The Impact of Tourism on the Economy and Population of Small Islands: The Case of Aruba

ISBN: 978-90-6266-270-8

Coverphotos: Rosalinda Croes

Graphic design and figures: GeoMedia, Faculty of Geosciences, Utrecht University

English correction: Dr Anne Hawkins

The Impact of Tourism on the Economy and Population of Small Islands: The Case of Aruba

Het Effect van Toerisme op de Economie en de Bevolking van Kleine Eilanden: Een studie van Aruba

(met een samenvatting in het Nederlands)

Proefschrift

ter verkrijging van de graad van doctor aan de Universiteit Utrecht
op gezag van de rector magnificus, prof. dr. W.H. Gispen,
ingevolge het besluit van het college voor promoties
in het openbaar te verdedigen op donderdag 11 oktober 2007
des middags te 12.45 uur

door

Rigoberto Haime Croes

geboren op 4 januari 1964 te Oranjestad, Aruba

Promotor: prof. dr. P. Hooimeijer

To my father, Geronimo Croes,
I dedicate this book to you in appreciation
for showing me that education is the most
beautiful and important asset in my life.

Your son, Haime Croes
October, 2007

Let us think of education as the means of developing our
greatest abilities, because in each of us there is a private
hope and dream which, fulfilled, can be translated into
benefit for everyone and greater strength for our nation.

John F. Kennedy

As the traveller who has once been from home
is wiser than he who has never left his own
doorstep, so a knowledge of one other culture
should sharpen our ability to scrutinize more
steadily, to appreciate more lovingly, our own.

Margaret Mead

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Preface

My PhD journey started when, after 10 years of research, work, and teaching in the geographic field of housing, I felt the need for new opportunities. Living in Aruba, the most important geographic issues discussed in the community were the future development of tourism and migration. Many actors in the Aruba community have talked about tourism and migration a great deal, but in-depth knowledge about these two international phenomena was scarce. With this in mind, I sketched out some ideas for a research project that could give me the opportunity to start my PhD journey. In the school summer vacation of 2000, I presented my draft to my old teacher of demographic research, Pieter Hooimeijer, and after two years of working with him and with Clara Mulder in my vacation and by email my proposal was accepted. In January 2003, I started full-time research at the Faculty of Geosciences in Utrecht University.

Returning to scientific research after a long time was harder than I had expected. Old skills needed to be recovered and new ones developed; there was a different mode of reasoning to grasp, and a large knowledge gap to fill. The way of thinking in the new scientific paradigm was stimulating, fascinating, but sometimes also discouraging. My emotional support was my wife, Rosalinda. The total change in our lives was refreshing and the return to the Netherlands was like coming back home; we had both lived in the Netherlands some time ago when I studied there for eight years.

I am sincerely grateful to my supervisor Prof. Pieter Hooimeijer for his patience, support, and enthusiasm. Pieter's mathematical and analytical skills and research experience are outstanding, and represent qualities that I would like to aspire to. He let me follow my own thoughts while firmly guiding me back to a manageable task. It was my privilege to have Pieter as my supervisor. The successful completion of my project owes a great deal to his leadership. My thanks also go to Prof. John Fletcher, Bournemouth University, for his advice and sharing of his knowledge about tourism and in particular economic impact studies. My thanks go too to Prof. Clara Mulder for her critical comments about written articles and methods used. I benefited from her extensive knowledge of fundamental theoretical methods in scientific research. I also want to thank Dr Peteke Feijten for her advice in the first years of my PhD project. To Peteke goes my appreciation for her generous sharing of her expertise and her practical help. I thank the members of the Amsterdam-Utrecht seminar group under the supervision of Clara Mulder and Pieter Hooimeijer (*Leerzitje*) for the countless useful comments on early drafts of the manuscripts that form the chapters of this book. Without these insightful comments it would have taken much longer for my research papers to reach the level they eventually did.

I am very grateful for the financial and material support provided to me for this study. The Government of Aruba, the Minister of Education, Drs Marisol Lopez-Tromp, and especially the former Minister of Education, the Governor of Aruba, Fredis Refunjol, Jimmy Oduber, director of UNESCO Aruba. The Urban and Regional research centre Utrecht (URU) for financial and material support. The Aruba Tourism Authority (ATA): Mirna Janssen, Charles Oduber, and Theo de Jong. The Department of Immigration and Naturalization Aruba (DOOV/DINA), Dr

Rene van Aller, Lic. Gina Paula, Fulvia Marquez, and Ricky Croes. Central Bureau of Statistics Aruba, Louisette Christiaans-Yarzagaray MSc, and Drs Martijn Balkenstijn.

Special thanks go to my friends the dynamic hotel entrepreneurs Ir. Richard Eman and his wife, Marcia, for their fascinating stories about hotel and tourism marketing when we were staying at Aruba Surfside Marina on vacation. I also want to thank Charlene Oduber MD, for her help in the first years of my PhD project. To Charlene goes my appreciation for her practical help. I particularly want to thank Vanja Oduber, Ir. Hensley Hamen, Oscar Heronimo, Natali Flanegien-Heronimo, Ir. Aldert Dreimüller, Charleson Oduber, Mr. Bram van Vliet, Humphrey Versloot, Arthur Volgers, Drs Brend Kouwenhoven, Wendy Maduro-Oduber, Natalie Rafael-Wever, Yolanda Oduber, Jeanne-Marie Oduber, Jowen Maduro and John Jowill Maduro, for their encouragement along the way. I also want to thank Dr Anne Hawkins for the English correction and editing and her helpful advice about written scientific articles.

This book is dedicated to my father, Geronimo Croes, and my mother, Ida Maria Croes. My father, born on the small island of Aruba, has always been a man of international vision and a great lover of education. My parents gave me the opportunity to study and through a lifetime of love and support instilled in me the personal qualities, values, and motivation that have helped me make the most of that opportunity. I thank you both for your unconditional love.

The last words of acknowledgement go to the dearest person in my life, my wife, Rosalinda. Rose embraced my plan to return to study and live abroad with willingness and enthusiasm as she has always done whenever I have made such proposals. She has been my inspiration and emotional support. She has motivated and encouraged me over and over again. Without her love, support, and trust I could not have completed this book. While not wishing to evade any responsibility for this study's limitations, I consider the outcome to be as much her achievement as it is mine. Rose dearest, I want to apologize to you for the last six months, since it looked as if I was married to my articles and this book. Now, at the end of my dissertation I know that we will have time to enjoy our relationship in another stage of our lives together. With this book my PhD journey has ended and the fascinating world of scientific research has started.

Haime Croes
Oegstgeest, October 2007

1 Introduction

1.1 Background

Aruba is a small island in the Caribbean and is part of the Kingdom of the Netherlands. Since 1955, the oil refinery and the tourist industry have been the main sectors of the economy for the island of Aruba (Central Bureau of Statistics Aruba (CBS-Aruba), 2000; Cole & Razak, 2003). Since the refinery's operations had become less profitable, the oil company Exxon decided to close it down in 1985.

A switch to tourism was seen to be the most viable option to absorb the increase in unemployment. Aruba is certainly not the only island in the world to use tourism as a strategy for economic development (Albuquerque & McElroy, 1992; World Tourism Organization (WTO), 2004). Tourism offers one of the few opportunities for the economic diversification of small islands (United Nations Environmental Program (UNEP), 1996; WTO, 2004). They can use tourism as a generator for employment opportunities, income, and revenue for the local community (Fletcher, 1989; Wilkinson, 1989; Prasad, 2003).

However, many authors have also pointed out the drawbacks of tourism for the local community in terms of economic (Briguglio, 1995; Briguglio et al., 2000; Briguglio, 2004) and ecological vulnerability (Sutton, 1999; Sutton, 2001). There are three mechanisms that lead to the economic vulnerability of small islands (Briguglio, 2004). The first is the fact that most small, tropical tourist destinations are characterized by the dominance of the international hotel chains, which leads to a reliance on a single geographic market (Albuquerque & McElroy, 1992; Grandoit, 2005). The second is seasonality, which leads to the inefficient use of resources and loss of profits for the tourist accommodations or amenities during the off-peak periods (Sutcliffe & Sinclair, 1980; Manning & Powers, 1984; Jang, 2004, Farsari et al., 2007). The last is the high degree of dependence on the tourism sector and a high level of leakages from the gross tourism receipts. Some of the tourism-generated profits leak out of the local economy. These leakages occur primarily through the import of goods and the return on investment for the international chains. The extent of these leakages influences the economic benefits enjoyed by the local community (Fletcher, 1989; WTO, 2004).

The ecological vulnerability of the small-island tourist destinations has three aspects:

- The increase in the road- and air-traffic movements caused by the large number of tourists. Short-stay tourism in particular contributes to the number of air-traffic movements. International hotel chains typically cater for short-stay package tourists to fill the hotel rooms all year round (Wilkinson, 1989; Albuquerque & McElroy, 1992; Grandoit, 2005).
- The increase of the population pressure caused by the rapid growth of tourism. This growth has led to a strong demand for workers that cannot always be met by the local labour market. The recruitment of labour migrants is inevitable (Kontogeorgopoulos, 1998; WTO, 2004). Both the tourists and the migrants add substantially to the population of the island (Dodds, 2007).
- The spatial claims caused by the large number and size of the accommodations that may lead to the depletion of natural resources (Albuquerque & McElroy, 1992; WTO, 1999; Grandoit, 2005).

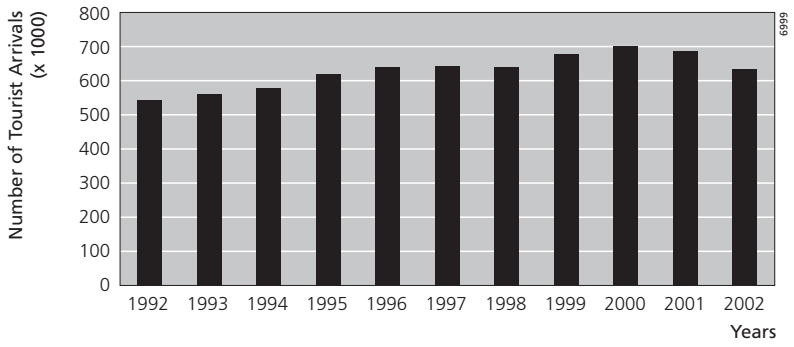
Figure 1.1 | Chain of impacts of tourism on a small island

The positive and negative aspects of tourism development may be considered as a chain of impacts with different linkages. The aim of this study is twofold: first, to provide insight into the effects of tourism expansion on the economy, the labour market, and the demography of Aruba; second, to understand the mechanisms that bring about the effects in each link of the impact chain.

The impact chain of the expansion of accommodations on a small island is illustrated in conceptual form in Figure 1.1. In section1.2, a descriptive analysis is given of the position of the tourism of Aruba in relation to different indicators of economic and ecological vulnerability, examined in comparison with the Caribbean as a whole. The reference year chosen was 1992, since 1991 was the first year in which Aruba collected consistent socioeconomic and demographic data. Section 1.3 introduces a theoretical framework for each link in the impact chain; in sections 1.4 and 1.5, the research questions are discussed.

1.2 Aruba tourism in the global context

The estimated tourist arrivals in Aruba in 1985 were around 200,000. This amount increased to 541,000 in 1992. Aruba experienced a growth of hotel rooms from 2,500 in 1985 to an estimated 5,200 rooms in 1992 and 7,500 in 2002 (Caribbean Tourism Organization (CTO), 2003). The expansion of the number of hotel rooms increased the tourist arrivals steadily from 541,000 in 1992, reaching a peak of 721,000 in 2000. Since then, arrivals gradually declined to 691,000 in 2001 and 643,000 in 2002 (Figure 1.2). This decline can be explained by the fact that tourist destinations worldwide have suffered from the attacks in the United States on September 11, 2001 (CTO, 2003; WTO, 2004). Because of these attacks, American tourists have felt afraid to travel to different parts of the world (CTO, 2003).



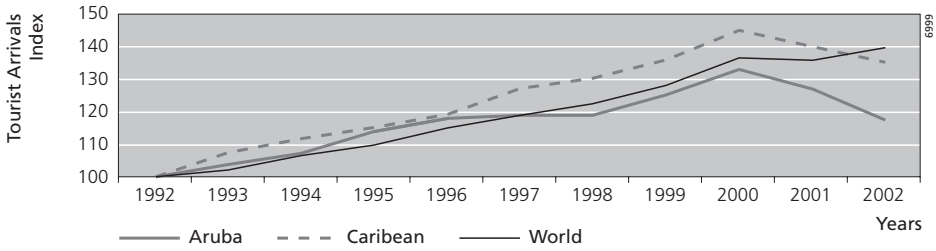
Source: CTO, 2003

Figure 1.2 | Aruba tourist arrivals 1992-2002

In 2002, there were about 700 million international tourist arrivals globally, which generated a total receipt of US$ 474.2 billion worldwide (CTO, 2003). The tourist arrivals (stopovers) in the Caribbean grew to 19.0 million in 2002 (CTO, 2003).

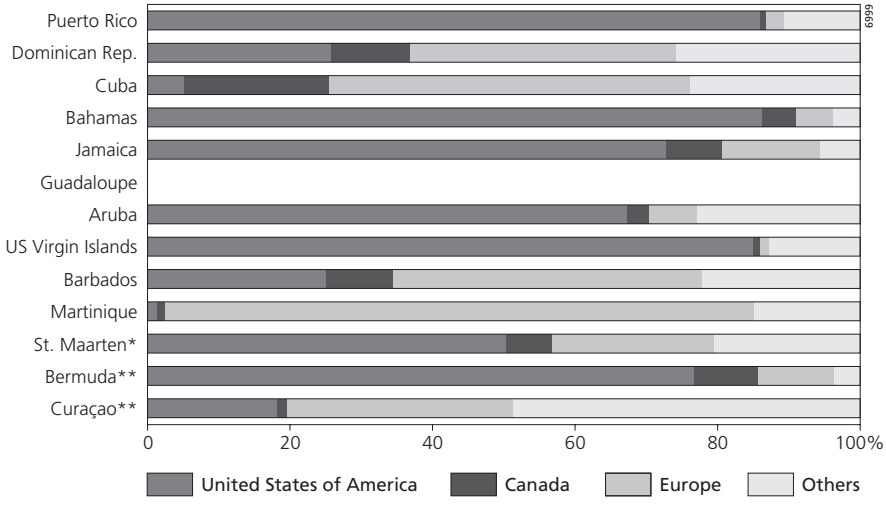
We have compared the Aruba performance in tourist arrivals with Caribbean and world trends with 1992 as the reference year (Figure 1.3). From 1992 to 1997, the indexes for Aruba were higher than the world's rates, but lower than the Caribbean's growth. From 1998 to 2002, average growth rates for the world and for the Caribbean were both higher than for Aruba. Figure 1.3 suggests that, in comparison with the global trend, the September 11 attacks caused a decline of tourist arrivals in 2001 and 2002 in both the Caribbean and Aruba, since the global trend seems to be more stable. In this context the question arises: Are Aruba and the Caribbean too heavily dependent on the North American market?

Figure 1.4 shows the reliance on the North American market. For Aruba, this is 60 percent of the total tourist arrivals to the island. In Figure 1.4, the islands in the Caribbean with the most tourist arrivals are listed. Eleven of these islands are former territories of the five colonial



Source: WTO, 2003; CTO, 2003; CBS-Aruba, 1996; 1998; 2002; 2003

Figure 1.3 | Aruba performance in comparison with the global trends



Source: CTO, 2002; 2003
Note: The island of Guadeloupe ranks sixth of the islands with the most tourist arrivals, but there is no data available for the main tourist market.

Figure 1.4 | The Caribbean islands with their main tourist market 2002

powers: The Netherlands: Aruba, St Maarten, and Curaçao; United States: Puerto Rico and US Virgin Islands; Great Britain: Bahamas, Jamaica, Barbados, and Bermuda; France: Guadeloupe and Martinique. The two largest islands on the list are former colonies of Spain: the Dominican Republic and Cuba.

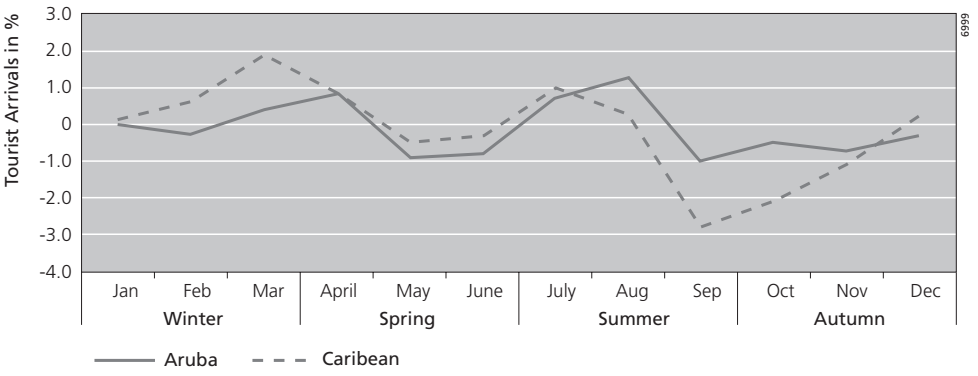
Europe (the Netherlands) could be expected to be the most important tourist market for Aruba, as for the other Dutch islands in the Caribbean, because of the historic relationship with the Netherlands. Nevertheless, Aruba – together with the British Commonwealth islands – seems to have a different market pattern; the United States also accounts for more than 70 percent of the main market for the Bahamas and Jamaica. The possible reason for this outcome might be the language spoken on the island (English) and the geographical position of the Bahamas (close to Florida).

The other Dutch islands, Curaçao and St Maarten, do have Europe as one of their most important markets. The main market (80 percent) for the American territories like the US Virgin islands and Puerto Rico is the United States. The islands of Martinique, a former colony of France, and Barbados, an ex colony of Great Britain, depend on Europeans for more than 50 percent of the market. The important conclusion in this context is that the Dominican Republic, Cuba, and Curaçao, occupy a position in the Caribbean with a diversified geographic tourist market. The attraction for the European tourists of the Dominican Republic and Cuba could be explained by the historic relationship with Spain and the establishment of European hotel entrepreneurs (mainly Spaniards) in these countries. The question arises: Why does Aruba rely on the American market to such a great extent?

The next mechanism that leads to the economic vulnerability of small islands is seasonality. Figure 1.5 shows the distance to the baseline obtained by a continuous proportion of the total average tourist arrivals of 8.3 each month throughout the year for the Caribbean and Aruba. For the Caribbean as a whole, winter and summer are the peak seasons and September and October are low seasons.

The peak months with most tourist arrivals for Aruba are April and July/August, but the seasonal swings are much less marked. The question arises: Why does Aruba have lower seasonal swings?

The last aspect of economic vulnerability described in section 1.1 is the dependence on tourism as a major sector of the economy. One indicator of this aspect is the tourists' average



Source: CTO, 2002; 2003

Figure 1.5 | Monthly tourist arrivals in the Caribbean and Aruba

spending per capita. Aruba ranks third in average tourist spending per capita, approaching US$ 7.011. The island of St Maarten and the US Virgin islands rank first and second. Aruba has a high dependence on the tourism sector and the question to be addressed is: For what proportion of the tourist receipts from the local economy and the benefits received by the local community are leakages responsible?

In section 1.1, three aspects of ecological vulnerability were identified: the increase of the road- and air-traffic movements, the increase of the population pressure, and the spatial claims made by hotel accommodation. With respect to the road- and air-traffic movements, the length of stay is important. Aruba, with an average length of stay of 7.6 nights, fares worse in terms of ecological vulnerability than do the islands of Martinique, Barbados, Cuba, and Jamaica, with an average length of stay greater than ten nights (Table 1.1). Puerto Rico, with an average length of stay of 2.5 nights, and to a lesser extent, St Maarten are countries with a high degree of ecological vulnerability (Table 1.1). The outcome for Puerto Rico is based on the fact that the airport of San Juan is the Caribbean entry point for most of the main North American airlines. Many visitors take a connecting flight on the following day (WTO, 2004).

Another indicator presented in section 1.1 for the measurement of ecological vulnerability is population pressure. A proxy of population pressure is the average daily visitor density and the proportion of the migrants in the population. The results reported in Table 1.1 show that Aruba ranks second with an average daily visitor density of over 160 per 1,000 residents. Thus tourist activities on the island of Aruba result in a 16 percent increase in the daily island population throughout the year. The island of St Maarten ranks first of all the selected Caribbean islands in

Table 1.1 | List of selected Caribbean islands socio-economic indicator 2002

	Rank Arrivals	Tourist Arrivals (x1000)	Hotel Rooms (1)	Length of stay nights	Tourists spending per capita (US $)	Population Mid-year (x1000)	Land Area (sq.km)	Average daily tourists density (2)	Hotel Rooms (sq.km)
Puerto Rico	1	3230.5	12,788	2.5	6.482	383.6	8,875	66.3	1.4
Dominican Rep.	2	2793.6	54,730	9.7	0.305	8956.9	48,442	8.4	1.1
Cuba	3	1686.2	41,323	10.5	0.157	11247.2	110,860	4.3	0.4
Bahamas	4	1513.1	15,145	5.8	5.650	311.9	13,864	101.7	1.1
Jamaica	5	1266.4	24,239	10.2	0.461	2622.3	11,424	14.4	2.1
Guadeloupe	6	773.4	8,019	5.7	1.030	422.5	1,373	28.2	5.8
Aruba	7	642.6	7,500	7.6	7.011	93.3	180	160.5	41.7
US-Virgin Islands	8	552.6	5,092	4.5	11.274	110.0	342	105.2	14.9
Barbados	9	497.9	6,742	11.0	2.392	270.8	432	60.7	15.6
Martinique	10	446.7	8,733	13.5	0.610	381.4	1,060	44.8	8.2
St Maarten**	12	380.8	3,548	5	11.377	42.7	34	189.9	104.4
Bermuda**	15	284.0	3,251	6.5	6.120	61.9	53	90.6	61.3
Curaçao**	17	218.0	3,238	8.4	2.121	128.5	444	45.8	7.3

Source: CTO, 2002; 2003

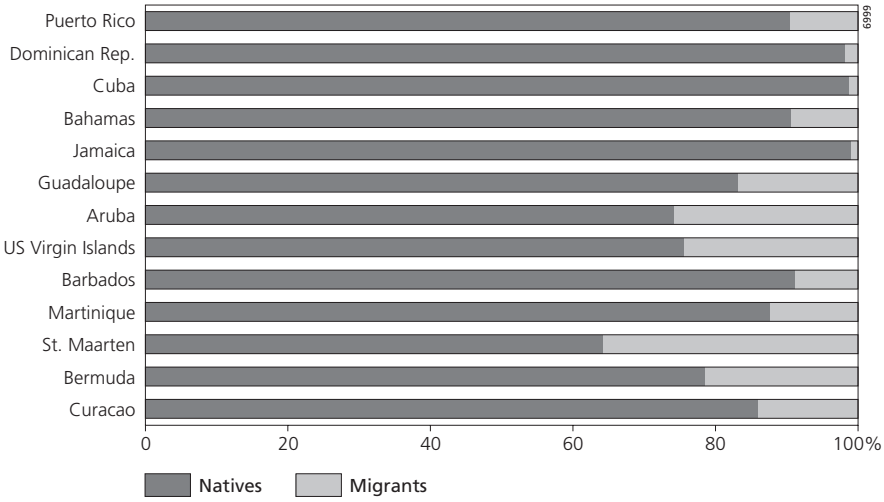
Notes:

1 Tourist arrivals (stopovers) includes visitors staying in the country at least 24 hours. Caribbean Tourism Organization (CTO), Caribbean Tourism Statistical Report 2001-2002 (St Michael, Barbados: CTO, 2002).

2 [(Tourists * Stay) + Cruises day Visitors]/(Population * 365) x 1,000

3 GDP: CTO (2002).

4 ** additional small islands not selected by tourist arrivals, but based on their relevance for this study.



Source: United Nations, 2002; CTO, 2000; CBS-Netherlands Antilles, 2001

Figure 1.6 | International migrants stock 2000

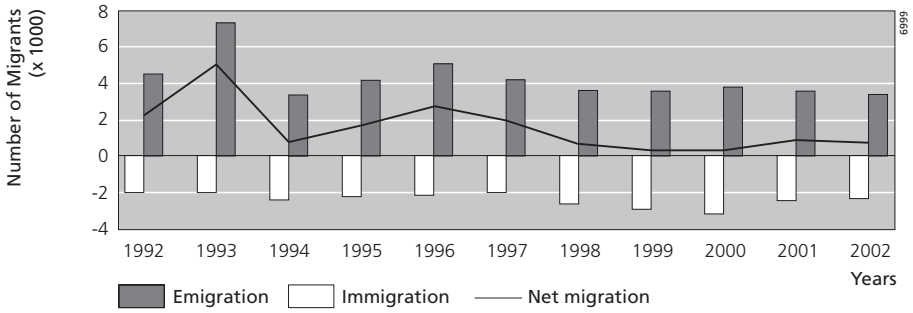
terms of the highest average daily visitor density, close to 190 per 1,000 residents. The US Virgin islands ranks third with a daily visitor density of over 105 per 1,000 residents.

Aruba ranks second with respect to the proportion of migrants in the population. St Maarten ranks first (Figure 1.6). It seems that islands with smaller populations and high tourist spending per capita have a higher proportion of migrants. This raises the question whether the recruitment of labour migrants is the cause of the increase of the population.

Figure 1.7 shows that migration added substantially to the population of Aruba. From 1992 to 1997, the average net migration was about 2,000 migrants per year. After 1997, the average net migration gradually dropped to an average of 500 migrants per year as a consequence of an increase in emigration.

The last mechanism in terms of ecological vulnerability is the space required by tourist accommodation. An indicator for spatial claims is the number of rooms per square kilometre. The results indicate that Aruba ranks third with respect to the number of hotel rooms per km²; the landscapes of the island of Aruba are crowded, with 41.7 hotel rooms per km² (Table 1.1). St Maarten ranks first with 104.4 hotel rooms per km². Bermuda ranks second with 61.3 hotel rooms per km². The indicator *hotel rooms per square kilometre* should be interpreted with care. The assumption that small islands have a higher degree of ecological vulnerability than large islands do might be false. Most of the large islands like the Dominican Republic, Puerto Rico, and Cuba have concentrated their tourist activities in one place (McElroy & Albuquerque, 1998; McElroy, 2003). Experience in the Dominican Republic has shown that the region of Punta Cana has a higher degree of ecological vulnerability than the overall area of the Dominican Republic (Padilla & McElroy, 2005). This last could also apply to the island of Aruba, which also has the most tourist activities spatially concentrated in one place.

The conclusions to be drawn from the descriptive analyses of tourism development on Aruba are that there have been positive and negative effects for the local community. To understand the driving forces of tourism development, an in-depth theoretical investigation of each link in the chain of impacts of tourism is imperative. In the next section, the theoretical framework is described.



Source: CBS-Aruba, 2003

Figure 1.7 | Net migration 1992-2002

1.3 Theoretical framework

Butler's (1980) destinations lifecycle is a classic theory of tourism. It states that tourist destinations go through different phases of development (Butler, 1980; Martin & Uysal, 1990; Debbage & Daniels, 1998). Butler's (1980) destination lifecycle model emphasizes the dynamic, market-driven thrust of tourism development and argues that successful destinations pass through a regular sequence of growth stages that parallel the S-shaped logistic curve. Progress along the development continuum involves increasing industry institutionalization, facility scale, visitor saturation, and cumulative ecological impact (Dann & Cohen, 1991; Butler, 1994). Butler's (1980) six stages comprise emergence, involvement, growth, consolidation, maturity and/or stagnation, followed by decline or rejuvenation. The concept is analogous to the product lifecycle in marketing literature whereby a new product is launched, achieves acceptance, and grows until competitors gain market share, and innovation or repositioning is necessary to stave off a decline in sales and profits (Haywood, 1998).

Although the model has been applied to over a dozen resort areas, these case studies have lack standardized approaches, uniform measures, and rigorous quantification (Getz, 1992). As a result, conceptual and empirical difficulties remain, including problems in the empirical definition of the stages, questions about the inevitability of the progression, and complications involving multiple products with multiple cycles in a given destination (Agarwal, 1997). Plog (2001) criticized the destination lifecycle model on the grounds that the decline of mature destinations is not an irreversible process. According to Plog (2001), it is the process of uncontrolled growth that could lead to the self destruction of the destination. This process starts when a tourist destination with an upscale exclusive market becomes attractive to other developers who see the destination as a reliable and lucrative source of income. Soon, more hotels and tourist facilities are developed to attract more tourists, destroying the 'paradise' connotation and distinctive character. The outcome of uncontrolled growth is that affluent tourists move elsewhere. Cyprus, and Malta exemplify this process. In order to attract more upscale tourists, Cyprus, and Malta concentrated on the expansion of accommodation in the higher-grade hotel sector. However, in contrast with the expected results, tourist arrivals declined and the over-supply of accommodation of both islands increased the power of the tour operators, reinforcing the mass-tourist appeal of the islands (Sharpley, 2003; Dodds, 2007; Farsari et al., 2007).

The consequence of uncontrolled tourist expansion is that affluent tourists move on to new places, leaving the destination dependent on mass tourism. The accommodation sector is divided into international hotel chains, local chains of hotels or resorts, and small hotels like guesthouses or self-catering apartments (Culpan, 1987; Andriotis, 2002). The pros and cons of the different types of accommodation are a subject of debate. According to Rodenburg (1980), local and small hotels are the best accommodation types for the local economy. An important argument put forward by Rodenburg (1980), and Albuquerque & McElroy (1992), is the fact that international hotel chains cause tourist destinations to over-depend on one geographic market, tour operator or hotel chain. The dominance of the international hotel chains with specific tourist types or mass tourism leads to market saturation and fewer benefits for the small and local hotels.

In contrast, according to Jenkins (1982), all three hotel types are interdependent. Jenkins (1982) stated that it is precisely the international hotel chains that could activate tourism development in Third World countries by creating the conditions for small and local hotel chains to emerge. The large hotel chains might give the Third World countries an alternative way of joining the international tourist market, and could therefore be beneficial to the economy of those countries (Kusluvan & Karamustafa, 2001). According to Wight (1997), many large hotel chains in the Caribbean may close during the off season, while others may have greatly reduced revenues. The most common groups patronizing the international hotel chains in destinations characterized by sun, sea, and sand are the vacationers, most of whom travel during the cold period in their hometowns (Albuquerque & McElroy, 1992). In contrast with the vacationers, business travellers are not expected to travel in the vacation period. Apparently, business travellers and vacationers differ markedly (Holloway, 1998). The difference could lie in the fact that business people do not have the freedom of action to choose travel time or destination. Most of the time, their companies pay all travel expenses and the individual travellers might be less concerned about the expense than when they pay for themselves.

The important conclusion drawn is that the different types of accommodation are directly related to the types of tourist from the different geographic markets.

Tourism is not a single entity, but is composed of a heterogeneous group of establishments providing a wide variety of services for tourists (Var & Guayson, 1985; Ruiz, 1985). They consume these services and their payments flow into the local economy. The injection of these payments becomes a source of income and jobs for the people involved in providing the tourism services. The process of the re-spending of incomes in other sectors of the economy creates additional economic activity; this is known as the *multiplier effect* (Archer, 1982; Wanhill, 1994).

This economic mechanism generates three types of multiplier effect. The *direct* or *primary* effect is the initial injection of tourist spending, which creates direct revenue for a particular business or industry. Second, the *indirect* effects bring in additional revenue for the businesses that supply the necessary inputs. Finally, the private households that benefit from the direct and indirect effects spend their increased incomes on consumption; this is an *induced* effect (Henrey & Deane, 1997; Cooper et al., 1998; Armstrong & Taylor, 2000).

In a small island economy with strong linkages between the tourist sector and the other sectors of the economy, a demand for workers is created that cannot always be met by the local labour market and the recruitment of labour migrants becomes inevitable. The question that arises is: What labour-market effects are the consequence of tourist development?

The tourist industry is characterized by two groups of workers: a small fraction of the total demand for labour consists of the core group (professionals); and the large majority of primary workers (Riley et al., 1991; Shaw & Williams, 1995). The economy of small islands is characterized

by limited human resources; since tourism generates a strong demand for workers that could not always be met by the local market, employers recruit primary labourers from other parts of the world. The tourist industry therefore contributes to the dual character of the labour market for migrants. According to dual-labour-market theory (Piore, 1979), the labour market is segmented into a capital-intensive primary market and a labour-intensive secondary market. Workers in the primary market usually hold stable, well-paid, skilled jobs. In contrast, workers in the secondary market generally hold unstable, unskilled jobs and may be laid off at little or no cost to the employer (Piore, 1979; Mead, 1992). Women migrants tend to be clustered in the secondary labour market.

In the view of the dual-labour-market theories or segmented labour market, immigration is demand-driven, built into the economic structure of an advanced industrial society (Piore, 1979). Not all branches or divisions develop in the same way. In every economy there are intensive capital-consuming segments as well as labour-consuming segments. The existence of a permanent structural demand for unskilled labourers in industrial societies is conditioned by the coexistence of capital-intensive primary sectors and labour-intensive secondary sectors. Immigration is not caused by push factors in the sending countries (low wages or high unemployment), but by pull factors in the receiving countries (a chronic and unavoidable need for foreign workers). In accordance with this theory, wages not only reflect the conditions of supply and demand, but also confer status and prestige.

Of the large number of labour migrants recruited by the employers of the different sectors of the economy, a small group may encourage further immigration by bringing over their families (Muus, 1995; Voets et al., 1995; Nimwegen van & Beets, 2000). The conclusion drawn from the literature review is that each link of the chain of impacts needs its own theory.

1.4 Research questions

The descriptive analysis of the first and second links in the chain of impacts revealed that the expansion of the hotel room provision on Aruba led to a growth in tourist arrivals. In addition, it is shown in section 1.2 that Aruba has less severe seasonal swings throughout the year. In Section 1.3 it is asserted that the different types of accommodation are directly related to the types of tourist from the different geographic market; the research questions are therefore:

- *To what extent do the various accommodation types on the island cater for different segments of the international tourist market?*
- *To what extent do smaller hotels and local resorts show different patterns of visitors over the year and are they really less successful in achieving stable occupancy rates?*
- *Is reliance on a single geographical market inevitable and does geographical diversification help in countering seasonality?*

The data used to address the above three research questions was derived from the visitors' disembarkation cards of the Aruba Tourism Authority (ATA). The method we have used for the first research question is the Exhaustive Chi-square Automatic Interaction Detector (CHAID). The purpose of this method is to analyse the choice of the different tourist segments from the international tourist market for the different accommodation types in Aruba (chapter 2). To examine seasonality in the different accommodation types throughout the year, the method

we have used for the second and third research questions is the multinomial log-linear model (chapter 3).

In order to analyse the indirect effect of the economic tourist effects for the host community in the third link of the chain of impacts, the following research question was formulated:

- *To what extent are the multiplier effects of the tourist sector different from the other sectors in the economy and are these differences comparable between Aruba and the Netherlands Antilles?*

The data used are the National Accounts of the Central Bureaus of Statistics (CBS) of Aruba and of the Netherlands Antilles. For the comparison of multipliers between Aruba and the Netherlands Antilles, data for the year 1999 have been used. The method used to estimate the multiplier effects is the input-output model (chapter 4).

The rapid tourism growth in small-island economies that has led to a demand for workers that cannot be met by the local labour market has made the recruitment of labour migrants inevitable. The tourist industry contributes to the dual character of the labour market for migrants. Workers in the primary market usually hold stable, well-paid, skilled jobs. In contrast, workers in the secondary market generally hold unstable, unskilled jobs and may be laid off after a short period of time at little or no cost to the employer. Women migrants tend to be clustered in the secondary labour market. To investigate the labour market and demographic effects in the fourth and fifth links of the chain of impacts, an analysis was made of the effect of labour market segmentation on the composition of the migrant population. In this context, the following research questions were formulated:

- *To what extent do the sectors of the economy and job level determine the recruitment of labour migrants from different parts of the world?*
- *To what extent is labour migration followed by chain migration (family reunification and formation)?*

The data for both research questions have been derived from the applications for work and residence permits as registered in the Uniform Foreigner Registration System (NAVAS) used by the Department of Foreign Affairs of Aruba. The method we have used for the first research question is a multinomial regression of the origin of the migrants on the characteristics of the job generated (chapter 5). A minority of the recruited migrants will bring their families to Aruba. To investigate the probabilities of taking families abroad, a binary logistic regression is used for the second research question (chapter 6).

1.5 Dissertation outline

The research questions derived from the main research question are addressed in the chapters that follow. Each chapter is written as a complete article; that is, each has its own theoretical framework, empirical analysis, and conclusion. These articles have all been submitted to international scientific journals. The contents of chapters 2-6 have been briefly described above. Chapter 7 provides a summary of the findings of the investigation of the research questions, a general conclusion, outlines of future developments, and an evaluation of the contribution made to scientific research.

References

Agarwal, S. (1997). The resort cycle and seaside tourism: an assessment of its applicability and validity. *Tourism Management,* 18 (2):65-73.

Albuquerque, K. de & McElroy J.L. (1992). Caribbean Small-Island Tourism Styles and Sustainable Strategies. *Environmental Management,* 16 (5):619-632.

Amstrong, H., & Taylor J. (2000). *Regional Economics and policy. Third Edition.* Blackwell Publishing.

Andriotis, K. (2002). Scale of hospitality firms and local economic development: evidence from Crete. *Tourism Management,* 23:333-341.

Archer, B. (1982). The value of Multipliers and their policy implications. *Tourism Management,* 3 (4):236-241.

Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *WorldDevelopment,* 23 (9):1615-1632.

Briguglio, L., Persaud B., & Stern R. (2000). Toward an Outward-Oriented DevelopmentStrategy for Small States: Issues, Opportunities, and Resilience Building. *A review of the Small States Agenda Proposed in the Commonwealth/World Bank Joint Task Force Report of April 2000.*

Briguglio, L. (2004). Economic Vulnerability and Resilience: Concepts and Measurements. *Paper presented at the International Workshop on "Vulnerability and Resilience of Small States" organised by the Commonwealth Secretariat and the University of Malta,University Gozo Centre*, Malta, 1-3 March, 2004.

Butler, R. (1980). The concept of the tourist area cycle of evolution: implications for management of resources. *Canadian Geographer,* 24 (1):5-12.

Butler, R.W. (1994). *Tourism: Seasonality in Tourism: Issues and Problems.* In The State of the Art. A.V. Seaton ed. 332-339. Chichester, England: Willey & Sons.

Caribbean Tourism Organization, CTO (2003). Caribbean Tourism Statistical Report, 2002-2003 Edition.

Central Bureau of Statistics Aruba, CBS (2000). Tourist Profile Year Report 2000. Volume II – Year Report 2000.

Cole, S., & Razak V.M. (2003). A framework for sustainable tourism in Aruba. Conference draft, November 2003. Prepared for the National Tourism Council of Aruba and the Minister of Tourism and Transportation.

Cooper, C., Fletcher J., David G., & Wanhill S. (1998). *Tourism: Principles and Practice* (2nd ed.). Pearson Education Limited.

Culpan, R. (1987). International Tourism Model for Developing economies. *Annals of Tourism Research,* 14:541-552.

Dann, G., & Cohen E. (1991). Sociology and tourism. *Annals of Tourism Research,* 18 (1):155-169.

Debbage, K.G., & Daniels P. (1998). The tourist industry and economic geography: Missed opportunities? In *The Economic Geography of the Tourist Industry: A supply-side analysis*, D. Ioannides ed., pp. 17-30. London and New York: Routledge.

Dodds, R. (2007). Malta's Tourism Policy: Standing Still or Advancing towards Sustainability? *Island Studies Journal,* 2 (1):47-66.

Farsari, Y., Butler R., & Prastacos P. (2007). Sustainable tourism policy for Mediterranean destinations: issues and interrelationships. *International Journal Tourism Policy,* 1 (1):58-78.

Fletcher, J. (1989). Input-Output Analysis and Tourism Impact Studies. *Annals of Tourism Research,* 16 (4):514-529.

Getz, D. (1992). Tourism planning and destination life cycle. *Annals of Tourism Research,* 19:752-770.
Grandoit, J. (2005). Tourism as a Development Tool in the Caribbean and the Environmental By-products: The Stresses on Small Island Resources and Viable Remedies. *Journal of Development and Social Transformation,* 1:89-97.
Haywood, M. (1998). Economic business cycles and the tourism life-cycle concept. In *The Economic Geography of the Tourist Industry: A supply-side analysis*, D. Ioannides ed., pp. 273-284. London and New York: Routledge.
Henrey, E., & Deane B. (1997) The contribution of tourism to the economy of Ireland in 1990 and 1995. *Tourism Management,* 18 (8):535-553.
Holloway, J.C. (1998). *The Business of Tourism.* Fifth Edition. Addison Wesley Longman Limited, England and New York.
Jang, S. (2004). Mitigating tourism seasonality: A quantitative approach. *Annals of Tourism Research,* 31 (4):819-836.
Jenkins, C.L. (1982). The effects of scale in Tourism Projects in Developing Countries. *Annals of Tourism Research,* 9:229-249.
Kontogeorgopoulos, N. (1998). Accommodation Employment patterns and Opportunities. *Annals of Tourism Research,* 25 (2):314-339.
Kusluvan, S., & Karamustafa K. (2001). Multinational Hotel Development in Developing Countries: an Exploratory Analysis of Critical Policy Issues. *International Journal of Tourism Research,* 3:179-197.
Manning, R.E., & Powers L.A. (1984). Peak and off-peak use: redistributing the outdoor recreation/tourism load. *Journal of Travel Research*, 23 (2):25-31.
Martin, B., & Uysal M. (1990). An examination of the relationship between carrying capacity and the tourism life-cycle: management and policy implications. *Journal of Environmental Management,* 31:327-333.
McElroy, J.L., & Albuquerque K. de (1998). Tourism penetration index in small Caribbean islands. *Annals of Tourism Research,* 25 (1):145-168.
McElroy, J.L. (2003). Tourism Development in Small Islands Across the World. *Geografiska Annaler*, 85 (4):231-242. Blackwell Publishing.
Mead, L.M. (1992). *Dual Labor Market Theory.* Smart Library on Urban Poverty.
Muus, P. (1995). *De wereld in beweging; Internationale migratie, mensenrechten en ontwikkeling.* Utrecht: Uitgeverij Jan van Arkel.
Nimwegen, N. van, & Beets G. (2000). Demos September 2000. *Netherlands Interdisciplinary Demographic Institute.* 4 September 2000.
Padilla, A., & McElroy, J.L. (2005). The tourism penetration index in large islands: the Case of the Dominican Republic. *Journal of Sustainable Tourism,* 13 (4):353-372.
Piore, M. (1979). *Birds of Passage: Migrant Labor and Industrial Societies.* Cambridge: Cambridge University Press
Plog, S. (2001). Why Destination Areas Rise and Fall in Popularity: An Update of a Cornell Quarterly Classic. *Cornell Hotel and Restaurant Administration Quarterly:* an invited paper pp. 13-24.
Prasad, N. (2003). Small Island's Quest For Economic Development. Asia-Pacific *Development Journal,* 10 (1):47-67.
Riley, M., Lockwood A., Powell-Perry J., & Baker M. (1991). Job satisfaction,
Organisation commitment and occupational culture: a case from the UK pub

industry. *Progress in Tourism and Hospitality Research,* 4 (2):159-168.
Rodenburg, E.E. (1980). The effects of scale in economic development: Tourism in Bali. *Annals of Tourism Research,* VII (2):177-196.
Var, T., & Quayson J. (1985). The Multiplier Impact of Tourism in The Okanagan.*Annals of Tourism Research,* 12 (4):497-514.
Voets, S., Schoorl J., & de Bruijn B. (1995). *The Demographic consequences ofInternational Migration.* Proceedings of the symposium, NIAS, Wassenaar, 27-29 September 1990. Netherlands Interdisciplinary Demographic Institute. Report nr. 44.
Ruiz, A. (1985). Tourism and the economy of Puerto Rico: an input-output approach.*Tourism Management,* 6 (1):61-65.
Sharpley, R. (2003). Tourism, Modernisation and Development on the Island of Cyprus: Challenges and Policy Responses. *Journal of Sustainable Tourism,* 11(2&3): 246-265.
Shaw, & Williams (1995). Critical Issues in Tourism: A Geographical Perspective. *Geographical Review,* 85 (2):243-245.
Sutcliffe, C., & Sinclair M. (1980). The Measurement of Seasonality within the Tourist Industry: An Application To Tourist Arrivals in Spain. *Applied Economics,* 12 (4):429-441.
Sutton, P. (1999). What are the Priorities for Small States in the International System? *The Round Table,* 88 (351):397-402.
Sutton, P. (2001). Small States and the Commonwealth. *Commonwealth & Comparative Politics,* 39 (3):75-94.
United Nations Environment Program, UNEP (1996). Sustainable tourism development in small island developing States. Commission on sustainable development. Fourth session.
Wanhill, S. (1994). The measurement of tourist income multipliers. *Tourism Management,* 15 (4):281-283.
Wight, P.A. (1997). Ecotourism accommodation spectrum: does supply match the demand? *Tourism Management,* 18 (4):209-220.
Wilkinson, P. (1989). Strategies for tourism in island microstates. *Annals of Tourism Research,* 16 (2):153-177.
World Tourism Organization, WTO (1999). Addendum A, Tourism and Economic Development; Contribution of TheWorld Tourism Organization to The Report on Tourism and Sustainable Development For The meeting.
World Tourism Organization, WTO (2004). Making Tourism Work for Small Island Developing States. *Department of Sustainable Development of Tourism.*

2 Accommodation portfolio and market differentiation: The case of Aruba

Submitted

Abstract

Dependence on international hotel chains creates risks of economic and ecological vulnerability owing to the reliance on a single market for mass tourism and its concomitant large number of short-stay visitors. A diversified accommodation portfolio could lead to market differentiation and therefore to a stable number of tourists. The results confirm the reliance of the international chains on the North-American market of short-stay vacationers. The local resorts attract long-stay vacationers and show geographical market differentiation, since they also cater for Latin-American tourists. The small hotels have a much more differentiated market by nature and attract many long-stay vacationers from Latin-America.

2.1 Introduction

Three different types of tourism accommodation are commonly distinguished in the literature: large international chains (more than 100 rooms), medium-sized local resorts, and small independent hotels and apartments (Albuquerque & Mc Elroy, 1992; Kontogeorgopoulos, 1998; Andriotis, 2002). Many authors state that the international chains have more resources (financial, technological, personnel) and are more capable of achieving economies of scale (Main et al., 1997; Kusluvan & Karamustafa, 2001). Small islands in the Caribbean that wanted to develop their tourist sector have therefore relied on these chains to open up the market, as the local entrepreneurs had limited capacity for capital investment and marketing budgets (Wilkinson, 1989). This kind of tourist development has been criticized, because of the significant risks for the islands in terms of economic vulnerability and ecological damage. The economic vulnerability stems from an excessive reliance on a single major source of tourists, such as North America (Albuquerque & Mc Elroy, 1992; Briguglio, 2004). Reliance on a single market is risky as economic difficulties in the source country have direct and adverse impacts on the receiving countries (UNEP, 1996).

In contrast with the international hotels, small and medium-sized enterprises are mostly locally owned and employ more family members (Andriotis, 2002; Thomas, 2000). Wilkinson (1989) asserts that small tropical islands with this kind of accommodation attract a different, more stable clientele than the islands that depend heavily on mass tourism and the tour-operator market. The type of accommodation affects not only the economic impact in terms of benefits and employment, but also the recruitment of different categories of tourist (Rodenburg, 1980;

Kontogeorgopoulos, 1998; Holloway, 1998; Plog, 2001). The supply of accommodation will therefore directly influence the type of tourist attracted to the destination. The question then arises, whether a more balanced mix of accommodations could redress the reliance on a single market.

Locally-owned accommodations are supposedly also more sustainable as they do not attract the high-volume package tours, but rely on individual arrangement made by tourists who stay longer at the destination (Weaver, 2000). However, this kind of development does not appear to provide the potential for growth in tourism that the international hotels offer (Wilkinson, 1989). Therefore, nowadays integration of the different accommodation types in order to arrive at market differentiation is offered as a solution for small islands (Sharpley, 2003).

Empirical evidence of the integration strategies for market differentiation is scarce. Most researchers assess the economic and environmental impacts associated with separate types of accommodation (Rodenburg, 1980; Kontogeorgopoulos, 1998; Albuquerque & Mc Elroy, 1992), and a few see integration of the different accommodations as a consolidation of the island's position in the international tourist market (Sharpley, 2003).

This book reports an analysis of the outcomes of the choices of the three accommodation types made by the different tourist-market segments on the island of Aruba, a Caribbean island just north of Venezuela. Aruba provides an interesting case for a number of reasons. Since 1985 the number of rooms in tourist accommodation has tripled from 2,500 to 7,500 rooms (Caribbean Tourist Organisation, CTO, 2003). In the same period, tourist arrivals increased by a factor of 4, from 180,000 in 1986 to 720,000 in 2000. This increase indicates that the island is becoming a mass-tourism destination welcoming many short-stay visitors. With an average length of stay of 7.6 nights, the island now ranks sixth among the major Caribbean destinations. The dependence on the North-American market is also pronounced, as two-thirds of the international tourists come from this region. Not surprisingly, a considerable drop in the number of arrivals from the US occurred in the aftermath of September 11 (World Tourism Organization, WTO, 2004). The aim of this contribution is to provide a detailed description of the relationship between the accommodation types and their dominant market segments, since this might be a crucial aspect in the further development of the island as a more stable destination.

2.2 Accommodation mix: single market or market differentiation strategy?

Butler's (1980) classical tourism theory assumes that destinations undergo an irreversible process of evolutionary development in six stages. Plog (2001) criticized Butler's lifecycle model, since the decline of mature destinations is not an inevitable process, but happens as a result of uncontrolled growth. This, according to Plog (2001), causes destinations to lose their distinctive character. This loss will eventually discourage tourists from visiting the destination.

Literature about small tropical islands in the Caribbean shows that most tourist destinations are characterized by the dominance of international hotel chains that cater for short-stay mass tourism coming from North America (Wilkinson, 1989; Albuquerque & McElroy, 1992). The share of the international chains in these tourist destinations is more than 60 percent of all accommodations. An important aspect of the strategy of the international hotel chains is the direct link that this kind of accommodation has with the tour operators. Kusluvan & Karamustafa (2001) point out that the international hotel chains are often integrated with tour operators, travel agencies, and airlines, owing to their long experience and established image within the

international tourist industry. Many tourists look for familiarity in unknown environments. This familiarity is a strong point for the international chains in a variety of tourist destinations.

The role of tour operators and travel agencies in advertising is vital in mass tourism, bringing back-to-back groups to the destination (Culpan, 1987). Tour operators are experienced organizations with capable personnel who know the tourist markets, airlines, accommodation companies, and car rentals (Carey et al., 1997). To remain competitive, most large tour operators have signed a management contract with the large international chains to sell the hotel rooms (Medina-Muñoz & Garcia-Falcon, 2000). According to Carey and colleagues (1997), small tour operators focus on specialized or alternative tourist markets and play a vital part in opening up new markets (see also Medina-Munoz et al., 2003). The overdependence on international hotel chains and tour operators is sometimes seen as a serious problem for the small and medium-sized hotels (Farsari et al., 2007). The domination of mass tourism leads to a saturated market with fewer benefits for the small and medium-sized hotels (Rodenburg, 1980; Butler, 1980; Albuquerque & McElroy, 1992).

Wilkinson (1989) stated that the share of small and medium-sized hotels can be seen as a measurement of local involvement in the tourist industry. The experience of the Commonwealth Antilles like the British Virgin Islands, Anguilla, Cayman Islands, and the Turks and Caicos islands has demonstrated that, with a low proportion of large hotels in the total accommodation portfolio, a steady pattern of tourist arrivals was accomplished. From these examples one could deduce that these islands attract a different, more stable clientele than those islands that depend heavily on mass tourism/tour operator markets.

Nevertheless, Jenkins (1982) claimed that it is precisely the international chains that activate tourism development in the Third World countries by creating the conditions for the small and medium hotels to emerge. The large hotel chains present countries with the opportunity to join in the international tourist market, and are therefore beneficial to the economy of those countries. In line with Jenkins, Sharpley (2003) states that the international hotel chains have proven to be an effective vehicle of development of Cyprus. Far from being a solution, the current policy for promoting quality tourism is not only inappropriate, but may actually hinder the further development of tourist destinations (Sharpley, 2003; Farsari et al., 2007).

From the beginning of the international tourism to Aruba, the typical establishments were a large hotel & casino, and only a few small hotels. Later on, the introduction of local chains and of timeshare operations has given Aruba a more diversified accommodation portfolio (Cole & Razak, 2003). Most of the American international-franchise hotels on Aruba have casinos, since these accommodation styles attract more affluent visitors to the island. To maintain their annual volume of tourists, most international hotel chains in Aruba depend on tour operators from North America that specialize in short-stay packages (Morrison et al., 1994).

Short-stay tourism may harm the tourism industry, because it has to work harder to keep a steady occupancy rate year-round by attracting more short-stay tourists instead of focusing on the long-stay tourists. The increased volume of short-stay package tourists contributes to ecological damage, owing to the expansion of transport facilities over land as well as the increase in air traffic (Albuquerque & McElroy, 1992). Since local resorts and small hotels have lower costs and charge lower prices, they can be expected to be more able to attract tourists who stay for a longer period and tourists from more distant origins like Europe and Latin-America.

Since the 1990s, most of the Caribbean tourist destinations have searched for more upscale tourists to increase the tourist expenditure and government revenue. In this context, specialized tour operators focus their marketing efforts on new markets like the business and convention

tourists and the honeymooners (ECLAC, 2003), since these are less concerned about expense (Holloway, 1998). The international chains can therefore be expected to be very active in these markets. It is also likely that these markets will be dominated by short-stay tourists. This is self-evident for the business and convention market, but also holds for the honeymooners, given the fact that many islands have reduced the waiting period for couples to be married to less than three days in order to capture a share of this market.

The application of more general insights from the literature on Aruba shows that a close relationship can be expected between the type of accommodation and the type of tourist. It can be expected that the tourists who opt for the international chains will do so for a short stay and will come from North-America. The tourists who come from Europe and Latin-America can be expected to stay in the locally-owned types of accommodation and remain on the island for a longer period.

2.3 Study method

The data used in this study have been derived from the visitor's disembarkation cards processed by the Aruba Tourism Authority (ATA). People who visit the island for less than three months are required to provide information on the purpose of their visit, country of origin, place, and length of stay on the island. The number of arrivals is approximately 700,000 per year. From the more than 2 million visitor's disembarkation cards for the years 2000-2002, a random sample of 200,000 visitors that could be classified as *tourist* was obtained.

This study has classified the accommodation types into international hotels, local resorts, and small hotels. International hotels are defined as the hotels that have a management contract with an international hotel chain. Local resorts are holiday resorts owned by local entrepreneurs. Small hotels are family-owned hotels, guesthouses, and self-catering apartments. The length of stay has been classified as passing tourists (1 or 2 nights), short-stay tourists (3 to 7 nights), and long-stay tourists (8 nights or more). The country of origin or geographic market has been classified as Latin America, North America, and Europe. In this study Latin America includes the Hispanic countries, Brazil, and the Caribbean islands, including the Netherlands Antilles. North America captures the USA and Canada, and Europe is defined as the Netherlands and all other countries. The purpose of visit in this study has been classified in the categories vacation, honeymoon, and business or other. The category *vacation* includes tourists on vacation or visiting friends and relatives. The category *business* includes attending conventions.

Simple cross tabulation is used to analyse two-dimensional relationships. The multivariate analysis uses Chi-square Automatic Interaction Detection (CHAID). The CHAID technique is an effective approach for obtaining meaningful segments from a large number of categorical variables (Kass, 1980). In this study, the dependent variable is the accommodation type and the independent variables (predictors) are the tourist's length of stay, purpose of visit, and country of origin. From the set of independent variables, the software chooses the strongest predictor (on the basis of the chi-squared value) as the first to segment the sample. Categories that do not show a significant difference are taken together. The procedure is repeated for each segment and the result is a tree-like partitioning into mutually exclusive, exhaustive segments that best describe the choice of a type of accommodation (see Figure 2.1).

The next step is to rank the segments per type of accommodation. For this ranking, the gain index is used. This index is defined as the proportion in the segment that chooses the

accommodation divided by the overall proportion of tourists in this accommodation. The higher the gain index, the higher the market share of the accommodation in this segment (see Table 2.3).

2.4 Results

2.4.1 Results Bivariate analyses

Table 2.1 shows the cross tabulation between the tourist's length of stay and the different accommodation types. The column totals show that slightly over 50 percent of all tourists arriving on Aruba choose to stay at a hotel belonging to an international chain. The small hotels have a market share of only 13.5 percent. However, among the small group of passing tourists (1 or 2 nights), the share of this accommodation is no less than 71.8 percent. The very large group of short-stay tourists predominantly chooses the international hotel chains (75 percent). A striking outcome is that the long-stay tourists hardly ever choose this type of accommodation, but stay in the locally-owned resorts and hotels.

The Cramer's V of 0.492 confirms the strong link between the variable length of stay and the accommodation type. Cramer's V also confirms the expectations that the locally-owned accommodations are more successful in attracting long-stay tourists and that the international chains depend on the short-stay packages.

The choices made by tourists from different geographical markets are displayed in Table 2.2. The North-American tourists choose the international chains more often, but are also slightly overrepresented in the local resorts. Tourists from Latin America can be found in each of the accommodation types, but show a clearer preference for the small hotels than do the North American tourists. This difference is even stronger for the tourists from Europe. No less than 40 percent choose a family-owned hotel or apartment. The international chains have the lowest share in this market.

The local resorts have a relatively high share in each of the markets. People from all over the world seem to choose this type of accommodation, making it less vulnerable to sudden shifts in demand from the various countries. The CHAID tree provides a more detailed analysis that also uncovers the niche markets for the various types of accommodation.

Table 2.1 | Length of stay by accommodation types

		International hotel chains	Local chains	Small or town hotels	Total
1 or 2 nights	Count	303	146	1141	1590
	%	19.1	9.2	71.8	100.0
3 till 7 nights	Count	93859	28447	3063	125369
	%	74.9	22.7	2.4	100.0
8 nights or more	Count	3890	41681	22040	67611
	%	5.8	61.6	32.6	100.0
Total	Count	98052	70274	26244	194570
	%	50.4	36.1	13.5	100.0

Source: ATA, Aruba

Table 2.2 | Geographical market by accommodation types

		International chains	Local resorts	Small hotels	Total
Europe	Count	3499	4243	5557	13299
	%	26.3	31.9	41.8	100.0
Latin America	Count	21197	15219	15044	51460
	%	41.2	29.6	29.2	100.0
North America	Count	73959	51029	7919	132907
	%	55.6	38.4	6.0	100.0
Total	Count	98052	70274	26244	194570
	%	50.4	36.1	13.5	100.0

Source: ATA, Aruba

2.4.2 Results CHAID analyses

Figure 2.1 is tree diagram. Not surprisingly, the length of stay is the strongest predictor of accommodation choice. The first split shows the same figures as the bivariate analysis of Table 2.1. The further splits are more informative.

Passing tourists are concentrated in the small hotels. The next step for this segment shows that this concentration applies particularly to the tourists from North America and Europe. They choose the small hotels almost exclusively. Passing tourists from Latin America also locate in the international chains (19.2 percent).

The large group of short-stay tourists (close to 65 percent of the total sample) shows a very different pattern. Three quarters of these tourists stay in the international chains; the rest choose local resorts. This segment is split by the purpose of the visit: business, vacation, and honeymooning. Both the North-American and the European business tourists have a clear preference for the international chains, while the business tourists from Latin America on the other hand choose various types of accommodation including the small hotels (21.3 percent). The very large group of short-stay vacationers stays in the international chains almost exclusively (90 percent). Again, the Latin-American tourists form the exception. Many of these short-stay vacationers opt for the local resorts (47 percent). Among the honeymooners, a surprisingly large share of the short-stay tourists choose the local resorts, in particular the tourists from North America and Europe (53 percent).

At first sight, the long-stay visitors seem to mirror the short-stay tourists. Overall only 5 percent of the long-stay tourists find accommodation in the international chains. Both the small hotels and the local resorts cater for this market. However, the next split shows that the American sub-markets are fully polarized. The North-American market is in the hands of the local resorts (83.8 percent), while the small hotels service the Latin-American market exclusively (99 percent), regardless of whether people come for business, vacation or honeymoon. For the North Americans, the purpose of the visit affects the choice of accommodation. People on business also choose the small hotels (43.5 percent) or the international chains (21.7 percent). Honeymooners from North America who stay longer than a week do so in the international chains (96 percent) and not in the local resorts (0 percent). This differentiation is a clear example of niche marketing, where tour operators offer long-stay honeymoon packages to the North-American market. It turns out that these packages are on sale in the off-season when fewer vacationers come to the international chains. The long-stay tourists from Europe are again a very different category. They

Table 2.3 | Response index rate of the selected groups

Segment nr	First	Second	Third	Market	Number	Gain index
1	8 nights or more	North America	Honeymooners	96.01	505	192
2	3 to 7 nights	Business & others	Europe	93.41	510	187
3	3 to 7 nights	Vacation	North America & Europe	90.32	63294	181
4	3 to 7 nights	Business & others	North America	87.73	4018	176
5	3 to 7 nights	Business & others	Latin America	57.48	1868	116
					70195	
Total	**International Chains**				98655	
Share %					71	
1	8 nights or more	North America	Vacation	87.11	36846	244
2	8 nights or more	Europe	Honeymooners	63.67	191	179
3	3 to 7 nights	Honeymooners	North America & Europe	53.42	6245	150
4	3 to 7 nights	Honeymooners	Latin America	41.08	422	115
5	3 to 7 nights	Vacation	Latin America	40.71	13903	114
					57607	
Total	**Local Resorts**				70491	
Share %					82	
1	8 nights or more	Latin America	Vacation/ honeymooners	99.63	9238	690
2	8 nights or more	Latin America	Business & others	99.09	1413	687
3	1 or 2 nights	North America & Europe		92.28	227	640
4	1 or 2 nights	Latin America		71.72	1177	467
5	8 nights or more	Europe	Business & others	67.39	587	201
					12642	
Total	**Small Hotels**				28520	
Share %					44	

Source: ATA Aruba

are overrepresented in the small hotels, particularly if they are on business (67.4 percent). If they are on their honeymoon, they prefer the local resorts (63.7 percent).

The conclusion is that the market is far more complex than it appears at first sight. Nevertheless, a number of inferences can be drawn. It is indeed the case that the international chains are highly dependent on the North-American market for short-stay package tourists, with the exception of the small group of honeymooners. The locally-owned accommodation is more successful in attracting long-stay tourists, both from North America (the resorts) and from Latin America (the small hotels). This differentiation is further illustrated in Table 2.3.

Table 2.3 shows the five best market segments for each type of accommodation. For the international chains these segment account for 71 percent of all tourists. The dominant segment is the short-stay vacationers. The other segments are niche markets for business travel from each of the three continents. These tourists also only stay for a few nights and it can be claimed that the international chains account for much of the air traffic to the island.

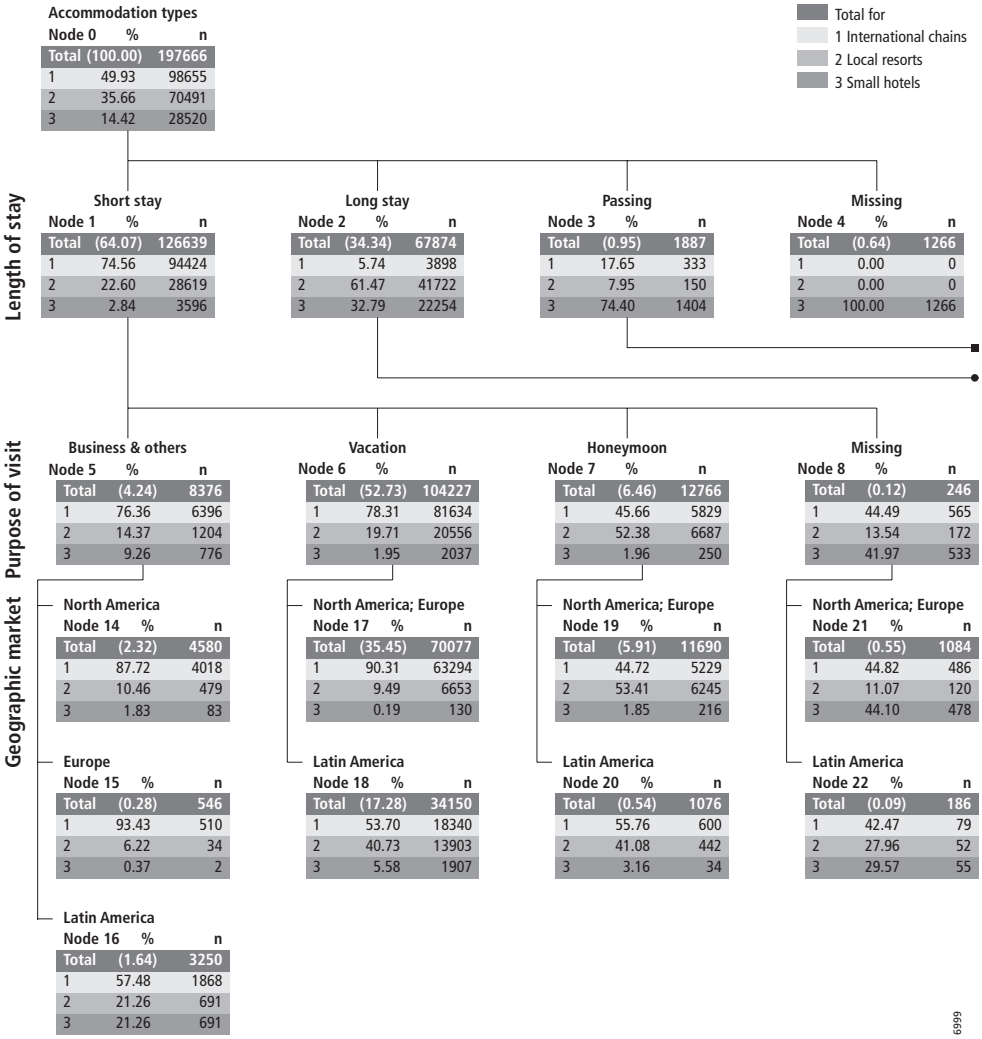
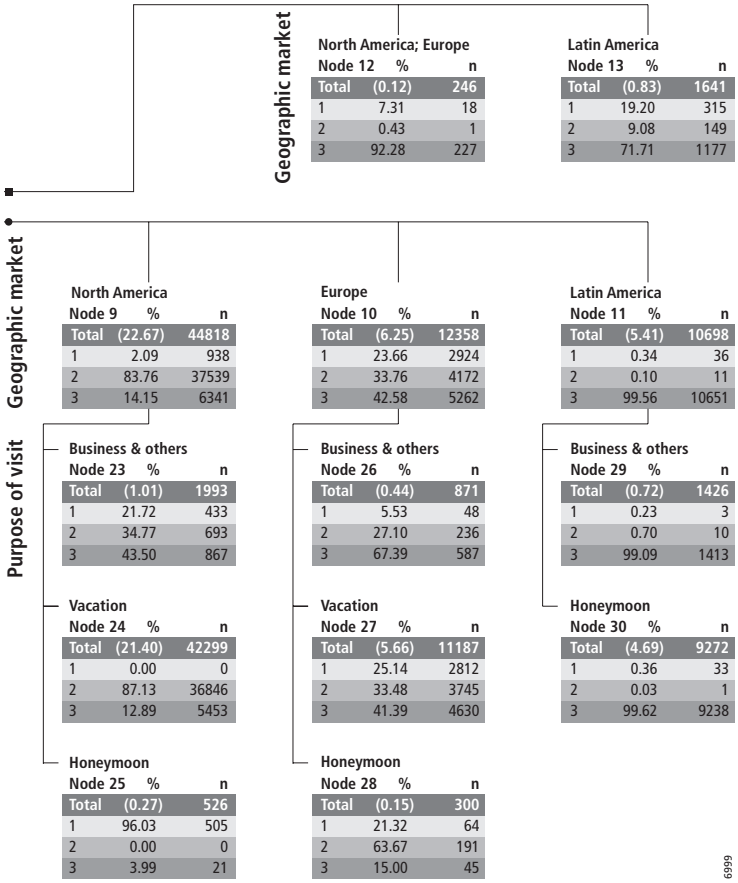


Figure 2.1 | Tree diagram

The local resorts on the other hand also have a stronghold on the North-American market, but for the long-stay rather than the short-stay visitor. The lower number of arrivals for these resorts is not indicative of the number of nights spent by these tourists on the island. The short-stay tourists in these resorts come from Latin America for a vacation or from North America for their honeymoon. The five best segments account for 82 percent of all tourists. The small hotels show a larger degree of market differentiation. The five best segments only account for 44 percent of all tourists. These hotels have been very successful in catering for the market of long-stay vacationers from Latin America. The business travellers to these accommodations are either passing tourists (a small number) or tourists who stay on the island for a longer period.



(Figure 2.1 continued)

2.5 Conclusion

To what extent do the results of this research help in the design of a policy to reduce the economic and ecological vulnerability of the island in further developing the tourist sector? The first answer is that the analyses confirm the dominant role of the accommodation sector in the planning and management of tourism. The tourist's choice is determined to a large extent by the type of accommodation on offer. The various types of accommodation service different tourist markets. Diversifying the portfolio can therefore lead to a differentiated market mix. The second answer is that the frequently-documented reliance of the international chains on a single market for mass tourism is not a cliché. Uncontrolled expansion of this type of accommodation in its present form could lead to even more pressure on the infrastructure of the island, owing to the many

arrivals and departures generated by the short-stay tourists. It would, however, be interesting to see whether a shift from package tours to timeshare accommodation could lead to more repeat visitors who stay for a longer period in the international chains. The third answer is that there seems to be a trade-off among the tourists between the price of the accommodation and the length of stay. The local resorts have been far more successful in attracting the North-American market for long-stay tourism than the international chains have. This success might well be the result of the lower price for accommodation. The same holds for the Latin-American market. Here, the local resorts attract the short-stay tourists and the small hotels are more successful in attracting the long-stay visitors, again probably because they charge lower prices. A policy aimed at attracting fewer, but more upscale tourists might not be the best way to prolong the stay of tourists on the island. The fourth answer is that the European market could be promising as travellers from Europe almost inevitably stay for a longer period. It certainly looks as though there is a relationship between the duration of the journey and the duration of the stay. Aruba serves the European market far less than other islands like Curaçao and Martinique do. There seems to be no reason why Aruba could not increase its market share from the European region. The fifth answer is that niche markets of businessmen, conventioneers, and honeymooners may lead to more tourists, although the numbers are inevitably low, but hardly to more long-stay tourists. To some extent these answers are speculative. The exploratory and descriptive research reported here does not provide the final answers, but it certainly identifies a number of issues that are worth exploring further.

References

Albuquerque, K. de, & McElroy J.L. (1992). Caribbean Small-Island Tourism Styles and Sustainable Strategies. *Environmental Management,* 16 (5):619-632.

Andriotis, K. (2002). Scale of hospitality firms and local economic development: evidence from Crete. *Tourism Management,* 23:333-341.

Butler, R. (1980). The concept of the tourist area cycle of evolution: implications for management of resources. *Canadian Geographer,* 24 (1):5-12.

Briguglio, L. (2004). Economic Vulnerability and Resilience: Concepts and Measurements. *Paper presented at the International Workshop on "Vulnerability and Resilience of Small States" organised by the Commonwealth Secretariat and the University of Malta, University Gozo Centre*, Malta, 1-3 March, 2004.

Carey, S., Gountas Y., & Gilbert D. (1997). Tour operators and destination sustainability. *Tourism Management,* 18 (7):425-431.

Caribbean Tourism Organization, CTO (2003). Caribbean Tourism Statistical Report, 2002-2003 Edition.

Cole, S., & Razak V.M. (2003). A framework for sustainable tourism in Aruba. Conference draft, November 2003. Prepared for the National Tourism Council of Aruba and the Minister of Tourism and Transportation.

Economic Commission for Latin America and the Caribbean, ECLAC (2003). A review of Caribbean Tourism in the 1990s and at the beginning of the new century.

Culpan, R. (1987). International Tourism Model for Developing economies. *Annals of Tourism Research,*14:541-552.

Farsari, Y., Butler R., & Prastacos P. (2007). Sustainable tourism policy for Mediterranean destinations: issues and interrelationships. *International Journal Tourism Policy,* 1 (1):58-78.

Holloway, J.C. (1998). *The Business of Tourism.* Fifth Edition. Addison Wesley Longman Limited, England and New York.
Jenkins, C.L. (1982). The effects of scale in Tourism Projects in Developing Countries. *Annals of Tourism Research,* 9:229-249.
Kass, G. (1980). An Exploratory Technique for Investigating Large Quantities of Categorical Data. *Applied Statistics,* 29:119-127.
Kontogeorgopoulos, N. (1998). Accommodation Employment patterns and Opportunities. *Annals of Tourism Research,* 25 (2):314-339.
Kusluvan, S., & Karamustafa K. (2001). Multinational Hotel Development in Developing Countries: an Exploratory Analysis of Critical Policy Issues. *International Journal of Tourism Research,* 3:179-197.
Main, H., Chung, M., & Ingold A. (1997). A preliminary study of data utilisation by small to medium-sized hotels. *International Journal of Contemporary Hospitality Management,* 9 (2):92-96
Medina-Muñoz, D., & Garcia-Falcon, J.M. (2000). Successful Relationships Between Hotels and Agencies. *Annals of Tourism Research,* 27 (3):737-762.
Medina-Muñoz, R.D., Medina-Muñoz D.R., & Garcia-Falcon, J.M. (2003). Understanding European tour operators' control on accommodation companies: an empirical evidence. *Tourism Management,* 24:135-147.
Morrison, A., Hsieh S., & O'Leary, J.T. (1994). A comparison of the travel arrangements of international travelers from France, Germany and the UK. *Tourism Management,* 15 (6):451-463.
Plog, S. (2001). Why Destination Areas Rise and Fall in Popularity: An Update of a Cornell Quarterly Classic. *Cornell Hotel and Restaurant Administration Quarterly:* an invited paper pp. 13-24.
Rodenburg, E. (1980). The effects of scale in economic development: Tourism in Bali. *Annals of Tourism Research,* VII (2):177-196.
Sharpley, R. (2003). Tourism, Modernisation and Development on the Island of Cyprus: Challenges and Policy Responses. *Journal of Sustainable Tourism,* 11 (2&3): 246-265.
Thomas, R. (2000). Small Firms in the Tourism Industry: Some Conceptual Issues. *International Journal of Tourism Research,* 2:345-353.
United Nations Environment Program, UNEP (1996). Sustainable tourism development in small island developing States. Commission on sustainable development. Fourth session.
Weaver, D.B. (2000). A broad context model of destination development scenarios. *Tourism Management,* 21:217-224.
Wilkinson, P. (1989). Strategies for tourism in island microstates. *Annals of TourismResearch,* 16 (2):153-177.
World Tourism Organization, WTO (2004). Making Tourism Work for Small Island Developing States. *Department of Sustainable Development of Tourism.*

3 Product-market mixing: An all-season destination tool

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Abstract

Many small tropical islands economically dependent on tourism suffer from institutional rather than natural seasonality. This contribution shows how seasonal swings can be handled. The island of Aruba has a diversified accommodation portfolio of international hotels, local resorts, and a variety of small hotels and apartments. Each product segment has its own successful strategy to counter institutional seasonality by catering for multiple market segments in terms of geographic origin and the purpose of the visit. The results of analyses using multinomial logit-models show that product-market mixing is a very effective tool to arrive at stable occupancy rates over the year, making the island an all-season destination.

3.1 Introduction

The literature on tourism in small tropical islands indicates that seasonality has persistently affected the tourist industry (Albuquerque & McElroy, 1992). In the peak season, facilities become crowded, making it hard to maintain good quality service and keep tourists satisfied (Jang, 2004). In the accommodation sector, seasonal fluctuations may lead to a shortage of hotel rooms during the peak season. Creating excess capacity to counteract the scarcity of rooms has displacement effects that lead to ineffective economic development (Cooper et al., 1998). Seasonality is even more of a problem in the off-peak season as a result of the inefficient use of resources and facilities (Sutcliffe & Sinclair, 1980; Manning & Powers, 1984; Jang, 2004). The underutilization of facilities in the off-peak season and the concomitant reduction in revenues are inevitable, since capital assets are inflexible because of the lack of alternative uses (Mathieson & Wall, 1982). The two main groups of factors causing seasonality are *natural* and *institutional* (BarOn, 1975). *Natural seasonality* is related to variations in the climate throughout a year – the length of daylight hours, the hours of sunshine, rainfall, snow, et cetera. *Institutional seasonality* refers to traditional temporal variations formed by human decisions, which are often enshrined in legislation (Butler, 1994). These variations come about through holidays and other events specific to a time of year, such as Christmas, but also summer school vacations, employment arrangements, and so on. Furthermore, social pressure or fashion, the sporting season, and tradition/habit are significant additional causes of seasonality (Butler, 1994).

Part of the accommodation sector, in particular small guesthouses and budget hotels, closes down during the off-peak season (Wanhill, 2000). In the Caribbean, the high visitor flows occur during the winter season. The remaining months often see reduced hotel staffing and, in some

destinations, routine summer closing (Mathieson & Wall, 1982; Murphy, 1985; Albuquerque & McElroy, 1992; Kulic, 2005). In order to retain their highly skilled staff, the upmarket hotels are generally committed to staying open for business all the year round. They try to attract off-season tourists by offering lower rates and targeting the business sector (Murphy, 1985). Another strategy for increasing business in the off-peak periods is to focus on the package tourists (Morrison, 1994). The packages enable the industry to integrate its services and attract new and special-interest markets (Pearce, 1987; Quiroga, 1990). The problem of seasonality can be addressed by applying a multiple-segment strategy to make a tourist resort an all-seasons destination that serves different customer groups (Yacoumis, 1980; Owens, 1994; Higham & Hinch, 2002; Fairley, 2005).

Empirical evidence of the outcomes of the various strategies to counter seasonality is scarce (Koenig & Bischoff, 2004) and much of the research is based on implicit assumptions. The existence of a peak season is often taken for granted, while in reality the variation may depend on the geographical distribution of the main tourist markets of the large international hotel chains. Is reliance on a single geographical market inevitable and would geographical diversification help in countering seasonality? The strategies of other types of accommodation are often overlooked. To what extent do smaller hotels and local resorts show different patterns of visitors over the year and are they really less successful in achieving stable occupancy rates?

This book reports an in-depth analysis of the outcomes of the strategies deployed by entrepreneurs, systematically comparing various types of accommodation, on the island of Aruba. The island provides an interesting case for a number of reasons, the most important of which is that, according to the Caribbean Tourist Organization (CTO, 2003), Aruba has a far more even pattern of tourist arrivals over the year than the Caribbean average. Since 1990, Aruba has seen a rapid development of the tourist sector and it now ranks seventh in Caribbean destinations. The average tourist spending *per capita* is higher than in Bermuda and the Bahamas (CTO, 2003). Half the tourists who visit the island stay in hotels owned by international chains; the rest stay in accommodation owned by local entrepreneurs. Aruba has substantial Latin-American (25 percent) and European (8 percent) markets. The question that arises is whether the product-market mix of the island is instrumental in generating the close to uniform distribution of tourist arrivals over the year.

3.2 Strategies for diversification: products and markets

Butler (1994) describes seasonality as a temporal imbalance in the demand that may be expressed in terms of numbers of tourists, expenditure of tourists, traffic on highways and other forms of transportation, employment and admissions to attractions. For Allock (1994), the most significant aspect of seasonality is that it involves the concentration of tourist flows in relatively short periods of the year. Although there is no generally accepted definition of seasonality (Koenig & Bischoff, 2004), in tourism seasonality is usually defined as *a phenomenon which involves the concentration of tourist flows in relatively short periods of the year and repeats itself each year*. Seasonality can be natural or institutional. The seasonal variation increases with distance from the equator (Butler, 1994; Hartmann, 1986). Problems caused by natural seasonality are therefore more difficult to overcome at high-latitude destinations (Lundtorp et al., 1999).

Institutional seasonality does not affect all destinations in the same way in each continent. The subtropical and tropical destinations in Europe and the Americas show different seasonal

variations (Butler, 1994; Donatos & Zairis, 1991; Morales, 2003; Albuquerque & Mc Elroy, 1992). Subtropical destinations like the Greek islands, Spain, Portugal, and Cyprus have significant peak periods in the summer months (Drakatos, 1987; Donatos & Zairis, 1991; Jeffrey & Barden, 2001; Morales, 2003). Since these subtropical destinations are part of Europe, summer is the period during which tourist flows reach their peak. Butler (1994) states that the traditional long school summer holidays in Europe remain the greatest impediment to reducing seasonality. Besides the school holidays, work holidays also boost the seasonal peak in the summer. In several countries of Europe, industrial sectors close for two or more weeks during the summer months. In France, twenty percent of the population takes to the road during the first weekend of August (Murphy, 1985).

By contrast, tropical islands in the Caribbean show high tourist flows during the winter months, because North-American tourists prefer to travel to these islands for their winter holidays and spend their summer holidays elsewhere in North America (Albuquerque & Mc Elroy, 1992; Kermath & Thomas, 1992; Kulic, 2005). Summer turns out to be the off-peak season for most tropical islands in the Caribbean because of this institutional seasonality in combination with the natural seasonality caused by the hurricane season.

Not all of these islands have a high dependence on the North-American market. Their colonial history forms an attraction for tourists from Commonwealth countries. Guadeloupe and Martinique, for instance, rely on the French market for more than 80 percent of their tourists. More than 40 percent of tourists in Barbados come from the UK, while 85 percent of the tourists in the Bahamas are from the US. Political history reveals itself in the shares of US tourists in Cuba (5 percent) and Puerto Rico (87 percent).

As a tropical island in the Caribbean, Aruba differs from the other Caribbean islands in its geographical position (just north of Venezuela and out of the hurricane track). Nevertheless, tourists from the US still account for 70 percent of all arrivals. One might therefore expect distinct institutional seasonality and a peak in the winter season. Latin America does not escape the cold in the winter, but rather the heat in the summer and the weather may well contribute to a second peak in the summer months. Next to the Americans, Europeans (the Dutch) also travel to Aruba because of their colonial history. Since the motive for coming to Aruba is not primarily sea and sand, a specific peak season is not to be expected among this group. Applying the more general insights from the literature to the case of Aruba, the first hypothesis of this research is that *various geographical markets shows different patterns of seasonality and that the overall geographical market mix of the island helps counter the seasonality*.

In Aruba, 50 percent of the accommodation is owned by large international hotel chains. Local resorts account for 35 percent, and small entrepreneurs own the remaining 15 percent. Various authors report that the international hotel chains reduce seasonality more successfully than other types of accommodation do (Murphy, 1985). There are different patterns in the operating performances of international hotel chains, local hotels, and small hotels (Jenkins, 1982; Kulic, 2005). Therefore, the second hypothesis is *that the international hotels have less seasonality than either the local resorts or the small hotels.*

Murphy (1985) notes that international hotel chains apply various tools for an all-season destination, trying to attract low-season trade by offering lower rates in the off-season and reduced rates to the business sector to attract business travellers not linked to the holiday season. Baum and Hagen (1999) also recognize the identification of new market segments as a strategy to increase demand outside the peak season. New or alternative sources of demand for existing products and facilities include, for example, senior citizens, short-break package holidaymakers,

and conference-market tourists. Therefore, the third hypothesis is that *the international hotels attract more business tourists in the low season.*

The literature about segmentation reveals that the most upcoming tourist group is *honeymooners* (ECLAC, 2003). In this context, honeymooners could also be included in the strategy of the international hotel chains to reduce seasonality by offering low seasonal rates according to purpose of visit to attract other market than vacationers. Therefore the fourth hypothesis is that *the international hotels attract honeymooners in the low season.*

This review of the literature reveals that the owners of different types of accommodation apply different strategies to reduce seasonality. In comparison with the local and small hotels, the international hotel chains apparently have more means at their disposal to reduce seasonality, using strategies like price reductions for tourists with different purpose of visit during off-peak seasons and the exploration of a niche market of honeymooners. Very little is known about the strategies of the local entrepreneurs. Do they merely submit to having reduced occupancy rates in the low season? Do they employ the same or different strategies to counter seasonality or are they less susceptible to institutional seasonality because of their geographical market mix? This contribution reports our testing of the hypotheses on international hotel chains and addresses these questions on the local accommodations.

3.3 Study method

The data used in this study have been derived from the visitors' disembarkation cards processed by the Aruba Tourism Authority (ATA). Tourists who visit the island for a short period of time (less than three months) are required to provide information on the purpose, place, and length of stay on the island on these disembarkation cards. The average number of tourist arrivals on Aruba has shown a steady upward trend during the last two decades, with a small dip at the start of the new millennium owing to the nine-eleven drop in tourism from the US (Central Bureau of Statistics of Aruba, CBS, 2000-2002). The number of arrivals is approximately 700,000 per year. From the visitors' disembarkation cards for the years 2000-2002, a random sample of 200,000 visitors that could be classified as *tourist* was obtained. The disembarkation card states the length of stay, the accommodation, country of origin, purpose of visit, and period of the year.

The ATA registration of arrival time is quarterly. Winter has been classified as the months of January, February, and March. Spring runs from April to June; the summer season from July to September. The fall is defined as the months of October, November, and December.

This study has classified the accommodation types into international hotels, local resorts, and small hotels. *International hotels* are defined as the (high-rise and timeshare) hotels that have a management contract with an international chain. *Local resorts* are chains of holiday resorts owned by local entrepreneurs. *Small hotels* are family-owned hotels, guesthouses, and self-catering apartments. The *country of origin* or *geographic market* has been categorized as Latin America, North America, and Europe. In this study, Latin America includes the Hispanic countries, Brazil, and the Caribbean islands, including the Netherlands Antilles. North America captures the USA and Canada; Europe is defined as the Netherlands and all other countries. *Purpose of visit* in this study has been classified in the categories vacation, honeymoon, and business or other. The category *vacation* includes tourists with purpose vacation, visiting friends and relatives. The category *business* includes attending conventions.

Simple cross tabulation is used to analyse two-dimensional relationships. The measure for distribution over the seasons is the standardized entropy, defined as $-(\Sigma_{i=1..I}\ p_i\ LN\ p_i)/LN\ I$, in which p_i is the proportion of observations in category i, LN is the natural logarithm and I is the number of categories. The standardized entropy ranges from 0 if one of the proportions equals one, to 1 if all proportions are the same, indicating a uniform distribution (Deurloo, 1987).

Log linear models have been used to analyse multidimensional tables, exploring and testing the relationships between the seasonal distribution of tourists and the product-market mixes. Multinomial logit-models display the outcome of the marketing strategies in terms of distribution over the seasons for the various combinations of market segments, using the winter season as a reference category. The parameters are zero if the segment is equally present in the other seasons, negative if the segment prefers the winter season to other seasons, and positive if the segment visits the island more in (one of) the off-seasons.

3.4 Results

3.4.1 Bivariate results on seasonality

The results of the cross tabulation between the different accommodation types and the seasons (Table 3.1) confirm that Aruba has limited seasonality problems. The table shows that the peak seasons are winter and summer, while the low season is the spring. In that season, occupancy rates are only 80 percent of the rates in the summer (43034/52940*100). Evidently even small fluctuations can have considerable effects.

The results in the table seemingly refute the hypothesis that the winter is the major season on the island. However, one should bear in mind that this almost uniform distribution is to some extent an effect of the price strategy of the entrepreneurs. International hotels on Aruba typically charge individual guests some US$ 350 per night in winter and only US$ 250 in the other seasons. The price differentials are less marked for the local resorts. They charge some US$ 200 in winter and only US$ 150 in the other seasons. The average price for small hotels is about US$ 100, but one should expect to pay 10 percent more in winter and 10 percent less in the fall. The discounts on the different types of accommodation vary considerably. Nevertheless, the international hotels do not perform any better than the local resorts or small hotels on the island where seasonality is concerned. The value of Cramer's V (0.031) indicates that there is no association between the type of accommodation and the distribution over the seasons. The entropy shows that local resorts

Table 3.1 | Accommodation type by season

		Winter	Spring	Summer	Fall	Total	Entropy
International hotels	Count	26392	20626	27111	23923	98052	0.996
	%	26.9	21.0	27.6	24.4	100.0	
Local resorts	Count	18100	16494	19224	16456	70274	0.998
	%	25.8	23.5	27.4	23.4	100.0	
Small hotels	Count	7317	5914	6605	6408	26244	0.998
	%	27.9	22.5	25.2	24.4	100.0	
Total	Count	51809	43034	52940	46787	194570	0.998
	%	26.6	22.1	27.2	24.0	100.0	

Source: ATA 2002

Table 3.2 | Geographic market by season

		Winter	Spring	Summer	Fall	Total	Entropy
Europe	Count	3181	2933	3290	3572	12976	0.998
	%	24.5	22.6	25.4	27.5	100.0	
Latin America	Count	10257	10626	18072	11530	50485	0.979
	%	20.3	21.0	35.8	22.8	100.0	
North America	Count	38371	29475	31578	31685	131109	0.996
	%	29.3	22.5	24.1	24.2	100.0	
Total	Count	51809	43034	52940	46787	194570	0.998
	%	26.6	22.1	27.2	24.0	100.0	

Source: ATA 2002

Table 3.3 | Purpose of visit by season

		Winter	Spring	Summer	Fall	Total	Entropy
Vacationers	Count	44784	36627	45520	40035	166966	0.997
	%	26.8	21.9	27.3	24.0	100.0	
Business & others	Count	3392	3626	3125	3869	14012	0.998
	%	24.2	25.9	22.3	27.6	100.0	
Honeymooners	Count	3633	2781	4295	2883	13592	0.988
	%	26.7	20.5	31.6	21.2	100.0	
Total	Count	51809	43034	52940	46787	194570	0.998
	%	26.6	22.1	27.2	24.0	100.0	

Source: ATA 2002

and small hotels (0.998) have a slightly more uniform distribution than do the international hotels (0.996). This result is not in line with the hypothesis that international hotel chains are more successful in countering seasonality; the question then arises, what are the strategies of the smaller entrepreneurs? Table 3.2 suggests that the geographic markets might provide part of the answer.

The table shows that geographic differentiation is a helpful strategy in attracting tourists outside the winter season. The North-American market is overrepresented in the winter; almost 30 percent of the tourists arrive in the first three months of the year. Latin-American tourists on the other hand are concentrated in the summer, with more than a third arriving in the period July to September. European tourists are more evenly distributed over the seasons. The results fit in with the hypothesis that North Americans come to tropical islands in the Caribbean in the winter to escape the cold and Latin Americans in the summer to escape the heat.

Targeting new markets for business and conventions also looks promising in countering seasonality. This category of tourists is less prevalent in the winter and summer and more common in the spring and particularly in the fall. An unexpected result is that honeymooners seem to avoid the low season. The hypothesis is that people marry throughout the year and this group would not therefore show a preference for the holiday season in winter or summer. The table shows, however, that the summer seems to be the most favoured season for this group. The seasonal variation for the honeymooners is more marked (0.988) than for the vacationers (0.997).

3.4.2 Bivariate results on product-market mix

Opening up new markets for the off-season has been described as a strategy of the international hotel chains and it has been claimed that small guesthouses and family-owned hotels have little or no motivation to generate business in the off-season (Murphy, 1985). Nevertheless, in Table 3.1 it was shown that the seasonality problem on Aruba is lower for the small hotels than for the international hotels. To what extent does that difference relate to the markets for which they cater?

Table 3.4 shows that the international hotels are more dependent on a single geographical market, North America in particular (75 percent). The dispersion over the markets is very low indeed, as the entropy shows (0.605). The local resorts also show a high level of dependence, but are more successful in the European market. The small hotels have the most diversified market and rely on the North-American market for only 25 percent. As a result, the vulnerability of this type of accommodation is less than among the international hotels. The downturn in the number of tourists in 2002 and 2003 in the wake of September 11 was less for the small hotels.

Traditionally, small hotels also cater for the business market far more than the international hotels and local resorts do. The last two categories have been specially designed to serve vacationers and find it difficult to attract other types of guest. The local resorts in particular hardly serve the business market (3.2 percent), but have been very successful in attracting the growing market of honeymooners: close to 10 percent.

Table 3.4 | Accommodation types by geographic market

		Europe	Latin America	North America	Total	Entropy
International hotels	Count	3472	21106	73474	98052	0.605
	%	3.5	21.5	74.9	100.0	
Local resorts	Count	4225	15163	50886	70274	0.668
	%	6.0	21.6	72.4	100.0	
Small hotels	Count	5279	14216	6749	26244	0.914
	%	20.1	54.2	25.7	100.0	
Total	Count	12976	50485	131109	194570	0.725
	%	6.7	25.9	67.4	100.0	

Source: ATA 2002

Table 3.5 | Accommodation types by purpose of visit

		Vacationers	Business & others	Honeymooners	Total	Entropy
International hotels	Count	84479	7179	6394	98052	0.453
	%	86.2	7.3	6.5	100.0	
Local resorts	Count	61148	2261	6865	70274	0.418
	%	87.0	3.2	9.8	100.0	
Small hotels	Count	21339	4572	333	26244	0.481
	%	81.3	17.4	1.3	100.0	
Total	Count	166966	14012	13592	194570	0.461
	%	85.8	7.2	7.0	100.0	

Source: ATA 2002

The highly-diversified market and lower seasonality of the small hotels is revealed by the bivariate analyses, but they do not provide any insight into the specific strategies of the various types of accommodation. To what extent do international hotel chains attract business tourists and honeymooners in the off-season in particular and is that targeting also the strategy of the local chains?

3.4.3 Results of the Multivariate Analysis

Using a multinomial logit-model, the distribution over the seasons can be analysed for a variety of product-market mixes. The analyses show that there is considerable variation in seasonality between markets segments. The reference group in the multinomial model is the largest group of tourists visiting the island: the North-American vacationers who stay in the international hotels in the wintertime. The parameters in the model are the relative log odds (Table 3.6).

The intercept shows the seasonal distribution of the reference group. The negative parameters show that the North-American vacationers stay in the international hotels in the off-season far less than in the winter. Spring is a particularly low season. The negative log-odds of -0.460 corresponds to odds of Exp(-0.046)= 0.63. This figure indicates that, for every 100 vacationers in the winter, there are only 63 in the spring. In the summer, the comparative figure would be 80 [Exp(-0.222)] and in the fall, 76 [Exp(-0.270)]. Since 86 percent of the guests in the international hotels are vacationers (Table 5) and 75 percent are from North America (Table 3.4), the baseline market for these hotels shows serious seasonal swings. Occupancy rates in the spring would be only 63 percent of those in the winter, despite the considerable discount in prices in the off-season.

Geographic market diversification by the international hotel chains does help counter seasonality. The European market is very evenly spread over the seasons. This regularity can be derived from Table 3.6 by adding the parameters to the intercept. The log odds for the seasons are: (-0.460+0.312=) -0.148 in spring; (-0.222+0.149=) -0.073 in summer; and (-0.270+0.369=) +0.099 in the fall. The corresponding odds are: 0.86, 0.93, and 1.10. Reliance on the European market would therefore reduce seasonality to a large extent. Yet, they only make up 3.5 percent of the guests in the international hotels. The Latin American market is more interesting as it is counter seasonal. The odds for this market are 1.05, 1.76, and 1.17 for spring, summer, and fall. Even though tourists from Latin America are only 22 percent of the total guests in the international hotels, in the summer they make up for the lack of North American vacationers in this type of accommodation. Further expansion of this market by the international hotel chains could also help reduce seasonality in spring and fall.

Market diversification by purpose is another useful strategy for the international hotel chains. In comparison with vacationers, business tourists are overrepresented in both the spring (+0.496) and the fall (+0.268). This overrepresentation is almost equal to the underrepresentation of vacationers in these seasons (-0.460 and -0.270), so that, if the share of business guests was equal to that of the vacationers, occupancy rates in the spring and the fall would be the same as in the winter. However, at the present time business tourists account for only 7.3 percent of the guests in these hotels. The honeymooners display the explicit strategy of the international hotel chains to sell off-season honeymoon packages. These packages are not on offer during the winter season and as a result the number of honeymooners in these hotels in the spring, summer, and fall are five to six times higher than in the winter. Even though the share of honeymooners in these hotels is only 6.5 percent, they do contribute substantially to higher occupancy rates in the off-seasons.

Table 3.6 | The results of the multinomial logit-model

	Spring			Summer			Fall		
	B		Std. Error	B		Std. Error	B		Std. Error
Intercept	-0.460	*	0.011	-0.222	*	0.011	-0.270	*	0.011
Country of origin (*ref.= North America)*									
Europe	0.312	*	0.050	0.149		0.050	0.369	*	0.048
Latin America	0.515	*	0.024	0.789	*	0.022	0.425	*	0.024
Purpose of visit (*ref.= vacationers)*									
Business & others	0.496	*	0.035	-0.128	*	0.037	0.268	*	0.035
Honeymooners	1.562	*	0.053	1.808	*	0.050	1.518	*	0.052
Accommodation type (*ref.=international hotels)*									
Local resorts	0.435	*	0.017	0.025		0.017	0.196	*	0.017
Small hotels	0.204	*	0.036	-0.095	*	0.036	-0.019		0.036
Interaction effect *(ref.=international hotels, North America)*									
Local * Europe	-0.080		0.070	0.476	*	0.069	0.071		0.067
Local * Latin America	-0.261	*	0.039	0.539	*	0.035	-0.095	*	0.038
Small * Europe	-0.347	*	0.072	-0.006		0.072	-0.164	*	0.070
Small * Latin America	-0.508	*	0.048	-0.500	*	0.047	-0.239	*	0.048
Interaction effect (*ref.=international hotels, vacationers)*									
Local * Business & others	-0.731	*	0.075	-0.468	*	0.077	0.162	*	0.067
Local * Honeymooners	-2.553	*	0.064	-2.380	*	0.060	-2.584	*	0.064
Small * Business & others	-0.291	*	0.058	0.214	*	0.059	-0.230	*	0.058
Small * Honeymooners	-0.506	*	0.197	-0.523	*	0.191	-0.543	*	0.199

*significant at p =<0.05

A striking result from Table 3.6 is that the local resorts manage to attract far more North-American vacationers in the off-season than the international hotel chains do, particularly in the spring (+0.435). The occupancy rates for this group of tourists are nearly constant in the local resorts, as the log odds are close to zero: (-0.460+0.435=) -0.015 in spring, (-0.222+0.025=) -0.197 in summer and (-0.260+0.196=) -0.064 in the fall. The corresponding odds are 0.98, 0.82, and 1.06, indicating that only the summer is a low season for the North-American vacationers who stay in the local resorts. The local resorts compensate for the low summer season among these tourists by attracting extra vacationers from Latin America (+0.539) and Europe (+0.476). The odds for the Latin-American vacationers to come to local resorts in the summer rather than in the winter are Exp(-0.222+0.789+0.539)=3.0. For every 100 vacationers in the winter, there are 300 who come in the summer. European vacationers show odds of 1.5. Since the Latin-American and European tourists account for close to 30 percent of the visitors to the local resorts (Table 3.4), their concentration in the summer period contributes substantially to the summer peak of this type of accommodation (Table 3.1). The summer is not an off-season for the local resorts.

The more even distribution of the North-American vacationers over the season might provide an explanation why the local resorts aim less vigorously at the business and honeymooners sectors outside the winter season. Compared with the international hotel chains, business tourists are overrepresented in the fall (+0.162) and underrepresented in spring and summer (-0.731 and -0.468). The large numbers of honeymooners in the local resorts (Table 3.5) are highly concentrated in the winter period and not in the off-seasons as they are in the international hotels. The market strategy is clearly different for the local resorts, as the need to attract other visitors in spring, summer, and fall is much lower than among the international hotel chains.

The small hotels cater for the North-American market far less than the others (Table 3.4). Seasonality among the vacationers from this market is comparable with that of the international hotel chains, although the spring is less of a low season (+0.204). A surprising effect is that the small hotels are much more successful in attracting Latin-American vacationers in wintertime (the parameter for summer is -0.500). Price differentials might provide an explanation for this effect, since prices are very high in the tourist hotels and resorts in winter and low in the small hotels all year round. The business sector gets attractive packages in the international hotels in the spring and fall and business tourists stay at the small hotels less in these seasons. Honeymooners are a negligible market for the small hotels (Table 3.5).

3.5 Conclusion

The results of the multivariate analyses concur with the hypotheses on the strategies of the international hotel chains. The dependence on North-American vacationers would incur serious seasonal swings for this type of accommodation on Aruba, like those described for the Caribbean as a whole (Albuquerque & McElroy, 1992). The strategy of the international hotel chains is to attract other tourists in the off-seasons. Catering for the Latin-American market is indeed a successful strategy, since the main season for these tourists is the summer, when they travel to escape the tropical heat and come to the island to enjoy the sea and the sand. Offering packages for conventions and other business arrangements also helps, since this strategy increases the number of guests in the spring and fall. The international hotels attract the majority of their honeymoon tourists in the off-seasons. As a result, their occupancy rates are relatively stable over the year.

The results for the local resorts and small hotels seem to refute the received opinion reported in the literature. Locally-owned hotels are often assumed to have limited resources for tourist marketing (Milne & Poblmann, 1998) and would therefore be less successful in countering seasonality. Yet the analyses show that the locally-owned types of accommodation have fewer rather than more seasonality problems than the international hotels. The local chains or resorts compete successfully with the international hotels in attracting North-American vacationers in the off-season and have stable visiting patterns for this group throughout the year. The local resorts are also successful in attracting the European and Latin-American markets. The small hotels have a diversified market by nature in terms of both geography and purpose of visit. Institutional seasonality is therefore hardly a problem for this type of accommodation. In contrast with what is stated in the literature on routine closing during the off-season (Murphy, 1985), this type of accommodation is in business all the year round. This is probably not the result of a joint strategy by the entrepreneurs, but more an outcome of the diversified nature of the product-market mix in this type of accommodation.

To what extent do these results have any significance beyond the island of Aruba? The first limitation obviously is the fact that natural seasonality is absent for these islands and so the results may not be generalized to destinations at higher latitudes. Yet there are many tropical destinations not only in the Caribbean, but also in the Pacific and other parts of the world, where seasonality is a matter of institutions rather than climate. As the cost of air travel decreases, geographic market diversification might be successfully pursued at other destinations as well. Further analyses might very well show large differences in seasonality for the various islands in the Caribbean as many cater for other markets than just the North American. The European market is very prominent in islands like Barbados and Martinique and diversification on the island might actually include serving the North American market on top of the European market. The large share of the Latin-American market might seem typical for Aruba owing to its location close to Venezuela, but may increasingly become an option for other islands as well, since the prosperity on this continent and low travel costs allow people to travel longer distances.

The visitor's disembarkation cards provide reliable information on the population of tourists and may therefore serve as a sampling framework. These administrative registers have considerable added value as datasets for tourist and migration research as they provide the statistical power for multivariate analyses. Extending the number of questions and retaining full details in the answers could enhance the quality of these sets for research considerably. Comparative research using pooled datasets for regions like the Caribbean could widen our understanding of the diversity in the development of tourism within the region and uncover more general trends at the same time. Unfortunately, this issue was beyond the scope of the present contribution.

References

Albuquerque, K. de, & McElroy J. (1992). Caribbean Small-Island Tourism Styles and Sustainable Strategies. *Environmental Management,* 16 (5):619-632.

Allock, J.B. (1994). *Seasonality*. In Tourism Marketing and Management Handbook (2nd ed.): 86-92. New York: Prentice Hall.

BarOn, R.M. (1975). *Seasonality in Tourism – A Guide to the Analysis of Seasonality and Trend For Policy Making.* The Economist Intelligence Unit Ltd.,Technical Series No.2.

Baum, T., & Hagen L. (1999). Response to seasonality: the experience of peripheral destinations. *International Journal of Tourism Research,* 1 (5):299-312.

Butler, R.W. (1994). *Tourism: Seasonality in Tourism: Issues and Problems.* In The State of the Art. A.V. Seaton ed. 332-339. Chichester, England: Willey & Sons.

Caribbean Tourism Organization, CTO (2003). Caribbean Tourism Statistical Report, 2002-2003 Edition.

Central Bureau of Statistics Aruba, CBS (2000). Tourist Profile Year Report 2000. Volume II – Year Report 2000.

Central Bureau of Statistics Aruba, CBS (2002). Tourist Profile Year Report 2002.Volume IV-Year Report 2002.

Cooper, C., Fletcher J., David G., & Wanhill S. (1998). *Tourism: Principles and Practice* (2nd ed.). Pearson Education Limited.

Deurloo, M.C. (1987). *A Multivariate Analysis of Residential Mobility.* Amsterdam: Institute for Human Geography, University of Amsterdam.

Donatos, G., & Zairis P. (1990). Seasonality of foreign tourism in the Greek Island of Crete. *Annals of Tourism Research,* 18 (3):515-519.
Drakatos, C.G. (1987). Seasonal Concentration of Tourism in Greece. *Annals of Tourism Research,* 18 (3):582-586.
Economic Commission for Latin America and the Caribbean, ECLAC (2003). A review of Caribbean Tourism in the 1990s and at the beginning of the new century.
Fairley, A. (2005). *Inspiring All- Seasons Visitation to Seasonal Areas*. Victorian tourism Conference, May 2005.
Hartmann, R. (1986). *Tourism, seasonality and social change.* Leisure Studies, 5 (1):25-33.
Higham, J., & Hinch T. (2002). Tourism, sport and seasons: the challenges and potential of overcoming seasonality in the sport and tourism sectors. *Tourism management,* 23 (2):175-185.
Jang, S. (2004). Mitigating tourism seasonality: A quantitative approach. *Annals of Tourism Research,* 31 (4):819-836.
Jeffrey, D., & Barden R. (2001). An Analysis of the nature, causes and marketing implications of seasonality in The occupancy performance of English hotels. In *Seasonality in Tourism* (pp.119-140). Pergamon, Amsterdam.
Jenkins, C.L. (1982). The effects of scale in Tourism Projects in Developing Countries. *Annals of Tourism Research,* 9 (2):229-249.
Kermath, B.M., & Thomas R.N. (1992). Spatial Dynamics of Resorts: Sosúa, Dominican Republic. *Annals of Tourism Research,* 19:173-190.
Koenig, N., & Bischoff E.E. (2004). Analysing seasonality in Welsh room occupancy rates. *Annals of Tourism Research,* 31: 374-392.
Kulic, P. (2005). Caribbean Hotels & Resorts: The Seasonality Issue. HVS International. <*http://www.hospitalitynet.org/news/4018698*>
Lundtorp, S., Rassing, C.R., & Wanhill, S.R.C. (1999). The off-season is 'no season': the case of the Danish Island of Bornholm. *Tourism Economics,* 5 (1):49-68.
Manning, R.E., & Powers L.A. (1984). Peak and off-peak use: redistributing the outdoor recreation/tourism load. *Journal of Travel Research,* 23 (2):25-31.
Mathieson, A., & Wall G. (1982). *Tourism economic, physical and social impacts.* Essex, Longman Group.
Milne, S., & Poblmann C. (1998). Continuity and change in the hotel sector. Some evidence from Montreal. In *The Economic Geography of the Tourist Industry,: A supply-side analysis*, D. Ioannides ed., pp. 180-196. London and New York: Routledge.
Morales, A.F. (2003). Decomposing seasonal concentration. *Annals of Tourism Research,* 30 (4):942-956.
Morrison, A., Hsieh, S., & O'Leary J. (1994). A comparison of the travel arrangements of international travellers from France, Germany and the UK. *Tourism Management,* 15 (6):451-463.
Murphy, P. (1985). *Tourism: A Community Approach.* New York: Methuen.
Owens, D.J. (1994). The all-season opportunity for Canada's resort. *The Cornell Hotel and Restaurant Administration Quarterly,* 35 (5):28-41.
Quiroga, I. (1990). Characteristics of Package Tours in Europe. Annals of Tourism Research, 17 (2):185-207.
Pearce, D.G. (1987). Spatial patterns of package tourism in Europe. *Annals of Tourism Research,* 14 (2):183-201.

Sutcliffe, C., & Sinclair M. (1980). The Measurement of Seasonality within the Tourist Industry: An Application To Tourist Arrivals in Spain. *Applied Economics,* 12 (4):429-441.
Yacoumis, J. (1980). Tackling seasonality: The case of Sri Lanka. *Tourism Management,* 1 (2):84-98.
Wanhill, S. (2000). Small and Medium Tourism Enterprises. *Annals of Tourism Research,* 27 (1):132-147.

4 Multiplier effects in open island economies

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Abstract

Tourist expansion as a strategy for economic growth by small islands has been too readily criticized because of the small multiplier effect of the tourist sector on the local economy. On the basis of detailed analyses of the direct, indirect, and induced effects of tourism in Aruba and the Netherlands Antilles, this contribution shows that small output multipliers are typical of small island economies. The tourist sector itself has larger output multipliers than other sectors in these economies. Income and employment multipliers depend not only on the inter-industry linkages, but also on the way the tourist sector is organized and on the share of domestic consumption in the local economy.

4.1 Introduction

To small islands, tourism offers one of the few opportunities available for economic diversification (UNEP, 1996). These islands use tourism as a generator of employment opportunities, income, and revenue for the local community (Fletcher, 1989; Wilkinson, 1989; Prasad, 2003). Researchers have doubted the beneficial effects of tourism to the local community, by arguing that the tourist sector is often isolated from the local economy. According to Liu & Var (1982), Albuquerque and McElroy (1992), and WTO (1999), tourism in the Caribbean shows limited beneficial effects, because many of the international chains import goods and services from outside the local economy. The negative effects in the form of the depletion of natural resources might outbalance the positive effects on the economy. This debate raises the question whether the tourist sector is really isolated from the local economy and whether profits leak to other countries. A better understanding of the ways in which tourism contributes to the prosperity of the islands involved is called for.

Tourism is not a single entity, but is composed of a heterogeneous group of establishments providing a wide variety of services for tourists (Var & Guayson, 1985; Ruiz, 1985). They consume these services and the payments flow into the local economy. The injection of these payments becomes a source of income and jobs for the people involved in providing tourism services. The process of the re-spending of incomes in other sectors of the economy creates additional economic activity; this is known as the *multiplier effect* (Archer, 1982; Wanhill, 1994).

This economic mechanism generates three types of multiplier effect. The *direct* or *primary* effect is the initial injection of tourist spending, which creates direct revenue for a particular business or industry. Secondly, the *indirect* effects bring the additional revenue for the businesses that supply the necessary inputs. Finally, the private households that benefit from the direct and indirect effects spend their increased incomes on consumption; these are the *induced* effects

(Henrey & Deane, 1997; Cooper et al., 1998; Armstrong & Taylor, 2000). The indirect and induced effects are commonly referred to as *secondary* effects. The sum of the direct, indirect, and induced effect is expressed in an *output multiplier* (Fletcher, 1989); this can be described as *the change in total output generated as a result of an increase in the final demand in a sector of the economy*. The effects of this increased output on wages and employment are expressed in the income and employment multipliers. The *income multiplier* is the change in household incomes created as a result of an increase in the final demand in a sector. Similarly, the *employment multiplier* is the amount of employment created.

This study is an analysis of the economies of two countries: Aruba and the Netherlands Antilles. Both countries have opted for economic growth through the expansion of tourism. Since accommodation is the basis of the tourist development of the two countries, *hotels & restaurants* has been taken as the sector that most closely corresponds to the tourist sector. Compared with many other Caribbean islands, the Netherlands Antilles and Aruba provide an interesting case since they have a diversified accommodation portfolio. Local entrepreneurs own about 49 percent of the total accommodation. Local chains generate high indirect and induced multiplier effects through their strong links with the local economy (Telfer & Wall, 1996). The effects on the multipliers of the small size of the local island economies might therefore be compensated for by the diversification of the portfolios.

The Netherlands Antilles and Aruba are located just north of Venezuela. The two countries are analysed together, because of their similar economic structure and history as part of the Dutch Kingdom, but have followed different paths in tourist development. In 1986, both experienced the closure of their oil refineries – the mainstay of the local economies. Although the countries had the same starting point, their further economic development has differed markedly (Haan de, 1998). Aruba became separated from the rest of the Netherlands Antilles and obtained Special (more independent) Status within the Dutch Kingdom. Aruba introduced its own economic policy. A rapid expansion of the accommodation sector was the cornerstone of this policy and the role of the public sector in the economy has been reduced.

This expansion caused a fourfold growth in tourist arrivals: from 180,000 in 1986 to 720,000 in 2000. The growth in tourist arrivals was reflected in the increase in tourist revenue, from US$ 162 million in 1986 to US$ 842 million in 2000 (Central Bureau of Statistics, CBS-Aruba, 2002b). Tourism became Aruba's largest source of export income. In the same period, the employment of Aruba doubled: from 24,000 employees in 1986 to 45,000 employees in 2000. In parallel with the increase in employment, the population of Aruba grew by a factor of 1.5, reaching a total of 90,000 in 2000, mostly through the migration of foreign labourers from the region to the island (CBS-Aruba, 2002a; 2002c; 2003a; 2003b).

The Netherlands Antilles consists of five islands: Curaçao is the largest, with 74 percent of the country's total population; St Maarten is the most important tourist destination. Tourist arrivals grew by a factor of 1.2, from 540,000 in 1986 to 630,000 in 2000 (Haan de, 1998; CTO, 2003). Tourist revenue showed a growth of US$ 247 million in 1986 to US$ 777 million in 2000 (Haan de, 1998; Bank of the Netherlands Antilles, 1990; 2006). Employment in the Netherlands Antilles grew by a factor close to 1.7, or from 57,000 persons employed in 1986 to 96,000 in 2000 (Central Bureau of Statistics Willemstad, 1990; Bank of the Netherlands Antilles, 2002). Nevertheless, the population of the Netherlands Antilles decreased from 191,000 in 1986 to 177,000 in 2000 (Haan de, 1998; CBS-Willemstad, 2001). This fall was the result of the decrease in the population of Curaçao, which dropped by nearly 13 percent during the period 1986-2000, when a large number

of the inhabitants of Curaçao migrated to other countries (Haan de, 1998; Curaçao Tourism Development Bureau, 2001; CBS-Willemstad, 2000; 2001a; 2001b).

The strategy of economic growth through the expansion of tourism seems to have been more successful in Aruba than in the Netherlands Antilles. However, the analyses are incomplete without isolating the effects of tourism on the local economies. Does the tourist sector provide more positive effects on total output and household incomes than other sectors and are these effects the same in Aruba and the Netherlands Antilles? Quantifying the impact of tourism for both islands is possible by calculating the direct, indirect, and induced effects of the sector hotels & restaurants.

The aim of this study is twofold. The first is the analysis of the relative contribution of the hotels & restaurants sector in terms of output, income, and employment in comparison with the other sectors in the economy of Aruba. The second is the comparison of the output, income, and employment multiplier effects of the hotels & restaurants sectors of Aruba and the Netherlands Antilles.

The data used in this study are the National Accounts of the Central Bureaus of Statistics of Aruba and of the Netherlands Antilles. As a result of their shared history, the classifications in the national accounts are comparable for the two countries. For Aruba, a time-series 1995-2002 was available, allowing a check on the stationarity of the data. For the comparison between Aruba and the Netherlands Antilles, data for the year 1999 have been used, owing to the fact that this was the only year for which data was available for the Netherlands Antilles. The method used to estimate the multiplier effects is the input-output model.

4.2 Expansion of tourism: boon or bane?

Tourism is an export industry that provides local services and the experiences of local resources to foreign consumers in return for foreign currency (Witt, 1987; Eadington & Redman, 1991; Archer, 1995). The *tourist industry* is defined as *a heterogeneous group of business establishments selling goods and services to tourists*. However, according to Fletcher (1989), the frontline sectors for tourist are the hotels and restaurants. The various sectors of an economy are interrelated and the expenditure originating in tourism tends to have a spinoff effect on the whole economy (Arabsheibani & Delgado-Aparicio Labarthe, 2002; WTO, 1999; Khan et al., 1990).

The receipts from tourism can have a magnifying impact on the host country's economy in three ways (Fletcher, 1989). First, the *direct* or *primary* effect is the initial injection of tourists' spending, which creates direct revenues for hotels, shops, restaurants, airlines, and travel agents. Second, the *indirect* effects are the additional revenues for the businesses that supply the necessary inputs. Airlines, for example, purchase inputs such as fuel and prepared food, and the suppliers of these materials in turn buy storage facilities, raw food, and the like. Third, the private households that benefit from these direct and indirect effects spend their increased incomes on consumption, thereby generating further effects. These are referred to as *induced* effects. The indirect and induced effects jointly constitute what are commonly called the *secondary* effects. The process of describing and estimating the extent of these primary and secondary income flows is commonly called *multiplier analysis* (Archer, 1982; Liu et al., 1984; Milne, 1987; Khan et al., 1990; Hughes, 1994; Stynes, 1999).

Multiplier analyses are divided into two types, dependent on the treatment of the secondary effects (Armstrong & Taylor, 2000; Fletcher, 1989). *Type I multipliers* concentrate on the inter-

industry linkages, excluding the effect of rising consumption by private households. The secondary effects reflect the indirect effects and not the induced effects. In *Type II multipliers*, private households are regarded as a sector of production, selling labour at a wage (outputs) and buying inputs in the form of domestic consumption. The secondary effects include both the indirect and induced effects. Type I multipliers underestimate the secondary effects, while Type II multipliers might overestimate them, since not every increase in the total wage-sum will be spent proportionally on domestic consumption.

The choice of type of multiplier depends on the level of employment and on whether an economy is open or closed. In a closed economy with full employment, the effect of economic growth is that wages increase rather than that more labour is supplied at the same price. In that case, part of the increased wages are not used for domestic consumption, but rather for savings or spending abroad, so that the use of a Type II multiplier could seriously overestimate the secondary effect. In an open economy or an economy with high unemployment, economic growth leads to more workers from the home labour market or from other regions or countries. Even though part of the wages of foreign workers may leak abroad in the form of remittances, the choice of a Type I multiplier would lead to an underestimation of the secondary effects, since the induced effects of household consumption are ignored. Since the Netherlands Antilles has a high unemployment rate and since there is an abundant labour supply in the neighbouring countries of both Aruba and the Antilles, Type II multipliers are more capable of describing the economic effects of tourism on these islands.

A variety of multipliers appear in the literature. The most common are the multipliers related to the output of the economy; these are used to show the linkages between the various economic sectors. The growth of the number of tourist arrivals or of tourist expenditure leads to more final demand for tourist goods and services such as hotel rooms, meals, and transportation. The industries that provide these goods and services require inputs from other sectors (such as agriculture, construction, and financial services) and therefore increase their output. These sectors in turn require inputs from other sectors and so on. This sequence is referred to as *backward linkage* (Heng & Low, 1990; Arabsheibani & Delgado-Aparicio Labarthe, 2002). Output multipliers reflect the output effect on each sector through the backward linkages of a unit increase in the final demand for the sector concerned. Studies of these linkages show that tourist establishments have strong backward linkages with a variety of supplying industries (Archer, 1995; Archer & Fletcher, 1996; Fan & Oosterhaven, 2005). Therefore, the hypothesis is that the backward linkages of the tourism-oriented sectors are stronger than those of the other sectors of the economy.

Since economic activities pay wages for the production of their goods and services, income multipliers can be calculated on the basis of the output multipliers. In Type II multiplier analyses, labour is treated as one of the inputs for production and the income multipliers can therefore be derived directly from the multiplier matrix. Assuming a constant average wage-rate per sector, the employment multiplier can be calculated by dividing the partial output multipliers by the wage-rate per unit output of each sector.

Hotels & restaurants are known as the sector where payments to labourers are the major component of the total operating costs, even though average wages are low. Therefore, it could be confidently hypothesised that, on Aruba, the direct or primary income effect of this sector is larger than that of the other sectors, while the direct employment effect is even stronger owing to the low wage level. Since this sector was also hypothesised to have stronger backward linkages to

other sectors in the economy, the secondary income and employments effects could be expected to be stronger than those of other sectors.

It has repeatedly been claimed that the variation between countries in the magnitude of the income multipliers of tourism depends on the structure of both their economy and their tourist market. Baaijens and colleagues (1997) list a number of hypotheses that might explain the variation between countries. The first hypothesis concerns the diversity of the economic activities, since little diversity leads to high imports and high imports lead to low multipliers. The second hypothesis concerns the ownership of the hotels and restaurants. If these are locally owned, the backward linkages are stronger. The third hypothesis concerns market diversity. Dominance by a single country facilitates adjustments of the local economy to provide the necessary input for these tourists, while imports are needed to serve a wider variety. The fourth hypothesis concerns the labour intensity of the sector. The larger the share of labour as an input, the higher is the income multiplier. The fifth hypothesis concerns the consumption pattern of the local population. If a greater share of the wages is spent on consumption rather than savings or taxes, the induced effects are stronger and so the income multiplier is higher. Empirical evidence for each of these hypotheses is either scarce or weak. They can nevertheless be used as a basis for hypotheses concerning the differences in multipliers between Aruba and the Netherlands Antilles.

According to Fletcher (1989), there is a marked relationship between the size of the population and the magnitude of the income multiplier. The common explanation is that larger countries have more diversified economies and can supply the necessary inputs for the frontline tourist sector, while smaller countries have to import more of these inputs (Milne, 1987).

Baaijens and colleagues (1997) found a significant effect of (the natural logarithm of) population size on the magnitude of the income multiplier in their analyses of the multipliers for eleven countries. This outcome indicates that, particularly among smaller countries, population size does matter. Bermuda turned out to be a major exception in their analyses, having a much larger multiplier than would be expected on the basis of the size of the population. Given the fact that the population of the Netherlands Antilles is twice that of Aruba, the hypothesis is that in Aruba the multipliers are smaller.

In comparison with other Caribbean islands, the share of local entrepreneurs in the accommodation portfolio of both Aruba and the Netherlands Antilles is high, and the differences between the two countries are slight. It could therefore be expected that the output and income multipliers of both countries would be relatively high compared with other Caribbean islands.

The Netherlands Antilles has a more diversified tourist market than Aruba, which is more strongly dominated by North-American tourists. However, the differences are again small, and therefore this issue would seem to be of little importance.

Aruba and the Netherlands Antilles differ clearly with respect to the labour intensity of their hotels & restaurants sectors. The national accounts of 1999 show that wages are just 25 percent of the operating costs of this sector in the Netherlands Antilles, but more than 35 percent in Aruba. This difference may be related to the 'quality' of tourism in the two countries. Tourist expenditure per capita on Aruba is three to six times as high as in the major destinations in the Netherlands Antilles: the islands Curaçao and St Maarten (CTO, 2003). Even if it is not fully clear what the causes of the difference in the share of wages is, it should be clear that this will lead to higher income multipliers for Aruba.

Household consumption takes up a larger share of the GDP in Aruba and the gap between the wages earned and the household incomes spent is definitely smaller than in the Antilles.

Consequently, the induced effect of tourism could be expected to be higher in Aruba than in the Netherlands Antilles.

On the whole, given the differences between the two countries, the Netherlands Antilles could be expected to have the higher output multipliers, since the population is twice as large. At the same time, income and employment multipliers in the tourist sector could be expected to be higher in Aruba, owing to the higher share of wages in the operating costs of tourism and the consumption pattern of the local population.

This review of the literature shows that, in a small, open economy like Aruba with a high rate of migration, it is appropriate to measure the direct, indirect, and induced effects by Type II multipliers. The hotels & restaurants sector is the frontline of the tourist industry and has been chosen here as its proxy. It is plausible that this sector will show stronger backward linkages and therefore higher output multipliers than the other sectors in the economy. Given the high share of labour in the operating costs of this sector, the income multiplier could be expected to deviate even more from the multipliers of other sectors.

The hypothesis concerning the difference between Aruba and the Netherlands Antilles with respect to multipliers is that output multipliers are higher in the Antilles, but that income multipliers are higher in Aruba. If that is the case, then the population in Aruba benefits more from the tourist development of their island than does the population of the Antilles.

4.3 Study Methods

The method used in this study is a demand-driven input-output model, since this model is well suited to measure the inter-industry impacts or backward linkages (Claus, 2002). The input-output model also provides a tool to measure different types of multipliers, including the induced effects, which are difficult to measure with other models (Briassoulis, 1991; Wagner, 1997; Zhou et al., 1997). Since the borders of small islands are sharply defined, so is their accounting, and therefore reliable data can be obtained. The input-output model groups the industries in an economy into N x N sectors linked to each other in terms of their purchases and sales to each other and to the final demand sector. The central element in this model is the *transaction table*. This is subdivided into **three** major sections. First, the inter-industry matrix (the top left-hand section) details the sales and purchases that took place among the various sectors of the economy. Second, the bottom left-hand section shows each sector's purchases of the primary inputs (such as payments to workers, taxes, profits, and so forth). Third, the right-hand section shows the sales made by each sector to each source of final demand. The matrix of technical coefficients is calculated from the transaction table by dividing the cell entries by the total of each column. The technical coefficients describe the direct effect in terms of inputs from each sector (i) by a unit increase of output in sector (j) (appendix A). The familiar Leontief inverse has been used to derive the multipliers from this matrix of technical coefficients (Armstrong & Taylor, 2000). The multipliers describe the direct and indirect effects.

For the purpose of this study, an 8 x 8 transaction table was constructed. For Aruba, the table was constructed for the years 1995, 1997, 1999, and 2002. For the comparative analyses of Aruba and The Netherlands Antilles, the transaction tables are for 1999, since this was the only year for which data were available for The Netherlands Antilles (CBS-Willemstad, 2003a; 2003b). The hotels & restaurants sector has been used as the tourist sector. Tourist expenditures are treated as a vector of final demand. The sum of entries in each column represents the total purchases by

the industry in question. Since profits, losses, depreciation, taxes, and so forth are recorded in the table as final payments, the total purchases and payments equal total sales. However, the national accounts are not based on double-entry bookkeeping for each transaction and adjustment factors had to be introduced to equate inputs and outputs. The average adjustment factor lies between 6 percent and 7 percent for the accounts of Aruba in the period 1995-2002. The transport & communication sector shows high negative adjustment factors of 20-30 percent after 1997, while the financial & business services sector shows positive adjustment factors of slightly over 20 percent for these years. The interpretation of the multipliers for these sectors therefore requires great caution.

The input-output model is built on a number of assumptions. First, this model assumes that production technology is one of permanent proportions. That is to say, an industry is expected to have to double its inputs in order to double its outputs: the technical coefficients are assumed to be constant. The single homogeneous production function is assumed to hold for each sector. Visual inspection of the matrices for the years 1995, 1997, 1999, and 2002 reveals minor variations that are illustrated in the results section.

The second major assumption of this model is that there are no constraints on the productive capacity (labour in particular) that is expected to 'deliver the goods' if there is any increase in the final demand. This assumption of the input-output method presented is probably valid, since both islands had an open economy in the period 1995-2002. The Netherlands Antilles had an excess of labourers and Aruba imported labourers from abroad.

For this study, an open input-output model has been used, incorporating the induced effect of the increased household consumption. An important assumption in this model is that, when income increases, the household consumption increases proportionally. This induced effect on household consumption was based on the expectation that any extra income received by households as a result of an increase in output would be spent on domestic consumption. Visual inspection of the gap between wages earned and the income spent on Aruba shows that this gap is relatively stable at about 10 percent, although it was slightly less in 1997 (8 percent) and slightly higher (13 percent) in 2002.

The Type II output multipliers, quantified as the direct, indirect, and induced effects, are obtained by summing the column of the inverse matrix for each sector, with the household sector treated as if it were a producing sector (appendix B). Households therefore consume inputs from industries in order to produce their own output: labour. For the household sector, only the domestic consumption has been included as an input to production. Saving and spending abroad are defined as leakages and do not show up in the technical coefficients.

Type II household-income multipliers are obtained by summing the direct plus indirect plus induced household income effects (appendix C). Type II employment multipliers sum the direct, indirect, and induced effects of additional ultimate demand for a sector on the total level of employment in the economy (appendix D).

4.4 Results

4.4.1 Inter-Industry Linkages

The total multiplier values associated with the inter-industry linkages in the Aruba economy are shown in Table 4.1. Only the direct effects are included in the multipliers: not the induced effects

Table 4.1 | Type I output multipliers for Aruba (1995, 1997, 1999, 2002)

	Type I output multipliers			
	1995	**1997**	**1999**	**2002**
Agriculture	1.19	1.17	1.28	1.21
Manufacturing	1.35	1.41	1.42	1.51
Construction	1.77	1.88	1.81	1.90
Wholesale & Retail	1.20	1.22	1.25	1.36
Hotels & Restaurants	**1.71**	**1.74**	**1.74**	**1.77**
Transport & Communications	1.71	1.74	2.09	1.92
Financial & Business services	1.35	1.30	1.14	1.16
Public services	1.35	1.42	1.33	1.41
Average (not weighted)	1.45	1.49	1.51	1.53

Source: calculated on the basis of the national accounts of CBS Aruba.

of the increase in domestic consumption. The bottom row shows the average of the multipliers for each sector. The averages have not been weighted to reflect the share of the sector in the economy.

The first conclusion drawn from this table is that the average multiplier consistently grew in the period 1995-2002. This increase is bound to be an expression of the steady growth path of the Aruba economy and is reflected in the multipliers of most of the sectors.

The second conclusion drawn is that, given this growth, the multipliers are remarkably stable over time. The transport & communication and financial & business services sectors are clear exceptions to this rule. After 1997, the multipliers for the transport & communication sector were higher and those of the financial & business services lower. This result could have been brought about by a change in the organization between these sectors that was not picked up in the national accounts. As explained in the data section, input-adjustment factors were highly negative for transport & communication (leading to higher multipliers) and positive for financial and business services (leading to lower multipliers). If the two sectors are taken together, they show the same path as the other sectors.

The third conclusion drawn is that, as hypothesised, the hotels & restaurants sector has strong backward linkages to the other sectors of the economy, resulting in a high output multiplier. The only sector with consistently higher multipliers is construction, which evidently relies on the domestic market for its inputs. Agriculture, manufacturing, and wholesale & retail have low multipliers, owing to the fact that they rely on imports much more than the other sectors do. This reliance is related to both the size of the island and the size of the economy. Aruba is too small to provide the agricultural produce needed to feed a population of 90,000 plus the 700,000 tourists arriving each year. Similarly, the economy is too small to provide the necessary diversity of consumer products or the necessary inputs for the manufacturing industry.

4.4.2 Induced effects

In Table 4.2, the same results are shown for the Type II multipliers, which include the private household as a production sector. The multipliers reflect both the indirect effect of the inter-industry linkages and the induced effects of extra household consumption as a result of a unit increase in the final demand for the output of each of the sectors.

The average multipliers show that the Type II multipliers for Aruba are generally 0.4-0.45 larger than the corresponding Type I multipliers. This difference indicates the size of the

Table 4.2 | Type II output multipliers for Aruba (1995, 1997, 1999, 2002)

	Type II output multipliers			
	1995	**1997**	**1999**	**2002**
Agriculture	1.32	1.32	1.49	1.41
Manufacturing	1.50	1.56	1.58	1.74
Construction	2.20	2.23	2.23	2.47
Wholesale & Retail	1.50	1.51	1.59	1.89
Hotels & Restaurants	**2.41**	**2.40**	**2.44**	**2.62**
Transport & Communications	2.18	2.18	2.76	2.75
Financial & Business services	1.68	1.59	1.36	1.42
Public services	2.15	2.19	2.14	2.38
Average (not weighted)	1.87	1.87	1.95	2.09

Source: calculated on the basis of the national accounts of CBS Aruba.

induced effect on top of the indirect effects on the industrial output. The year 2002 seems to be an exception, since the difference between the Type II and Type I multiplier is higher for this year. The substantial population growth on the island may account for the rise of the induced effect. Domestic consumption by private households increased and it is plausible that the relative importance to the local economy grew similarly.

In line with the hypotheses, hotels & restaurants stand out as a sector with a very high Type II multiplier. From Table 4.1, it is clear that the direct effects are high, but the induced effects of this sector are even more substantial, the difference being in the order of 0.7 in the years 1995-1999. Ignoring the possibly erroneous multipliers of the transport & communication sector, hotels & restaurants now stand out as the sector with the highest multiplier. A rise in the final demand for the output of this sector has various beneficial effects for the total economy on the island, not only through the inter-industry linkages, but also through the associated boost in domestic consumption.

The major reason for the positive induced effect is the high share in the operating costs of this sector of wages, which are spent in other sectors of the economy, leading to high multiplier effects. The same holds for the public services sector. Although the direct effects of this sector are limited, the induced effects are even higher than those of hotels & restaurants owing to the domestic consumption by public servants. The opposite is the case for the labour-extensive and capital-intensive manufacturing sector. There, the indirect effects are low owing to the reliance on imports and the induced effects are low owing to the low share of wages in the operating costs.

4.4.3 Income and employment effects

These effects can be analysed more explicitly by examining the income and employment multipliers of the various sectors. In Table 4.3, the effects on household income and employment are listed. The figures represent the averages for the years 1995, 1997, 1999, and 2002. The direct income effect is simply the technical coefficient of the wages in the column of the transaction matrix. The indirect effect is calculated in a Type I model by multiplying the partial multipliers of the output sector j linked to each input sector i by the technical coefficient of the wages of that input sector. The induced effects are estimates based on the differences between the Type II and Type I income multipliers. The employment effects are calculated by dividing the partial output

Table 4.3 | The household income and employment effects (1995-2002)

	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Agriculture	0.09	0.03	0.03	0.15	4.4	1.4	1.4	7.2
Manufacturing	0.07	0.05	0.03	0.15	2.8	3.9	1.4	8.2
Construction	0.22	0.09	0.08	0.39	18.0	5.6	3.9	27.5
Wholesale	0.21	0.04	0.07	0.31	11.4	3.7	3.2	18.0
Hotels & Restaurants	**0.37**	**0.12**	**0.15**	**0.64**	**18.6**	**5.1**	**6.3**	**29.9**
Transport & Communications	0.26	0.15	0.11	0.52	12.3	5.6	5.1	22.9
Financial & Business services	0.15	0.04	0.05	0.23	4.6	4.9	2.5	11.9
Public services	0.50	0.06	0.16	0.72	16.3	3.2	7.4	26.8

Source: calculated on the basis of the national accounts of CBS Aruba

multipliers by the output/employment ratios per sector and are expressed in output in million US dollars.

The interpretation of the parameters is straightforward. For every extra dollar spent by tourists in hotels and restaurants, 64 cents end up in the pockets of the households on the island. Of this amount, 37 cents is paid in wages to the workers in this sector directly. Another 12 cents is paid in wages in all sectors of the economy through the backward linkages of this sector with the other sectors that provide the input, leaving another 15 cents paid in wages in all sectors of the economy as a result of further rounds of domestic spending by the island households on a variety of consumer products and services.

As expected, the tourist frontline sector – hotels & restaurants – shows higher income multipliers (0.64) than the secondary sectors such as construction (0.39) and manufacturing (0.15), and is only surpassed by public services (0.72). The high total income multiplier of hotels & restaurants is not only the result of the high share of wages in the input for this sector (the direct effect 0.37), but also of the indirect and induced effects. The indirect effect indicates that the tourist sector has strong backward linkages with other sectors in which wages form an important input. High direct effects usually lead to high induced effects, since they boost domestic consumption. The choice of tourism expansion in Aruba and the way in which the tourist sector is organized certainly contributes to the wealth of the population, both directly and indirectly.

The interpretation of the employment multipliers is also straightforward. Each million of tourist expenditure in the hotels & restaurants sector creates 30 jobs on the island. Most of these jobs are created directly, as a result of the labour intensity and low wage-level in this sector.

This outcome supports the hypothesis that tourism is indeed the most important employment generator for Aruba. The table also shows that other sectors related to tourism development, such as construction, are also important employment generators. The rapid expansion of tourist accommodation has contributed considerably to the growth of employment opportunities on the island and the influx of migrant workers.

4.4.4 Comparing Countries

The comparative analyses of Aruba and the Netherlands Antilles are based on data from the national accounts for the year 1999. Two hypotheses were specified. The first is that output multipliers for the Netherlands Antilles are slightly higher than for Aruba. This hypothesis was based on the effect of the larger population. The second is that the income and employment multipliers of the frontline tourist sector are larger in Aruba than in the Antilles. This hypothesis

Table 4.4 | Output multipliers for Aruba and the Netherlands Antilles (1999)

	Aruba Type II Output	Netherlands Antilles Type II Output
Agriculture, forestry etc.	1.49	2.33
Manufacturing	1.58	1.42
Construction	2.23	2.47
Wholesale & Retail	1.60	2.36
Hotels & Restaurants	**2.44**	**2.38**
Transport & Communication	2.76	1.67
Financial and Business Services	1.36	1.68
Public services	2.14	2.80
Average (not weighted)	1.95	2.14

Source: calculated on the basis of the national accounts of CBS Aruba and the Netherlands Antilles

was based on the larger share of wages in this sector and the more dominant role of domestic consumption in the local economy.

The results in Table 4.4 support the first hypothesis. The average output multiplier is higher in the Netherlands Antilles (2.14) than in Aruba (1.95). The output multipliers per sector give further support to this hypothesis. The multipliers of agriculture and wholesale & retail are much higher than on Aruba. The underlying data show that, in Aruba, these sectors import far more than in the Antilles, where more food and consumer products are home produced. As a result, the backward linkages of these sectors are much lower, generating small output multipliers. The differences between the countries in the multipliers of transport & communications and financial and business services cannot be given any substantive interpretation, since the differences might be an artefact of the data. As explained in the data sections, adjustment factors to equate input to output are extraordinary for these two sectors on Aruba, suggesting a shift in the organization between the sectors that is not picked up in the national accounts.

The most striking result to be derived from the table is that the hotels & restaurants sectors have a higher output multiplier in Aruba (2.44) than in the Antilles (2.38). On the basis of the hypothesis, one would expect that, given the larger size of the population and the economy, this multiplier would be larger in the Antilles. Since these are Type II multipliers including both the indirect and induced effects, Table 4.4 does not show whether the indirect effect is greater in the Antilles, as expected on the basis of the hypothesis. In Table 4.5, the total multiplier of the hotels & restaurants sector is therefore split into the direct, indirect, and induced effects by calculating both the Type I and Type II multipliers and subtracting these from each other to estimate the induced effect.

The conclusion is clear that the indirect effect of the hotels & restaurants sector is greater in the Antilles. The larger economy and the smaller reliance on imports create stronger backward linkages in this country. On the other hand, the induced effect is greater in Aruba. This high induced effect is directly related to the positive effect of the Aruba tourist sector on the domestic consumption by the population.

This conclusion is further substantiated by differences in the income and employment effects of the hotels & restaurants sector. The second hypothesis specifies that these effects are larger in Aruba, since the tourist industry is more dependent on wages as input and because private domestic consumption is more dominant in the local economy of Aruba. Table 4.5 shows that

Table 4.5 | Output, income and employment multipliers 1999 for the sector hotels & restaurants

	Aruba	Netherlands Antilles	Aruba	Netherlands Antilles	Aruba	Netherlands Antilles
Components	Output	Output	Income	Income	Employment	Employment
Direct	1.00	1.00	0.39	0.25	19.1	16.8
Indirect	0.73	0.80	0.13	0.12	5.4	4.2
Induced	0.71	0.57	0.17	0.11	4.4	3.7
Total	2.44	2.37	0.69	0.48	28.9	24.7

Source: calculated on the basis of the national accounts of CBS Aruba and the Netherlands Antilles

the direct income effect of the sector is indeed much higher in Aruba (0.39) than in the Antilles (0.25). The indirect effects are roughly equal, but the induced effects are higher on Aruba, as expected.

The differences in the employment effects are lower than would be expected on the basis of the income effects. One of the reasons is that the output/employment ratios of the frontline tourist sector are smaller in the Antilles. Wages are lower and therefore more labour input can be used at the same cost. Nevertheless, the total employment effect is much more beneficial to the Aruba population than to the Antilles population.

4.5 Conclusions

In this study, the question addressed is whether tourist development is a boon or a bane to the local community of small tropical islands. Does the tourist sector really remain isolated from the rest of the economy and do profits leak to other countries? A detailed analysis of the economic effects of the tourist development in Aruba provides answers to this question at least in part.

The results show that the hotels & restaurants sector has made a significant contribution to the Aruba economy. The output multipliers demonstrate that the tourist-oriented sectors such as hotels & restaurants have stronger backward linkages to the other industries than other sectors such as manufacturing, wholesale or financial and business services. Only the construction sector has stronger inter-industry linkages than the hotels & restaurants do. Taking the induced effect of tourist expenditure also into account, it turns out that the frontline tourist sector has the largest multiplier effect on the local economy. A rise of one dollar in the final demand by tourists creates a total of 2.4 dollars of economic activity on the island, while for manufacturing this would be only 1.6 dollars.

The idea that the income-generating effects of tourism are low for small island economies owing to high leakages (Archer, 1982; Wall, 1997) is refuted by the results of this study. The household-income multiplier of the hotels & restaurants sector is larger than those of the primary sectors. There is a large direct effect on the household incomes on the island, since wages are an important input for the sector. Through the inter-industry linkages, more workers also earn wages in other sectors because of tourist expansion. As a result of the increased wealth, domestic consumption by private households generates an extra income effect across the local economy. There is no other sector with a potential in exporting goods and services that could generate the direct, indirect, and induced effects of the tourist sector.

The employment effects are also higher for the hotels & restaurants sector than for any other sector in the economy. The total employment multiplier shows an estimated 30 jobs per million dollars of extra final demand in the tourist frontline sector. Tourist expenditure in Aruba rose by $ 680 million in the period 1986-2000. A rough estimate would be that this rise created some 20,000s jobs on the island, accounting for the overall majority of the employment growth of 21,000 in the period.

These conclusions do not contradict the evidence that the tourist multipliers are lower for small islands than for larger economies; rather, the conclusions show that this is not just typical of the tourist sector, but holds for all sectors. It is not the tourist sector as such, but the economy at large that is dependent on imports in small countries. The frontline tourist sector itself has more beneficial effects than any other sector in the small economy of a tropical island.

This conclusion is substantiated by the comparative analyses of Aruba and the Netherlands Antilles, which has a larger economy. A lower dependence on imports in agriculture, manufacturing, and wholesale creates larger output multipliers in the Antilles than in Aruba. Also, in the hotels & restaurants sector, the inter-industry linkages are slightly stronger than in Aruba. The indirect leakages of tourist development are consequently smaller in larger economies.

Nevertheless, the total output, income, and employment multipliers are higher in Aruba than in the Antilles, in particular because of the better induced effects. This result is not related to the size or diversity of the economy, but to the share of wages in the tourist sector and the importance of domestic consumption in the local economy. The gap between wages paid and private incomes spent is much smaller in Aruba. The total income multipliers of Aruba (0.69) are more in line with islands like Barbados (0.60) and the Bahamas (0.79), countries with thrice the population. The income multipliers of the Netherlands Antilles (0.48) are closer to the British Virgin Islands (0.58) with a population only a quarter of that in the Antilles.

It would be interesting to replicate the analyses in this contribution to compare Aruba and Bermuda. The size of their populations is roughly comparable, but income multipliers seem to be much higher on Bermuda (1.09). It has been suggested that higher per capita spending by tourists could lead to higher income multipliers owing to the larger share of wages in producing the tourist experience, but this can only be substantiated by further research. An analysis of Bermuda might also show whether specialization in the tourist market could lead to higher backward linkages, a hypothesis that could not be tested in this study. The effect on the multiplier of the ownership of the hotels and restaurants by nationals is another effect that could not be isolated in the data. More detailed national accounts could show the relative contribution of the national and the international chains to the local economy.

The input-output model has again proven its potential in disentangling the complex system of economic effects of a growing export industry on a local economy. However, the major weakness of the model – its dependence on high quality data from the national accounts – has also been illustrated in this study. The failure to identify the effects of the transport sector, second in importance for the tourist market after hotels & restaurants, is a major shortcoming of this study.

References

Albuquerque, K. de, & McElroy J. (1992). Caribbean Small-Island Tourism Styles and Sustainable Strategies. *Environmental Management,* 16 (5):619-632.

Amstrong, H., & Taylor J. (2000). *Regional Economics and policy. Third Edition.* Blackwell Publishing.

Arabsheibani, R.G., & Delgado-Aparicio Labarthe A. (2002). *Tourism Multiplier Effects on Peru*. University of Wales.
Archer, B. (1982). The value of Multipliers and their policy implications. *Tourism Management,* 3 (4):236-241.
Archer, B. (1995). Importance of Tourism for the Economy of Bermuda. *Annals of Tourism Research,* 22 (4):918-930.
Archer, B., & Fletcher J. (1996). The Economic Impact of Tourism in The Seychelles. *Annals of Tourism Research,* 23 (1):32-47.
Baaijens, S., Nijkamp P., & Montfort K. van, (1997). *Explanatory Meta-Analysis of Tourism Income Multipliers: An application of comparative research to island economies.* Faculty of Economics and Econometrics Vrije Universiteit Amsterdam.
Bank van de Nederlandse Antillen [Bank of the Netherlands Antilles] (1990). Economic figures Netherlands Antilles.
Bank van de Nederlandse Antillen [Bank of the Netherlands Antilles] (2006). Economic figures Netherlands Antilles.
Briassoulis, H. (1991). Methodological Issues: Tourism Input-Output Analysis. *Annals of Tourism Research,* 18 (3):485-495.
Caribbean Tourism Organization, CTO (2003). Caribbean Tourism Statistical Report, 2002-2003 Edition.
Central Bureau of Statistics Aruba, CBS (2002a). Gross domestic product 2001-2002, Provisional estimates for Aruba. Statistics for progress.
Central Bureau of Statistics Aruba, CBS (2002b). National Accounts of Aruba 1995-2000. Statistics for progress.
Central Bureau of Statistics Aruba, CBS (2002c). The People of Aruba, Continuity and Change. Fourth Population and Housing Census, Aruba. Census 2000 Special Reports. Statistics for progress.
Central Bureau of Statistics Aruba, CBS (2003a). Current Developments of Aruba's Labour Market. Statistics for progress.
Central Bureau of Statistics Aruba, CBS (2003b). Statistical Yearbook, Year 2002. Statistics For progress.
Central Bureau of Statistics Willemstad, CBS (2000). Statistical Yearbook of the Netherlands Antilles.
Central Bureau of Statistics Willemstad, CBS (2001a). Fourth Population and Housing Census of the Netherlands Antilles. Volume 1: Methodology, Main Results, Concepts And Definitions, Code Books and Questionnaires.
Central Bureau of Statistics Willemstad, CBS (2001b). Fourth Population and Housing Census of the Netherlands Antilles. Volume 2: Selected Tables.
Central Bureau of Statistics Willemstad, CBS (2003a). National Accounts NetherlandsAntilles 1996-1999.
Central Bureau of Statistics Willemstad, CBS (2003b). Recente Nationale Rekeningen. De economie van Bonaire, Curaçao en St. Maarten in 2002. [Recent National Accounts. The economy of Bonaire, Curaçao and St. Maarten in 2002.]
Claus, I. (2002). Inter industry linkages in New Zealand. *New Zealand Treasury*, working paper 02/09.
Cooper, C., Fletcher J., David G., & Wanhill S. (1998). *Tourism: Principles and Practice. Second Edition*. Pearson Education Limited.

Curaçao Tourism Development Bureau (2001). Visitor Arrivals Annual overview 2001: Stayover Visitors Development 1995-2001.
Eadington, W., & Redman M. (1991). Economics and Tourism. *Annals of Tourism Research,* 18 (1):41-56.
Fan, T., & Oosterhaven J. (2005). The Impact Of International Tourism On The Chinese Economy. Paper for the 15th International Input-Output Conference, Beijing.
Fletcher, J. (1989). Input-Output Analysis and Tourism Impact Studies. *Annals of Tourism Research,* 16 (4):514-529.
Haan, E. (1998). *Antilliaanse Instituties: De economische ontwikkeling van de Nederlandse Antillen en Aruba, 1969-1995*. Rijksuniversiteit Groningen Proefschrift. [Antillean Institute: The economic development of the Netherlands Antilles and Aruba, 1969-1995. Dissertation University of Groningen]
Heng, T., & Low L. (1990). Economic Impact of Tourism in Singapore. *Annals of Tourism Research,* 17 (2):246-269.
Henrey, E., & Deane B. (1997). The contribution of tourism to the economy of Ireland in 1990 and 1995. *Tourism Management,* 18 (8):535-553.
Hughes, H. (1994). Tourism multiplier studies: a more judicious approach. *Tourism Management,* 15 (6):403-406.
Khan, H., Fee Seng C., & Kwei Cheong W. (1990). Tourism Multiplier Effects on Singapore. *Annals of Tourism Research,* 17 (3):408-418.
Liu, J., & Var T. (1982). Differential multipliers for the accommodation sector. *TourismManagement,* 3 (3):177-187.
Liu, J., Var T., & Timur A. (1984). Tourist-income multipliers for Turkey. *Tourism Management,* 5 (4):280-287.
Milne, S. (1987). Differential Multipliers. *Annals of Tourism Research,* 14 (4):499-515.
Prasad, N. (2003). Small Island's Quest For Economic Development. Asia-Pacific*Development Journal,* 10 (1):47-67.
Ruiz, A. (1985). Tourism and the economy of Puerto Rico: an input-output approach. *Tourism Management,* 6 (1):61-65.
Stynes, D. (1999). Approaches to Estimating the Economic Impacts of Tourism; Some Examples. *Economic Impacts of Tourism,* pp.1-18.
Telfer, D., & Wall G. (1996). Linkages between Tourism and Food Production. *Annals of Tourism Research,* 23 (3):635-653.
United Nations Environment Program, UNEP (1996). Sustainable tourism developmentin small island developing States. Commission on sustainable development. Fourth session.
Var, T., & Quayson J. (1985). The Multiplier Impact of Tourism in The Okanagan. *Annals of Tourism Research,* 12 (4):497-514.
Wagner, J. (1997). Estimating The Economic Impacts Of Tourism. *Annals of Tourism Research,* 24 (3):592-608.
Wall, G. (1997). Scale Effects on Tourism Multipliers. *Annals of Tourism Research*, Research Notes and Reports, 24 (2):446-450.
Wanhill, S. (1994). The measurement of tourist income multipliers. *Tourism Management,* 15 (4):281-283.
Wilkinson, P. (1989). Strategies for tourism in island microstates. *Annals of Tourism Research,* 16 (2):153-177.
Witt, S. (1987). Economic Impact of Tourism on Wales. *Tourism Management,* 8 (4):306-316.

World Tourism Organization, WTO (1999). Addendum A, Tourism and Economic Development; Contribution of The World Tourism Organization to The Report on Tourism and Sustainable Development For The meeting. World Tourism Organization.
Zhou, D., Yanagida J., Chakravorty U., & Leung P. (1997). Estimating Economic Impacts From Tourism. *Annals of Tourism Research,* 24 (1):76-89.

5 International migration and the tourist industry in Aruba

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Abstract

The expansion of the tourist industry on Aruba has led to the recruitment of labour migrants from various parts of the world and to a dual labour market for migrants. In this contribution, we analyse the effect of labour market segmentation on the composition of the migrant population. The data for this study have been derived from the applications for work and residence permits issued by the Department of Foreign Affairs of Aruba and therefore do not include undocumented immigrants. An application shows sector of employment, job level, gender, age, and country of origin. The results of this study demonstrate that the labour market for immigrants is highly segmented along the lines of job level, gender, and ethnicity. The personal services sector recruits woman migrants from the non-Dutch Caribbean and the Latin American countries for elementary jobs. The public and business services sector offer skilled positions to migrants from developed countries, The Netherlands and USA in particular. The hotels & restaurants sector has an overrepresentation of Asian workers in both the blue- and white-collar jobs. In fast-growing tourist economies, the dual labour market theory has shown to be a strong concept in explaining patterns of inflow of labour migrants by labour-market segmentation along the lines of job level. Nevertheless, the theory should be extended by other forms of segmentation along the lines of gender, ethnicity, and culture (language) to account more fully for the recruitment process of people of various nationalities.

5.1 Introduction

Tourism plays an important part in the economies of many small islands, since it generates employment (Wilkinson, 1989; Andriotis, 2002). The tourist industry is labour intensive. Tourism generates a strong demand for workers that cannot always be met by the local market (Kontogeorgopoulos, 1998); consequently, employers recruit labour migrants for elementary jobs. These pay relatively low wages and only provide part-time or seasonal work opportunities (Mckee & Tisdell, 1988; Pantin, 1999; Krakover, 2000; Carstensen et al., 2001). Many of these positions are taken up by young migrants from developing countries. Since much of the work is in personal or domestic services, women migrants in particular are recruited (Salt, 1992).

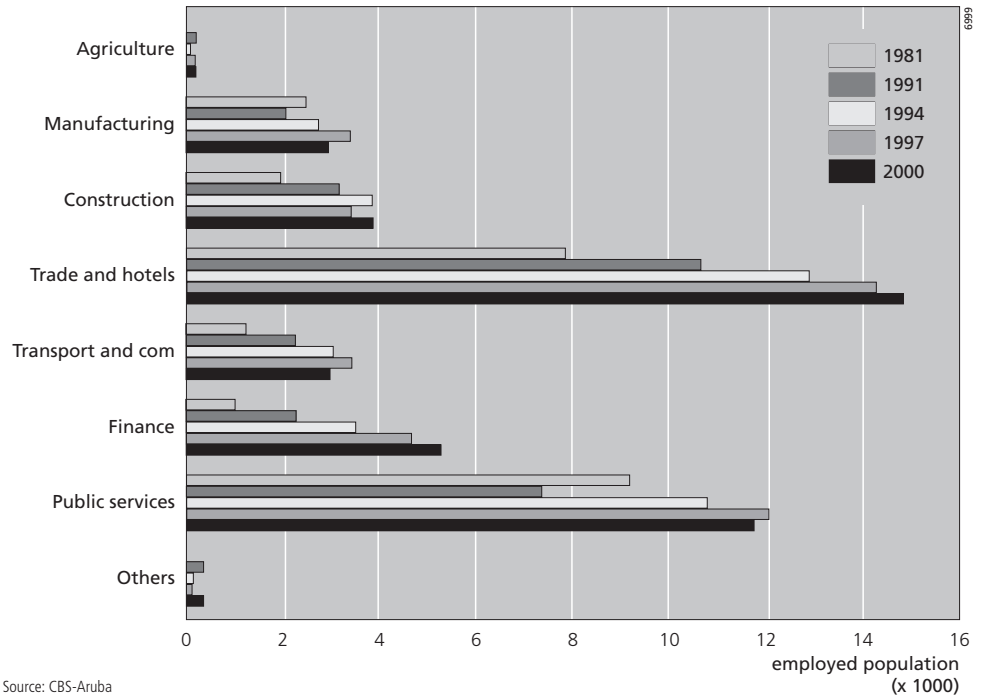
However, the tourist industry also creates opportunities that are not at the bottom of the job hierarchy. Job creation occurs directly through the employment of managerial staff and indirectly through the construction of real estate, and through the business and public services provided

to the tourist industry. As the wealth of the population increases, induced effects occur through home consumption.

The tourist expansion therefore contributes to the dual character of the labour market for migrants. According to dual labour market theory (Piore, 1979), the labour market is segmented in a capital-intensive primary market and a labour-intensive secondary market. Workers in the primary market usually hold stable, well-paid, skilled jobs. In contrast, workers in the secondary market generally hold unstable, unskilled jobs and may be laid off at little or no cost to the employer (Piore, 1979; Mead, 1992). Women migrants tend to be clustered in the secondary labour market.

Immigration laws and policies contribute to this segmentation (Böhning, 1998). The largely labour-demand-driven system in Europe grants temporary working and residence permits to contracted foreign workers as they enter the country. Permanent residence permits are only issued after a number of years in gainful employment. Migrants employed by private persons are classified as 'living in'; they depend on their employer for their lodgings and allowances, and cannot exercise any independent rights.

The small island of Aruba, a Caribbean island just north of Venezuela, is a perfect illustration of both a fast-growing economy (as a result of the expansion of tourism after 1985) and of a dual labour market for the migrant population that has been recruited in response to labour shortages. Employment on Aruba has grown from nearly 24,000 employees in 1981 to almost 45,000 employees in 2000 (CBS-Aruba, 2003). Employment growth was substantial in, but not limited to, the trade and hotels sectors, which dominate the tourist industry (Figure 5.1). The strong linkages



Source: CBS-Aruba

Figure 5.1 | Employed population by branch or industry

of the hotel sector with the other sectors of the economy have created job opportunities over the full spectrum of the labour market. In the early phase of tourist development, employment in the construction sector doubled. The financial and public sectors showed a strong increase during the second phase.

The strong demand for workers in the various sectors of the economy could not be met by the local labour market. The 2000 census of Aruba showed that the number of people in the workforce not born on the island had increased to 18,500 by that year. Four out of every ten people in the workforce had been born elsewhere. For the population as a whole, this figure is three out of ten. The total population on the island grew from 66,000 in 1991 to more than 90,000 in the year 2000. Since Aruba is part of the Kingdom of the Netherlands and the Antilles, many of the people not born on the island have Dutch nationality.

Table 5.1 shows the shift in population composition in the period 1991-2000. In 1991, 76 percent of the population had been born on the island and 89 percent of the population had Dutch nationality. A substantial share of the Dutch nationals had not been born in Europe, but on one of the other islands in the Netherlands Antilles or in Suriname before that country became independent in 1975. The largest non-Dutch population came from South America: Columbia, Venezuela, Peru, and Suriname. The second largest group came from other Caribbean islands: Dominican Republic, Haiti, and Jamaica. The third largest group came from the USA and the UK; the fourth was from Asia: the Philippines and China. By the year 2000, the share of the locally- born population had decreased to 66 percent and only 81 percent had Dutch nationality. The migrant population from Columbia and Peru has more than tripled in these ten years and the Asian population now outnumbers the people coming from the USA and the UK.

Table 5.1 | Numbers and cumulative percentage of nationalities on Aruba

Nationality	1991		2000		2000
	population	cum.%	population	cum.%	% women
Aruba	50,177	76	59,886	66	50
Netherlands	2,297	79	3,755	70	49
Netherlands Antilles	3,288	84	3,554	74	48
Other Dutch nationals	3,107	89	6,245	81	62
Colombia	1,345	91	5,768	88	59
Venezuela	1,090	93	2,444	90	46
Dominican Republic	1,479	95	2,139	93	68
Peru	1,39	95	792	94	45
Haiti	276	96	790	94	64
Philippines	236	96	709	95	44
Jamaica	164	96	662	96	68
United States	503	97	656	97	49
Suriname	357	97	450	97	52
China	185	98	404	98	48
United Kingdom	362	98	177	98	57
Other countries of the world	1,146	100	2,001	100	47
Total	66,151		90,432		52

Source: CBS, Aruba, Census 1991, 2000

The last column shows the percentage of women among the various nationalities. The share of women is strikingly high (two thirds) among the Caribbean population. Many of these women are employed in the informal sector.

Dual labour market theory predicts that workers in the secondary market will come from (neighbouring) countries with a low level of prosperity and a high level of unemployment. The segmentation of the labour market, however, has more dimensions than just the division into a primary and secondary market. Recruitment turns out to vary within the primary and secondary markets between the sectors of the economy. So far, it has remained unclear whether the job level is more important in the recruitment of migrants than the sector of the economy. Gender and age segregation are common phenomena in all labour markets (Ghilarducci & Lee, 2002; Buchmann et al., 2001) and the question arises whether this segmentation is crucial in the recruitment of labour from other countries.

The aim of this study is to provide an assessment of the effects of labour-market segmentation on the composition of the migrant labour population with respect to their country of origin. It will be shown that the labour-market segmentation is crucial in the understanding of international migration to Aruba and contributes to the understanding of the position of various migrant groups in Aruba's society.

The data for this study have been derived from the applications for work and residence permits as registered in the uniform foreigner registration system (Navas) used by the Department of Foreign Affairs of Aruba and therefore do not include undocumented immigrants. The type of application distinguishes the labour migrant, sector of employment, job level, gender, age, and country of origin. Multinomial regression of the origin of the migrants on the characteristics of the job generates the probabilities that expansion of labour demand will lead to specific migration flows that will change the ethnic composition of the population of Aruba.

5.2 Literature review

Dual labour market theory was put forward as an alternative to neo-classical economic theory in the early 1970s (Doeringer & Piore, 1971) and was linked to international migration at an early stage (Piore, 1973). Piore (1979) asserts in his seminal book that the reason for the sustained demand for foreign labour is the deep segmentation of the labour market. Immigration is not caused by push factors in sending countries (low wages or high unemployment), but by pull factors in receiving countries as a result of a chronic and unavoidable need for foreign workers. In accordance with this theory, wages not only reflect conditions of supply and demand, but also confer status and prestige. The existence of a permanent structural demand for unskilled labourers in industrial societies is conditioned by the coexistence of capital-intensive primary sectors and labour-intensive secondary sectors, and is the result of a segmented labour market. Workers in the primary sector usually hold stable well-paid jobs. In contrast, workers in the secondary sector generally hold unstable jobs, and may be laid off at any time. The secondary market is further divided into a formal market with temporary positions, few benefits, and poor working conditions and an informal market with no benefits, poor wages, and no enforcement of fair employment practices (Carr et al., 2000; Avirgan et al., 2005).

The legal position of migrant workers depends not only on the type of their labour contract, but also on their statutory right to reside in the country of employment. The admission policy of a country determines the recruitment of labour migrants (Brochmann, 1998; Amersfoort &

Doomernik, 1998). Böhning (1998) identifies marked differences between the admission policies for labour immigrants in the USA and European countries. In the USA, the inflow of legal immigrants was largely supply-driven within the constraints of the quota system. Immigration laws have been aimed at encouraging the immigration of highly-skilled foreign workers and professionals and barring the less skilled from the country (Samuel et al., 1995; Schoeni, 1998). The result is not only a flow into the primary labour market, but also a significantly larger flow of undocumented immigrants into the secondary market (Wilson & Portes, 1980).

Europe's approach is based on a demand-driven inflow of migrants (Straubhaar, 1986). Rather than defining a quota, employers are allowed to recruit workers from other countries if positions cannot be filled on the national market. Furthermore, European policy assumes a temporary stay for all immigrants. This system leads to more labour migrants in unskilled jobs with a legal entitlement, but only for a fixed period. This unstable position is typical of the secondary market. People can escape to the primary market if they manage to remain in gainful employment for more than five years, after which time a permanent residence permit may be issued. Since Aruba is part of the Kingdom of the Netherlands, the regulations for the admission and expulsion of migrants are part of the European system (CBJZA-Afkondigingblad van Aruba, 1993). In European law, immigrants can be employed either by registered businesses or by private persons. In the latter case, an immigrant is registered as 'living in' and depends on the host for lodging and allowances. No formal wages or contracts apply and the immigrant can only remain in the country as long as the hospitality continues. In this way, an informal market has been created within the legal system of admissions. Transition to the formal market is not impossible, but is strongly discouraged. To apply for a regular job and a work permit, people have to return to their home country and start procedures from there.

The literature on the recruitment of immigrants in the USA and Europe has shown that most of the foreign workers who were attracted were unskilled and low-paid workers from developing countries such as Mexico, the Philippines, the Dominican Republic, Sri Lanka, and Morocco (Athukorala, 1990; Massey et al.,1993;1994; Doomernik et al., 1997). For skilled migrants there is a different labour market. For instance, in multinational companies an internal labour market enables skilled employees and professionals to move easily from one country to another without a change in contract or employee's rights. Many of these employees originate from prosperous countries with an elaborate educational system. In general, skilled migrants from developed countries can easily migrate within the primary labour market. The first hypothesis for this study is therefore that *the recruitment in the primary labour market of Aruba attracts immigrants from developed countries in Europe and North America and in the secondary market from developing countries in South America and the Caribbean*.

The dual labour market theory has been criticized for being too binary. The theory does not account for variation within the primary and the secondary market, while there is considerable evidence that such variation exists and is related to categories of immigrants (Boyle et al., 1998). One of the first instances in labour-market segmentation that cuts across the primary and secondary markets is gender segregation. Traditionally, women tend to be segregated in specific occupations resembling their family role. Many of them are employed for domestic and other personal services (Morokvasic, 1984). Immigrant women from developing countries have long been recruited for these positions, Aruba being no exception (Thomas-Hope, 1992). Aymer (1997) describes how employers in the Exxon oil refinery period (the plant was shut down in 1985) recruited labour migrants from the Caribbean for unskilled jobs on Aruba. Many of the migrants were women who were recruited to work as domestic workers. This practice has continued and

has even been exacerbated as a result of the tourist expansion, which has generated many jobs in the service sector. Our second hypothesis is therefore that *there is a large market segment of female employment particularly in the informal market as defined by Aruba's admission policy and that this segment attracts young women from the Caribbean and to a lesser extent also South American countries.*

Nevertheless, current literature suggests that the emergence of the service economy has also created employment opportunities for women in the primary market for (among others) the educational and medical professions (Salt, 1992; Lauby & Stark, 1998). Boyle, Halfacree and Robinson (1998) report that multinational companies, such as the international hotel chains, have a preference for skilled young women on their staff. Even in the technical sectors, an increasing number of professional and managerial positions are open to women and migrants are recruited into these positions from developed countries. Our third hypothesis is therefore that *higher level jobs for females in the primary market attract women migrants from Europe and North America.*

Another segmentation that might diversify the binary character of the dual labour market is ethnic segregation. Scott (1992) reported in his analyses of the immigrant labour force in the electronics industry in California that Asian immigrants occupied a better position than Hispanic immigrants. Ethnic entrepreneurship might lead to the recruitment of immigrants from the country of origin. Wilson and Portes (1980) found ethnic enclaves of Cubans in Miami that clearly cut across the boundary between the primary and secondary market. Ethnic entrepreneurship is common in trade and restaurants on Aruba, since many firms are owned by Asians. Our fourth hypothesis is that *skilled jobs in the trade and hotel & restaurant sectors are often taken up by immigrants from Asia.*

In general terms, the various sectors in the economy can be expected to have different needs with respect to the specific competences of their skilled personnel. Since many of the hotels on Aruba belong to international chains owned by American companies, the spoken language in this sector is English. And since most of the guests in the international chains on Aruba are visitors from the United States, receptionists and other staff must have a good command of that language. Our fifth hypothesis is therefore that *the hotel & restaurant sector recruits immigrants from English-speaking countries like the USA and the UK.*

In the public services sector on the other hand, the spoken language is Dutch. Not only civil servants, but also teachers and (some) healthcare professions require Dutch as a native language. A number of islands in the Caribbean and the country of Suriname still have Dutch as their official language as part of their colonial heritage. Our sixth hypothesis is therefore that *the public sector recruits immigrants from the Caribbean for skilled jobs.*

As a more general conclusion from the literature, it has become clear that dual-labour- market theory is too confined to account satisfactorily for the variation in the origin of migrants and their position in the receiving country. In the case of Aruba, job opportunities have been generated over the full spectrum of the labour market, not only for unskilled jobs, but also for professions requiring special skills. The dichotomy between a primary market and a secondary market is too simple, since other mechanisms of segmentation such as gender and ethnic segregation cut across this boundary. Various sectors in the economy have different needs for specialized skills that can be found in specific parts of the world and this differentiation will no doubt have a major impact on the pattern of international migration.

In the following section, we present a flexible framework of detailed labour-market segmentation that can be used to analyse the probability that immigrants will be recruited from different parts in the world.

5.3 Data and method

The recruitment of labour immigrants on Aruba is directly linked to the Regulations for Admissions and Expulsions of Migrants (CBJZA-Afkondigingblad van Aruba, 1993; Jaarverslag 1998;1999, DOOV Aruba). Inhabitants of the Dutch Kingdom have free access to the island, but need to register as foreign born. For non-Dutch nationals, the policy of Aruba is restrictive. Labour migrants can only work in Aruba if there are no local workers available for the jobs concerned. Labour migrants receive temporary residence and work permits for a period of one year with an option of annual renewal. A permanent residence and work permit can be issued to a foreign worker who is at least 18 years old and has resided in the Dutch Kingdom for at least five years with a temporary residence permit. A legal work permit can be obtained for a formal or an informal job; residence permits are only issued to those in formal employment. People in unstable jobs will have less chance of renewal, as their employers will have to cooperate in extending their contracts or providing a tenured position.

From the register of petitions for the years 1997-2002, we obtained a sample of 7,800 people who could be classified as labour migrants on the basis of their petition for a work permit. The record from the register contains each migrant's birth date, gender, marital status, employer, occupation, permit type, number of renewals, permit requests, and permit approvals.

Industrial and business activities in Aruba are classified according to the International Standard Industrial Classification of Economic Activities (ISIC-third revision). We used this classification to define a number of sectors of economic activity. The ISIC has 17 categories: agriculture (A), hunting, forestry, and fishing (B), mining, and quarrying (C), manufacturing (D), electricity, gas, and water supply (E), construction (F), wholesale and retail trade, and personal and household goods (G), hotels and restaurants (H), transport, storage, and communications (I), financial intermediation (J), real estate activities (K), public administration (L), education (M), health and social work (N), social and community services (O), 'other' services (P), and extra territorial organizations and bodies (Q).

Since jobs in some of these categories are rare, we reduced the economic activity categories to six sectors. We defined the six economic sectors as:

1. Manufacturing & transport (A, B, D, E, and I),
2. Construction (F),
3. Hotels & restaurants (H),
4. Trade & finance (G, K, and J),
5. Public services (C, L, M, O, N, Q) and
6. 'Other' services (P).

In this study, the primary market is defined as manufacturing & transport, construction, hotels & restaurants, trade & finance, and public services; the secondary market is defined as the 'other' services sector. This secondary market can be divided into two divisions based on the statutory rights of the labour migrants. The first division is the formal market in which firms obtain the work permit for the migrant. The formal market recruits labour migrants for cleaning, gardening, waste disposal, and various other type of work that could not be classified under the other five sectors. Many of these firms provide services not only to private households, but also to hotels and businesses. The second division is the informal market, in which an individual person obtains a work permit for the immigrant. All immigrants recruited in this way are registered as 'living-in'

domestic servants, although the term does not necessarily mean that they share residence with the employer, nor that they only provide a service for the private household.

The jobs in the register are classified by the International Standard Classification of Occupation (ISCO- 88). The ISCO distinguishes 10 categories:

1. Legislators, managers,
2. Professionals,
3. Technicians,
4. Clerks,
5. Service workers,
6. Skilled agricultural workers,
7. Craftsmen,
8. Plant and machine workers,
9. Elementary occupations,
10. Armed forces.

In this study, the occupations are classified as white-collar, blue-collar, and elementary jobs. The white-collar jobs are: legislators and managers, professionals, technicians, and clerks. The blue-collar jobs are: service workers, skilled agricultural workers, craftsmen, and plant and machine workers. Elementary jobs are such occupations as: housemaids, barmaids, cleaners, prostitutes, gardeners, and other personal or domestic services.

We have taken the age of the immigrant as an indicator of the level of experience that the job requires and the gender of the immigrant as an indicator of the feminine or masculine character of the job.

The countries of origin of the labour migrants have been reclassified as North American and European, Caribbean, Latin American, and Asian countries. The Caribbean countries are Suriname, the Netherlands Antilles, and all other islands in the Caribbean. The Latin American countries are in South and Middle America.

The methods used were cross-tabulation and a multivariate multinomial logistic regression. The multinomial logistic regression analyses the odds of the recruitment of labour migrants from the various countries. The independent variables of the multinomial logistic regression are job level, sector of employment, gender, and age, since these define the relevant market segments that recruited migrants. The number of permits is also included among the independent variables. Since the sample is based on the register of petitions, people with more permits have a higher chance of being selected into the sample. We have corrected for this bias by including the number of permits.

The reference category for the multinomial logistic regression is a young male labour migrant from a Latin American country recruited by the 'other' services sector for an elementary job.

5.4 Results

The starting point for the analysis is that there is a close association between the sector of economic activity and the level of the jobs created by the activity. If the 'other' service sector represents the secondary market, then the overall majority of the jobs for immigrants in this sector should be of an elementary nature, attracting unskilled workers. A more open question is whether the sectors that represent the primary market also generate jobs of an elementary nature for immigrants.

Table 5.2 gives the percentage of white-collar, blue-collar, and elementary jobs per sector of the economy. The association is strong (Cramer's V=0.66). The bottom row shows that more than 40 percent of the immigrants' jobs are elementary. In the informal market, jobs are elementary

Table 5.2 | Job level by sector of economic activity

		White-collar	Blue-collar	Elementary	Total
Manufacturing & transport	Count	130	225	38	393
	%	33.1	57.3	9.7	100.0
Construction	Count	54	959	218	1231
	%	4.4	77.9	17.7	100.0
Hotels & restaurants	Count	282	807	157	1246
	%	22.6	64.8	12.6	100.0
Public services	Count	332	134	71	537
	%	61.8	25.0	13.2	100.0
Trade & finance	Count	549	384	82	1015
	%	54.1	37.8	8.1	100.0
Personal services-formal	Count	79	216	1054	1349
	%	5.9	16.0	78.1	100.0
Personal services-informal	Count	0	0	1611	1611
	%	0.0	0.0	100.0	100.0
Total	Count	1426	2725	3231	7382
	%	19.3	36.9	43.8	100.0

Source: DINA-Aruba Cramer's V= 0.66

by definition as people employed by private persons are classified as domestic servants. However, the jobs in the formal market in the personal service sector are also predominantly (78.1 percent) elementary.

The sectors that represent the primary market have very few elementary jobs on offer. Table 5.2 shows that the public services (61.0 percent) and trade (54.1 percent) sectors have a large share of white-collar jobs, while the manufacturing (57.3 percent), construction (77.9 percent), and hotels & restaurants (64.8 percent) sectors mostly employ labour migrants in blue-collar jobs. This last figure may come as a surprise, as the tourist literature reports that the tourist industry typically generates elementary jobs. The reason for this deviation is that the larger hotels outsource activities such as laundry and cleaning to firms in the 'other' service sector and the small hotels and bed-and-breakfasts can hire domestic servants as private persons. The 'other' service sector is therefore closely related to the tourist industry, but is not classified under hotels and restaurants. In our sample of 7,382, only 1,246 immigrants were employed by the hotels & restaurants sector, while 2,960 immigrants were employed in the 'other' service sector.

The first conclusion is that the expansion of tourism on Aruba has not only created a surplus demand in elementary jobs, but also positions requiring technical or professional skills. The labour market for immigrants shows the characteristics of a dual labour market with the elementary jobs in the personal service sector and the skilled positions in the public and business service sector.

Sectors will also differ in the extent to which they create jobs for males or females. Gender segregation is traditionally strong between the technical sectors with predominantly male jobs and the personal and domestic service sectors with many female jobs. The migrant labour market of Aruba is no exception to this rule, as Table 5.3 shows. In the technical sectors of manufacturing, transportation, and construction close to one hundred percent of the immigrants' jobs are taken up by men. In the personal services, female employment is predominant. However, there is a clear

Table 5.3 | Gender segregation by sector of economic activity

		Female	Male	Total
Manufacturing & transport	Count	17	376	393
	%	4.3	95.7	100.0
Construction	Count	21	1211	1232
	%	1.7	98.3	100.0
Hotels & restaurants	Count	567	678	1245
	%	45.5	54.5	100.0
Public services	Count	212	344	556
	%	38.1	61.9	100.0
Trade & finance	Count	297	721	1018
	%	29.2	70.8	100.0
Personal services-formal	Count	571	778	1349
	%	42.3	57.7	100.0
Personal services-informal	Count	1565	45	1610
	%	97.2	2.8	100.0
Total	Count	3250	4153	7403
	%	43.9	56.1	100.0

Source: DINA-Aruba Cramer's V= 0.65

distinction between the informal and the formal markets. In the informal market, the percentage of women is close to one hundred; in the formal market, more than half the workers are male. These figures correspond to earlier findings that the position of women immigrants in the labour market of developed countries is exceptionally weak (Morokvasic, 1984). At the turn of the millennium, this conclusion still holds. At the same time, however, the modern service sectors such as hotels & restaurants (45.5 percent) and the public services (38.1 percent) have created many positions for women migrants for more than just the elementary jobs.

Table 5.4 shows the cross tabulation between the sectors and the countries of origin of the labour migrants recruited. The largest category (46.3 percent) comes from the Latin American countries, followed by the labour migrants from North American and European countries (28.4 percent) and from the Caribbean (18.8 percent). The smallest category is that of the labour migrants from the Asian countries (6.5 percent). The association between the sector and the country of origin is less marked than with job level or gender (Cramer's V=0.26)

Nevertheless, there are striking differences in the recruitment patterns per sector. In manufacturing and transportation, immigrants from North America and Europe are clearly overrepresented and the sector attracts few immigrants from the Caribbean. Construction workers are mainly recruited from Latin American countries (61.4 percent) and typically not from northern countries. Hotels & restaurants recruit their workers from North America and Asia, as we expected on the basis of the ethnic ownership of the firms in these sectors. There is also evidence that the public sector indeed recruits many workers from Europe (the Netherlands in particular) on the basis of the Dutch language skills needed in this line of work.

The secondary market recruits personnel from the developing countries in Latin America and the Caribbean, as we expected on the basis of the literature on dual markets. Nevertheless, in the formal personal service sector, the share of North American and European immigrants is substantial. The question arises whether there is a difference in recruitment for various job levels within this sector. In more general terms, the question is whether the job level is more

Table 5.4 | Country of origin by sector of economic activity

		Latin America	Caribbean	Asian	North America & Europe	Total
Manufacturing & transport	Count	158	49	21	165	393
	%	40.2	12.5	5.3	42.0	100.0
Construction	Count	757	216	20	239	1232
	%	61.4	17.5	1.6	19.4	100.0
Hotels & restaurants	Count	472	123	194	457	1246
	%	37.9	9.9	15.6	36.7	100.0
Public services	Count	129	72	19	336	556
	%	23.2	12.9	3.4	60.4	100.0
Trade & finance	Count	313	92	115	497	1017
	%	30.8	9.0	11.3	48.9	100.0
Personal services-formal	Count	646	339	68	296	1349
	%	47.9	25.1	5.0	21.9	100.0
Personal services-informal	Count	952	501	44	114	1611
	%	59.1	31.1	2.7	7.1	100.0
Total	Count	3427	1392	481	2104	7404
	%	46.3	18.8	6.5	28.4	100.0

Source: DINA-Aruba Cramer's V= 0.26

capable than the sector of explaining the ethnic diversity in the recruitment. On the basis of the hypotheses stated above, we expected that the combination of sector and job level would be crucial in understanding the geographical pattern of recruitment. We also hypothesised that jobs for females in the primary market would attract immigrants from developed countries and the female occupations at the bottom end would attract migrants from developing countries.

To test these hypotheses, we used a multivariate analysis in which the various forms of market segmentation (by sector, gender, and job level) could be analysed for their combined effect on the recruitment of labour migrants. The multinomial regression (Table 5.5) shows the main effects of job level, sector of employment, and gender, and the combined effects of sector and job level, and of sector and gender. The main effects of age have also been included, reflecting the level of experience and the number of permits to control for sample selection bias (see the section on data and method). We reduced the number of sectors for this analysis by placing manufacturing and construction together in a technical sector and dropping the division into formal and informal in the personal services sector. The starting point for the interpretation is the segment of elementary jobs in the personal services as a more strict definition of the secondary market.

The B parameters are the multinomial regression coefficients. The parameters display the log odds with respect to the reference category. A positive value of B reflects an overrepresentation of migrants from that country of origin; negative parameters signify the converse. The Exp(B) parameters give the odds of recruitment from a country relative to the reference category. The reference category consists of labour migrants from Latin America recruited by the personal services sector for the elementary jobs for young men.

The intercepts show the general overrepresentation of immigrants from Latin America in the secondary market with respect to all other ethnic categories. All other origins have negative parameters. This situation changes if we also take the job level into account. With respect to recruitment for white-collar jobs, we find that North Americans and Europeans are

overrepresented (+1.913) and people from the Caribbean are underrepresented (-1.474). This result indicates that the few good jobs in the personal services go to people from developed countries and that people from the Caribbean who work in this sector are completely restricted to the elementary jobs as they also do not qualify for blue-collar jobs (-0.804). They fill the bottom end of the job hierarchy on Aruba. People from Latin American countries are slightly better off, but they also cluster at this lower end of the job hierarchy. This result is fully in line with our

Table 5.5 | Multinomial regression with interaction effects: dependent variable= probability of the countries of origin of the labour migrants (North American and European countries, Asian countries, Caribbean, and Latin America).

	N.America & Europe			Asian			Caribbean		
	B	Std. Error	Exp(B)	B	Std. Error	Exp(B	B	Std. Error	Exp(B)
Intercept	-1.666*	0.131	0.189	-1.951*	0.202	0.146	-1.113*	0.120	0.329
Job Level (ref elementary jobs)									
White-Collar	1.913*	0.264	6.773	0.574	0.554	1.776	-1.474*	0.611	0.229
Blue-Collar	0.304	0.192	1.355	-0.120	0.345	0.887	-0.804*	0.211	0.448
Sector (ref personal services)									
Technical sector	-0.122	0.191	0.885	-1.428*	0.484	0.240	-1.076*	0.211	0.341
Hotels & restaurants	0.881*	0.231	2.412	-0.592	0.619	0.553	-0.457	0.279	0.633
Public services	0.428	0.301	1.534	-0.728	0.748	0.483	-0.529	0.347	0.589
Trade & finance	0.305	0.319	1.356	1.197*	0.360	3.311	-0.539	0.353	0.584
Interaction effect (ref personal services and elementary jobs)									
Technical * White-Collar	-0.104	0.352	0.901	0.950	0.811	2.586	0.815	0.793	2.258
Technical * Blue-Collar	-0.533*	0.262	0.587	0.218	0.607	1.244	1.107*	0.294	3.026
Hotels * White-Collar	-1.343*	0.356	0.261	1.721*	0.831	5.592	0.985	0.697	2.677
Hotels * Blue-Collar	-0.108	0.283	0.898	2.397*	0.693	10.990	0.253	0.337	1.287
Public * White-Collar	0.473	0.440	1.606	1.660	0.982	5.260	2.377*	0.754	10.768
Public * Blue-Collar	-0.528	0.402	0.590	0.215	0.958	1.240	0.775	0.462	2.171
Trade * White-Collar	-0.360	0.413	0.698	-0.245	0.655	0.783	1.074	0.728	2.928
Trade * Blue-Collar	0.454	0.375	1.574	-0.360	0.510	0.698	0.875*	0.432	2.399
Gender(ref male occupations)									
Female occupations	-0.807*	0.126	0.446	-1.103*	0.210	0.332	-0.023	0.105	0.977
Interaction effect (ref personal services and male occupation)									
Technical * woman	1.321*	0.427	3.746	1.276	1.065	3.584	-0.116	0.567	0.890
Hotels * woman	0.432*	0.186	1.541	-0.046	0.286	0.955	0.148	0.235	1.160
Public * woman	1.560*	0.310	4.760	-0.394	0.826	0.674	0.673	0.370	1.961
Trade * woman	0.746*	0.209	2.109	0.412	0.347	1.510	-0.095	0.281	0.910
Age (ref.=15-30)									
31-40	0.464*	0.073	1.590	0.019	0.115	1.019	0.191*	0.074	1.211
>40	0.898*	0.086	2.456	0.078	0.147	1.081	0.368*	0.090	1.444
Frequencies Permit	0.074*	0.013	1.077	-0.011	0.022	0.989	0.097*	0.013	1.102

* significant at $p < 0.05$

first hypothesis that recruitment in the secondary market is fully directed to countries in South America and the Caribbean.

The figures for the recruitment for elementary jobs in the other sectors also add to our understanding of migration patterns. For elementary jobs in the technical sector (manufacturing, transport, and construction), very few people from the Caribbean (-1.076) or from Asia (-1.428) are recruited; Latin America seems to be the dominant market for these jobs. The hotel sector has a preference for North American and European personnel, even for elementary jobs. This finding supports our hypothesis that these firms attract personnel from English-speaking countries, because of the language of the customers. The public sector does not seem to have any specific recruitment for the relatively few elementary jobs on offer. In the trade and finance sector, however, many elementary jobs are taken up by people from Asia (1.197). This finding is in line with our fourth hypothesis that ethnic entrepreneurship leads to chain migration from the country of origin of the entrepreneur, although we expected to find this trend concentrated in the hotel and restaurant sector.

With respect to recruitment for higher level jobs by the sectors in the primary market, we hypothesised that: the trade, and hotel & restaurant sector would attract more Asian immigrants (#4); that the hotel & restaurant sector would recruit staff from English speaking countries (#5); and that the public sector would recruit immigrants from the Dutch Caribbean for their professional positions (#6). We did not specify any hypotheses for the technical sector.

The interaction effects of sector and job level nevertheless show that the technical sector recruits more Caribbean (+1.107) and fewer North American or European workers (-0.533) for their blue-collar jobs. Contrary to our hypothesis on English-speaking countries, the hotel & restaurant sector does not concentrate its recruitment for white-collar jobs on the USA and Europe (-1.343), but shows rather an overrepresentation of Asian workers in both the blue (2.397) and white-collar (1.721) jobs; these figures concur with the enclave effect of ethnic entrepreneurship. The public sector clearly aims to recruit its professionals from the Caribbean (2.377). The trade sector does not show the expected effect of attracting more Asian immigrants for high-level jobs as it did for elementary jobs.

With respect to gender, we formulated two contrasting hypotheses. The first was that, for elementary jobs in the personal service sector, women from Latin America in general and from the Caribbean in particular would be overrepresented (#2). The second was that, in the other sectors, the opposite would be the case. In these sectors, positions for women are predominantly filled by immigrants from the northern countries (#3).

The parameter of the gender effect represents the recruitment in the personal services sector. The results confirm the hypothesis that this sector is not so much a sector for female workers, but rather for female workers from developing countries. Hardly any immigrants from North America or Asia work in this sector; women from these countries are virtually absent (-0.807 and -1.103). In the other sectors, the pattern is very different indeed. Women from northern countries are clearly recruited by all other sectors: technical (1.321), hotels (0.432), public services (1.560), and trade (0.746) alike. It would certainly seem that the dual labour market is more polarized for women than for men. On the one hand, we find women from developing countries who are restricted to the bottom end of the job hierarchy, while on the other hand we find ample opportunities in the primary market for skilled women from developed countries.

5.5 Conclusions

The general impression given by the literature on the employment effects of tourism expansion is mixed. Many authors stress that the jobs created are elementary, low-paid, insecure, and with seasonal variation, creating a persistent demand for unskilled labour that can only be met by immigrant workers. Dual labour market theory specifies segmentation between a capital-intensive primary market and a labour-intensive secondary market. Immigrants fill the positions in the secondary market.

Our evidence from Aruba shows that reality is more diversified than theory would predict. The expansion of the tourist industry on the island has created a large variety of job opportunities, ranging from elementary jobs to professional positions in all sectors of the economy. Migrants have been recruited for all sorts of jobs and from many parts of the world. Nevertheless, a large proportion of the labour immigrants does fit the description of the dual labour market. Our analyses of the immigration register from the period 1997-2002 showed that nearly 45 percent of the immigrants had elementary jobs and that slightly over 40 percent worked in the personal and domestic services sector. The immigration laws and policies of Aruba grant these workers very few rights and many immigrants will have to leave the island once their contract with their employer ends. In domestic services in particular, many immigrants work on informal contracts; nearly all of these immigrants are women. A large majority (75-90 percent) of the immigrants in these sectors originates from developing countries in the vicinity, in particular from Columbia, Venezuela, the Dominican Republic, Haiti, and Jamaica. There seems to be little doubt that there is a secondary market on the island.

Nevertheless, the binary distinction in a primary and a secondary market is insufficient to explain the pattern in the recruitment of international migrants. Other forms of segmentation should be taken into account as well. Gender segregation reinforces the dual market segmentation. Ethnicity has been shown to play an important part in understanding migration flows triggered by ethnic entrepreneurship, in both the primary and secondary markets. Using multinomial regression, we were able to define multiple market segments and analyse the recruitment of migrants from various world regions.

Gender and the level of the job are crucial factors in explaining recruitment from various countries, but the effects differ in the various sectors of the economy. In the personal and domestic services sector, only migrants from Latin America and the Caribbean are recruited for the elementary jobs. In this sector, people from the Caribbean have not been recruited for any of the blue- or white-collar jobs. Migrants from North America and Europe in particular take up the few white-collar jobs in this sector. This pattern becomes even more pronounced when gender effects are taken into account. For elementary jobs in female occupations, this sector relies exclusively on migrants from the Caribbean islands and some Latin American countries.

In the other sectors, recruitment for elementary jobs deviates from this pattern to some extent. The technical sector relies more on male migrants from Colombia and Venezuela for the elementary jobs. The hotel & restaurant sector also recruits immigrants for elementary jobs from North America and the trade sector fills its elementary positions with people from Asia. We have interpreted this pattern as a mix of language requirements and ethnic entrepreneurship. The language in the hotel sector is English and immigrants from the USA and the UK, but also from the Philippines, meet the sector's language requirements. In the trade sector, Chinese entrepreneurship is common.

For blue- and white-collar positions, the pattern of recruitment is even more diversified. Most white-collar jobs are taken up by immigrants from North America and Europe. However, the hotel & restaurant sector clearly recruits Asian immigrants for both blue- and white-collar positions. In the public services, people from the (Dutch-speaking) Caribbean islands are recruited for the white-collar positions. Again, ethnic entrepreneurship and language requirements may account for these patterns. Sectors with many female occupations, such as the public services and the trade sector, have a clear preference for women migrants from North America and Europe.

Dual labour market theory introduces labour market segmentation along the lines of job level and turns out to be a very strong concept in explaining patterns of inflow of labour migrants into fast-growing economies. Nevertheless, the theory should be extended by other forms of segmentation along the lines of gender, ethnicity, and culture (language) to account more fully for the recruitment process of people of various nationalities.

References

Amersfoort, H. van, & Doomernik J. (1998). *International Migration. Processes and interventions*. The Netherlands: Het Spinhuis Publishers.

Andriotis, K. (2002). Scale of hospitality firms and local economic development: evidence from Crete. *Tourism Management,* 23:333-341.

Athukorala, P. (1990). International Contract Migration and the Reintegration of Return Migrants: The Experience of Sri Lanka. *International Migration Review,* 24 (2):323-346.

Avirgan, T., Josh Bivens L., & Gammage S.L. (2005). *Good Jobs, Bad Jobs, No Jobs. Labor Market and Informal Work in Egypt, El Salvador, India, Russia, and South Africa*. Washington: Global Policy Network. Economic Policy Institute.

Aymer, P.L. (1997). *Uprooted Women: migrant domestics in the Caribbean.* Connecticut: Praeger Publishers.

Böhning, W.R. (1998). *Top-end and bottom-end labour import in the United States and Europe. Historical evolution and sustainability.* University of Amsterdam: Institute for Migration and Ethnic Studies.

Boyle, P., Halfacree K., & Robinson V. (1998). *Exploring Contemporary Migration.* New York: Longman

Brochmann, G. (1998). *Controlling immigration in Europe. Nation-state dilemmas in an international context*. University of Amsterdam: Institute for Migration and Ethnic Studies.

Buchmann, M., Kriesi I., Pfeifer A., & Sacchi S. (2001). *Labor Market Opportunities and Women's Employment Exit and Reentry.* Swiss Federal Institute of Technology Zurich and University of Zurich.

Carr, M., Chen M.A., & Tate J. (2000). Globalisation and Home -based Workers. Forthcoming in special issue on *Globalisation of Feminist Economics,* 6 (3):123-142.

Carstensen, F., Lott W., McMillen S., Varol H., & Zhu J. (2001). *The Impact of Lodging-Based Tourism on The Connecticut Economy: A Dynamic Impact Analysis.* CCEA University of Connecticut.

Centraal Bureau Juridische Zaken Aruba, CBJZA (1993). *Afkondigingblad van Aruba, Landsverordening toelating en uitzetting.*

Centraal Bureau voor de Statistiek Curaçao, CBS (1983). Senso 1981 Census. Tweede Algemene Volks- en Woningtelling Nederlandse Antillen: toestand per 1 februari 1981. Serie B Publikatie nr. 1 Geselecteerde tabellen.

Central Bureau of Statistics Aruba, CBS (1996). *Labor Force Survey Aruba, October-November 1994*. Central Bureau of Statistics Aruba.
Central Bureau of Statistics Aruba, CBS (2000). *Fourth Population and Housing Census, Aruba. The People of Aruba, Continuity and Change. Census 2000.* Statistics for progress.
Central Bureau of Statistics Aruba, CBS (2003). *Current Developments of Aruba's Labor Market.*
Directie Openbare Orde en Veiligheid, DOOV (1999). *Jaarverslag 1998. DOOV Aruba.*
Directie Openbare Orde en Veiligheid, DOOV (2000). *Jaarverslag 1999. DOOV Aruba.*
Doeringer, P., & Piore M. (1971). *Internal Labor Markets and Manpower Analysis*. Lexington, Massachusetts: Heath Lexington Books
Doomernik, J., Penninx R., & Amersfoort H. van (1997). *A Migration Policy For The Future: possibilities and limitations.* Brussels: Institute for Migration and Ethnic Studies (IMES) Migration Policy Group (MPG).
Ghilarducci, T., & Lee M. (2002). *Female Dual Labor Market and Fringe Benefits.* Department of Economics University of Notre Dame.
Kontogeorgopoulos, N. (1998). Accommodation Employment patterns and Opportunities. *Annals of Tourism Research,* 25 (2):314-339.
Krakover, S. (2000). Partitioning seasonal employment in the hospitality industry. *Tourism Management,* 21:461-471.
Lauby, J., & Stark O. (1988). Individuals Migration as a Family Strategy: Young Women in the Philippines. *Population Studies,* 42 (3):473-486.
Massey, D.S., Arango J., Hugo G., Kouaouci A., Pellegrino A., & Taylor J.E. (1993). Theories of International Migration: A Review and Appraisal. *Population and Development Review,* 19 (3):431-466.
Massey, D.S., Arango J., Hugo G., Kouaouci A., Pellegrino A., & Taylor J.E. (1994). An Evaluation of International Migration Theory: The North American Case. *Population and Development Review,* 20 (4):699-751.
McKee, D.L., & Tisdell C.A. (1988). The Developmental Implications of Migration From and Between Small Island Nations. *Regional Science,* 26 (4):417-425.
Mead, L.M. (1992). *Dual Labor Market Theory.* Smart Library on Urban Poverty.
Morokvasic, M. (1984). Birds of Passage are also Women… *International Migration Review,* 18 (4):886-907.
Pantin, D.A. (1999). The challenge of sustainable development in small island developing states: case study on tourism in the Caribbean. *Natural Resources Forum,* 23:221-233.
Piore, M. (1973). Fragments of a "Sociological" Theory of Wages. *American Economic Review, American Economic Association*, 63 (2):377-84.
Piore, M. (1979). *Birds of Passage: Migrant Labor and Industrial Societies.* Cambridge: Cambridge University Press
Salt, J. (1992). The Future of International Labor Migration. *International Migration Review,* 26 (4):1077-1111.
Samuel, J., Martin P.L., & Taylor J.E. (1995). *The jobs and effects of migrant workers In northern America – Three essays.* ILO Employment Department. International Labour Office Geneva.
Schoeni, R.F. (1998). Labor Market Outcomes of Immigrant in the United States: 1970 to 1990. *International Migration Review,* 32 (1):57-77.
Scott, A. (1992). Low-wage workers in a high-technology manufacturing complex: the southern Californian electronics assembly industry. *Urban Studies,* 29:1231-46.

Straubhaar, T. (1986). The causes of International Labor Migrations: A Demand-Determined Approach. *International Migration Review,* 20 (4):835-855.
Thomas-Hope, E.M. (1992). Explanation in Caribbean Migration. Perception and the Image: Jamaica, Barbados, St Vincent. *Warwick University Caribbean Studies.*
Wilkinson, P.F. (1989). Strategies for tourism in island microstates. *Annals of Tourism Research,* 16:153-177.
Wilson, K.L., & Portes A. (1980). Immigrant Enclaves: An Analysis of the Labor Market Experiences of Cubans in Miami. *The American Journal of Sociology,* 86 (2):295-319.

Acknowledgements
Haime Croes is grateful to Unesco Aruba for financing the data entry work of the migrants' variables from 1997 to 2002.

6 Gender and chain migration: The case of Aruba

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Abstract
In this contribution we analyse chain migration in the form of family reunification and family formation in relation to the economic, social and legal position of the pioneer labour migrants on Aruba. Immigration policies of developed countries provide differential rights, including the entitlement to family reunification and formation, to migrants according to their apparent utility to the national economy. Aruba is no exception to this rule. The country has created a dual labour market with a high level of gender segregation for its large number of labour migrants. The results of the analyses show that the probability of chain migration depends on the duration of stay, the sector of employment, the level of the job and the country of origin. Women migrants have a disadvantaged position with respect to each of these determinants. On top of that there is a separate gender effect for married pioneer migrants, making family reunification even less probable for women. For unmarried migrants the results are very different. A high job level leads to less chain migration among these migrants, in particular among women migrants. This indicates a different migration perspective for the better skilled migrants without family ties in the country of origin.

6.1 Introduction

The traditional economic base of Aruba consists of three branches: the oil-industry, financial services, and tourism. When the oil refinery on the island closed down in 1985, tourism was chosen as the means for economic expansion, and with success (CBS-Aruba, 2002). The present GDP per capita in Aruba (US$ 19,232) is comparable to that of West-European countries (CBS-Aruba, 2002). The expansion of the tourist sector in Aruba has led to a strong demand for workers in various sectors of the economy that could not be met by the local labour market. Employers recruited labour migrants not only for elementary jobs, but also for skilled jobs. Migration added substantially to the 1990 population of 60,000 so that it reached 91,000 in the year 2000 (CBS-Aruba, 2002). Since 1988, net migration has been positive; it showed an average level of close to 2,000 per year until 1997, after which time net migration dropped to around 500 per year as a result of increased emigration (CBS-Aruba, 2004). Next to some return migration and retirement migration, most of the immigration consisted of labour migrants. The migrants form a diverse and stratified population. Highly-skilled professionals were recruited for the management of the international hotels and for the financial and legal services. Craftsmen were needed in the rapidly growing construction sector. The tourist sector and its related industries gave rise to the need for

domestic servants, gardeners and the like, many of whom work in the informal sector and most of whom are women migrants. Skills and languages differ between these types of occupations as does the bundle of rights provided to the migrants by the national government, including the entitlement to family reunification.

The conditions for family reunification or formation differ from country to country. However, according to Pflegerl (2002a), any system offering opportunities for family reunification or formation will consist of three main components: the first defines which migrants are legally entitled to bring their relatives in; the second defines which relatives may be brought in; the third component sets out all the other conditions that have to be fulfilled in order to reunite a family or import a bride. Immigration policy for family reunification or formation in Europe is more restricted than in the USA (Doomernik et al., 1997). Family reunification is related to a migrant's expected duration of stay and is restricted to spouses and children; other relatives may not be brought in. Nevertheless, chain migration does occur, although it may take time (Martin, 2001; Pflegerl, 2002a).

The admission policy of Aruba is derived from the Dutch system, which assumes a temporary stay for most migrants and restricts the opportunities for family reunification or formation to migrants who are allowed residence on a more permanent basis (Doomernik et al., 1997). Dutch nationals may bring their families to Aruba, without any legal constraint, but pioneer migrants of other nationalities need to meet a set of requirements to bring their families over. According to the Regulations for Admissions and Expulsions of Migrants of Aruba (CBJZA, 1993), a foreign pioneer migrant may bring spouse and/or children if proven to have had a valid work permit for more than 3 years, to have a stable job providing sufficient income, and to have acquired appropriate housing.

For some, family reunification may therefore be a matter of choice, since they have no trouble meeting the requirements for admission. Others will have to accumulate the legal and financial resources to meet these requirements and many will fail to meet them. The opportunities for family reunification depend on the social and economic positions of the pioneer migrant in the Aruba labour market, since these define the resources needed to meet the requirements.

The aim of this study is to gain insight into the process of chain migration based on the interaction between the statutory rights given by the system and the social and economic positions of the pioneer migrant. With respect to the social position, we consider the effects of age, marital status upon arrival, and (distance to) the country or origin. With respect to the economic position, we consider the duration of stay, the level of the job, and the sector of employment. Separate attention is paid to the gender effects of this interaction. As women migrants are often overrepresented in marginal jobs, are of different ethnicity, and have a harder time in acquiring statutory rights, their position may be triply disadvantaged. Yet at the same time it may mean upward mobility compared with the situation in the home country and a way to provide a better education for their children (Piper, 2005).

The data for this study are a sample from the applications for residence permits as registered in the uniform foreigner registration system (NAVAS) used by the Department of Foreign Affairs of Aruba. The type of application allows us to distinguish between labour migrants and family migrants. Family migrants could be linked to the pioneer migrant in the family through their surname, family position, and regular address. The method used to analyse the probability for family reunification and formation is binary logistic regression. In the next section, we report the derivation of the hypotheses from the literature on the nature of effects, after which we describe

the data in more detail. The section on results shows tables from the bivariate and multivariate analyses. We evaluate our findings in the concluding section.

6.2 Literature review

The concept of chain migration (White & Woods, 1980; Boyle et al., 1998) implies that there are primary and secondary migrants who are active and passive, leaders and followers, pioneers and colonists. The pioneer migrants make the first move from the origin area and are then followed by members of the secondary group. The primary group is traditionally dominated by young adult males, often from developing countries, in search of employment or a better standard of living, while the secondary group consists of dependents – wives, parents, children, but also siblings, cousins, neighbours, and fellow members of the community of origin.

According to Massey and colleagues (1994), Muus (1995), Pflegerl (2002a), chain migration happens because many governments accept family reunification or formation for humanitarian reasons based on the protection of family life as endorsed by law. Family reunification is the logical consequence of the humanitarian commitment adopted by various nations with respect to protecting families (Pflegerl, 2002a). However, any system offering opportunities for family reunification will consist of restrictive rules. Such systems have three main components: the first defines which migrants are legally entitled to bring their relatives in; the second defines which relatives may be brought into the receiving country; the third component sets out the other conditions that have to be fulfilled in order to reunite or form a family. The more extensive the first two components, and the less restrictive the third, the greater is the potential for family reunification or formation (Pflegerl, 2002a).

The potential for reunification is greater in the USA than in most European countries, since in the USA it is assumed that pioneer migrants are more productive if they are united with their families (Massey et al., 1994). The reunification of other relatives besides the spouse and children of the pioneer migrants is possible. However, since each relative of a pioneer migrant could in turn also bring over their families, a spiralling chain could ensue that would eventually reach most of the six billion world residents. Acknowledgement of this fact has obliged the USA to introduce a quota for most immigration categories (Massey et al., 1994). The quota system limits the number of people who can be admitted each year, and the relatives left at home must often wait for years to be admitted.

The European system is more restrictive. Foreigners are only allowed to stay for as long as their full employment can be guaranteed and they need to apply and reapply for work permits as well as residence permits. A work permit is only provided if no national citizen is available for the job concerned. The basic idea underlying this system was to facilitate the recruitment of cheap foreign workers in a flexible way while guaranteeing priority to national citizens in the labour market. At the beginning of the recruitment process in the 1960s, migrants were not entitled to bring their relatives with them; but, after a period of time, family reunification became inevitable for two reasons. First, foreign workers who had obtained long-term residence had accumulated claims to social services; second, employers were keen to keep their foreign workers, because they wished to save the costs of training their replacements (Pflegerl, 2002b). However, the system is still restricted to reunification with spouses and children, and conditions apply to prevent claims on welfare benefits.

Since Aruba is part of the Kingdom of the Netherlands, the Regulations for Admission and Expulsion of Migrants are part of the Dutch system. Family reunification or family formation with a foreign born is generally only possible if the pioneer migrant can be proven to have had a valid work permit for more than 3 years, to have a stable job providing sufficient income to support a family, and to have acquired appropriate housing (Voets et al., 1995; Penninx et al., 1994; Moors et al., 1999; Afkondigingblad van Aruba, CBJZA, 1993). Meeting the latter conditions may take more than three years. The first hypothesis is, therefore, that the probability for family reunification increases with the duration of a pioneer migrant's stay.

Acquiring a work permit more than three times in succession, a stable job, and sufficient income will depend on the pioneer migrant's type of employment. Countries like Aruba, with high immigration rates, have a dual labour market consisting of primary sectors with long term contracts and attractive pay and secondary sectors with unstable, low-paid jobs. Migrants are recruited in these secondary sectors to fill the lowest positions in the job hierarchy (Piore, 1979; Jennissen, 2003). The secondary sectors are further divided into a *formal* and an *informal* sector (Carr et al., 2000; Avirgan et al., 2005). Workers in the informal sector are employed by private persons rather than by registered firms or institutions and depend on their employer for their housing, as resident maids do, for example. Migrants in the informal sector will never meet the requirements for family reunification or formation unless they find work in the formal sector (Raghuram, 2004). The second hypothesis is, therefore, that pioneer migrants who enter the country to work in the informal sector have a very low probability of family reunification.

However, even in the formal sectors, a long-term job for migrants cannot be taken for granted. Richter (2004) documents the experience of labour migrants from Spain working in construction and manufacturing in Switzerland. The migrant jobs were only temporary, since people were hired on a project basis. In general terms, we hypothesise that the probabilities for family reunification are lower in sectors like construction and manufacturing.

On the other hand, people working in public services are often invited migrants who are offered long-term positions. This is particularly true for Aruba, a Dutch-speaking country in a predominantly Spanish-speaking world. Experts and teachers are recruited from the Netherlands and the Dutch Caribbean as long-term invited workers. Since the nationality of many of these invited pioneer labour migrants is Dutch, those working in the public services could be expected to have higher probabilities of family reunification or formation.

Migrants in professional positions may find it easier to get a stable job because they are more difficult to replace than migrants engaged in low-skilled or elementary jobs (Duany, 1992; Espenshade, 1999). We hypothesise that white-collar workers have a higher probability for family reunification or formation than blue-collar workers do.

Migration studies have traditionally conceptualized pioneer migration as the experience of men, assuming women to be the tied movers who join their husbands in the process (Ortiz, 1996). The recent literature (Kofman, 2004; Bailey & Boyle, 2004) has questioned this assumption, since women are increasingly the pioneer migrants supporting their family in the home country or using migration to gain independence as a single person (Raghuram, 2004). Most studies report that the labour market implications of long-distance migration differ between married women and married men (Boyle et al., 2003).

The migration of unskilled women from the Dominican Republic to the USA involves women migrants who have opted for migration as an avenue for survival; they gain independence and work to support their families, because in the United States migrant women encounter fewer barriers working outside the home than they do in their country of origin (Grasmuck &

Pessar, 1991). The same can be said of Puerto Rican female migrants to the USA. According to Ortiz (1996), women use migration to gain independence as single women and mothers, since unmarried women are more likely to migrate from Puerto Rico than married women. This effect might be stronger for highly-skilled women. For instance, Ho (2006) reports that highly-skilled women migrating to Austria tend to experience migration differently from men and that women are either single or moving alone. This finding leads to the hypothesis that women, highly-skilled women in particular show a lower probability for family reunification than do men in the same position.

In addition, the literature about migration from Asian countries such as Malaysia and the Philippines shows that the socio-cultural values in these countries encourage joint migration, where women are expected to follow their husbands (Lauby et al., 1988; Chattopadhyay, 1997; Heering et al., 2004). Separation from one's family may be more of a problem if the distance to the home country is great and the opportunities to visit one's family are restricted by time and money budgets. We hypothesise that pioneer migrants from distant countries have higher probabilities of family reunification or formation than pioneer migrants from the Caribbean or Latin American countries have.

The conclusion from this review of the literature is that family reunification or formation is not just a matter of choice on the part of the pioneer migrant. In the system of European immigration policies in particular, pioneer migrants have to meet strict requirements to bring their families over. The extent to which they are able to meet these requirements depends on the social and economic positions that migrants acquire in the labour market. We have identified indicators of these positions that might help explain the variation in family reunification by pioneer migrants. We hypothesise that the duration of stay, the level of the job, and the sector of employment are strong indicators of the probabilities of family reunification or formation. Although the literature on the gender effect is inconclusive, there is evidence that the probabilities women pioneer migrants have for family reunification and formation are lower than for men. This might be caused by women's weaker position in the dual labour market, but could also be a result of the different perspective of women on international migration, which is aimed more at independence. If that is indeed the case, then unmarried women with a strong position in the labour market should also be less inclined to engage in family reunification and formation.

6.3 Data and Method

The data used in this study have been derived from the petitions for residence permits in the registration system of the Department of Immigration and Naturalization of Aruba (DOOV Aruba Jaarverslag 1998;1999). The admission policy is based on the Regulations for Admissions and Expulsions of Migrants of Aruba (CBJZA, 1993). These give the inhabitants of the Dutch Kingdom a preferred status when they want to reside in a territory of the Dutch Kingdom. No restrictions are placed on Dutch citizens immigrating into Aruba; but for foreign citizens, Aruba operates a restricted immigration policy. Residence permits are issued only in accordance with international treaties and for family reunification or formation. The migration law draws a distinction between short-stay foreign workers who have a contract for less than one year and long-stay foreign workers with a contract for at least 3 years. A permanent residence and work permit is issued to a labour migrant who is at least 18 years old and has resided in the Dutch Kingdom for at least five years with a temporary permit. Nevertheless, every labour migrant has

to renew the residence and work permit annually. We can therefore derive from the register the number of renewals as an indicator of the duration of stay on the island.

From the register with petitions for the years 1997-2002, we took a 10 percent sample of 7,800 persons who could be classified as labour migrants on the basis of their petition for a work permit. A migrant's register record contains the last name, address, birth date, gender, marital status, employer, occupation, permit type, number of renewals, permit requests, and permit approvals. Using the last name and address, we selected the relatives from the register who shared the same name and address and had obtained a permit for family reunification. The information on these persons was added to the record of the pioneer migrant, deleting the identification variables. As with any cross-section, this procedure introduces some bias. Migrants with a longer stay have a higher probability of being selected in the sample. Since family reunification also depends on the duration of stay, this is also pertinent and would lead to biased estimates. To alleviate this problem we included the duration of stay in our multivariate analyses.

The industries and business activities of the migrant's employer is classified using the International Standard Industrial Classification of economic activities (ISIC-third revision). The 17 categories are: agriculture (A), hunting, forestry, and fishing (B), mining and quarrying (C), manufacturing (D), electricity, gas, and water supply (E), construction (F), wholesale and retail trade and personal and household goods (G), hotels & restaurants (H), transport, storage, and communications (I), financial intermediation (J), real estate activities (K), public administration (L), education (M), health and social work (N), community, social and personal services (O), other services (P), and extra territorial organizations and bodies (Q).

The economic activity categories have been reduced to six sectors since some of them have very few cases. The six economic sectors are defined as:

1. Manufacturing & transport (A, B, D, E, and I),
2. Construction (F),
3. Hotels & restaurants (H),
4. Trade & finance (G, K, and J),
5. Public services (C, L, M, O, N, and Q),
6. Other services (P).

The services provided in the sector *Other services* are activities such as cleaning, gardening, housekeeping, baby-sitting, waste removal, and so forth. In this study, this sector is subdivided into formal and informal sectors. Migrants in the formal sector are recruited by companies or firms, work on a labour contract, and need a work permit. In the informal sector, migrants are hired by private persons on a private contract that also includes the worker's accommodation. These migrants are classified in the register as living-in and are not eligible for social services or independent housing.

The jobs of the labour migrants can be classified by the International Standard Classification of Occupation (ISCO- 88). The ISCO distinguishes 10 categories:

1. Legislators, managers,
2. Professionals,
3. Technicians,
4. Clerks,
5. Service workers,
6. Skilled agricultures,
7. Craftsmen,
8. Plant and machine workers,
9. Elementary occupations,
10. Armed forces.

In this study, the occupations of the recruited migrants are classified as white-collar jobs (legislators and managers, professionals, technicians, and clerks) and blue-collar jobs (service workers, skilled agricultures, craftsmen, plant and machine workers, and elementary jobs). The nationalities of the pioneer migrants have been grouped and classified into North America (Canada and USA), Latin America (Venezuela, Colombia, Brazil, Argentina, Peru, Mexico, and Costa Rica), Europe (the Netherlands, Germany, Great Britain, and Spain), Asia (The Philippines, India, and China), Dutch Caribbean (Suriname and the Netherlands Antilles), and Caribbean (Dominican Republic, Cuba, Jamaica, and Haiti).

The method used was a bivariate analysis and a multivariate analysis with logistic regression. In the bivariate analysis, a cross tabulation between sectors and the family status of the labour pioneer migrants (unaccompanied or accompanied by family) was analysed. The logistic regression predicts the probability of being a pioneer labour migrant accompanied by family (versus an unaccompanied pioneer migrant) as the categorical dependent variable. The independent variables in the multinomial logistic regression are sector of employment, gender, country of origin, marital status, age, and job level. On the basis of the literature we chose the common labour migrant group as a reference category. The reference group is the young, single, male pioneer labour migrant recruited by the formal 'other services' sector from the Caribbean countries for blue-collar jobs.

6.4 Results

6.4.1 Bivariate results

Table 6.1 shows the cross tabulation between the sectors of employment and the family status of the pioneer labour migrants (unaccompanied or accompanied by family) by gender. The gender segregation turns out to be high. More than 2,000 of the 3,250 women in the sample work in the other services sector, with 1,565 of them working in the informal sector. Men are rarely employed in the informal sector. The technical sectors (manufacturing and construction) employ men almost exclusively.

The variation in the percentage accompanied by their families is wide. The table shows that about 27.2 percent of the male pioneer migrants bring their family over. The male migrants recruited by the public services have the largest share of family reunification or formation (40.7 percent). Many male pioneer migrants in the public services are invited labour migrants and are offered long-term positions. Some of the invited pioneer migrants have Dutch nationality; they can bring their families over without restrictions.

The sectors of trade (34.8 percent) and hotels & restaurants (33.6 percent) have recruited a substantial number of male pioneer migrants who have engaged in family reunification or formation. Male migrants recruited by the sectors of construction and manufacturing have a large share of solo pioneer labour migrants: 80.8 percent and 76.3 percent respectively. These figures are in line with the hypothesis that many of the jobs in these sectors are on a temporary basis, and therefore reduce the chances of family reunification or formation. The lowest share of family reunification is found among the small group of male pioneer migrants working in the informal 'other services' sector.

Female labour migrants show a strikingly lower share of family reunification and formation than do males (12.6 percent versus 27.2). To a large extent, this difference may be the effect of the sector of employment. Nearly half the female migrants work in the informal 'other services' sector

Table 6.1 | Sector by state of pioneer labour migrants

Gender	Sector		Unaccompanied	Accompanied by family	Total
Male	Manufacturing	Count	287	89	376
		%	76.3	23.7	100.0
	Construction	Count	978	233	1211
		%	80.8	19.2	100.0
	Hotels & Restaurants	Count	450	228	678
		%	66.4	33.6	100.0
	Public services	Count	204	140	344
		%	59.3	40.7	100.0
	Trade	Count	470	251	721
		%	65.2	34.8	100.0
	Other services- formal	Count	594	184	778
		%	76.3	23.7	100.0
	Other services-informal	Count	41	4	45
		%	91.1	8.9	100.0
	Total	Count	3024	1129	4153
		%	72.8	27.2	100.0
Female	Manufacturing	Count	13	4	17
		%	76.5	23.5	100.0
	Construction	Count	18	3	21
		%	85.7	14.3	100.0
	Hotels & Restaurants	Count	459	108	567
		%	81.0	19.0	100.0
	Public services	Count	170	42	212
		%	80.2	19.8	100.0
	Trade	Count	224	73	297
		%	75.4	24.6	100.0
	Other services- formal	Count	466	105	571
		%	81.6	18.4	100.0
	Other services-informal	Count	1491	74	1565
		%	95.3	4.7	100.0
	Total	Count	2841	409	3250
		%	87.4	12.6	100.0

Source: DINA-Aruba

(for male migrants this share is close to 1 percent) in which the opportunities for reunification are very limited (Raghuram, 2004). However, the share of pioneer migrants accompanied by their families is also lower in the other sectors, including the public services, in which only 20 percent of the female migrants are accompanied by their families. This smaller share raises the question whether female migrants are a different group in terms of marital status, job level and so forth or whether females have a different experience in international migration. We return to this issue in discussing the multivariate analysis.

A cross tabulation between nationality by sort of family reunification by gender is shown in Table 6.2 to show the sort of family reunification associated with each of the different groups. Many of the male migrants are from North America and Europe (one out of three). Among the

female migrants this is only one out of four. In this study, family reunification is divided into four categories: first, single pioneer migrants; second, single pioneer migrants with children; third, pioneer migrants with spouse; fourth, pioneer migrants with spouse and children. Table 6.2 shows that the group of male pioneer migrants with spouse and children is the most common sort of family reunification (11.8 percent). The group of male pioneer migrants with spouse (couple) is the second largest group of family reunification (10.6 percent).

These percentages confirm the views expressed in migration studies that conceptualized pioneer migration in traditional terms as the experience of men, assuming women to be the tied movers who join their husband in the process (Ortiz, 1996). The results also show that male pioneer migrants from long-distance origins such as Asia, Europe, and North America have the largest share of family reunification with both spouses and children. These results support the hypothesis that a long-distance migration encourages joint migration or rapid reunification, either because the opportunities to visit one's family are restricted by time and money budgets,

Table 6.2 | Nationality by sort of family reunification by gender

Gender	Nationality		Single	Single with children	Couple	Spouse and children	Total
Male	North America	Count	191	13	52	42	298
		%	64.1	4.4	17.4	14.1	100.0
	Europe	Count	705	66	213	203	1187
		%	59.4	5.6	17.9	17.1	100.0
	Dutch Caribbean	Count	54	5	9	11	79
		%	68.4	6.3	11.4	13.9	100.0
	Asia	Count	251	15	46	66	378
		%	66.4	4.0	12.2	17.5	100.0
	Latin America	Count	1482	115	106	174	1877
		%	79.0	6.1	5.6	9.3	100.0
	Caribbean	Count	490	22	38	23	573
		%	85.5	3.8	6.6	4.0	100.0
	Total	Count	3173	236	464	519	4392
		%	72.2	5.4	10.6	11.8	100.0
Female	North America	Count	61	5	5	4	75
		%	81.3	6.7	6.7	5.3	100.0
	Europe	Count	572	82	50	34	738
		%	77.5	11.1	6.8	4.6	100.0
	Dutch Caribbean	Count	40	6	2	4	52
		%	76.9	11.5	3.8	7.7	100.0
	Asia	Count	110	7	12	7	136
		%	80.9	5.1	8.8	5.1	100.0
	Latin America	Count	1481	128	38	19	1666
		%	88.9	7.7	2.3	1.1	100.0
	Caribbean	Count	716	25	11	7	759
		%	94.3	3.3	1.4	0.9	100.0
	Total	Count	2980	253	118	75	3426
		%	87.0	7.4	3.4	2.2	100.0

Source: DINA-Aruba

or because in Asian values women are expected to follow their husbands (Lauby et al., 1988; Chattopadhyay, 1997; Heering et al., 2004).

While for the male pioneer migrants the categories of pioneer migrants with spouse and children and pioneer migrants with spouse (couple) are the two largest groups of family reunification, for the female pioneer migrants the category of single pioneer migrants with children predominates (7.4 percent). This result provides a further indication that female migrants either form different groups in terms of marital status and job level or participate in international migration for other motives (to gain independence as a single woman and mother, for example) or their opportunities to form other sorts of family reunification are limited (Ortiz, 1996). With the exception of those coming from the Caribbean, women from every other origin are more inclined or enabled than men to bring their children over and less inclined or enabled to bring their spouses over.

The above results confirm that the sector of employment, the distance to the home country, and gender are strong indicators of the probabilities for family reunification. The literature review has also identified other social and economic indicators such as the level of the job, the marital status, age, and duration of stay as important indicators. A multivariate analysis was carried out to identify the relative contribution of each factor in the explanation of the probability of family reunification and formation.

6.4.2 The multivariate results

The logistic regression in Table 6.3 shows the effects of the independent variables: (distance to) the country of origin, the sector of employment, a combination variable (gender and marital status at the time of arrival), the level of the job, the duration of stay, and age on the dependent variable, the logarithm of the odds for family reunification. The B parameters are the regression coefficients: a positive value of B indicates the higher odds that the pioneer migrants bring their families to the island; negative parameters signify the opposite. The parameters display the log odds with respect to the reference group. For example, the parameter for North America shows the log odds for the North American pioneer migrants for family reunification or formation as opposed to a Caribbean migrant's possibilities of family reunification. The Exp(B) is the odds ratio. For instance, the ratio of 2.637 for North America indicates that a North American is 2.637 times more prone to family reunification than a Caribbean. The reference group is the young, single, male pioneer migrants recruited by the formal other services sector for the blue-collar jobs from the Caribbean countries.

The odds for family reunification of this group are reflected in the constant of the model. The value of the constant (ExpB= 0.029) shows that the odds for the family reunification and formation of the reference group are very low indeed. For every hundred solo migrants, only three have brought their families over to the island. The odds are even lower, however, for migrants working in the informal 'other services' sector or in construction or manufacturing. Only those recruited by the public services have significantly higher odds. These results are in line with the hypotheses we formulated on the basis of the literature. In the informal 'other services' sector, which is dominated by female migrants as the bivariate results show, the system of requirements renders family reunification or formation nearly impossible for both men and women. In construction and manufacturing, dominated by male migrants, many jobs are on a project basis and render temporary contracts that fail to meet the requirements for bringing one's family over. The public services sector provides more stable jobs and therefore enhances the odds for family reunification and formation.

Table 6.3 | Logistic regression model with main effects and interaction effects: dependent variable = probability for family reunification.

	B		Std. Error	Sig	Exp(B)
Constant	-3.547	*	0.176	0.000	0.029
Sectors (*ref.='other' services-formal)*					
Manufacturing	-0.457	*	0.168	0.007	0.633
Construction	-0.636	*	0.125	0.000	0.530
Hotels & Restaurants	0.035		0.112	0.757	1.035
Public Services	0.472	*	0.153	0.002	1.603
Trade	0.041		0.123	0.737	1.042
Other Services-Informal	-0.745	*	0.163	0.000	0.475
Country of origin *(*ref.= Caribbean)					
North America	0.970	*	0.197	0.000	2.637
Europe	0.964	*	0.132	0.000	2.622
Dutch Caribbean	1.019	*	0.270	0.000	2.771
Asia	0.721	*	0.169	0.000	2.058
South America	0.342	*	0.125	0.006	1.408
Marital status & gender (*ref.= Single man)*					
Married woman	2.005	*	0.142	0.000	7.428
Married man	2.638	*	0.115	0.000	13.990
Single woman	0.343	*	0.142	0.015	1.410
Job level (ref.=low job levels)					
White-collar job	-0.380		0.253	0.134	0.684
Interaction effect (*ref.=blue-collar, single man)*					
White-collar job by married woman	0.526		0.330	0.112	1.692
White-collar job by married man	0.818	*	0.273	0.003	2.267
White-collar job by single woman	-1.015	*	0.457	0.026	0.362
Age at arrival (*ref.=15-30)*					
31-40	-0.352	*	0.083	0.000	0.703
<40	-0.713	*	0.103	0.000	0.490
Frequencies Permit	0.159	*	0.015	0.000	1.173

* significant at p=<0.05

This explanation is only partial, however. The country of origin shows parameters of a higher magnitude than does the sector of employment. Geographical distance is important, since migrants from more distant origins in particular Asia, Europe, and North America have far higher odds. However, institutional rather than geographical distance might be more important. Migrants from the Dutch Caribbean stand out as having higher odds, even though the distance to the home country is relatively short. As explained above, however, many of the migrants from these countries will have Dutch nationality, making family formation unrestricted. Migrants from Latin America (mostly Venezuela and Colombia) have higher odds than migrants from the Caribbean even though the geographical distance might be the same. It would seem that people coming from the non-Dutch Caribbean Islands take up a different position in Aruba's society, regardless of their sector of employment or their skills.

In the section on the bivariate analyses, the question addressed is whether gender has a separate effect apart from marital status and job level. On the basis of the findings of Ortiz (1996) and Ho (2006), we hypothesised that highly-skilled single women in particular would be much less inclined to family formation than would their male counterparts. To test this hypothesis we combined marital status on arrival on the island with gender into one variable and included an interaction effect with skills. The results are remarkable.

Among the migrants in blue-collar jobs married men have odds nearly twice those for married women (13.99/7.43=1.88). Having a white-collar job hardly raises the odds for a married woman: the extra effect is 0.684*1.692=1.16; none of the parameters is significant. Among the married men, having a white-collar job does raise the odds: the effect is 0.684*2.267=1.55. For the migrants who are married on arrival, the general conclusion drawn therefore is that men engage in family reunification far more than women, in particular the men who have a white-collar job. The triple disadvantage for women: working in the informal sector, coming from less developed countries in the vicinity, and having an elementary job does operate. The negative effects on family reunification are exacerbated by the mere fact that they are women, at least among the ones that are married.

For those arriving as singles, however, the effects are different. Single women in blue-collar jobs have higher rather than lower odds than the single men do (1.41). It can be deduced from the bivariate analysis that this effect refers to bringing in children rather than spouses or families. Single women in white-collar jobs on the other hand have far lower odds than men in the same position. The effect is 1.41*0.684*0.362= 0.42: thus, the single women's odds are less than half those of the men. The perspective on migration seems to be different for this group and more independent of the country of origin.

The effect of age is in the expected direction, meaning that the older the migrant, the lower the odds of bringing over families. The frequency of the permits indicates the duration of stay, ranging from one to ten years, and has a strong positive effect on the odds of family reunification and formation.

6.5 Conclusions

The result of the analyses show that chain migration in the form of family reunification and formation indeed depends on both the economic and the social positions of the pioneer migrants. The rapid growth of the tourist industry on Aruba has created an influx of labour migrants to fill the job vacancies that could not be met in the local labour market. Gender segregation is very prominent in the migrant labour market. Women migrants are recruited by the service sectors in particular and half the women migrants have a job in the informal sector. Men are recruited in a diversity of sectors, but are clearly overrepresented in the manufacturing and construction industries. Very few men are employed in the informal sector.

Since the options for family reunification and formation in the European immigration policy system are highly dependent on migrants having a stable job that provides sufficient income to support a family and having acquired appropriate housing, the economic position of a migrant will be crucial in the process. The question arises whether the gender differentials in family reunification and formation (whereby one in four of the male migrants bring their families over as opposed to only one in eight of the female migrants) should be ascribed to the economic position of the pioneer migrants. The review of the literature showed that working in the informal sector

blocks the opportunity for family reunification almost completely, confirming that women have a weaker position. However, many jobs in the formal sectors, in particular in technical sectors such as manufacturing and construction, are also temporary, since much of the work is on a project basis. The findings also indicate that highly-skilled migrants have more opportunities to bring their families over; they are better paid and have longer contracts and, moreover, they are less easily replaced.

Apart from a migrant's economic position, other aspects are involved in the process. It is evident that single people will engage less in bringing their families over than will people who were married at the moment of arrival in the host country. Distance to the home country was also deemed important, since visits to relatives are more demanding in terms of time and money budgets if one has to travel far; moreover, people from different countries differ in their cultural values with respect to family life. It was expected that Asian migrants in particular would be accompanied by their families on the basis of cultural values and that migrants from the Caribbean and Latin America would engage less in family reunification and formation. The evidence shows that distance only provides part of the explanation. Migrants from prosperous countries seem to have a higher probability of reunification and formation than do migrants from poor countries.

The literature also suggests that the perspective and experience of women in international migration is different from those of men. A strive for independence might select women migrants who are less bound by the family structures in their home countries.

From the multivariate analysis it has become clear that the variation in economic position is indeed crucial in the process of family reunification and formation. Working in the informal sector or in construction has a very negative effect on the chances of bringing a family over. However, economic position does not account for the gender differentials, since separate gender effects could be identified. Married men are twice as likely as married women to bring their families over, particularly the men who are in jobs that require better skills. Again, among the people with better skills who arrive as singles, men are more than twice as likely as women to engage in family formation. A different interpretation could, however, be put forward for both groups of women. For those women who are married, their lower chances could indicate a weaker social position. For the highly skilled single women, a preference to remain independent seems a more plausible explanation.

At this point, a weakness in the analyses becomes apparent. Since the data pertain to registered chain migration, it is impossible to decide whether the low chances of reunification arise from constraints or from the preferences of the pioneer migrants. Additional research collecting data on motives and perspectives could clarify this point, but would be beyond the scope of this contribution.

Another weakness is that the interpretation of the length-of-stay variable is less than straightforward. The number of permits was included to correct for sample selection, since migrants with a longer stay had a greater chance of being included. At the same time, the duration of stay is an indicator of how stable a migrant's economic position on the island is.

Nevertheless, the research can confidently be claimed to contribute to our understanding, since it has been made clear that a weak economic and social position hampers the rights to family reunification and formation of those involved. These rights are clearly shown to be most restricted in the informal sector of the labour market, a finding which concurs with dual labour market theory. However, low levels of reunification also occur in the formal sectors. Further study would also be worthwhile of the effects of the country of origin on the chances of reunification,

since it seems that people from poorer countries have lower chances of reunification. Our analyses confirm the notion that international migration is a different experience for women than it is for men. In the case of Aruba, nearly half the pioneer migrants are women, rendering obsolete the traditional idea of men as the pioneer migrants and women the tied movers. The fact that the female pioneer migrants fill the lowest positions in the dual labour market does not fully account for their lower chances of bring their families over. Women may face more (implicit) restrictions than men do in bringing their families over. It could also be the case that these women who participate in migration are less firmly tied to family structures in their home country.

References

Avirgan, T., Bivens L.J., & Gammage S.L. (2005). *Good Jobs, Bad Jobs, No Jobs Labor Market and Informal Work in Egypt, El Salvador, India, Russia, and South Africa*. Washington: Global Policy Network. Economic Policy Institute.

Bailey, A., & Boyle P. (2004). Untying and Retying Family Migration in the New Europe. *Journal of Ethnic and Migration Studies*, 30:229-41.

Boyle, P., Halfacree K., & Robinson V. (1998). *Exploring Contemporary Migration.* New York: Addison Wesley Longman Ltd.

Boyle, P., Cooke T., Halfacree K., & Smith D. (2003). The effect of long-distance familymigration and motherhood on partnered women's labour-market activity rates in Great Britain and the USA. *Environment and Planning A,* 35:2097-2114.

Carr, M., Chen M.A., & Tate J. (2000). Globalisation and Home-based Workers. Forthcoming in special issue on Globalisation of Feminist Economics, 6:123-142.

Centraal Bureau Juridische Zaken Aruba, CBJZA (1993). *Afkondigingblad van Aruba, Landsverordening toelating en uitzetting.*

Central Bureau of Statistics Aruba, CBS (2002). *Fourth Population and Housing Census, Aruba. The People of Aruba, Continuity and Change. Census 2000*. Statistics for progress.

Central Bureau of Statistics Aruba, CBS (2004). *Statistical Yearbook, Year 2003*. Central Bureau of Statistics Aruba, Statistics for progress.

Chattopadhyay, A. (1997). Family Migration and the Economic Status of Woman in Malaysia. *International Migration Review,* 31:338-52.

Directie Openbare Orde en Veiligheid, DOOV (1999). *Jaarverslag 1998*. DOOV Aruba.

Directie Openbare Orde en Veiligheid, DOOV (2000). *Jaarverslag 1999*. DOOV Aruba.

Doomernik, J., Penninx R., & Amersfoort H. van (1997). *A Migration Policy for the Future: Possibilities and Limitations*. Brussels: Migration Policy Group.

Duany, J. (1992). Caribbean Migration to Puerto Rico: A Comparison of Cubans and Dominicans. *International Migration Review,* 26:46-66.

Espenshade, T.J. (1999). High-end immigrants and the shortage of skilled labor. *Office of Population Research Working Paper,* 65:2-10.

Grasmuck, S., & Pessar P.R. (1991). *Between Two Islands: Dominican International Migration.* Berkeley: University of California Press.

Heering, L., van der Erf R., & van Wissen L. (2004). The Role of Family Networks and Migration Culture in the Continuation of Moroccan Emigration: A Gender Perspective. *Journal of Ethnic and Migration Studies,* 30:323-37.

Ho, C. (2006). Migration as Féminisation? Chinese Women's Experiences of Work and Family in Australia. *Journal of Ethnic and Migration Studies,* 32:497-514.

Jennissen, R. (2003). Economic Determinants of Net International Migration in Western Europe. *European Journal of Population,* 19:171-98.
Kofman, E. (2004). Family-Related Migration: A Critical Review of European Studies. *Journal of Ethnic and Migration Studies,* 30:243-62.
Lauby, J., & Stark O. (1988). Individuals Migration as a Family Strategy: Young Women in the Philippines. *Population Studies,* 42:473-86.
Martin, S.F. (2001). Global migration trends and asylum. *The Journal of Humanitarian Assistance.* New Issues in Refugee Research, 41:1-13.
Massey, D.S., Arango J., Hugo G., Kouaouci A., Pellegrino A., & Taylor J.E. (1994). An Evaluation of International Migration Theory: The North American Case. *Population and Development Review,* 20:699-751.
Moors, H., van Dam E., & Esvelt I. (1999). Attitudes Towards Foreigners Admissions andMinority Policy of the Netherlands. Demos August 1999. *Netherlands Interdisciplinary Demographic Institute* (special issue), 15:1-6
Muus, P. (1995). *De wereld in beweging; Internationale migratie, mensenrechten en ontwikkeling.* Utrecht: Uitgeverij Jan van Arkel.
Ortiz, V. (1996). Migration and Marriage among Puerto Rican Women. *International Migration Review,* 30:460-84.
Penninx, R., Schoorl J., & van Praag C. (1994). *The Impact of International Migration onReceiving Countries: The case of the Netherlands*. Netherlands Interdisciplinary Demographic Institute. Report nr. 37.
Piper, N. (2005). Gender and migration. A paper prepared for the Policy Analysis and Research Programme of the Global Commission on International Migration, September 2005. *Global Commission on International Migration*.
Pflegerl, J. (2002a). Family and Migration. Research Developments in Europe: A General Overview. *Österreichisches Institut für Familienforschung*, ÖIF, *Austrian Institute for Family Studies,* 21: 1-35.
Pflegerl, J. (2002b). Immigration and Family. *Österreichisches Institut für Familienforschung*, ÖIF, *Austrian Institute for Family Studies*. Annual Seminar, Helsinki, Finland, 8-10 June: 3-8.
Piore, M. (1979). *Birds of Passage: Migrant Labor and Industrial Societies.* Cambridge: Cambridge University Press.
Raghuram, P. (2004). The Difference that Skills Make: Gender, Family Migration Strategies and Regulated Labour Markets. *Journal of Ethnic and Migration Studies,* 30:303-21.
Richter, M. (2004). Conceptualizing Gender and Migration: Galician Immigration to Switzerland. *The Center for Migration Studies of New York, IMR,* 38:263-86.
Voets, S., Schoorl J., & de Bruijn B. (1995). *The Demographic consequences of International Migration.* Proceedings of the symposium, NIAS, Wassenaar, 27-29 September 1990. Netherlands Interdisciplinary Demographic Institute. Report nr. 44.
White, P., & Woods R. (1980). *The geographical impact of migration*. New York: Longman Inc.

7 Conclusion and discussion

7.1 Introduction

Small islands use tourism as a silver bullet for employment, the creation of income, and revenue for the local community. However, many authors have pointed out the drawbacks of tourism in terms of the economic and ecological vulnerability of the local community. Three aspects of economic vulnerability are identified: reliance on a single market, seasonality, and dependence on tourism as a major sector of the economy. In addition, three aspects of ecological vulnerability are identified: the increase of the road- and air-traffic movements, the increase of the population pressure, and the spatial claims of the accommodation sector. The positive and negative aspects of tourism development may well be seen as a chain of impacts.

In this study, each link of the chain of impacts is analysed for the island of Aruba. The aim of this study is to provide insight into the effects of the expansion of tourism on the economy, the labour market, and the demography of Aruba. The results of the analyses show that the chain of impacts can be characterised by three different effects, each with its own theory: the *tourist market* effects, the *economic* effects, and the demographic effects (chapter 1).

In chapters 2 and 3 of this book, the *tourist market* effects for Aruba were analysed in terms of the economic vulnerability resulting from reliance on a single major market, and from seasonality, which leads to the inefficient use of resources and the loss of profits during the off-peak periods. The research questions addressed were:

- *To what extent do the various accommodation types on the island cater for different segments of the international tourist market?*
- *To what extent do smaller hotels and local resorts show different patterns of visitors over the year and are they really less successful in achieving stable occupancy rates?*
- *Is reliance on a single geographical market inevitable and does geographical diversification help in countering seasonality?*

In chapter 4, the economic effects for the host community were analysed in addressing the following research question:

- *To what extent are the multiplier effects of the tourist sector different from the other sectors in the economy and are these differences between Aruba and the Netherlands Antilles comparable?*

In chapters 5 and 6 we took a closer look at the demographic effects as consequences of the recruitment of labour migrants and the concomitant chain migration. The research questions addressed were:

- *To what extent do the sectors of the economy and job levels determine the recruitment of labour migrants from different parts of the world?*

- *To what extent is labour migration followed by chain migration (family reunification and formation)?*

7.2 Summary of findings

7.2.1 The tourist market effect

Aruba has an accommodation portfolio that consists of a group of luxury international hotel chains combined with local hotel chains and small hotels. This accommodation portfolio is complementary in terms of market diversification and seasonality. The diversified accommodation portfolio caters for short-stay (3 to 7 nights) and long-stay (8 nights or more) tourists from North America, Europe, and Latin America. The findings reveal that short-stay tourists choose the international hotel chains and long-stay tourists choose the local and small hotels. Each type of accommodation has its own successful strategy to counter institutional seasonality by catering for multiple-market segments in terms of geographic origin and purpose of visit. A surprising result of the findings for Aruba is that, although the international hotel chains apparently have more means at their disposal to reduce seasonality, by using strategies like price reduction for tourists with different visit purposes during off-peak seasons and the exploration of a niche market of honeymooners, the local and small hotels are more successful in reducing seasonality. This result refutes the assertion reported in the literature that locally-owned hotels have limited resources for tourist marketing and would therefore be less successful in countering seasonality. The results for Aruba show that the local chains or resorts compete successfully with the international hotel chains by attracting North-American vacationers in the off-season, and have stable visiting patterns for this group throughout the year. The local resorts are also successful in attracting the European and Latin-American markets. The small hotels have a diversified market in terms of both geographical market and purpose of visit. Institutional seasonality is therefore hardly a problem for this type of accommodation.

We conclude that the diversified nature of the product-market mix of the different types of accommodation on Aruba is the key to market differentiation, which reduces the economic vulnerability and the ecological damage through involving fewer flying movements.

7.2.2 The economic effects

Small islands in the Caribbean and elsewhere provide evidence that the tourist multipliers are lower in smaller than in larger economies. Lower multipliers for the small islands are created through the weak linkages with the other sectors of the economy, and the high proportion of leakages by import of goods and services outside the economy by the international hotel chains. The evidence of the tourist development of Aruba shows that the tourist sector itself has larger output multipliers than other sectors of the economy. It is not the tourist sector as such, but the economy at large that is reliant on imports in small countries. The results are confirmed by a comparative study of Aruba and the Netherlands Antilles, which has a larger economy. A lower dependence on imports in agriculture, manufacturing, and wholesale has created larger output multipliers in the Antilles than in Aruba. Also, in the hotels & restaurants sector, the inter-industry linkages are slightly stronger than in Aruba. The indirect leakages of tourist development are consequently smaller in larger economies. Nevertheless, the total output, income, and employment multipliers are higher in Aruba than in the Antilles, in particular because of the better induced effects. These effects are directly related to the positive effect of the Aruba tourist

sector on the domestic consumption by the population. This result is not related to the size or diversity of the economy, but to the share of wages in the tourist sector and the importance of domestic consumption in the local economy. The gap between wages paid and private income spent is much smaller in Aruba. This last statement indicates that income and employment multipliers do not depend only on the inter-industry linkages, but in particular also on the way the tourist sector is organised and on the share of domestic consumption in the local economy. We therefore conclude that tourism has contributed significantly to the benefits of the local community on Aruba.

7.2.3 The demographic effects

A labour-intensive industry like tourism creates a strong demand for workers that cannot always be met by the local labour market and therefore leads to the recruitment of labour migrants. The tourist industry as a service sector is characterised by many low-level job opportunities for female workers (chapter 5). Women migrants are often overrepresented in marginal jobs, are of different ethnicity, and find it more difficult to acquire statutory rights, so their position might be triply disadvantaged (chapter 6).

Our findings for Aruba reveal that the recruitment of labour migrants takes place over the full spectrum of the labour market for different job levels, not only elementary jobs. The expansion of the tourist industry on Aruba produces a surplus demand not only in elementary jobs, but also in positions requiring technical or professional skills. The labour market for immigrants shows characteristics of a dual labour market with elementary jobs in the personal-services sector and skilled positions in the public- and business-services sectors. In Aruba, gender segregation is particularly strong between the technical sectors with predominantly male jobs and the personal and domestic service sectors with many female jobs. The results for Aruba reveal that migrants recruited in these sectors fill the lowest positions in the job hierarchy. Many work in the informal sector and have few legal rights. The options for family reunification and formation in the Aruba immigration policy system are restricted and highly dependent on the migrant's economic position. This, however, does not account for the gender differentials, since separate gender effects can be identified. Married men are twice as likely as married women to bring their families over, particularly men in jobs that require better skills. Among the people with better skills who arrive as singles, men are more than twice as likely as women to engage in family formation. A different interpretation can, however, be put forward for both groups of women. For those women who are married, their lower chances can indicate a weaker social position. For the highly-skilled single women, a preference to remain independent seems a more plausible explanation. We conclude that the perspective for men and women migrants on the local labour market is different.

7.3 General Conclusions

What are the effects of tourism on the tropical island of Aruba? The general findings of this study show that tourist development on Aruba has created a positive economic development in terms of revenue and job creation. The social aspect is that many of these job opportunities on the local labour market are filled by a large number of female migrants with few statutory rights. This last finding accounts for the increase in gender inequality. The economic vulnerability is limited. Each type of accommodation has its own successful strategy to counter institutional seasonality by catering for multiple-market segments. The strategy of the international hotel chains is to attract

visitors other than vacationers in the off-seasons. As a result, their occupancy rates are relatively stable over the year. The locally-owned types of accommodation compete successfully with the international hotel chains by attracting North- American vacationers in the off-season and have stable visiting patterns for this group throughout the year. The small hotels have a diversified market in terms of both geographical market and purpose of visit.

The effects on the local economy are traced by analysing the multipliers. The hotels & restaurants sector has stronger backward linkages to the other industries than do the other sectors, such as manufacturing, wholesale or financial and business services. Only the construction sector has stronger inter-industry linkages than the hotels & restaurants sector does. Taking into account the induced effect of tourist expenditure, it turns out that the frontline tourist sector has the largest multiplier effect in the local economy.

The household-income multiplier of the hotels & restaurants sector is larger than for any other sector. There is a large direct effect on household incomes on the island, since wages are an important input for the sector. Through the inter-industry linkages, more workers also earn wages in other sectors, because of the tourist expansion. As a result of the increased wealth, domestic consumption by private households generates an extra income effect across the local economy. There is no other sector with a potential in exporting goods and services that can generate the direct, indirect, and induced effects of the tourist sector. The employment effects are also higher for the hotels & restaurants sector than for any other sector in the economy.

The effects of the employment multipliers create a strong demand for workers that cannot always be met by the local labour market, thereby leading to the recruitment of labour migrants. These are recruited from different parts of the world. The total population on the island of Aruba has grown significantly. Currently, four out of every ten people in the workforce is foreign-born. The labour market for immigrants shows characteristics of a segmented labour market with elementary jobs in the personal service sector and skilled positions in the public- and business-services sectors. In Aruba, gender segregation is traditionally strong between the technical sectors (with predominantly male jobs) and the personal and domestic service sectors (with many female jobs). Aruba, like any European country, has a restricted admission policy that allows people in for limited periods to fill skills gaps and the limited entry of others (usually unskilled) in the labour market, with limited rights of family reunification and obtaining citizenship or permanent settlement. This policy affects men and women differently. In addition, women tend to have fewer entitlements as a result of their different entry status; they are often overrepresented in marginal jobs, are of different ethnicity, and so their position is triply disadvantaged. The empirical evidence shows that economic growth leads to greater social inequalities.

7.4 Discussion and reflection

7.4.1 Future development

The future development of Aruba depends on the direction of the tourism sector in the economy. The first possible direction is uncontrolled growth and the second is managed growth.

The first option implies that further expansion of the accommodation sector leads to the over-supply of accommodation with the outcome that affluent tourists move elsewhere and Aruba becomes a mass tourism destination. There is currently a debate about the establishment of new accommodations on the south coast of Aruba. New accommodations in the south instead of on the west coast may lead to the relocation of the existing tourist market, referred

to as a *displacement effect*. To overcome displacement and avoid inefficient use of facilities, tourist accommodations should be concentrated on new tourist markets to reduce the risks of uncontrolled growth. In addition, the uncontrolled expansion of similar accommodation types in Aruba would lead to more short-stay tourism, which would increase the number of flying movements. In a situation of full employment, uncontrolled growth would lead to shortages in the labour market and therefore to further rounds of migration.

The second option is a more compact form of growth. Managed or smart growth seeks to contain most new growth in and around the existing built-up areas. Aruba has highly-developed tourist areas, so the existing tourist market cannot be overlooked. The basic idea of managed growth involves the growth of tourism through improving the existing market and finding niche markets. Managed growth emphasises the need to balance economic growth, social impact, and environmental protection. The best method of achieving sustained growth in the existing tourist market in the long-term sustainable development of Aruba is managed growth (Briguglio et al., 1996; Ioannides & Holcomb, 2001; Sharpley, 2003; Farsari et al., 2007).

7.4.2 Contribution to the scientific research

There is currently a debate as to whether international chains are beneficial for small islands or not. Many authors point out that small, tropical tourist destinations are characterised by the dominance of the international hotel chains, which leads to a reliance on a single geographic market (Wilkinson, 1989; Albuquerque & McElroy, 1992; Grandoit, 2005). International hotel chains typically cater for short-stay package tourists to fill the hotel rooms all year round. Short-stay tourism in particular contributes to the increasing number of road- and air-traffic movements. Rodenburg (1980) has stated that the international hotel chains bring fewer benefits for the local community than do the local and small hotels.

In contrast, Jenkins (1982) claims that all three hotel types are inter-dependent and that it is precisely the large hotel chains that activate tourism development in the Third World countries by creating the conditions for the small and medium hotels to emerge. Kusluvan & Karamustafa (2001) point out that the diverse experience and established image of international hotel chains within the international tourism industry frequently lead to integration with tour operators, travel agencies, and airlines. Many tourists look for familiarity in unfamiliar environments. Through the power of this acceptable tourism image, the international hotel chains are established in the various tourist destinations. In line with Jenkins (1982) and Kusluvan & Karamustafa (2001) is Sharpley's (2003) statement that the dominance of the international hotel chains that cater for mass tourism has proven to be an effective vehicle for development.

The results from Aruba support Sharpley's (2003) statement that the accommodation portfolio is complementary in terms of market diversification and seasonality. This development contributes to market diversification with a combination of short- and long-stay tourists. With respect to seasonality, we found that each type of accommodation has its own successful strategy to counter institutional seasonality by catering for multiple market segments. Contrary to statements in the literature that small and local accommodations are routinely closed during the off-season, the results for Aruba reveal that this type of accommodation stays in business all year round. The diversified nature of the product-market mix leads to stable occupancy rates.

The empirical evidence that the international hotel chains complement the other accommodation types to the benefit of small islands is a major contribution of this study to scientific research.

Regarding the multiplier effects, researchers doubt the beneficial effects of tourism for the local community by arguing that the tourist sector is often isolated from the local economy. Tourism in the Caribbean shows limited beneficial effects, because many of the international chains import goods and services from outside the local economy (Liu & Var, 1982; Albuquerque & McElroy, 1992; WTO, 1999). It has been found that the tourist sector in small islands economies has lower multipliers.

This study tests the above statement by comparing the tourist multipliers with the multipliers of the other sectors of the economy for the island of Aruba and the Netherlands Antilles: two islands of different size. The results demonstrate that the tourist sector for each country has the highest output multiplier, making tourist expansion a viable strategy for economic growth. Tourist multipliers are lower for small islands than for larger economies. This is not specifically characteristic of the tourist sector, but applies to all sectors. Furthermore, another crucial factor in determining the effects of tourism on the prosperity of the local community is the structure of the tourist sector. High-quality tourism requires a substantial labour input, and the induced effects of the domestic spending of the wages contribute substantially to the local economy. The empirical evidence to support the argument that the tourist sector as such has high multipliers is a substantial contribution of this study to scientific research.

With respect to tourism and international migration, some studies show that a labour-intensive industry like tourism creates a strong demand for workers that cannot be met by the local labour market and leads to the recruitment of labour migrants. The tourist industry as a service sector is characterised by many low-level job opportunities for female workers (Kontogeorgopoulos, 1998). Piper (2005) hypothesises that female migrants are often overrepresented in marginal jobs, are of different ethnicity, and have more difficulty in acquiring statutory rights, so that their position might be triply disadvantaged.

Our evidence from Aruba shows that reality is more diversified than the dual-labour theory predicts. The expansion of the tourist industry on the island has created a large variety of job opportunities, ranging from elementary jobs to professional positions in all sectors of the economy. Migrants are recruited for all sorts of jobs and from many parts of the world. The results show that the binary effects of the dual-labour market theory should be extended by other forms of segmentation along the lines of gender, ethnicity, and culture (language) to account completely for the recruitment process of people of various nationalities into fast-growing economies. Furthermore, many of the job opportunities on the local labour market are filled by female migrants with few statutory rights. This situation leads to an increase in gender inequality. The empirical evidence supports Piper's assumption about gender inequality.

7.5 Final remarks

An important limitation of this research is that the results concern only the island of Aruba. It would be interesting to replicate the analyses in this contribution to compare Aruba with other islands in the Caribbean. In addition, the research period of this study did not allow ecological problems for the island of Aruba to be revealed, but an in-depth research study of this matter would be interesting. Another issue that requires attention and in-depth research is gender inequality. These two issues should be monitored to guarantee a balance of people, planet, and profit in the further development of the island of Aruba.

References

Albuquerque, K. de, & McElroy J.L. (1992). Caribbean Small-Island Tourism Styles and Sustainable Strategies. *Environmental Management,* 16 (5):619-632.

Briguglio, L., Archer B., Jafari J., & Wall G. (eds.) (1996). *Sustainable Tourism in Island and Small States: Issues and Policies*. London: Pinter.

Farsari, Y., Butler R., & Prastacos P. (2007). Sustainable tourism policy for Mediterranean destinations: issues and interrelationships. *International Journal Tourism Policy,* 1 (1):58-78.

Grandoit, J. (2005). Tourism as a Development Tool in the Caribbean and the Environmental By-products: The Stresses on Small Island Resources and Viable Remedies. *Journal of Development and Social Transformation,* 1: 89-97.

Ioannides, D., & Holcomb B. (2001). Raising the stakes: Implications of upmarket tourism policies in Cyprus and Malta. In D. Ionnides, Y. Apostolopuolo and S. Sommez (eds). *Mediterranean Islands and Sustainable Tourism Development: Practice, Management and Policies* (pp. 234-258). London: Continuum.

Jenkins, C.L. (1982). The effects of scale in Tourism Projects in Developing Countries.*Annals of Tourism Research,* 9:229-249.

Kontogeorgopoulos, N. (1998). Accommodation Employment patterns and Opportunities. *Annals of Tourism Research,* 25 (2):314-339.

Kusluvan, S., & Karamustafa K. (2001). Multinational Hotel Development in Developing Countries: an Exploratory Analysis of Critical Policy Issues. *International Journal of Tourism Research,* 3:179-197.

Liu, J., & Var T. (1982). Differential multipliers for the accommodation sector. *Tourism Management,* 3 (3):177-187.

Piper N. (2005). Gender and migration. A paper prepared for the Policy Analysis andResearch Programme of the Global Commission on International Migration, September 2005. *Global Commission on International Migration*.

Rodenburg, E. (1980). The effects of scale in economic development: Tourism inBali. *Annals of Tourism Research,* VII (2):177-196.

Sharpley, R. (2003). Tourism, Modernisation and Development on the Island of Cyprus: Challenges and Policy Responses. *Journal of Sustainable Tourism,* 11 (2&3):246-265.

Wilkinson, P. (1989). Strategies for tourism in island microstates. *Annals of Tourism Research,* 16 (2):153-177.

World Tourism Organization, WTO (1999). Addendum A, Tourism and Economic Development; Contribution of The World Tourism Organization to The Report on Tourism and Sustainable Development For The meeting. World Tourism Organization.

Appendices

A Matrix of technical coefficients for Aruba and the Netherlands Antilles 1999

Table A.1 | Technical coefficients for Aruba

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	0.03	0.01	0.00	0.00	0.02	0.00	0.00	0.00
Manufacturing	0.07	0.22	0.42	0.06	0.10	0.18	0.02	0.08
Construction	0.00	0.00	0.07	0.00	0.03	0.00	0.00	0.01
Wholesale & Retail	0.07	0.02	0.00	0.01	0.24	0.02	0.00	0.04
Hotels & Restaurants	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Transport & Communications	0.01	0.00	0.00	0.01	0.03	0.19	0.00	0.01
Financial & Business services	0.04	0.05	0.07	0.11	0.13	0.32	0.08	0.10
Public services	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01

Source: calculated on the basis of the national accounts of CBS Aruba

Table A.2 | Technical coefficients for the Netherlands Antilles

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	0.16	0.00	0.06	0.01	0.00	0.00	0.00	0.00
Manufacturing	0.19	0.11	0.22	0.15	0.22	0.05	0.08	0.15
Construction	0.00	0.00	0.04	0.00	0.01	0.00	0.00	0.00
Wholesale & Retail	0.00	0.00	0.03	0.04	0.02	0.00	0.01	0.02
Hotels and Restaurants	0.15	0.00	0.02	0.02	0.03	0.00	0.00	0.01
Transport & Communications	0.02	0.02	0.17	0.05	0.10	0.05	0.04	0.08
Financial & Business services	0.10	0.04	0.11	0.19	0.23	0.14	0.12	0.16
Public services	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.04

Source: calculated on the basis of the national accounts of CBS Netherlands Antilles

B Matrix of the Type II output multipliers for Aruba and the Netherlands Antilles 1999

Table B.1 | Type II output multipliers for Aruba

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	1,03	0,01	0,01	0,01	0,03	0,01	0,00	0,01
Manufacturing	0,17	1,34	0,73	0,20	0,42	0,53	0,11	0,39
Construction	0,00	0,01	1,08	0,01	0,04	0,02	0,01	0,02
Wholesale & Retail	0,11	0,06	0,09	1,07	0,36	0,15	0,04	0,18
Hotels & Restaurants	0,01	0,01	0,01	0,01	1,02	0,04	0,01	0,02
Transport & Communications	0,02	0,01	0,02	0,01	0,05	1,25	0,01	0,02
Financial & Business services	0,14	0,13	0,26	0,25	0,44	0,69	1,17	0,41
Public services	0,02	0,02	0,04	0,03	0,07	0,06	0,02	1,08
Total	1,49	1,58	2,23	1,59	2,44	2,76	1,36	2,14

Source: calculated on the basis of the national accounts of CBS Aruba

Table B.2 | Type II output multipliers for the Netherlands Antilles

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	1,20	0,01	0,08	0,02	0,01	0,01	0,01	0,02
Manufacturing	0,45	1,20	0,51	0,47	0,50	0,20	0,24	0,63
Construction	0,00	0,00	1,04	0,01	0,01	0,01	0,00	0,01
Wholesale & Retail	0,01	0,00	0,04	1,04	0,02	0,00	0,01	0,03
Hotels and Restaurants	0,20	0,01	0,06	0,06	1,06	0,02	0,02	0,07
Transport & Communications	0,10	0,04	0,26	0,14	0,18	1,10	0,09	0,21
Financial & Business services	0,34	0,13	0,41	0,54	0,53	0,30	1,28	0,68
Public services	0,04	0,02	0,06	0,08	0,06	0,04	0,04	1,16
Total	2,33	1,42	2,46	2,36	2,38	1,67	1,68	2,80

Source: calculated on the basis of the national accounts of CBS Netherlands Antilles

C Matrix of the Type II household-income multipliers for Aruba and the Netherlands Antilles 1999

Table C.1 | Type II household-income multipliers for Aruba

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	0,12	0,00	0,00	0,00	0,00	0,00	0,00	0,00
Manufacturing	0,01	0,10	0,05	0,01	0,03	0,04	0,01	0,03
Construction	0,00	0,00	0,24	0,00	0,01	0,00	0,00	0,00
Wholesale & Retail	0,02	0,01	0,02	0,23	0,08	0,03	0,01	0,04
Hotels & Restaurants	0,00	0,00	0,00	0,00	0,40	0,02	0,00	0,01
Transport & Communications	0,01	0,00	0,00	0,00	0,02	0,38	0,00	0,01
Financial & Business services	0,02	0,02	0,04	0,04	0,13	0,10	0,17	0,06
Public services	0,01	0,01	0,02	0,02	0,01	0,03	0,00	0,59
Total	0,19	0,14	0,38	0,31	0,69	0,61	0,19	0,73

Source: calculated on the basis of the national accounts of CBS Aruba

Table C.2 | Type II household-income multipliers for the Netherlands Antilles

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	0,11	0,00	0,01	0,00	0,00	0,00	0,00	0,00
Manufacturing	0,04	0,10	0,04	0,04	0,04	0,02	0,02	0,05
Construction	0,00	0,00	0,22	0,00	0,00	0,00	0,00	0,00
Wholesale & Retail	0,00	0,00	0,01	0,38	0,01	0,00	0,00	0,01
Hotels and Restaurants	0,05	0,00	0,01	0,02	0,27	0,00	0,00	0,02
Transport & Communications	0,02	0,01	0,04	0,02	0,03	0,18	0,01	0,04
Financial & Business services	0,06	0,02	0,07	0,09	0,09	0,05	0,22	0,12
Public services	0,02	0,01	0,04	0,05	0,04	0,02	0,02	0,75
Total	0,29	0,14	0,45	0,61	0,48	0,29	0,29	0,99

Source: calculated on the basis of the national accounts of CBS Netherlands Antilles

D Matrix of the Type II employment multipliers for Aruba and the Netherlands Antilles 1999

Table D.1 | Type II employment multipliers for Aruba

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	6,51	0,07	0,07	0,04	0,18	0,08	0,02	0,09
Manufacturing	0,39	3,16	1,71	0,47	0,98	1,24	0,25	0,91
Construction	0,10	0,13	23,35	0,18	0,94	0,38	0,14	0,42
Wholesale & Retail	1,22	0,68	1,01	12,13	4,13	1,74	0,45	2,02
Hotels & Restaurants	0,12	0,11	0,23	0,22	19,37	0,83	0,14	0,46
Transport & Communications	0,23	0,13	0,20	0,18	0,65	15,63	0,09	0,30
Financial & Business services	0,44	0,41	0,83	0,80	1,42	2,22	3,74	1,33
Public services	0,32	0,24	0,63	0,54	1,17	1,01	0,34	17,58
Total	9,32	4,93	28,03	14,55	28,83	23,15	5,17	23,09

Source: calculated on the basis of the national accounts of CBS Aruba

Table D.2 | Type II employment multipliers for the Netherlands Antilles

	Agriculture	Manufacturing	Construction	Wholesale	Hotels & Restaurants	Transport & Comm	Finan. & Buss. services	Public services
Agriculture	5,26	0,03	0,34	0,08	0,05	0,02	0,02	0,08
Manufacturing	1,04	2,80	1,20	1,10	1,17	0,47	0,55	1,47
Construction	0,06	0,06	12,34	0,06	0,15	0,07	0,03	0,14
Wholesale & Retail	0,13	0,03	0,74	20,35	0,46	0,07	0,22	0,57
Hotels and Restaurants	3,34	0,23	1,00	1,01	17,98	0,31	0,31	1,10
Transport & Communications	0,51	0,23	1,37	0,73	0,93	5,68	0,46	1,09
Financial & Business services	1,81	0,68	2,16	2,82	2,77	1,59	6,75	3,57
Public services	0,75	0,37	1,25	1,72	1,23	0,80	0,77	24,29
Total	12,90	4,43	20,39	27,86	24,74	9,01	9,12	32,31

Source: calculated on the basis of the national accounts of CBS Netherlands Antilles

Samenvatting in het Nederlands

Het Effect van Toerisme op de Economie en de Bevolking van Kleine Eilanden: een studie van Aruba

1 Inleiding

Aruba is een eiland in het Caribische gebied, dat deel uitmaakt van het Koninkrijk der Nederlanden. Vanaf 1955 waren de olieraffinaderij en het toerisme de belangrijkste bronnen van inkomen voor het eiland (CBS-Aruba, 2000; Cole & Razak, 2003).Toen de raffinaderij minder winstgevend werd, besliste de oliemaatschappij Exxon in 1985 de raffinaderij te sluiten.

Om de groei van werkloosheid onder de bevolking tegen te gaan, bleek de switch naar toerisme de meest voor de hand liggende keuze. Aruba is zeker niet het enige eiland in de wereld dat toerisme als strategie voor de economische ontwikkeling gebruikt (Albuquerque & McElroy, 1992; WTO, 2004). Toerisme biedt een van de weinige kansen voor economische diversiteit van kleine eilanden (UNEP, 1996; WTO, 2004). Deze eilanden gebruiken toerisme voor het genereren van werkgelegenheid en inkomen voor de lokale bevolking (Fletcher, 1989; Wilkinson, 1989; Prasad, 2003).

Vele auteurs hebben ook op de nadelen van toerisme voor de lokale gemeenschap gewezen in termen van economische en ecologische kwetsbaarheid (Sutton, 1999; 2001; Briguglio et al., 2000; Briguglio, 1995; 2004).

Er zijn drie mechanismen die leiden tot de economische kwetsbaarheid van kleine eilanden (Briguglio, 2004).

- De eerste is de afhankelijkheid van een eenzijdige geografische markt (Albuquerque & McElroy, 1992; Grandoit, 2005). Dit komt omdat de meeste kleine, tropische toeristenbestemmingen worden gekenmerkt door de overheersing van internationale hotelketens, die zich op één geografisch markt richten.
- De tweede is de seizoengevoeligheid, dit leidt tot het inefficiënte gebruik van middelen en verlies van winsten voor de hotelaccommodaties tijdens de periodes buiten de piek (Sutcliffe & Sinclair, 1980; Manning & Powers, 1984; Jang, 2004; Farsari et al, 2007).
- De derde en laatste is de hoge graad van economische afhankelijkheid van de toeristensector en het weglekken van toeristenbestedingen uit de lokale economie. Dit weglekken komt hoofdzakelijk door de invoer van goederen en het afvloeien van winsten naar het buitenland. (Fletcher, 1989; WTO, 2004).

De ecologische kwetsbaarheid van kleine eilanden heeft drie aspecten.

- De toename van aantal vliegbewegingen en de hoeveelheid wegverkeer die door het kortverblijf toerisme worden veroorzaakt. Vooral internationale hotelketens trekken

massatoerisme voor kortverblijf aan om de hotelkamers gedurende het hele jaar te vullen (Wilkinson, 1989; Albuquerque & McElroy, 1992; Grandoit, 2005).
- De toename van de bevolkingsdruk. De groei van het toerisme heeft geleid tot een grote vraag naar werknemers, die niet altijd op de lokale arbeidsmarkt aanwezig zijn. De rekrutering van arbeidsmigranten is hierdoor onvermijdelijk. Door zowel de arbeidsmigranten als het grote aantal toeristen neemt de bevolking van het eiland toe (Dodds, 2007).
- De ruimte-eisen van het grote aantal grote accommodaties kan tot de uitputting van de natuurlijke bronnen leiden (Albuquerque & McElroy, 1992; WTO, 1999; Grandoit, 2005).

De positieve en negatieve aspecten van de toeristische ontwikkeling kunnen als een effectketen met verschillende schakels worden beschouwd.

Het doel van deze studie is tweeledig:
- ten eerste: om inzicht te krijgen in de gevolgen van de uitbreiding van toerisme voor de economie, de arbeidsmarkt en de demografie;
- ten tweede: om de mechanismen te begrijpen die de gevolgen in elke schakel van de effectketen bewerkstelligen.

2 Het toerisme van Aruba in de globale context

Aruba kende een groei in het aantal hotelkamers van 2.500 in 1985 tot naar schatting 5.200 kamers in 1992 en 7.500 in 2002 (CTO, 2003). De uitbreiding van het aantal hotelkamers verhoogde gestaag de toeristenaantallen van ongeveer 200.000 in 1985, 541.000 in 1992, tot een piek van 721.000 in 2000. Sindsdien daalde dit aantal geleidelijk tot 691.000 in 2001 en tot 643.000 in 2002. Deze daling kan worden verklaard door het feit dat de toeristenbestemmingen hebben geleden onder de terroristische aanslagen in Amerika op 11 september, 2001 (CTO, 2003).

In 2002, waren er wereldwijd ongeveer 700 miljoen internationale toeristen, die een totaal aan bestedingen van US$ 474.2 miljard vertegenwoordigden (CTO, 2003). De toeristenaantallen in de Caraïben groeide aan tot 19 miljoen toeristen in 2002 (CTO, 2003).

Wij hebben de indexcijfers van de aantallen toeristen van Aruba vergeleken met de Caraïben en wereld met 1992 als referentiejaar. Vanaf 1992 tot 1997, waren de indexen voor Aruba hoger dan de wereldtrends, maar lager dan de groei van de Caraïben. Vanaf 1998 tot 2002, waren de gemiddelde groeipercentages voor de wereld en voor de Caraïben beide hoger dan voor Aruba. In vergelijking met de globale tendens, hebben de aanslagen van 11 september een grotere daling van toeristenaantallen in 2001 en 2002 in zowel de Caraïben als Aruba veroorzaakt, de globale tendens lijkt stabieler te zijn.

De dertien belangrijkste toeristische bestemmingen in de Caraïben zijn vroegere gebieden van de koloniale mogendheden:
- Aruba, St. Maarten en Curaçao: Nederland;
- Puerto Rico en US Virgin Islands:Verenigde Staten;
- De Bahamas, Jamaica, Barbados, en de Bermuda's: Groot-Brittannië;
- Guadeloupe en Martinique: Frankrijk.
- De Dominicaanse Republiek en Cuba: Spanje

Uit de analyse naar de herkomst van de toeristen blijkt dat Aruba voor meer dan 60 procent afhankelijk is van de Noord Amerikaanse markt. Op basis van de historische relatie met

Nederland was de verwachting dat Europa, en in het bijzonder Nederland, de belangrijkste toeristenmarkt voor Aruba zou zijn, net als op Curaçao en St. Maarten. Aruba blijkt, samen met de Britse Gemenebest eilanden een afwijkend marktpatroon te hebben. De Verenigde Staten zijn ook voor meer dan 70 procent de belangrijkste toeristenmarkt voor de Bahamas en Jamaica. Voor de Amerikaanse gebieden, zoals de US Virgin Islands en Puerto Rico, is de Noord Amerikaanse toeristenmarkt (80 procent). De eilanden Martinique, een vroegere kolonie van Frankrijk, en Barbados, een ex kolonie van Groot-Brittannië, zijn voor meer dan 50 procent afhankelijk van de Europese toeristenmarkt. De aantrekkelijkheid voor de Europese toeristen van de Dominicaanse Republiek en Cuba kan door de historische relatie met Spanje en de vestiging van Europese hotelondernemers (hoofdzakelijk Spanjaarden) in deze landen worden verklaard.

Het volgende mechanisme dat tot de economische kwetsbaarheid van kleine eilanden leidt is seizoengevoeligheid. De toeristenaantallen op Aruba en de Caribische eilanden zijn geanalyseerd voor de verschillende seizoenen. Voor de Caraïben als geheel, zijn de winter en de zomer de piekseizoenen en de maanden september en oktober het laagseizoen. De piekmaanden voor Aruba zijn april en juli/augustus, maar de seizoensgebonden schommeling is duidelijk veel minder dan op andere eilanden in de Caraïben.

Het laatste aspect van economische kwetsbaarheid is de afhankelijkheid van toerisme als belangrijkste sector van de economie en het weglekken van toeristische bestedingen. Aruba staat op de derde plaats met een gemiddelde toeristenbesteding van US$ 7.011 per capita, na St. Maarten en de US Virgin Islands. Aruba is daarmee sterk afhankelijk van de toeristische sector.

De drie aspecten van ecologische kwetsbaarheid zijn geïdentificeerd als: de toename in aantal vliegbewegingen en de hoeveelheid wegverkeer, de toename van de bevolkingsdruk, en de ruimte-eisen die door de accommodaties worden gemaakt.

Met betrekking tot de toename in het verkeer (wegverkeer en vliegbewegingen), is de gemiddelde verblijfsduur belangrijk. Aruba scoorde, met een gemiddelde verblijfsduur van 7,6 nachten, slechter in termen van ecologische kwetsbaarheid dan de eilanden Martinique, Barbados, Cuba en Jamaica, met een gemiddelde verblijfsduur van meer dan tien nachten.

De andere indicator voor de ecologische kwetsbaarheid is de bevolkingsdruk. Deze toename is te meten door de gemiddelde dagelijkse toeristendichtheid en het aandeel van migranten onder de bevolking. De resultaten tonen aan dat Aruba de tweede plaats bezet met een gemiddelde dagelijkse toeristendichtheid van meer dan 160 toeristen per 1.000 ingezetenen. De toeristenactiviteiten op Aruba resulteren in een verhoging van de eilandbevolking gedurende het jaar met 16 procent. Het eiland van St. Maarten staat eerste uit de geselecteerde Caribische eilanden met de hoogste gemiddelde dagelijkse toeristendichtheid van bijna 190 per 1.000 inwoners. De US Virgin Islands bezetten de derde plaats met een gemiddelde dagelijkse toeristendichtheid van ruim 105 per 1.000 inwoners.

Het blijkt dat eilanden met kleinere bevolkingsaantallen en een hoge gemiddelde toeristenbesteding per capita een hoger aandeel migranten hebben. Aruba staat op de tweede plaats achter St. Maarten.

De migratie heeft aanzienlijk bijgedragen aan de bevolkingstoename van Aruba. Vanaf 1992 tot 1997, was het vestigingsoverschot ongeveer 2.000 per jaar. Na 1997, daalde het vestigingsoverschot geleidelijk aan tot 500 per jaar ten gevolge van een toename van de emigratie.

Het laatste mechanisme in termen van ecologische kwetsbaarheid is de vereiste ruimte door de accommodaties. Een indicator voor ruimte-eisen is het aantal hotelkamers per vierkante kilometer. Aruba neemt de derde plaats in met 41,7 hotelkamers per km^2. St. Maarten bezet de

eerste plaats met 104,4 hotelkamers per km². De Bermudas staan tweede met 61,3 hotelkamers per km².

De indicator hotelkamers per vierkante kilometer dienen voorzichtig te worden geïnterpreteerd. De veronderstelling dat de kleinere eilanden een hogere graad van ecologische kwetsbaarheid hebben dan de grote eilanden gaat niet volledig op. De meeste grote eilanden zoals de Dominicaanse Republiek, Puerto Rico en Cuba hebben hun toeristenactiviteiten op één plaats geconcentreerd (McElroy & Albuquerque, 1998; McElroy, 2003). De ervaring in de Dominicaanse Republiek heeft aangetoond dat het gebied van Punta Cana een hogere graad van ecologische kwetsbaarheid heeft dan de totale Dominicaanse Republiek (Padilla & McElroy, 2005). Deze analogie is ook van toepassing voor Aruba, waar de meeste toeristenactiviteiten eveneens op één plaats zijn geconcentreerd.

De beschrijving van de toeristische ontwikkelingen in Aruba laten zien dat er zowel positieve als negatieve effecten voor de lokale gemeenschap zijn geweest. Om de effecten van toeristische ontwikkelingen daadwerkelijk te begrijpen, is een onderzoek naar elke schakel in de toeristische effectketen noodzakelijk.

3 Theoretisch kader

Een klassieke theorie van toerisme is de bestemmingslevenscyclus benadering van Butler (1980). Volgens die benadering gaan de toeristenbestemmingen door verschillende fasen van ontwikkeling (Butler, 1980; Martin & Uysal, 1990; Debbage & Daniels, 1998).

De zesfasen van Butler's (1980) model zijn exploratie, start, ontwikkeling, consolidatie, volwassenheid, stagnatie gevolgd door verval of vernieuwing, naar analogie van de productlevenscyclus in de marketing literatuur. Hoewel het model is toegepast op veel toeristische bestemmingen, hebben de studies een gebrek aan gestandaardiseerde benaderingen, en aan goede getalsmatige weergave (Getz, 1992). Plog (2001) bekritiseerde het model van de bestemmingslevenscyclus omdat de afname van populariteit in een volwassen toeristische bestemmingen geen onvermijdelijk proces is. Volgens Plog (2001) leidt alleen een proces van ongecontroleerde groei tot de zelfvernietiging van de bestemming. Dit proces begint wanneer een toeristenbestemming met een exclusieve markt, aantrekkelijk wordt voor andere ontwikkelaars die de bestemming als betrouwbare en winstgevende bron van inkomsten zien. Spoedig worden meerdere hotels en toeristenfaciliteiten ontwikkeld om meer toeristen aan te trekken, die zo het 'paradijs' vernietigen. Het resultaat van de ongecontroleerde groei is, dat de rijke toeristen zich naar elders begeven. Cyprus en Malta zijn voorbeelden van dit proces. Om meer rijke toeristen aan te trekken, concentreerden Cyprus en Malta zich op de uitbreiding van accommodaties in de sector van luxueuze hotels. In tegenstelling tot de verwachte resultaten, daalde de toeristenaantallen. De overcapaciteit van accommodaties van beide eilanden verhoogde de macht van de touroperators die zich richten op het massa toerisme (Sharpley, 2003; Dodds, 2007; Farsari et al., 2007).

De accommodatiesector is verdeeld in internationale hotelketens, lokale hotelketens, en kleine hotels en appartementen (Culpan, 1987; Andriotis, 2002). De voor- en nadelen van de verschillende soorten hotelaccommodaties zijn onderwerp van debat. Volgens Rodenburg (1980) en Albuquerque & McElroy (1992) leiden de internationale hotelketens er toe dat toeristische bestemmingen te afhankelijk worden van één geografische markt. De overheersing van de internationale hotelketens leidt tot marktverzadiging en tot minder voordelen voor de kleine en

lokale hotels. Volgens Jenkins (1982) zijn de drie hoteltypes juist onderling afhankelijk. Het zijn de internationale hotelketens die de toeristische ontwikkeling in de Derde wereld landen activeren en zo voorwaarden scheppen voor de kleine en lokale hotels. De grote hotelketens bieden de Derde wereld landen een manier om zich bij de internationale toeristenmarkt aan te sluiten, en zijn dientengevolge voordelig voor de economie van die landen (Kusluvan & Karamustafa, 2001).

De meest voorkomende groepen toeristen die normaliter de internationale hotelketens frequenteren in bestemmingen die gekenmerkt worden door zon, strand en zee zijn de vakantiegangers. De Noord Amerikaanse toerist reist meestal gedurende het winterseizoen om het koude weer in eigen land te ontsnappen (Albuquerque & McElroy, 1992). De zomer is de vakantie periode in Europa en Latijns Amerika. Spreiding van geografische markten kan daarom de seizoensafhankelijkheid verminderen. Het economische belang van toerisme is groter dan allen de directe besteding in hotels en restaurant en dergelijke. Daarnaast is er ook een multipliereffect. Het multipliereffect kent drie verschijningsvormen. Het *directe effect, dit* is de aanvankelijke injectie van toeristenbestedingen, die tot directe opbrengsten leidt voor bepaalde zaken of industrieën. Ten tweede, de *indirecte effecten,* de extra opbrengsten voor ondernemingen die de noodzakelijke input leveren (o.a. toeleveranciers). Tot slot besteden de huishoudens, die van de directe en indirecte effecten profiteren, hun extra inkomens aan consumptie; dit is een '*induced effect*' (Henrey & Deane, 1997; Armstrong & Taylor, 2000).

In een kleine eilandeconomie met sterke verbindingen tussen de toeristensector en de andere sectoren van de economie, wordt een vraag naar arbeiders gecreëerd die niet altijd op de lokale arbeidsmarkt kan worden ingevuld. Hierdoor wordt de rekrutering van arbeidsmigranten onvermijdelijk. De toeristenindustrie wordt gekenmerkt door twee soorten werknemers: een kleine fractie van de totale vraag naar arbeid bestaat uit hoogopgeleid personeel; en de grote meerderheid uit laaggeschoolde arbeiders (Riley et al., 1991; Shaw & Williams, 1995). Aangezien toerisme een grote vraag naar werknemers schept die niet altijd kan worden vervuld door de lokale arbeidsmarkt, worden laaggeschoolde arbeiders uit andere landen aangetrokken. De toeristenindustrie draagt daarom bij tot het duale karakter van de arbeidsmarkt voor migranten. Volgens de 'dual labour market theory' is de arbeidsmarkt gesegmenteerd in een kapitaalintensieve primaire markt en een arbeidsintensieve secundaire markt (Piore, 1979). De werknemers in de primaire markt kunnen rekenen op stabiele werkomstandigheden, worden goed betaald en krijgen trainingsmogelijkheden. Daar tegenover staan de arbeiders in de secundaire markt met over het algemeen instabiele, eenvoudige banen. Zij kunnen met weinig of geen kosten voor de werkgever worden ontslagen (Piore, 1979). De vrouwelijke migranten bevinden zich voornamelijk in de secundaire arbeidsmarkt. De immigratie wordt niet veroorzaakt door '*push-factoren*' in de verzendende landen (lage lonen of hoge werkloosheid), maar door '*pull-factoren*' in de ontvangende landen (een chronische en onvermijdelijke behoefte aan gastarbeiders). Volgens deze theorie, wijzen de lonen niet alleen op de voorwaarden van vraag en aanbod, maar verlenen ook status en prestige. Het grote aantal arbeidsmigranten dat wordt aangetrokken, kan verdere immigratie veroorzaken doordat zij hun families overbrengen (Muus, 1995; Voets et al., 1995; Nimwegen van & Bieten, 2000).

4 De onderzoeksvragen

Om de afhankelijkheid van een eenzijdig geografische markt en de seizoenafhankelijkheid van uiteenlopende typen accommodatie te analyseren zijn de volgende onderzoeksvragen opgesteld:

- *In welke mate bedienen de diverse accommodaties op het eiland verschillende segmenten van de internationale toeristenmarkt?*
- *In welke mate hebben de kleinere en de lokale hotels verschillende patronen van bezoekers tijdens het jaar en hoe succesvol zijn zij in het bereiken van stabiele bezettingsgraden?*
- *Is de afhankelijkheid op één geografische markt onvermijdelijk en helpt de geografische diversificatie in het verminderen van seizoengevoeligheid?*

De data (2000-2002) die worden gebruikt om de drie bovengenoemde onderzoeksvragen te beantwoorden zijn afkomstig van de Aruba Tourism Authority (ATA). Ter beantwoording van de eerste onderzoeksvraag is de *Chi-square Automatic Interaction Detector (CHAID)* gehanteerd. Het doel van deze methode is het analyseren van de keuze van uiteenlopende segmenten van de internationale toeristenmarkt voor de verschillende typen accommodatie in Aruba. Om seizoengevoeligheid in de verschillende typen accommodatie gedurende het jaar te onderzoeken, is het '*multinomial log-lineaire*'-model gebruikt.

Om de gevolgen van de economische toeristische effecten voor de lokale gemeenschap te analyseren, is de volgende onderzoeksvraag leidend:

- *In welke mate zijn de multiplie reffecten van de toeristensector verschillend van de andere sectoren in de economie en zijn deze verschillen vergelijkbaar tussen Aruba en de Nederlandse Antillen?*

De gebruikte gegevens zijn van de Nationale Rekeningen van het Centraal Bureau voor de Statistieken (CBS) van Aruba en van de Nederlandse Antillen. Voor de vergelijking van multipliers tussen Aruba en de Nederlandse Antillen, zijn de gegevens voor het jaar 1999 gebruikt. De gebruikte methode om de multiplie reffecten te schatten is het *input-output* model.

De snelle toerismegroei in kleine eilandeconomieën heeft geleid tot een vraag naar werknemers die niet door de lokale arbeidsmarkt kunnen worden vervuld. De rekrutering van arbeidsmigranten is hierdoor onvermijdelijk. De toeristenindustrie draagt zoals gezegd bij aan het duale karakter van de arbeidsmarkt voor migranten.

Om de arbeidsmarkt en bevolkingseffecten te onderzoeken, is een analyse gemaakt van het effect van arbeidsmarktsegmentatie op de samenstelling van de migrerende bevolking. In deze context zijn de volgende onderzoeksvragen geformuleerd:

- *In welke mate bepalen de sectoren van de economie en het baanniveau de rekrutering van arbeidsmigranten uit de verschillende delen van de wereld?*
- *In welke mate leidt arbeidsmigratie tot volgmigratie (gezinshereniging en -vorming)?*

De gegevens voor beide onderzoeksvragen zijn afgeleid uit de bestanden over de werk- en verblijfsvergunningen (1997-2002), zoals die in het Uniforme Vreemdelingen Registratie Systeem (NAVAS) door het Ministerie van Buitenlandse zaken van Aruba worden geregistreerd. Voor de eerste onderzoeksvraag is met behulp van multinomiale regressie de oorsprong van de migranten verklaard uit de kenmerken van de baan waarvoor zij gerekruteerd zijn. Om de kans op het overhalen van families in het buitenland te onderzoeken, is een binaire logistische regressie gebruikt.

5 Bevindingen

5.1 Het effect van de toeristenmarkt

De accommodatieportfolio van Aruba bestaat uit een groep van luxe internationale hotelketens gecombineerd met lokale hotelketens en kleine hotels. Deze accommodatieportfolio is complementair in termen van markten en seizoengevoeligheid. De bevindingen tonen aan dat de kortverblijf toeristen uit Noord Amerika kiezen voor de internationale hotelketens en de langverblijf toeristen voor de lokale en kleine hotels. Elk type accommodatie heeft zijn eigen succesvolle strategie om (institutionele) seizoengevoeligheid te verminderen door gebruik te maken van marktdifferentiatie in termen van land van herkomst en motief. Hoewel de internationale hotelketens strategieën gebruiken zoals prijsvermindering tijdens de laagseizoenen en de exploratie van nichemarkten als zakelijke toeristen en huwelijksreizen, zijn de lokale en kleine hotels meer succesvol in het verminderen van seizoengevoeligheid. Dit resultaat weerspreekt de bestaande inzichten uit de literatuur. Daarin wordt gemeld dat de lokale hotels beperkte middelen hebben voor marketing en daarom minder succesvol zijn in het tegengaan van seizoensgevoeligheid. De resultaten voor Aruba tonen echter aan dat de lokale hotelketens, de internationale hotelketens met succes hebben beconcurreerd. Het aantrekken van Noord-Amerikaanse vakantiegangers in het laagseizoen zorgt voor stabiele bezoekerspatronen voor dit type accommodatie gedurende het jaar. De lokale hotelketens zijn ook succesvol in het aantrekken van de Europese en Latijns-Amerikaanse markten. De kleine hotels hebben van nature een gedifferentieerde markt in termen van zowel geografische markt als motief. De institutionele seizoengevoeligheid is daarom nauwelijks een probleem voor dit accommodatietype. De conclusie die hieruit getrokken kan worden is, dat de gediversifieerde aard van de '*product-market-mix*' op Aruba de sleutel is voor marktdifferentiatie die de economische kwetsbaarheid beperkt.

5.2 De economische gevolgen

Kleine eilanden in de Caraïben en elders hebben toeristenmultipliers die laag zijn vergeleken bij grotere eilanden omdat ze goederen en diensten moeten importeren. Onderzocht is of dat in het bijzonder geld voor de toeristische sector. Het onderzoek wijst uit dat de toeristensector grotere outputmultipliers heeft dan de andere sectoren in de economie. Het is niet de toeristensector als zodanig, maar de grootte van de economie die meer invoer in kleine landen noodzakelijk maakt. Dit resultaat wordt bevestigd door een vergelijkende studie tussen Aruba en de Nederlandse Antillen. De Nederlandse Antillen hebben een grotere economie. De lagere afhankelijkheid van de invoer in landbouw, productie en groothandel leidt tot grotere outputmultipliers in de Antillen vergeleken met Aruba. Ook in de hotels & restaurants sector zijn de interindustriële verbindingen iets sterker dan in Aruba en de indirecte effecten daarom iets groter. Niettemin, zijn de totale output, het inkomen, en de werkgelegenheidsmultipliers hoger in Aruba dan in de Antillen, in het bijzonder wegens de betere 'induced' effecten die ontstaan als gevolg van huishoudelijke consumptie door de bevolking. Deze bestedingseffecten hebben geen verband met de grootte of de diversiteit van de economie, maar met het aandeel van de lonen in de toeristensector en het belang van de huishoudelijke consumptie in de lokale economie. Dit belang is groter om der andere omdat de belastingdruk op Aruba veel lager is dan op de Antillen.

Dit laatste wijst erop dat inkomen- en werkgelegenheidsmultipliers niet alleen van de interindustriële verbindingen afhankelijk zijn, maar in het bijzonder van de manier waarop de toeristensector georganiseerd is, en op het aandeel van de huishoudelijke consumptie in de lokale

economie. De conclusie is, dat toerisme significant heeft bijgedragen aan de welvaart van de lokale gemeenschap op Aruba.

5.3 De demografische gevolgen

Een arbeidsintensieve industrie zoals toerisme creëert een grote vraag naar werknemers die niet altijd door de lokale arbeidsmarkt kan worden vervuld. Dit leidt tot de rekrutering van arbeidsmigranten. De toeristenindustrie wordt gekenmerkt door veel laag gekwalificeerd werk en veel vrouwelijke werknemers. De positie van vrouwelijke migranten is in drie opzichten nadelig. Ze zijn sterker vertegenwoordigd in marginale banen, zijn meer afkomstig uit ontwikkelingslanden en hebben extra moeite in het verwerven van statutaire rechten.

Onze bevindingen voor Aruba tonen aan dat de rekrutering van arbeidsmigranten over het volledige spectrum van de arbeidsmarkt voor verschillende baanniveaus plaatsvond en niet alleen voor de elementaire banen. De uitbreiding van de toeristenindustrie op Aruba veroorzaakte niet alleen surplusvraag in elementaire banen, maar ook in posities die technische of professionele vaardigheden vereisen. De arbeidsmarkt voor immigranten toont kenmerken van een *'dual labour market'* met elementaire banen in de huishoudelijke dienstsector en betere posities in de publieke en commerciële dienstensectoren. In Aruba is de 'gender' segregatie bijzonder sterk tussen de technische sectoren met hoofdzakelijk banen voor mannen en de huishoudelijke dienstensectoren met veel banen voor vrouwen. De migranten die in deze laatste sectoren worden aangetrokken, vervullen de laagste posities in de baanhiërarchie. Velen werken in de informele sector en hebben weinig wettelijke rechten. De opties voor gezinshereniging en -vorming in het Arubaanse immigratiebeleid zijn beperkt en sterk afhankelijk van de economische positie van de migrant. Gehuwde mannen hebben een tweemaal zo hoge kans hun families over te brengen dan gehuwde vrouwen. Bij de ongehuwde migranten met een lage opleiding doen vrouwen iets meer aan gezinsvorming omdat sommigen hun kinderen laten overkomen. Bij de hoogopgeleide vrijgezelle migranten importeren mannen twee maal zo vaak als vrouwen hun huwelijkspartner uit het buitenland. Voor de gehuwde vrouwen wijzen hun lagere kansen op gezinshereniging op een zwakkere sociale positie. Voor de hooggekwalificeerde vrijgezelle vrouwen, is de voorkeur om onafhankelijk te blijven een aannemelijkere verklaring voor de geringere gezinsvorming. De conclusie is, dat het perspectief voor de migranten op de lokale arbeidsmarkt verschillend is voor vrouwen dan voor mannen.

6 Algemene conclusies

Wat zijn de gevolgen van toerisme voor het tropische eiland Aruba? Deze studie heeft aangetoond dat de toeristische ontwikkeling in Aruba tot een positieve economische ontwikkeling in termen van welvaart en werkgelegenheid heeft geleid. Echter een groot deel van deze banen wordt ingevuld door vrouwelijke migranten met weinig statutaire rechten. Dit leidt tot de toename van ongelijkheid op basis van geslacht en etniciteit.

De economische kwetsbaarheid is beperkt. Elk accommodatietype heeft zijn eigen succesvolle strategie om seizoengevoeligheid te verminderen door meerdere marktsegmenten te bedienen. De strategie van de internationale hotelketens is om andere bezoekers dan de vakantiegangers in de laagseizoenen aan te trekken. Dientengevolge zijn hun bezettingsgraden vrij stabiel gedurende het jaar. De lokale hotelketens concurreren met succes met de internationale hotelketens. Het aantrekken van Noord-Amerikaanse vakantiegangers in het laagseizoen heeft gezorgd voor

stabiele bezoekerspatronen voor deze groep gedurende het hele jaar. De kleine hotels hebben van nature een gedifferentieerde markt in termen van zowel geografische markt als motief.

De gevolgen voor de lokale economie zijn gevonden door de multipliers te analyseren. De hotel en restaurant sector heeft sterke *'backward linkages*' met de andere sectoren, zoals de bouw, groothandel, of financiële en commerciële diensten. Slechts de bouwsector had sterkere interindustriële '*linkages*'. Het blijkt dat de hotel en restaurant sector het grootste multiplierseffect heeft voor de lokale economie.

De inkomensmultiplier van de hotel en restaurant sector was groter dan voor iedere andere sector. Er was een direct effect op de inkomens op het eiland, omdat de lonen een belangrijke input voor deze sector zijn. Door de interindustriële verbindingen verdienen werknemers ook in andere sectoren meer loon. De bestedingen van die lonen aan binnenlandse consumptie genereren een ' induced' effect.

Er is geen andere sector met een potentieel in de export dan de toeristensector die zulke hoge *directe, indirecte* en '*induced' effecten* kan genereren.

De werkgelegenheidsmultipliers zijn ook hoger voor de hotel en restaurant sector dan voor elk andere sector in de economie.

De gevolgen van de werkgelegenheidsmultipliers hebben tot een grote vraag naar arbeiders geleid, die niet altijd door de lokale arbeidsmarkt kan worden vervuld en tot de rekrutering van arbeidsmigranten heeft geleid. Arbeidsmigranten van verschillende delen van de wereld worden aangetrokken. De totale bevolking op het eiland Aruba groeide aanzienlijk door deze werving. Van elke tien werkzame persoon zijn er vier in het buitenland geboren.

De arbeidsmarkt voor immigranten toont kenmerken van een gesegmenteerde arbeidsmarkt met elementaire banen in de huishoudelijke dienstensector en betere posities in de publieke en commerciële dienstensectoren. In Aruba is de segregatie op basis van geslacht traditioneel sterk tussen de technische sectoren met hoofdzakelijk 'mannelijke' banen en de huishoudelijke dienstensectoren met vele 'vrouwelijke' banen. Aruba heeft, evenals elk ander Europees land, een stringent toelatingsbeleid dat goedopgeleide mensen voor beperkte periodes toelaat om vacatures te vullen en toelating van anderen (meestal ongeschoold) in de arbeidsmarkt te beperken. De laaggeschoolde migranten hebben beperkte rechten op bijvoorbeeld gezinshereniging, burgerschap of permanente vestiging. Dit beleid beïnvloedt mannen en vrouwen verschillend. Niet alleen hebben vrouwen beperkte rechten dankzij hun verschillende toelatingsstatus, zij zijn vaak sterk vertegenwoordigd in de marginale banen. De economische groei leidt tot grotere sociale ongelijkheden.

7 Toekomstige ontwikkeling

De toekomstige ontwikkeling van Aruba hangt af van de richting van de toerismesector in de economie. De eerste richting is de *ongecontroleerde groei* en de tweede is de '*Managed' groei*.

De eerste optie impliceert dat de verdere uitbreiding van de accommodatie tot overcapaciteit kan leiden met als resultaat dat Aruba een massatoerismebestemming wordt en de rijke toeristen zich naar elders begeven. Er is een debat gaande over het vestigen van nieuwe accommodaties aan de zuidkust van Aruba. Nieuwe accommodaties kunnen leiden tot verdringing op de bestaande toeristenmarkt. Om verdringing te voorkomen en inefficiënt gebruik van de toeristische faciliteiten en accommodaties te vermijden, zou de nadruk op nieuwe toeristenmarkten moeten worden gelegd. Ook zal de ongecontroleerde uitbreiding van gelijkwaardige accommodaties

in Aruba leiden tot meer kortverblijf toerisme en daarmee tot meer vliegbewegingen. De ongecontroleerde groei zal verder leiden tot tekorten in de arbeidsmarkt en tot verdere rondes van migratie.

De tweede optie is een compactere vorm van groei. '*Managed*' of 'doordachte' groei heeft tot doel de groei in en rond het bestaande opgebouwde gebied te accommoderen. Het basisidee van '*Managed*' groei is dat de bestaande markt wordt verbeterend en nichemarkten worden gevonden. '*Managed*' groei benadrukt de noodzaak om de economische, sociale en ecologische belangen in evenwicht te brengen. '*Managed*' *groei* is de enige manier om ondanks de aanhoudende groei in de bestaande toeristenmarkt toch een duurzame ontwikkeling op lange termijn van Aruba te bereiken (Briguglio et al., 1996; Ioannides & Holcomb, 2001; Sharpley, 2003; Farsari et al., 2007).

8 Slotopmerkingen

Dit onderzoek kent ook een aantal beperkingen. De eerste is dat de resultaten slechts het eiland Aruba betreffen. Het zou interessant zijn om de analyses in deze bijdrage te herhalen en daarbij Aruba met andere eilanden in de Caraïben te vergelijken. Ook heeft deze studie de ecologische problemen van het eiland Aruba niet werkelijk in kaart gebracht. Een diepgaand onderzoek naar deze kwestie zou interessant zijn. Een andere kwestie die aandacht en een verdergaand onderzoek vereist is de toenemende sociale ongelijkheid. Deze laatste twee kwesties zouden moeten worden aangepakt om een evenwicht tussen de sociale, economische en ecologische aspecten in de verdere ontwikkeling van het eiland Aruba te waarborgen.

Literatuur

Albuquerque, K. de & McElroy J.L. (1992). Caribbean Small-Island Tourism Styles and Sustainable Strategies. *Environmental Management,* 16 (5):619-632.

Amstrong, H., & Taylor J. (2000). *Regional Economics and policy. Third Edition.* Blackwell Publishing.

Andriotis, K. (2002). Scale of hospitality firms and local economic development: evidence from Crete. *Tourism Management,* 23:333-341.

Briguglio, L. (1995). Small island developing states and their economic vulnerabilities. *World Development,* 23 (9):1615-1632.

Briguglio, L., Archer B., Jafari J. & Wall G. (eds.) (1996). *Sustainable Tourism in Island and Small States: Issues and Policies*. London: Pinter.

Briguglio, L., Persaud B. & Stern R. (2000). Toward an Outward-Oriented Development Strategy for Small States: Issues, Opportunities, and Resilience Building. *A review of the Small States Agenda Proposed in the Commonwealth/World Bank Joint Task Force Report of April 2000.*

Briguglio, L. (2004). Economic Vulnerability and Resilience: Concepts and Measurements. *Paper presented at the International Workshop on "Vulnerability and Resilience of Small States" organised by the Commonwealth Secretariat and the University of Malta,University Gozo Centre*, Malta, 1-3 March, 2004.

Butler, R. (1980). The concept of the tourist area cycle of evolution: implications for management of resources. *Canadian Geographer,* 24 (1):5-12.

Caribbean Tourism Organization, CTO (2003). Caribbean Tourism Statistical Report, 2002-2003 Edition.

Central Bureau of Statistics Aruba (2000). Tourist Profile Year Report 2000. Volume II – Year Report 2000.
Cole, S. & Razak V.M. (2003). A framework for sustainable tourism in Aruba. Conference draft, November 2003. Prepared for the National Tourism Council of Aruba and the Minister of Tourism and Transportation.
Culpan, R. (1987). International Tourism Model for Developing economies. *Annals of Tourism Research,* 14: 541-552.
Debbage, K.G., & Daniels P. (1998). The tourist industry and economic geography: Missed opportunities? In *The Economic Geography of the Tourist Industry: A supply-side analysis*, D. Ioannides ed., pp. 17-30. London and New York: Routledge.
Dodds, R. (2007). Malta's Tourism Policy: Standing Still or Advancing towards Sustainability? *Island Studies Journal,* 2 (1):47-66.
Farsari, Y., Butler R., & Prastacos P. (2007). Sustainable tourism policy for
Mediterranean destinations: issues and interrelationships. *International Journal Tourism Policy,*1 (1):58-78.
Fletcher, J. (1989). Input-Output Analysis and Tourism Impact Studies. *Annals of Tourism Research* 16 (4):514-529.
Getz, D. (1992). Tourism planning and destination life cycle. *Annals of Tourism Research,* 19:752-770.
Grandoit, J. (2005). Tourism as a Development Tool in the Caribbean and theEnvironmental By-products: The Stresses on Small Island Resources and Viable Remedies. *Journal of Development and Social Transformation,* 1:89-97.
Henrey, E., & Deane B. (1997) The contribution of tourism to the economy of Ireland in 1990 and 1995. *Tourism Management,*18 (8):535-553.
Ioannides, D., & Holcomb B. (2001). Raising the stakes: Implications of upmarket tourism policies in Cyprus and Malta. In D. Ionnides, Y. Apostolopuolo and S. Sommez (eds). *Mediterranean Islands and Sustainable Tourism Development: Practice, Management and Policies* (pp. 234-258). London: Continuum.
Jang, S. (2004). Mitigating tourism seasonality: A quantitative approach. *Annals of Tourism Research,* 31 (4):819-836.
Jenkins, C.L. (1982). The effects of scale in Tourism Projects in Developing Countries. *Annals of Tourism Research,* 9:229-249.
Kusluvan, S., & Karamustafa K. (2001). Multinational Hotel Development in Developing Countries: an Exploratory Analysis of Critical Policy Issues. *International Journal of Tourism Research,* 3:179-197.
Manning, R.E., & Powers L.A. (1984). Peak and off-peak use: redistributing the outdoor recreation/tourism load. *Journal of Travel Research*, 23 (2):25-31.
Martin, B., & Uysal M. (1990). An examination of the relationship between carrying capacity and the tourism life-cycle: management and policy implications. *Journal of Environmental Management,* 31:327-333.
McElroy, J.L. & Albuquerque K. de (1998). Tourism penetration index in small Caribbean islands. *Annals of Tourism Research,* 25 (1):145-168.
McElroy, J.L. (2003). Tourism Development in Small Islands Across the World. *Geografiska Annaler,* 85(4): 231-242. Blackwell Publishing.
Muus, P. (1995). *De wereld in beweging; Internationale migratie, mensenrechten en ontwikkeling.* Utrecht: Uitgeverij Jan van Arkel.

Nimwegen, N. van, & Beets G. (2000). Demos September 2000. *Netherlands Interdisciplinary Demographic Institute.* 4 September 2000.
Padilla, A., & McElroy J.L. (2005). The tourism penetration index in large islands: the Case of the Dominican Republic. *Journal of Sustainable Tourism,*13 (4):353-372.
Piore, M. (1979). *Birds of Passage: Migrant Labor and Industrial Societies.*Cambridge: Cambridge University Press
Plog, S. (2001). Why Destination Areas Rise and Fall in Popularity: An Update of a Cornell Quarterly Classic. *Cornell Hotel and Restaurant Administration Quarterly:*an invited paper pp.13-24.
Prasad, N. (2003). Small Island's Quest For Economic Development. Asia-Pacific *Development Journal*,10 (1):47-67.
Riley, M., Lockwood A., Powell-Perry J., & Baker M. (1991). Job satisfaction, Organisation commitment and occupational culture: a case from the UK pub industry. *Progress in Tourism and Hospitality Research,* 4 (2):159-168.
Rodenburg, Eric E. (1980). The effects of scale in economic development: Tourism in Bali. *Annals of Tourism Research,* VII(2):177-196.
Voets, S., Schoorl J., & de Bruijn B. (1995). *The Demographic consequences of International Migration.* Proceedings of the symposium, NIAS, Wassenaar, 27-29 September 1990. Netherlands Interdisciplinary Demographic Institute. Report nr. 44.
Sharpley, R. (2003). Tourism, Modernisation and Development on the Island of Cyprus: Challenges and Policy Responses. *Journal of Sustainable Tourism,* 11 (2&3):246-265.
Shaw, & Williams (1995). Critical Issues in Tourism: A Geographical Perspective.*Geographical Review,* 85 (2):243-245.
Sutcliffe, C., & Sinclair M. (1980). The Measurement of Seasonality within the Tourist Industry: An Application To Tourist Arrivals in Spain. *Applied Economics,* 12 (4):429-441.
Sutton, P. (1999). What are the Priorities for Small States in the International System?*The Round Table,* 88 (351):397-402.
Sutton, P. (2001). Small States and the Commonwealth. *Commonwealth & ComparativePolitics,* 39 (3): 75-94.
United Nations Environment Program, UNEP (1996). Sustainable tourism development in small island developing States. Commission on sustainable development. Fourth session.
Wilkinson, P. (1989). Strategies for tourism in island microstates. *Annals of Tourism Research,* 16 (2):153-177.
World Tourism Organization, WTO (1999). Addendum A, Tourism and EconomicDevelopment; Contribution of The World Tourism Organization to The Report onTourism and Sustainable Development For The meeting.
World Tourism Organization, WTO (2004). Making Tourism Work for Small Island Developing States. *Department of Sustainable Development of Tourism*.

Curriculum Vitae

Rigoberto Haime Croes was born in Aruba on January 4th, 1964. He entered secondary education in 1976 in Aruba and received his diploma in 1980. After he completed the secondary technical school in Aruba in 1984, he entered the Nationale Hogeschool voor Toerisme, Verkeer, Planologie, Recreatie & Vervoer in Tilburg to study urban management and received his diploma in 1988. In the same year, he entered Utrecht University to study human geography with a major in economic geography. He received his Master's degree in economic geography in 1991. He returned to Aruba where he joined the civil service, where he took up the position of researcher at CBS-Aruba in social demographic economic statistics in 1991. After three years he joined VROM-Aruba as manager of a leading housing policy development. He also taught statistical and methodological techniques and four years of higher degree geography part time, and in 2000 he became a full-time teacher at the College of Primary Education in Aruba. From 2000 to 2002 he was chair of the working group for the geography curriculum in secondary education of Aruba. In 2002 he also became chair of the supervisory board of the housing association of Aruba FCCA, a position he still holds. In 2003, he became a PhD research student in the Urban and Regional research centre Utrecht in the Faculty of Geosciences, Utrecht University. He was a member of the Netherlands Graduate School of Housing and Urban Research, where he followed various courses. In 2004, he embarked on a project, together with the A2 Management & Consultancy group, and Vestia Inter-consult for the remigration of the inhabitants of the Netherlands Antilles & Aruba in the Netherlands and the exploration of low-cost finance from the DIGH and the Dutch financial corporation for affordable housing projects for the island of Aruba and the Netherlands Antilles.