going to ask you about your attendance at a number of attractions. Please look at the first attraction listed on Card 1 which is Sovereign Hill, Ballarat. Using the response formats on Card 2, please tell me"**:
"(a) Have you ever visited this attraction?"

"(b) How interested are you in visiting this attraction in the future?"

"(c) How likely are you to visit this attraction within the next 12 months?"

This procedure is repeated for each of the 13 attractions listed on Card 1.

Display Cards 3 and 4.
Say **"I am now going to ask you about your participation on tours of a number of attractions. Please look at the first attraction tour listed on Card 3 which is a tour of Parliament House. Using the response formats on Card 4, please tell me"**:
"(a) Have you ever participated in a tour of this attraction?"

"(b) How interested are you in touring this attraction in the future?"

"(c) How likely are you to tour this attraction within the next 12 months?"

This procedure is repeated for each of the five attraction tours listed on Card 3.

Display Cards 5 and 6.
Say **"I am now going to ask you about your attendance at a number of events. Please look at the first event listed on Card 5 which is the Ford Australian Open Tennis. Using the response formats on Card 4, please tell me"**:
"(a) Have you ever attended this event?"

"(b) How interested are you in attending this event in the future?"

"(c) How likely are you to attend this event within the next 12 months?"

This procedure is repeated for each of the 13 events listed on Card 5.

Card 1

1	Sovereign Hill, Ballarat
2	De Bortoli Winery, Dixons Creek
3	National Gallery of Victoria, Melbourne
4	Bendigo Pottery, Bendigo
5	Penguin Parade, Phillip Island
6	Powerworks (Formerly tour of SEC power plant), Morwell
7	"Pick-your-own" Fruit and Berry Farm, Drouin West
8	Bureau of Meteorology, Melbourne
9	Scienceworks Museum, Melbourne
10	Puffing Billy, Belgrave
11	Our World of Money, Craigieburn (Australian Mint)
12	Victorian Tapestry Workshop, South Melbourne
13	Rialto Towers Observation Deck, Melbourne

Card 2

(a) Have you ever visited this attraction?   No   1   Yes   2

(b) How interested are you in visiting this attraction in the future?

Extremely uninterested						Extremely interested
1	2	3	4	5	6	7

(c) How likely are you to visit this attraction within the next 12 months?

Definitely will not visit						Definitely will visit
1	2	3	4	5	6	7

Card 3

14	Tour of Parliament House, Melbourne
15	Tour of the Australian Stock Exchange, Melbourne
16	Backstage tour of the Victorian Arts Centre, Melbourne
17	Behind the scenes tour of the Melbourne Cricket Ground (MCG)
18	Tour of Western Wastewater Treatment Plant, Werribee

Card 4

(a) Have you ever participated in a tour of this attraction?

No 1   Yes 2

(b) How interested are you in participating in a tour of this attraction in the future?

Extremely uninterested						Extremely interested
1	2	3	4	5	6	7

(c) How likely are you to participate in a tour of this attraction within the next 12 months?

Definitely will not tour						Definitely will tour
1	2	3	4	5	6	7

Card 5

19   Ford Australian Open Tennis, Melbourne

20   Spring Racing Carnival, Melbourne

21   International Festival of the Arts, Melbourne

22   Australian Formula One Grand Prix, Melbourne

23   Royal Agricultural Society of Victoria Show (Melbourne Show)

24   Melbourne Food and Wine Festival, Melbourne

25   Australian Motorcycle Grand Prix

26   Melbourne International Comedy Festival

27   Melbourne Moomba Festival

28   Australian Football League Grand Final, Melbourne

29   Bells Beach Surf Classic, Bells Beach

30   A Commonwealth or Olympic Games

31   Australian International Air Show, Avalon

Card 6

(a) Have you ever visited this event?   No   1   Yes   2

(b) How interested are you in visiting this event in the future?

Extremely uninterested						Extremely interested
1	2	3	4	5	6	7

(c) How likely are you to visit this event within the next 12 months?

Definitely will not attend						Definitely will attend
1	2	3	4	5	6	7

Display Cards 7 and 8.

Say "I am now going to ask you about your attendance at non-specific events in particular event categories. Please look at the first event category listed on Card 7 which is Major Sporting Event held in Victoria. Using the response formats on Card 8, please tell me":

"(a) Have you ever attended an event in this category not previously listed?"

If the answer is YES, say "Please specify the name of the event attended".

"(b) How interested are you in attending this type of event in the future?"

"(c) How likely are you to attend this type of event within the next 12 months?"

This procedure is repeated for each of the three event categories listed on Card 7.

Card 7

32	A Major Sporting Event held in Victoria
33	A Regional Community Festival or Fair in Victoria
34	A Major Cultural Event held in Victoria

Card 8

(a) Have you ever attended an event in this category?

No 1 Yes 2

If yes, please specify:

_____

(b) How interested are you in attending an event in this category in the future?

Extremely uninterested						Extremely interested
1	2	3	4	5	6	7

_____

(c) How likely are you to attend an event in this category within the next 12 months?

Definitely will not attend						Definitely will attend
1	2	3	4	5	6	7

Section A Answer Sheet

Att No	Visited		Interest in visiting							Intention to visit						
	No	Yes	Extremely uninterested						Extremely interested	Definitely will not visit						Definitely will visit
	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
1	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
12	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
14	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
15	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
17	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
18	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
19	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
20	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
21	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
22	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
23	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
24	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
25	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
26	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
27	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
28	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
29	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
30	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
31	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
32	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
32	Specify															
33	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
33	Specify															
34	1	2	1	2	3	4	5	6	7	1	2	3	4	5	6	7
34	Specify															

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SECTION B
QUESTION AND ANSWER SHEET

Q1. Card 9.
Say **"Referring to the attractions and events listed on the previous Cards and summarised on Card 9, please indicate the <u>one</u> attraction or event which you <u>most recently</u> visited".**
Number of attraction or event on Card 9: _____
If the respondent has visited an attraction or event on Card 9, skip to Q3, if not, go to Q2.

Q2. If the respondent has <u>not</u> visited any of the attractions or events on Card 9 say. **"If you have <u>not</u> visited any of the attractions or events on Card 9, please name the attraction or event which you have most recently visited"**
Name of attraction or event:

_____

Q3. Card 10.
For all respondents say **"Referring to Card 10, which of the categories best describes your most recent visit to an attraction or event?"**
I visited alone..1
I visited with one other person..2
I visited with two other people..3
I visited with three to six other people 4
I visited as part of a group of more than 6 people.........................5

If the respondent's answer to Q3 was 1, skip to Q7.
If the respondent's answer to Q3 was 2, 3 or 4, skip to Q6.
If the respondent's answer to Q3 was 5, go to Q4 and Q5:

Q4. Say **"How many people were in the group?"**
Number of people in the group: _____

Q5. Say **"Describe the type of group where type of group includes age group, gender mix and basis for the group such as social group, special interest group, school group or the like."**
Record the respondent's answer below.

_____
_____
_____

Skip to Q7.

Q6. Card 11.
For the respondents who answered Q1 with the numbers 2, 3 or 4 say
"Referring to Card 11, please indicate the age range, gender and relationship to you of each person who accompanied you on your most recent visit to an attraction or event."

	First Other Person	Second Other Person	Third Other Person	Fourth Other Person	Fifth Other Person	Sixth Other Person
Gender of each person						
Male..............................	1	1	1	1	1	1
Female...........................	2	2	2	2	2	2
Age group of each person						
0 to 4............................	1	1	1	1	1	1
5 to 13..........................	2	2	2	2	2	2
14 to 19.........................	3	3	3	3	3	3
20 to 29.........................	4	4	4	4	4	4
30 to 39.........................	5	5	5	5	5	5
40 to 49.........................	6	6	6	6	6	6
50 to 59.........................	7	7	7	7	7	7
60 and above..................	8	8	8	8	8	8
Relationship to you						
Partner or spouse............	1	1	1	1	1	1
Friend or workmate..........	2	2	2	2	2	2
Brother or sister..............	3	3	3	3	3	3
Parent............................	4	4	4	4	4	4
Child..............................	5	5	5	5	5	5
Other family member.......	6	6	6	6	6	6
Other (please specify)	7	7	7	7	7	7

Go to Q7.

Q7. For all respondents say **"Was your visit to this attraction or event part of a day trip or part of a trip which involved an overnight stay or longer?"**

Part of a day trip..1
Part of a trip which involved an overnight stay or longer 2

Card 9

1	Sovereign Hill, Ballarat
2	De Bortoli Winery, Dixons Creek
3	National Gallery of Victoria, Melbourne
4	Bendigo Pottery, Bendigo
5	Penguin Parade, Phillip Island
6	Powerworks (Formerly tour of SEC power plant), Morwell
7	"Pick-your-own" Fruit and Berry Farm, Drouin West
8	Bureau of Meteorology, Melbourne
9	Scienceworks Museum, Melbourne
10	Puffing Billy, Belgrave
11	Our World of Money, Craigieburn (Australian Mint)
12	Victorian Tapestry Workshop, South Melbourne
13	Rialto Towers Observation Deck, Melbourne
14	Tour of Parliament House, Melbourne
15	Tour of the Australian Stock Exchange, Melbourne
16	Backstage tour of the Victorian Arts Centre, Melbourne
17	Behind the scenes tour of the Melbourne Cricket Ground (MCG)
18	Tour of Western Wastewater Treatment Plant, Werribee
19	Ford Australian Open Tennis, Melbourne
20	Spring Racing Carnival, Melbourne
21	International Festival of the Arts, Melbourne
22	Australian Formula One Grand Prix, Melbourne
23	Royal Agricultural Society of Victoria Show (Melbourne Show)
24	Melbourne Food and Wine Festival, Melbourne
25	Australian Motorcycle Grand Prix
26	Melbourne International Comedy Festival
27	Melbourne Moomba Festival
28	Australian Football League Grand Final, Melbourne
29	Bells Beach Surf Classic, Bells Beach
30	A Commonwealth or Olympic Games
31	Australian International Air Show, Avalon

Card 10

I visited alone..1

I visited with one other person.....................................2

I visited with two other people.....................................3

I visited with three to six other people........................4

I visited with a group of more than 6 people...............5

Card 11

	First Other Person	Second Other Person	Third Other Person	Fourth Other Person	Fifth Other Person	Sixth Other Person
Gender of each person						
Male.........................	1	1	1	1	1	1
Female....................	2	2	2	2	2	2
Age group of each person						
0 to 4......................	1	1	1	1	1	1
5 to 13....................	2	2	2	2	2	2
14 to 19..................	3	3	3	3	3	3
20 to 29..................	4	4	4	4	4	4
30 to 39..................	5	5	5	5	5	5
40 to 49..................	6	6	6	6	6	6
50 to 59..................	7	7	7	7	7	7
60 and above..........	8	8	8	8	8	8
Relationship to you						
Partner or spouse..	1	1	1	1	1	1
Friend or workmate	2	2	2	2	2	2
Brother or sister.....	3	3	3	3	3	3
Parent.....................	4	4	4	4	4	4
Child.......................	5	5	5	5	5	5
Other family............	6	6	6	6	6	6
Other (specify).......	7	7	7	7	7	7

SECTION C
QUESTION SHEET

Say, "The next part of the survey is all about your preferred interests and activities. It will take a few minutes to complete and should be done without my input. However, I can clarify the instructions. Please answer as honestly and frankly as possible and do not rush this section. Please ensure that you place a cross in a box beside each question. It is not necessary to count the total number of crosses at the end of each section. While you are completing it I will carry out some paperwork. Please let me know when you have completed it and we can move on to the next section."

SECTION C
ANSWER SHEET

In this section, we are asking about people's interests and ask that you place a cross in the relevant box beside each question.

Please <u>do not count</u> the total number of crosses at the end of each section.

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Activities

Put a cross, like this ☒, in the box under 'L' for each activity you **like** (or **would like**) to do. Put a cross in the box under 'D' for each one you would **dislike** doing, or would not care about one way or the other.

	L	D
Repair cars	☐	☐
Fix mechanical things	☐	☐
Build things with wood	☐	☐
Drive a truck or tractor	☐	☐
Use metalwork or machine tools	☐	☐
Work on a drag car or motor bike	☐	☐
Take a Trade or Engineering course	☐	☐
Take a Woodwork course	☐	☐
Take a Motor Mechanics course	☐	☐

R

Total No. of L's ☐

	L	D
Read scientific books or magazines	☐	☐
Work in a laboratory	☐	☐
Work on a scientific project	☐	☐
Work with a chemistry set	☐	☐
Read about special subjects on my own	☐	☐
Solve maths or chess puzzles	☐	☐
Build a small computer	☐	☐
Take a Physics course	☐	☐
Take a Biology course	☐	☐

I

Total No. of L's ☐

	L	D
Sketch, draw, or paint	☐	☐
Go to or act in plays	☐	☐
Play in a band, group, or orchestra	☐	☐
Practise a musical instrument	☐	☐
Go to recitals, concerts, or musicals	☐	☐
Take portrait photographs	☐	☐
Read plays	☐	☐
Read or write poetry	☐	☐
Take an Art course	☐	☐

A

Total No. of L's ☐

	L	D
S		
Write letters to friends	☐	☐
Attend religious services	☐	☐
Belong to clubs	☐	☐
Help others with their personal problems	☐	☐
Take care of children	☐	☐
Go to parties	☐	☐
Go dancing	☐	☐
Attend meetings and conferences	☐	☐
Make new friends	☐	☐

Total No. of L's ☐

	L	D
E		
Discuss politics	☐	☐
Influence others	☐	☐
Operate my own service or business	☐	☐
Take part in a sales conference	☐	☐
Be on the committee of a group	☐	☐
Supervise the work of others	☐	☐
Meet important people	☐	☐
Lead a group in accomplishing some goal	☐	☐
Participate in a political campaign	☐	☐

Total No. of L's ☐

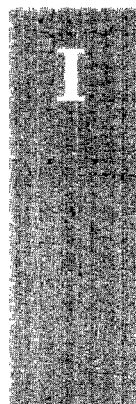|	L	D
C		
Type papers or letters for yourself or for others	☐	☐
Add, subtract, multiply, and divide numbers in business, or bookkeeping	☐	☐
Operate business machines of any kind	☐	☐
Keep detailed records of expenses	☐	☐
File letters, reports, records, etc.	☐	☐
Write business letters	☐	☐
Take a Business course	☐	☐
Take a Bookkeeping course	☐	☐
Take a Business Maths course	☐	☐

Total No. of L's ☐

4

Competencies

Put a cross, like this ⊠, in the box under Y for 'Yes' for each activity you can do **well** or **competently**. Put a cross under N for 'No' for each activity you have **never done** or do **poorly**.
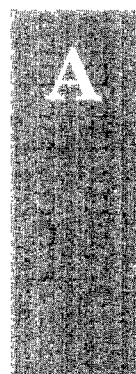
R

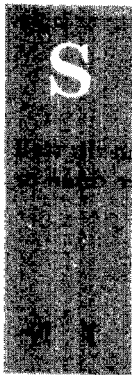|	Y	N
I have used carpentry power tools such as an electric saw, lathe or sander	☐	☐
I have operated power tools such as a drill press or grinder or sewing machine	☐	☐
I can refinish furniture or woodwork	☐	☐
I can read blueprints	☐	☐
I can do simple electrical repairs	☐	☐
I can repair furniture	☐	☐
I can do mechanical drawings	☐	☐
I can do simple repairs on a TV set	☐	☐
I can do simple plumbing repairs	☐	☐

Total No. of Y's ☐

I

	Y	N
I can name three foods that are high in protein content	☐	☐
I understand the "half-life" of a radioactive element	☐	☐
I can use logarithmic tables	☐	☐
I can use a microscope	☐	☐
I can identify three constellations of the stars	☐	☐
I can describe the function of the white blood cells	☐	☐
I can interpret simple chemical formulae	☐	☐
I understand why most man-made satellites do not fall to the earth	☐	☐
I have participated in a Science Fair or competition	☐	☐

Total No. of Y's ☐

A

	Y	N
I can play a musical instrument	☐	☐
I can participate in two- or four-part choral singing	☐	☐
I can perform as a musical soloist	☐	☐
I can act in a play	☐	☐
I can make good flower arrangements	☐	☐
I can sketch people so that they can be recognized	☐	☐
I can do a painting or sculpture	☐	☐
I can make pottery	☐	☐
I can design clothing, posters, or furniture	☐	☐

Total No. of Y's ☐

5

	Y	N

S

	Y	N
I am good at explaining things to others	☐	☐
I have participated in charity or benefit drives	☐	☐
I cooperate and work well with others	☐	☐
I am competent at entertaining people older than myself	☐	☐
I can teach children easily	☐	☐
I can plan entertainment for a party	☐	☐
I am good at helping people who are upset or troubled	☐	☐
I am a good judge of personality	☐	☐
I can be a good host or hostess	☐	☐

Total No. of Y's ☐

E

	Y	N
I have been elected to an office in school, college or university	☐	☐
I can supervise the work of others	☐	☐
I have unusual energy and enthusiasm	☐	☐
I am good at getting people to do things my way	☐	☐
I have acted as leader for some group presenting suggestions or complaints to a person in authority	☐	☐
I have won an award for work as a salesperson or leader	☐	☐
I have organized a club, group, or gang	☐	☐
I know how to be a successful leader	☐	☐
I am a good debater	☐	☐

Total No. of Y's ☐

C

	Y	N
I can type 40 words a minute	☐	☐
I can operate a duplicating or adding machine	☐	☐
I can file correspondence and other papers	☐	☐
I have held an office job	☐	☐
I can do a lot of paper work in a short time	☐	☐
I can operate a word processor	☐	☐
I can use simple data processing equipment such as a keypunch	☐	☐
I can post credits and debits	☐	☐
I can keep accurate records of payments or sales	☐	☐

Total No. of Y's ☐

Occupations

This is an inventory of your feelings and attitudes about many kinds of work. Show the occupations that **interest** or **appeal** to you by putting a cross, like this ☒, in the box under 'Y' for 'Yes' for each one. Show the occupations that you **dislike** or find **uninteresting** by putting a cross in the box under N for 'No' for each one.

	Y	N		Y	N
Aircraft Mechanic	☐	☐	Sociologist	☐	☐
Forest Ranger	☐	☐	Secondary School Teacher	☐	☐
Motor Mechanic	☐	☐	Probation Officer	☐	☐
Carpenter	☐	☐	Speech Therapist	☐	☐
Bulldozer Driver	☐	☐	Marriage Guidance Counsellor	☐	☐
Surveyor	☐	☐	School Principal	☐	☐
Construction Site Inspector	☐	☐	Playground Leader	☐	☐
Service Station Attendant	☐	☐	Social Studies Teacher	☐	☐
Sheep Station Hand	☐	☐	Social Worker	☐	☐
Railway Engine Driver	☐	☐	Hospital Attendant	☐	☐
Machinist	☐	☐	Youth Leader	☐	☐
Wool Classer	☐	☐	Psychiatric Nurse	☐	☐
Fruit Grower	☐	☐	School Counsellor	☐	☐
Electrician	☐	☐	Physiotherapist	☐	☐

Total R Y's [ ]   **Total S Y's** [ ]

	Y	N		Y	N
Biologist	☐	☐	Stockbroker	☐	☐
Astronomer	☐	☐	Buyer	☐	☐
Medical Laboratory Technician	☐	☐	Advertising Executive	☐	☐
Pharmacist	☐	☐	Sales Representative	☐	☐
Zoologist	☐	☐	Television Producer	☐	☐
Chemical Engineer	☐	☐	Office (Personnel) Manager	☐	☐
Agricultural Scientist	☐	☐	Business Consultant	☐	☐
Writer of Scientific Reports	☐	☐	Restaurant Manager	☐	☐
Editor of a Scientific Journal	☐	☐	Radio or TV Announcer	☐	☐
Geologist	☐	☐	Shopkeeper (e.g. milk bar)	☐	☐
Botanist	☐	☐	Real Estate Agent	☐	☐
Scientific Research Assistant	☐	☐	Public Relations Officer	☐	☐
Physicist	☐	☐	Sports Promoter	☐	☐
Veterinarian	☐	☐	Sales Manager	☐	☐

Total I Y's [ ]   **Total E Y's** [ ]

	Y	N		Y	N
Poet	☐	☐	Bookkeeper	☐	☐
Orchestra Conductor	☐	☐	Business Studies Teacher	☐	☐
Musician	☐	☐	Insurance Clerk	☐	☐
Author	☐	☐	Chartered Accountant	☐	☐
Commercial Artist	☐	☐	Credit Officer	☐	☐
Freelance Writer	☐	☐	Bank Teller	☐	☐
Music Arranger	☐	☐	Tax Consultant	☐	☐
Portrait Painter	☐	☐	Stock/Inventory Controller	☐	☐
Concert Singer	☐	☐	Business Machine Operator	☐	☐
Composer	☐	☐	Financial Analyst	☐	☐
Sculptor	☐	☐	Cost Estimator	☐	☐
Playwright	☐	☐	Pay Clerk	☐	☐
Cartoonist	☐	☐	Bank Inspector	☐	☐
Interior Decorator	☐	☐	Word Processor Operator	☐	☐

Total A Y's [ ]   **Total C Y's** [ ]

Self-Estimates

1. Rate yourself on each of the following traits as **you really think you are when compared with other persons your own age.** Give the most accurate estimate of **how you** see yourself. Circle the appropriate number and **avoid rating yourself the same in each ability.**

	Mechanical Ability	Scientific Ability	Artistic Ability	Teaching Ability	Sales Ability	Clerical Ability
High						
					6	6
					5	5
Average					4	4
					3	3
					2	2
Low						
	R	**I**	**A**	**S**	**E**	**C**

	Manual Skills	Maths Ability	Musical Ability	Friend-liness	Managerial Skills	Office Skills
High			7		7	
			6		6	6
	5		5		5	5
Average			4		4	
			3		3	3
	2		2		2	
Low			1		1	
	R	**I**	**A**	**S**	**E**	**C**

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SECTION D
QUESTION SHEET

Say: "On the first page, please circle a number on each of the 20 lines of this question indicating your support for the particular value as a guiding principle in your life. On the second page, please use the numbers 1, 2 and 3 to indicate the three values that you regard as most important. Please ensure that <u>only</u> three of the values are noted with the numbers 1, 2 and 3. Please let me know when you have completed it and we can move on to the next section."

SECTION D (V1)
ANSWER SHEET

1. Please rate the importance of each of the following values as guiding principles in your life. Indicate your response by circling a number on the scale 1 to 7, where 1 represents <u>extremely unimportant</u> and 7 represents <u>extremely important</u>.

		Extremely unimportant					Extremely important	
1.	Self fulfilment	1	2	3	4	5	6	7
2.	Security	1	2	3	4	5	6	7
3.	Individuality	1	2	3	4	5	6	7
4.	Accomplishment	1	2	3	4	5	6	7
5.	Solitude	1	2	3	4	5	6	7
6.	Self reliance	1	2	3	4	5	6	7
7.	Wealth	1	2	3	4	5	6	7
8.	Belonging	1	2	3	4	5	6	7
9.	Popularity	1	2	3	4	5	6	7
10.	Warm relationships with others.	1	2	3	4	5	6	7
11.	Being well respected	1	2	3	4	5	6	7
12.	Dominating others	1	2	3	4	5	6	7
13.	Status	1	2	3	4	5	6	7
14.	Materialism	1	2	3	4	5	6	7
15.	Excitement	1	2	3	4	5	6	7
16.	Ambition	1	2	3	4	5	6	7
17.	Self respect	1	2	3	4	5	6	7
18.	Spirituality	1	2	3	4	5	6	7
19.	Fun and enjoyment in life	1	2	3	4	5	6	7
20.	Competing with others	1	2	3	4	5	6	7

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2. Using the same list of values, please rank the THREE VALUES (three only) that are most important to you. Write the numbers 1 (most important), 2 (second most important), and 3 (third most important), next to the three relevant values to indicate your ranking.

<u>Rank</u>

1.	Self fulfilment	_____
2.	Security	_____
3.	Individuality	_____
4.	Accomplishment	_____
5.	Solitude	_____
6.	Self reliance	_____
7.	Wealth	_____
8.	Belonging	_____
9.	Popularity	_____
10.	Warm relationships with others	_____
11.	Being well respected	_____
12.	Dominating others	_____
13.	Status	_____
14.	Materialism	_____
15.	Excitement	_____
16.	Ambition	_____
17.	Self respect	_____
18.	Spirituality	_____
19.	Fun and enjoyment in life	_____
20.	Competing with others	_____

SECTION D (V2)
ANSWER SHEET

1. Please rate the importance of each of the following values as guiding principles in your life. Indicate your response by circling a number on the scale 1 to 7, where 1 represents <u>extremely unimportant</u> and 7 represents <u>extremely important</u>.

		Extremely unimportant						Extremely important
1.	Competing with others	1	2	3	4	5	6	7
2.	Fun and enjoyment in life	1	2	3	4	5	6	7
3.	Spirituality	1	2	3	4	5	6	7
4.	Self respect	1	2	3	4	5	6	7
5.	Ambition	1	2	3	4	5	6	7
6.	Excitement	1	2	3	4	5	6	7
7.	Materialism	1	2	3	4	5	6	7
8.	Status	1	2	3	4	5	6	7
9.	Dominating others	1	2	3	4	5	6	7
10.	Being well respected	1	2	3	4	5	6	7
11.	Warm relationships with others.	1	2	3	4	5	6	7
12.	Popularity	1	2	3	4	5	6	7
13.	Belonging	1	2	3	4	5	6	7
14.	Wealth	1	2	3	4	5	6	7
15.	Self reliance	1	2	3	4	5	6	7
16.	Solitude	1	2	3	4	5	6	7
17.	Accomplishment	1	2	3	4	5	6	7
18.	Individuality	1	2	3	4	5	6	7
19.	Security	1	2	3	4	5	6	7
20.	Self fulfilment	1	2	3	4	5	6	7

2. Using the same list of values, please rank the THREE VALUES (three only) that are most important to you. Write the numbers 1 (most important), 2 (second most important), and 3 (third most important), next to the three relevant values to indicate your ranking.

Rank

1.	Competing with others	_____
2.	Fun and enjoyment in life	_____
3.	Spirituality	_____
4.	Self respect	_____
5.	Ambition	_____
6.	Excitement	_____
7.	Materialism	_____
8.	Status	_____
9.	Dominating others	_____
10.	Being well respected	_____
11.	Warm relationships with others	_____
12.	Popularity	_____
13.	Belonging	_____
14.	Wealth	_____
15.	Self reliance	_____
16.	Solitude	_____
17.	Accomplishment	_____
18.	Individuality	_____
19.	Security	_____
20.	Self fulfilment	_____

SECTION E
QUESTION SHEET

Say: "Please read carefully each of the statements in this section and indicate your level of agreement with each statement by circling a number on the scale 1 to 7, where 1 represents <u>strongly disagree</u> and 7 represents <u>strongly agree</u>. Although some statements may appear irrelevant to you, it is important that you address each item accurately. Please let me know when you have completed it and we can move on to the next section."

SECTION E
ANSWER SHEET

Please indicate your level of agreement with the following list of statements using the scale 1 to 7, where 1 represents <u>strongly disagree</u>, and 7 represents <u>strongly agree</u>.

		Strongly Disagree						Strongly Agree
1.	I frequently visit friends and relatives.	1	2	3	4	5	6	7
2.	I like to participate in exciting activities.	1	2	3	4	5	6	7
3.	I frequently go shopping.	1	2	3	4	5	6	7
4.	I feel that I get a raw deal out of life in general.	1	2	3	4	5	6	7
5.	I frequently dine in restaurants.	1	2	3	4	5	6	7
6.	I like to talk about an experience afterwards.	1	2	3	4	5	6	7
7.	I enjoy mastering things.	1	2	3	4	5	6	7
8.	I frequently go driving to sightsee or just for pleasure.	1	2	3	4	5	6	7
9.	I like to be creative.	1	2	3	4	5	6	7
10.	I frequently visit an art gallery or craft centre.	1	2	3	4	5	6	7
11.	I like to use my physical abilities.	1	2	3	4	5	6	7
12.	I frequently attend a festival, special or sports event.	1	2	3	4	5	6	7
13.	I like to interact with others.	1	2	3	4	5	6	7
14.	I frequently attend the theatre or a concert.	1	2	3	4	5	6	7
15.	I like to be involved in activities that require imagination.	1	2	3	4	5	6	7
16.	I frequently visit a museum or historic site.	1	2	3	4	5	6	7
17.	I frequently water-ski.	1	2	3	4	5	6	7
18.	I am traditional in my views on social issues and social trends in Australia.	1	2	3	4	5	6	7
19.	I frequently go to the cinema / movies.	1	2	3	4	5	6	7
20.	I frequently gamble, go to a casino, or play gaming machines.	1	2	3	4	5	6	7
21.	I like doing things the whole family can enjoy.	1	2	3	4	5	6	7

		Strongly Disagree						Strongly Agree
22.	I frequently go to a nightclub / disco / or other form of nightlife.	1	2	3	4	5	6	7
23.	I like to be in a calm atmosphere.	1	2	3	4	5	6	7
24.	I enjoy participating in activities that are seen to be trendy.	1	2	3	4	5	6	7
25.	I believe that unions have too much power.	1	2	3	4	5	6	7
26.	I like to improve my skill and ability.	1	2	3	4	5	6	7
27.	I frequently visit a winery.	1	2	3	4	5	6	7
28.	I like to learn about myself.	1	2	3	4	5	6	7
29.	I frequently visit a theme, amusement or historic park.	1	2	3	4	5	6	7
30.	I seek to satisfy my curiosity.	1	2	3	4	5	6	7
31.	I frequently go bushwalking.	1	2	3	4	5	6	7
32.	I like to make things more meaningful to me.	1	2	3	4	5	6	7
33.	I frequently visit a national park / forest.	1	2	3	4	5	6	7
34.	I like to rest and relax.	1	2	3	4	5	6	7
35.	I frequently go sailing or boating.	1	2	3	4	5	6	7
36.	I enjoy food and wine.	1	2	3	4	5	6	7
37.	I frequently visit animal / wildlife parks / zoos.	1	2	3	4	5	6	7
38.	I believe that the smoking of marijuana should be made legal.	1	2	3	4	5	6	7
39.	I like to compete against others.	1	2	3	4	5	6	7
40.	I frequently go swimming / surfing / diving.	1	2	3	4	5	6	7
41.	I like to be entertained.	1	2	3	4	5	6	7
42.	I frequently visit a park or garden.	1	2	3	4	5	6	7
43.	I believe that religion should be taught in Government schools.	1	2	3	4	5	6	7
44.	I frequently go fishing.	1	2	3	4	5	6	7
45.	I seek to expand my knowledge.	1	2	3	4	5	6	7
46.	I think that it is important to save money rather than spend it all now.	1	2	3	4	5	6	7
47.	I enjoy being with my friends.	1	2	3	4	5	6	7

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		Strongly Disagree						Strongly Agree
48.	I like to be with people who are enjoying themselves.	1	2	3	4	5	6	7
49.	I like a change of pace from everyday life.	1	2	3	4	5	6	7
50.	I believe that all education should be paid for by the government.	1	2	3	4	5	6	7
51.	I frequently play sport (eg. golf, tennis)	1	2	3	4	5	6	7
52.	I believe that people should rely on themselves and not just the government.	1	2	3	4	5	6	7
53.	I like to be socially competent and skillful	1	2	3	4	5	6	7
54.	I believe that a woman's role is taking care of the home.	1	2	3	4	5	6	7
55.	I frequently go snow skiing.	1	2	3	4	5	6	7
56.	I like to participate in an activity that is mentally challenging.	1	2	3	4	5	6	7
57.	I frequently participate in adventure activities (eg. rafting, horseriding)	1	2	3	4	5	6	7
58.	I frequently participate in organised tours or group activities.	1	2	3	4	5	6	7

SECTION F
QUESTION AND ANSWER SHEET

Q1. Say "What is your present occupation. Please give me your full title".
If the person is unemployed or retired, ask him/her for details of his/her last occupation.
If the respondent is a student or has never worked, record this and skip to Section G.
Occupation Title: _____

Q2. Say "What are the main tasks that you usually perform in that occupation?"
Main tasks: _____
_____
_____
_____

Q3. Card 12.
Say "Referring to the top scale on Card 12, please indicate how satisfied you are with your present job"
If the respondent indicated in Q1 that he/she is unemployed or retired, ask this question in relation to his/her last occupation.

Extremely unsatisfied						Extremely satisfied
1	2	3	4	5	6	7

Q4. Say "Referring to the bottom scale shown on Card 12, please indicate the extent to which you feel you are well suited to your present job"
If the respondent indicated in Q1 that he/she is unemployed or retired, ask this question in relation to his/her last occupation.

Extremely unsuited						Extremely suited
1	2	3	4	5	6	7

Card 12

How satisfied are you with your present job?

Extremely unsatisfied						Extremely satisfied
1	2	3	4	5	6	7

To what extent to you feel you are well suited to your present job?

Extremely unsuited						Extremely suited
1	2	3	4	5	6	7

SECTION G
QUESTION AND ANSWER SHEET

Q1. Card 13.
Say: **"Referring to Card 13, please indicate the age category into which you fall".**

18 to 19	1
20 to 29	2
30 to 39	3
40 to 49	4
50 to 59	5
60 and above	6

Q2. Card 14.
Say: **"Referring to Card 14, please indicate the category which represents the highest education level that you have achieved".**
If the respondent happens to be a student, record the level at which they are currently studying.

Primary	1
Some secondary school	2
Completed secondary school (Year 12 or its equivalent)	3
Some technical, commercial, trade certificate or apprenticeship	4
Completed technical, commercial, trade certificate, apprenticeship	5
Some university or other tertiary degree or diploma	6
Completed university or other tertiary degree or diploma	7

Q3. Card 15.
Say: **"Referring to Card 15, please indicate your family situation".**

Married (or De facto), children living at home	1
Married (or De facto), no children living at home	2
Married (or De facto), no children	3
Separated/ divorced/ widowed/ never married, children living at home	4
Never married, no children living at home	5
Widowed, no children living at home	6
Divorced/ separated, no children living at home	7

Card 13

Age Category

18 to 19..1

20 to 29...2

30 to 39...3

40 to 49...4

50 to 59...5

60 and above...6

Card 14

Highest Education Level Achieved

Primary...1

Some secondary school 2

Completed secondary school (Year 12 or its equivalent).....................3

Some technical, commercial, trade certificate, apprenticeship...........4

Completed technical, commercial, trade certificate, apprenticeship...5

Some university or other tertiary degree or diploma...........................6

Completed university or other tertiary degree or diploma...................7

Card 15

Family Situation

Married (or De facto), children living at home.............................1

Married (or De facto), no children living at home.........................2

Married (or De facto), no children...3

Separated/ divorced/ widowed/ never married,
children living at home...4

Never married, no children living at home....................................5

Widowed, no children living at home..6

Divorced/ separated, no children living at home...........................7

Q4.   Card 16.
Say: "Referring to Card 16, please indicate the gender and age of each dependent child living at home. A dependent child is one not in full time employment."

		Child One	Child Two	Child Three	Child Four	Child Five	Child Six
(a)	Gender of each child						
	Male	1	1	1	1	1	1
	Female	2	2	2	2	2	2
(b)	Age group of each child						
	0 to 4	1	1	1	1	1	1
	5 to 13	2	2	2	2	2	2
	14 to 19	3	3	3	3	3	3
	20 and above	4	4	4	4	4	4

		Child Seven	Child Eight	Child Nine	Child Ten
(a)	Gender of each child				
	Male	1	1	1	1
	Female	2	2	2	2
(b)	Age group of each child				
	0 to 4	1	1	1	1
	5 to 13	2	2	2	2
	14 to 19	3	3	3	3
	20 and above	4	4	4	4

Q5   Card 17.
Say: "Referring to Card 17, please indicate the total family income from all sources. Total family income refers to the total of income earned by all members of the family including wages, salaries, interest, dividends, pensions and profits".

Less than $10,000 per annum 1
$10,000 to $29,999 per annum 2
$30,000 to $49,999 per annum 3
$50,000 to $69,999 per annum 4
$70,000 to $99,999 per annum 5
$100,000 and above per annum 6

Q6. Respondent's home address: (Do not ask the respondent)
       Number and street name: _____
       Suburb: _____
       Postcode: _____

Card 16

Dependent Children Living at Home

	Child One	Child Two	Child Three	Child Four	Child Five	Child Six
Gender of each child						
Male.........................	1	1	1	1	1	1
Female.....................	2	2	2	2	2	2
Age group of each child						
0 to 4......................	1	1	1	1	1	1
5 to 13....................	2	2	2	2	2	2
14 to 19..................	3	3	3	3	3	3
20 and above..........	4	4	4	4	4	4

	Child Seven	Child Eight	Child Nine	Child Ten
Gender of each child				
Male.........................	1	1	1	1
Female.....................	2	2	2	2
Age group of each child				
0 to 4......................	1	1	1	1
5 to 13....................	2	2	2	2
14 to 19..................	3	3	3	3
20 and above..........	4	4	4	4

Card 17

Total Family Income from all Sources

Less than $10,000 per annum..1

$10,000 to $29,999 per annum...2

$30,000 to $49,999 per annum...3

$50,000 to $69,999 per annum...4

$70,000 to $99,999 per annum...5

$100,000 and above per annum.......................................6

Q7. Respondent's gender: (Do not ask the respondent)

      Male 1

      Female 2

The questionnaire is now complete. Thank the respondent for his/her assistance.