Economic Impact Analysis of the i-SITE Network

Prepared for:

Auckland Tourism, Events and Economic Development
i-SITE New Zealand

Date: September 2015
Status: Final Report

m.e spatial

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Document reference: ATEED 004.14

Date of this version: 15/09/2015

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Abbreviations

AES	Annual Enterprise Survey
ATEED	Auckland Tourism, Events and Economic Development
CAM	Commercial Accommodation Monitor
CGE	Computable General Equilibrium
CWC	Cricket World Cup
DTS	Domestic Travel Survey
GDP	Gross Domestic Product
IO	Input-Output
ITS	International Travel Survey
IVS	International Visitor Survey
M.E	Market Economics Limited
MBIE	Ministry of Business, Innovation and Employment
MEC	Modified Employment Count
MRIO	Multi-Regional Input Output
NZ	New Zealand
RTO	Regional Tourism Organisation
SD	Systems Dynamics
SNZ	Statistics New Zealand
VA	Value Added
VFR	Visiting Friends and Relatives

Executive Summary

Tourism, both domestic and international in New Zealand generates $23.7 billion[1] of expenditure, making it one of New Zealand's largest industries. One of the keys to maximising tourism potential is to have a fully informed market. New Zealand's i-SITE network plays an important role in this regard. Around 7.3m people move through the i-SITEs on top of 380,000 internet visits and 290,000 telephone interactions. During the 2013/14 financial year, i-SITEs generated revenues of some $13.8m through different channels. Commission–based sales delivered 53.3% of revenue. This was followed by brochure fees and retail margins contributing 18.3% and 14.4% respectively. In total, the i-SITE network employed 557 people (head count).

M.E was commissioned to estimate the overall economic impact of the i-SITE network across New Zealand. The central effect of the i-SITE network is that it unlocks tourist spending, facilitating a series of flow on effects. This analysis included both directly facilitated and indirectly facilitated effects and these effects were identified using the results from a survey conducted by Colmar Brunton. There were some issues around the primary research, particularly a low response rate and this overcome by using statistical techniques. To reduce the overall effect of this limitation we applied a number of statistical techniques to ensure that the results were reasonable. These results were then run through a 16 region economic model that traces the flows of goods and services through the economy and regions. Care was taken to only model the effects of the spending that could be attributed to i-SITEs while excluding any spending that would have taken place irrespective of the i-SITES.

The economic impacts were measured and described using Gross Domestic Product (GDP), employment (using Modified Employee Counts or MECs) and income. We estimated the total economic impacts, including the flow on effects through the entire economy. Our modelling suggests that the total economic effects generated by the i-SITE network in the total economy is $146.8m (GDP). This activity is generated using some 2,220 employees (MECs) and returns $90.2m to households in the form of income. In most regions, around two thirds of the economic effects (GDP) stays within the region. The average across the regions are:

- GDP 65.4%,
- Employment 71.5%, and
- Income 66.2%.

Across the regions, the average *income* returned to households for every $1 provided in funding is $5.2. This varies from around $1.1 to $8.4. This indicator relates to the i-SITEs' effects within the region where they are located and does not include the effects in other regions (or the effects felt in one region arising from interregional trade).

[1] Sourced from Tourism Satellite Accounts.

When considering the effects on businesses, businesses that interact with tourists feel a larger positive effect from the i-SITEs than firms not related to tourist. However, firm not servicing tourists are still benefiting through the supply chain effects (i.e. the accountant servicing the backpacker lodge benefits). On a per firm basis the i-SITE network facilitates, on average, $1,265 additional sales for tourist related firms and $793 for non-tourist related firms.

It is clear that the i-SITE network is making a positive economic contribution to the NZ economy by facilitating visitor spending. This research did not consider the non-monetary impacts of the i-SITEs and the network. These impacts may be substantial and could create wider economic benefits arising from the social value of an i-SITE in a small community because it can be viewed as an important community facility. Other effects not included in this assessment include: the effects of future, return visits and the potential marketing value of i-SITEs. If these effects were to be included in the assessment it would, in all likelihood, increase the economic value of the i-SITE network.

1 Introduction

Tourism, both domestic and international in New Zealand generates $23.7 billion[2] of expenditure making it one of New Zealand's largest sectors. As the global tourism market grows, the foreign tourism dollar coming to New Zealand is expected to increase. Additionally, there are a number of initiative which attempts to grow visitor spending. One of the keys to maximising tourism potential is to have a fully informed market. New Zealand's i-SITE network plays an important role in this regard. There are over 80 i-SITEs around the country servicing both domestic and international visitors.

To better understand the national and regional economic impacts of the i-SITE network, i-SITE New Zealand and Auckland Tourism, Events and Economic Development (ATEED) have commissioned Market Economics Ltd (M.E) to study and identify the economic impacts of the network.

The economic impacts from tourism arise from visitors' expenditure on a range of goods and services as well as the operation of the i-SITEs within each region. Direct expenditure by visitors on tourism activities flows through the economy supporting a wide range of jobs and benefits both directly (to those serving tourists directly) and indirectly (to those working as suppliers to businesses providing tourism related goods and services).

The main role of i-SITEs is to **facilitate** visitor activity in a particular region and through this, facilitate the purchase of goods and services by visitors to the region. The activity generated by the operation of the i-SITEs can be classified as is both **directly facilitated**, where visitors purchase services and goods at the i-SITEs, and **indirectly facilitated**, where visitors are made aware of services/goods while at the i-SITEs, but purchase elsewhere. i-SITEs also have operational expenditure which allows them to facilitate economic growth.

i-SITEs may also unlock **additional** expenditure within a specific region. This is because the information they provide may cause visitors to undertake activities they had no prior knowledge of before they visited the i-SITE. i-SITEs also make purchases easier and/or more convenient, allowing visitors more time to undertake actual activities.

This study seeks to provide robust figures of the economic impacts generated by i-SITEs within each region; both directly and facilitated.

1.1 Project Approach

This study has been carried out using a staged approach.

- The first stage covered the project set-up and the survey process. Colmar Brunton was commissioned to undertake independent research about how i-SITEs influence tourist behaviour and spending. i-SITE visitors' email addresses were collected and an online survey was undertaken. The survey process ran between December 2014 and mid-April 2015. The period included the Cricket World Cup

[2] Sourced from Tourism Satellite Accounts.

(CWC 2015). We have used survey information to estimate additional expenditure stimulated by i-SITEs. The survey has been set into the regional context of total visitors and total expenditure. This stage delivered insights into the i-SITE network's effect on behaviour – particularly how it changes visitors' spending.

- During the second stage, we have examined the overall regional economic impacts associated with the spending facilitated by the i-SITEs. This was done using an Input-Output model and we estimated the direct, indirect and induced effects.

Each steps key parts are summarised below.

1.1.1 Stage I: Effects of i-SITEs on Behaviour

The direct facilitation role can be estimated from existing information to show the share of total visitor activity and expenditure in each region and nationally in which i-SITEs have a direct role. Gross and net sales achieved by i-SITEs, compared with total visitor expenditure and activity indicated by the International Visitor Survey (IVS) and Domestic Tourism Survey (DTS) information on visitor profiles, provides direct market share of the networks operation. Similarly, information on the numbers of visitors using i-SITEs can be combined with the IVS and DTS data on regional visitor numbers, to show proportions of visitors using the i-SITEs by region.

However, the existing information does not show whether i-SITEs generate additional expenditure, by stimulating visitors to spend on services and goods they would not otherwise have purchased. This information was collected through survey, which confirmed the facilitation/convenience role of i-SITEs, and identified the extent to which the i-SITE affected visitor activity and expenditure.

To estimate this, respondents were asked out how their interaction with i-SITEs had changed their spending. For example, did they undertake activities they found out more about or discovered as a result of visiting an i-SITE. Visitors were also asked how likely or unlikely they were to spend on the activities as a direct result of their visit to the i-SITEs.

In addition to this analysis, it is important to understand the difference between activity that is booked fully through the i-SITE network and that which is booked directly with activities themselves as a result of information obtained at the i-SITE. The former contributes to the successful operation of the i-SITE by allowing centres to collect booking fees, the later doesn't add to the funding of the centres but is as important to the wider region. In terms of overall economic impact, the distinction is not as important, with the exception that by booking through an agent adds a layer of administration to the process that may increase the employment required.

1.1.2 Stage II: Assessing Total Economic Impacts

Once the direct and additional effects of i-SITE operations have been estimated and compared with the overall tourist activity in each region, it is necessary to understand how the expenditure flows through the wider economy. This process highlights the total economic impacts arising for all i-SITE s within each region.

To estimate the flow on effects impacts in terms of net additional tourist expenditure on accommodation, transport and tourist activities, it is put through a Multi-Regional Input Output model. IO models can be used to measure the monetary value of all transactions between players in the economy. For example, a hotel provides accommodation, food and beverages to tourists. To do this it purchases foodstuffs and alcohol from wholesalers, labour from local residents, electricity from national producers, bedding, cutlery, consumables and a wide range of other goods and services from within and without the region. Further explanation of IO modelling and its limitations are fully explained in Appendix 1.

1.2 Data Sources

Four main data sources have been used to assess the economic impacts of the i-SITE network:

1) **Financial Performance Data** of i-SITEs**:** Deloitte collates information on the financial performance of the i-SITEs. The information covers sales and visitor numbers, i-SITE expenditure, sales and bookings for 2013/14 financial year. This data is an important building block for the assessment.
2) **Colmar Brunton survey results.** Colmar Brunton managed an on-line survey for this project. Over 250 responses were collected and analysed. The survey results informed the analysis by shedding light on how the i-SITEs changed/influenced visitor behaviour.
3) **Regional tourism estimates**. The Ministry of Business Innovation and Employment (MBIE) and Statistics New Zealand (SNZ) provide estimates of tourism spending on different product groups by region.
4) **Multi regional economic model.** M.E maintains a number of economic models including Input-Output Models, Computable General Equilibrium models (CGE) and Systems Dynamic (SD). For this project we used our Multi-Regional IO model (with 16[3] regions) to assess the impacts of the i-SITE network on the individual regional economies and national economy overall.

With reference to the i-SITE financial information, we assume that this information is accurate and complete. We did not audit this data. Where possible, M.E triangulated and checked the information used.

[3] The model covers 16 regions but one region is 'Outside the Areas'. this includes some of the islands such as the Chatham Islands.

1.3 Survey

Colmar Brunton managed an online survey that sought to uncover how i-SITE visitors use and respond to the information gathered at i-SITEs. Respondents were asked several questions regarding their purchase decisions and the role of i-SITE information on facilities/activities in these decisions. In particular, respondents were asked:

1. Whether at the i-SITE they learnt of any new activities to participate in and how much they spent on these activities,
2. Whether, at the i-SITE, they found out about any activities that they were already aware of, what these activities were, and how much they spent on these activities,
3. Whether there were any other activities that they had planned to do but would not now participate in these due to new information and participation in other activities, and
4. How the interactions with i-SITEs changed their overall spending plans and itinerary and how this affected overall spending.

The survey findings allow us to assess the extent to which i-SITE users have undertaken additional activity expenditure, either from the i-SITE providing more convenient service than would otherwise have been available, or making visitors aware of – or directly linking them – to services they would not otherwise have purchased. Essentially, this is the difference between the current situation and a situation where tourists simply undertake activities they already had knowledge of.

1.4 Issues and limitations

This research project was undertaken using a staged approach. During the first stage we collected the e-mail addresses of people visiting i-SITEs across the country. All i-SITEs were invited to collect e-mail addresses. The email collection stage ran for a considerable time – from end December (2014) until mid-April (2015). In spite of this extended timeframe, the total number of email addresses that were collected fell short of the planned quota. Consequently, the total number of completed surveys did not meet the intended targets. The initial target was set to return a margin error of 5% and a confidence level of 95% for the entire (NZ wide) sample. The final (completed sample) returns a confidence interval of around 90%. This means that the survey results used in our analysis is 'more uncertain' with less 'certainty' and the results we used in our economic modelling has more 'variance' from the real life situation.

This has meant that in a number of regions the resulting sample size is small. In response to this limitation M.E used a number of additional steps to reduce the effect on our analysis. These additional steps were designed to identify areas where regional patterns differed markedly from the overall (NZ-wide) pattern. If the regional figures fell below the

bottom 5th percentile or above the 95th percentile of the overall sample it was replaced with the median value for that particular question. In situations where a zero response was returned, we used the median results.

We also compared the regional results against the overall situation and relative distribution across regions. Where necessary additional minor adjustments were made to remove outliers. Care was taken to retain any regional patterns originating from the survey process.

Our analysis considers the economic flow on effects of i-SITEs and the spending that they facilitate. With reference to the public funding used to finance some of the activities, we did not look at alternative applications of that funding.

1.5 Report Structure

This report has two other sections.

Section 2 describes i-SITEs and their effects on spending. It distinguishes between spending flowing through the i-SITE network and visitor spending that the network 'secures' for the regions.

Section 3 describes the flow-on effects of the i-SITE network highlighting GDP, employment and income effects. A selection of ratios are used to show the relative effect of the i-SITE network.

2 i-SITEs – Facilitated effects

i-SITEs facilitates a range of economic transactions in the tourism market space. These transactions include direct interaction (sales) with tourist as well as other off-site sales. The scale and nature of these transactions drive the i-SITEs' economic impacts.

2.1 The i-SITE Network – basic figures

To identify the overall role of the i-SITE network, in relation to overall tourist flows, expenditure and regional expenditure, we have examined the level of patronage for each region and their spending through i-SITEs for key tourism-based activities (namely accommodation, attractions and transport). There are around 80 i-SITEs throughout New Zealand.

In 2014, 7.3m people visited i-SITEs and the network recorded around 380,000 internet visits and 290,000 telephone interactions. During the 2013/14 financial year, i-SITEs generated revenues of some $13.8m. This revenue was generated by way of different revenue channels with commission–based sales delivering 53.3% of revenue. This is followed by brochure fees and retail margins contributing 18.3% and 14.4% respectively. The balance is made up of other revenue types.

In total, the i-SITE network employed 557 people (head count) with 192 individuals in full time paid employment, 297 in part time paid employment and 68 volunteers.

2.2 i-SITE Driven Expenditure

Available information on visitor expenditure at the individual i-SITEs suggests that commission-based sales generated by the i-SITEs is around $73.6m (this is the total visitor spend; only a portion of this is returned to i-SITEs in the form of commission and is recorded as i-SITE revenue). Table 2-1 shows the regional distribution of commission-based sales across by category.

The i-SITE network processes $73.6m of sales directly into the national economy by way of the commission based sales moving through the network. This equates to 0.4% of the total tourism expenditure (including both domestic and international visitors of some NZ$17.3bn[4]. The two most important segment are the Holiday and Visiting Friends and Relatives (VFR) market segment with estimated expenditure of $11.9bn in 2014. The i-SITEs services all segments but according to i-SITE NZ the Holiday segment is the most important one. Market share figures from here on compare i-SITE commission-based sales with the Holiday segment, rather than total spending which includes travel to visit friends and relatives (VFR), business travel and travel for other purposes.

[4] Based on MBIE data – Regional Tourism Expenditure Dataset.

Table 2-1: i-SITE Generated Commission-based Sales ($'000)

Region	Travel	Accommodation	Activities	Total
Northland	851.3	1,069.2	911.6	2,832
Auckland	2,632.4	2,600.9	1,278.5	6,512
Waikato	2,132.1	3,730.8	2,627.0	8,490
Bay of Plenty	3,341.3	5,565.6	4,460.1	13,367
Gisborne	176.3	293.6	235.3	705
Hawke's Bay	572.2	953.1	763.8	2,289
Taranaki	156.5	308.0	131.9	596
Manawatu-Wanganui Region	318.6	627.3	268.6	1,214
Wellington Region	1,501.9	1,469.8	1,699.3	4,671
Nelson	449.9	808.3	615.3	1,874
Tasman	373.4	670.7	510.6	1,555
Canterbury	2,359.4	3,317.4	2,808.7	8,486
West Coast	667.6	1,199.4	913.1	2,780
Marlborough	618.7	1,111.5	846.2	2,576
Otago	2,719.1	5,675.4	6,219.0	14,614
Southland	206.5	431.0	472.3	1,110
	19,077	29,832	24,761	73,671

Own calculations based on information from Deloitte and the 2003 study

The largest regions in terms of commission-based sales are:

- Otago region with estimated commission-based sale of $14.6m (19.8% of all i-SITEs),
- Bay of Plenty with sales of $13.4m (18.1%),
- Waikato with sales of $8.5m (11.5%), and
- Canterbury with sales of $8.4m (11.5%).

The largest volume of booked expenditure is in Accommodation, with $29.8m or 40% of commission-based sales. This is followed Activities with some $24.8m (34%) of sales. Travel makes up the remaining $19.1m or 26%.

To define the level of i-SITE involvement in each tourism-based activity we have compared (i-SITE) sales figures against spend estimates for the Holiday market segment's core expenditure categories of:

- Accommodation,
- Transport, and
- Activities and entertainment.

Table 2-2: Holiday Expenditure (Selected Categories; Total NZ Market; $'m)

	Travel	Accommodation	Activities	SUM
Northland	76	26	49	151
Auckland	459	202	519	1,180
Waikato	206	64	159	429
Bay of Plenty	109	56	151	316
Gisborne	8	4	4	16
Hawke's Bay	35	16	57	108
Taranaki	20	11	13	43
Manawatu-Wanganui Region	106	26	57	188
Wellington Region	161	71	198	431
Nelson-Tasman	30	21	22	73
Canterbury	319	132	220	671
West Coast	91	37	33	161
Marlborough	33	14	19	65
Otago	332	186	429	946
Southland	81	36	56	174
SUM	2,067	900	1,985	4,952

Calculations based on MBIE and SNZ data

Holiday activity in the Auckland region is greatest. This is not surprising as the region sees the largest number of international tourists start and end their trips in Auckland. The region also captures a sizable portion of domestic tourist spending. In total, tourists spend $1.1bn in the Auckland region in these categories, or 23.8% of the total[5]. The second largest region is Otago with $946m followed by Canterbury with $671m in holiday activity. Overall, 1.5% of the relevant tourism expenditure flows through the i-SITE network. The network processes 3.3% of accommodation spend and 1.2% of the attractions and activity category (and entertainment) as well as 0.9% of the travel category (transport).

There is a considerable variation across the regions and expenditure categories. i-SITE sales in the Bay of Plenty region accounts for 10% of accommodation spending in that region. In Marlborough, this is around 7.9% of the Holiday segment's accommodation spending. In Auckland the corresponding figure is 1.3%. In Marlborough the activity and entertainment spending flowing through i-SITEs is 4.5%, of this spending with only 1.9% of the transport spending. Table 2-3 shows the shares for the other activities.

Table 2-3: Share of Expenditure Flowing through i-SITEs

Region	Travel	Accommodation	Activities	Total

[5] As measured in this table; only the Holiday segment is included.

Northland	1.1%	4.0%	1.9%	1.9%
Auckland	0.6%	1.3%	0.2%	0.6%
Waikato	1.0%	5.9%	1.7%	2.0%
Bay of Plenty	3.1%	10.0%	2.9%	4.2%
Gisborne	2.3%	7.7%	5.3%	4.5%
Hawke's Bay	1.7%	6.0%	1.3%	2.1%
Taranaki	0.8%	2.8%	1.0%	1.4%
Manawatu-Wanganui Region	0.3%	2.5%	0.5%	0.6%
Wellington Region	0.9%	2.1%	0.9%	1.1%
Nelson-Tasman	2.7%	7.1%	5.2%	4.7%
Canterbury	0.7%	2.5%	1.3%	1.3%
West Coast	0.7%	3.2%	2.8%	1.7%
Marlborough	1.9%	7.9%	4.5%	4.0%
Otago	0.8%	3.1%	1.5%	1.5%
Southland	0.3%	1.2%	0.8%	0.6%
Overall	0.9%	3.3%	1.2%	1.5%

When expressing the expenditure Regional i-SITE influenced expenditure as a share of total market spending and highlights the overall importance of the network as a key channel for tourism spending. Direct expenditure generated at the i-SITEs (commission based sales) equates to 1.5% of the total market. The accommodation segment is the most important with spending through i-SITEs processing 3.3% of this segment.

There are significant regional variations with some of regions capturing over 4% of holiday tourist spend and others less than 1%. It is important to realise that i-SITEs also service other tourist segments such as VFR and business tourists that may interact with them. According to Tourism NZ, the overall share of these other markets in the context of i-SITE activity is reasonably small.

2.3 Additional Expenditure

When assessing the economic impact of a project, event, facility or a network (such as the i-SITEs), it is important to exclude any effects that are not related to (or caused by) the subject. In other words only 'additional effects' should be included in the assessment. The additional expenditure generated by the i-SITE network is defined as the sum of all activity and tourist spending that would not have otherwise occurred. In other words, it reflects the spending that would have been lost (not taken place) if the i-SITEs weren't operating. It is also important to net out activities tourists no longer undertake as a result of new information and new activities.

To estimate the additional impact attributable to i-SITEs, information from the Colmar Brunton survey was used in conjunction with information on the number of visitors in each region. The additional expenditure that can be attributed to the i-SITE network was estimated using the following steps:

1. Define the parameters of total i-SITE visitors using information from the Deloitte dataset.
2. Review and analyse the Colmar Brunton survey to identify the number of visitors undertaking additional expenditure on an activity. This was done by comparing the proportion of respondents that sought information on a particular type of activity, how much they spent on that activity(ies) as well as the likelihood that they would have incurred those transactions based on their interactions with the i-SITEs.
3. Estimates from the survey where then used as proportions to estimate the proportion of total visitor expenditure that could be attributed to the presence of the i-SITEs and the proportion that would have occurred regardless.
4. Next the gross spending was adjusted to remove any spending that would (could) have taken place without any i-SITE interactions. For example, while a visitor may have found information about a place to eat (and spend money at that restaurant) from an i-SITE, it can be argued that the visitor would have found an alternative restaurant by simple exploring the locality. This suggests that the i-SITE delivers a convenience service to the visitor, improving the overall experience. However, this service does not necessarily increase the overall spending in the region.

The net effects modelled and reported here reflects both the transactions undertaken at the i-SITEs as well as the other facilitated spending. That is the spending where a visitor(s) find out about new activities at the i-SITEs and then undertake that activity without using the booking services offered by i-SITEs.

2.3.1 Additional Expenditure Facilitated by the i-Sites

i-SITEs facilitate a range of economic transactions. Table 2-4 shows the breakdown by category of *overall* spending as a result of i-SITE interactions. The spending is estimated at $298.5m. The largest category is 'paid activities' which generated $92.5m, followed by accommodation ($79.8m) and trips[6] at $68.8m. These figures suggest that i-SITEs play an important role in linking visitors and attractions and tourism facilities (e.g. accommodation). This figure includes the $73.6m sales flowing through the i-SITE network.[7]

The tourist areas of Bay of Plenty, Otago, Canterbury, and Waikato captured the greatest share of this spend with each region having between $35m and $40m worth of spending. There are regional differences in terms of the concentration of facilitated spending. For example, in Canterbury, the spending is concentrated in accommodation while in the Waikato, the paid activity category is the largest.

[6] This refers to transport costs and spending.

[7] After adjusting the commission-based sales to reflect the relevant sales margins.

Table 2-4: Spending facilitated by the i-SITE network

$'m	Accommo-dation	Paid attractions and activities	Events	Travel and Transport	Places to eat and drink	Local facilities
Otago	6.1	14.6	2.1	12.5	0.9	0.9
Canterbury	14.5	4.5	2.7	4.4	2.2	10.9
Auckland	4.6	3.2	0.3	5.2	0.4	1.8
Northland	3.0	6.7	2.8	6.7	0.7	4.0
Marlborough	2.1	2.8	0.1	2.6	0.1	0.5
Waikato	8.6	18.5	2.0	3.4	0.6	3.0
Southland	1.6	2.1	0.1	1.9	0.1	0.4
West Coast	3.4	3.3	0.7	3.1	0.3	1.0
Gisborne	1.4	1.8	0.1	1.7	0.1	0.3
Hawke's Bay	7.0	8.6	3.0	6.2	2.3	1.6
Wellington Region	5.6	4.9	1.2	2.7	0.3	0.9
Tasman	0.8	2.4	0.1	0.4	0.1	0.5
Nelson	1.7	2.3	0.1	2.1	0.1	0.4
Taranaki	1.9	1.3	0.0	1.1	0.2	0.7
Bay of Plenty	12.9	11.2	2.0	8.7	1.7	1.3
Manawatu-Wanganui Region	4.9	4.3	0.7	6.0	0.5	0.7
SUM	79.8	92.5	18.0	68.8	10.6	28.9
Total			**298.5**			

It is noted that the $298.5m figure is based on the survey results – specifically how the respondents interacted with the i-SITEs. It reflects the value of transactions where the i-SITEs had *some/potential* influence over visitor behaviour.

The above figure cannot be used to estimate the economic effects because it includes situations where a visitor may have used an alternative sources to guide his/her spending decisions. It is necessary to isolate the spending that can be attributed to the i-SITEs interaction with visitors. Table 2-5 shows the spending that can be attributed to the i-SITEs.

Table 2-5: Net Additional spending

$'m	Accommo-dation	Paid attractions and activities	Events	Travel and transport
Otago	3.0	4.7	1.5	0.7
Canterbury	9.7	2.5	1.6	0.5
Auckland	1.4	1.3	0.1	3.1
Northland	1.5	3.2	1.9	2.7
Marlborough	1.0	1.0	0.0	1.4
Waikato	4.3	7.9	0.7	0.5
Southland	0.8	0.7	0.0	1.1
West Coast	1.7	1.4	0.3	1.4
Gisborne	0.7	0.6	0.0	0.9
Hawke's Bay	3.4	4.2	1.3	1.7
Wellington Region	2.2	2.3	1.1	0.6
Tasman	0.2	0.7	0.0	0.0
Nelson	0.8	0.8	0.0	1.1
Taranaki	0.9	0.8	0.0	0.4
Bay of Plenty	6.4	5.1	1.8	2.0
Manawatu-Wanganui Region	2.7	1.8	0.3	1.3
Sum	40.7	39.0	10.6	19.0
Total		**109.3**		

The net additional spending that is facilitated by the i-SITE network is estimated at $109.3m with 37.2% of this in accommodation. This is followed by paid attractions and activities with $39.0m spending. Again M.E notes the regional differences. The spending associated with travel and transport, and events is relatively small coming in at $19.0m and 10.6m respectively.

The total value of the transactions facilitated by the i-SITE network is estimated at $109.3m. This suggests that for every $1 of commission-based sales moving through the i-SITE network, there is $1.48 total facilitated activity in the wider economy. This ratio can be used as a proxy to estimate the overall net additional spending taking place in the wider economy. Importantly, it is not a multiplier.

The economic impact of the i-SITEs is associated with this spending and how the demand created by this spending flows through the economy.

The next section describes these flow on effects.

3 Facilitated Economic Impacts

Tourism impacts can be expressed in terms of the direct and flow on effects associated with visitor spending. Crucially, the spending has a spatial component the supporting supply chains are (generally) not constrained by administrative boundaries meaning that the economic effects can flow across and between regions.

For example, a hotel in Hamilton may use legal or accounting services offered by a firm that is located in Auckland, Wellington or Christchurch. Understanding these cross-regional flows is important when assessing network effects because a change in economic activity in one region can have an effect on another region.

3.1 Multi Regional Economic Model

Total economic effects are the aggregate of direct, indirect and induced effects associated with how expenditure flows through an economy. Each of these three effects relate to different 'rounds' of economic impacts. The **direct impacts** arise from increased activity in sectors which directly service tourism – particularly accommodation, transport, retail, entertainment and hospitality, and i-SITEs. To meet the demands from tourist spending, businesses in these sectors require more goods and services from their own suppliers, whose level of activity consequently increases. This is the **indirect impact**, which can flow through several layers of the economy. As firms deliver the goods and services associated with the direct and indirect impacts. They require extra employees to deliver those goods and services. In turn employees are remunerated and they spend their earnings, generating another round of impacts called the **induced impacts**. The economic impacts are measured and described using three indicators:

- **Gross Domestic Product** (GDP). GDP measures the net contribution of an activity, covering wages and salaries (including income tax), consumption of fixed capital, GST and indirect taxes (on production), and operating surplus, less subsidies. It excludes the value of goods and services directly purchased from other sectors.
- **Employment** (using Modified Employee Counts or MECs). A MEC is an indicator of employment that includes all employees (head counts) as well as working proprietors.
- **Income**. This indicator includes the salaries and wages paid to households as compensation for their labour. Income also includes a portion of operating surplus to account for dividends paid out.

In this study we use a Multi-Regional IO model covering NZ's regions[8] and 55 economic sectors[9]. To estimate the economic effects of the spending that i-SITEs facilitate, the

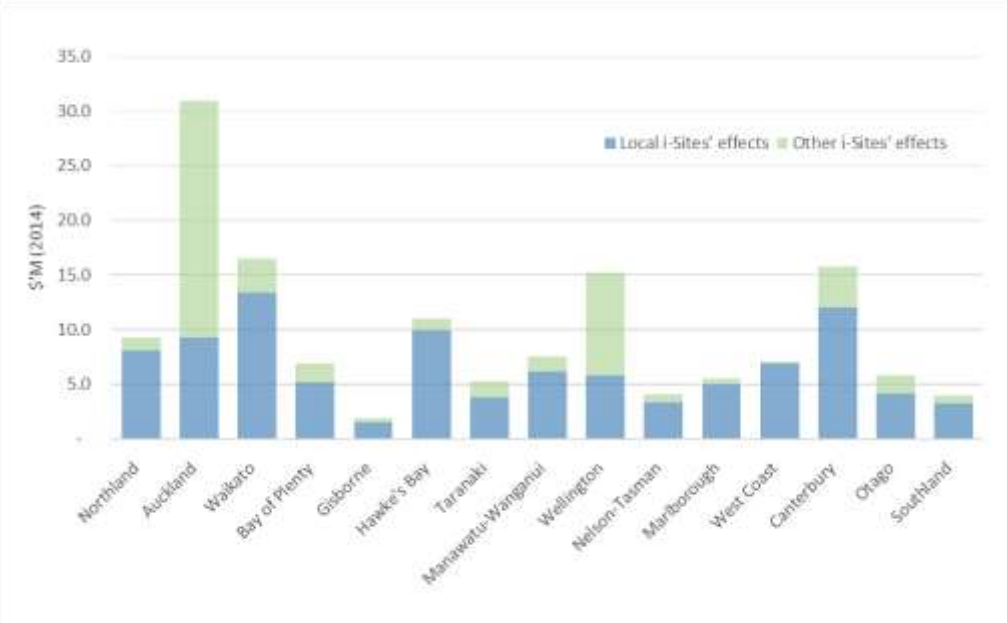
[8] The model covers 16 regions but 1 region is 'Areas outside of NZ' and refer to areas such as the Chatham Islands.
[9] This includes 48 economic sectors and 7 primary input sectors.

expenditure has to be mapped to specific economic sectors. It is important to note that a large portion of tourist spending is in retailing. Accurately estimating the economic effects of additional retail spend necessitates another round of sector mapping that matches the retail spending, with the appropriate economic sectors (not just retailing) to account for retail margins. If this is not done then the retail effects may be overstated.

3.2 Economic Impacts

The economic impacts presented here relates to the total effects and also distinguishes between the effects felt within each region as a result of i-SITE activity in that region. As mentioned earlier, economic activity flows across regional boundaries meaning that an i-SITE in one region can have an economic impact in other regions through the flow of goods and services across boundaries. We distinguish between the 'local' and 'interregional' effects. Figure 3-1 illustrates the GDP effects felt in different regions. Table 3-1 shows the regional impacts of using GDP, employment and income[10].

Figure 3-1 Economic Effects – GDP per Region



[10] The table includes the GDP data used to prepare the figure. This is included for completeness.

Table 3-1: Economic Impacts –Summary Data

		Northland	Auckland	Waikato	Bay of Plenty	Gisborne	Hawke's Bay	Taranaki	Manawatu-Wanganui	Wellington	Nelson-Tasman	Marlborough	West Coast	Canterbury	Otago	Southland
GDP ($m)	Within region i-SITEs' economic effects felt within region	8.1	9.3	13.4	5.1	1.5	9.9	3.8	6.2	5.7	3.3	4.9	6.9	12.0	4.1	3.3
	Other regions' i-SITEs economic effects felt within the region	1.2	21.6	3.1	1.8	0.4	1.1	1.4	1.4	9.5	0.8	0.6	0.3	3.7	1.7	0.7
	Total GDP effects felt within the region	**9.3**	**30.9**	**16.5**	**6.9**	**1.9**	**11.0**	**5.2**	**7.6**	**15.2**	**4.0**	**5.5**	**7.1**	**15.7**	**5.8**	**4.0**
	Economic effects of within region i-SITEs flowing out to other regions	5.0	1.8	6.6	3.0	1.1	5.3	2.4	3.4	1.6	2.0	3.4	5.6	3.6	2.0	2.3
Employment	Within region i-SITEs' economic effects felt within region	118	122	197	121	28	183	58	107	81	59	76	105	225	79	55
	Other regions' i-SITEs economic effects felt within the region	14	240	43	27	8	18	13	25	96	13	9	4	58	28	13
	Total Employment effects felt within the region	**132**	**362**	**240**	**148**	**36**	**201**	**71**	**131**	**178**	**72**	**85**	**109**	**283**	**107**	**68**
	Economic effects of within region i-SITEs flowing to other regions	1	13	2	1	0	1	1	1	6	0	0	0	2	1	0
Income ($m)	Within region i-SITEs' economic effects felt within region	5.0	5.7	8.3	3.1	1.0	6.2	2.4	3.9	3.5	2.0	3.1	4.4	7.4	2.6	2.0
	Other regions' i-SITEs economic effects felt within the region	0.7	13.1	1.8	1.1	0.2	0.7	0.8	0.8	5.7	0.5	0.3	0.2	2.3	1.0	0.4
	Total Income effects felt within the region	**5.7**	**18.8**	**10.2**	**4.3**	**1.2**	**6.9**	**3.1**	**4.8**	**9.3**	**2.5**	**3.4**	**4.5**	**9.7**	**3.6**	**2.4**
	Economic effects of within region i-SITEs flowing out to other regions	3.0	1.0	4.0	1.8	0.7	3.2	1.4	2.1	0.9	1.2	2.1	3.4	2.2	1.2	1.4

For each indicator, the following four dimensions are shown.

1. '*Within region i-SITEs' economic effects felt within region*': each i-SITE facilitates spending in the local area. These are the total economic flow on effects that are felt within the same region as where the i-SITE is located.

2. *'Other regions' i-SITEs economic effects are felt within the region'*: Each i-SITEs facilitates tourism spending in their regions. The businesses servicing this first round of visitor demand a range of goods and services. Some of these goods and services may be procured from firms in other regions, implying that some of the economic flow on effects are felt in other regions. This category reflects the flow on effects felt in a region that originates from spending facilitated by the i-SITEs in other regions.

3. *'Total GDP effects felt within the region':* This is the sum of the economic flow on effects felt with a region. This includes the total effects of all i-SITEs within a region as well as the flow on effects felt in the regional economy which originate from other regions.

4. *'Economic effects from an i-SITE within a region flowing out to other regions'*: Some supply chain (flow on) effects associated with visitor spending flow to other regions. In other words, a portion of an i-SITE's economic effects are felt in other regions.

Combining the above aspects provides an ability to estimate:

- The total effects felt **within** each region, and
- The total effects **generated** by the i-SITEs in each region.

The total economic effects generated by the i-SITE network in the total economy is estimated at $146.8m of GDP. This activity is generated using some 2,220 employees (MECs) returning income of around $90.2m to households. In most regions, around two thirds of the economic effects (GDP) stay within the region.

An important observation about the overall economic effects is that the Auckland, Wellington and Canterbury economies capture a substantial portion of 'out of region' effects. This is due to the flow on and supply chain effects. In Auckland, for example, $21.6m of GDP impacts are felt and these impacts arise due to Auckland based firms delivering goods and services to firms in other regions (whose spending decisions were affected by the i-SITEs in those regions).

The total economic effects of the i-SITE network is concentrated in Auckland with around 21% of the GDP effects felt in this region. Other regions that experience large (overall) effects include Waikato and Wellington region.

It is however important not to confuse tourism spending and activity in the regions, total tourism spending through the i-SITEs, and the facilitated spending that is attributed to i-SITEs. i-SITEs in regions such as Otago capture large portions of visitor

spend but it is argued that a substantial portion of that spend would have taken place irrespective of i-SITEs (as underpinned by the survey findings). In these cases the i-SITEs' make value contributions by enhancing the visitor experience by making it easier for visitors to find relevant attractions and activities.

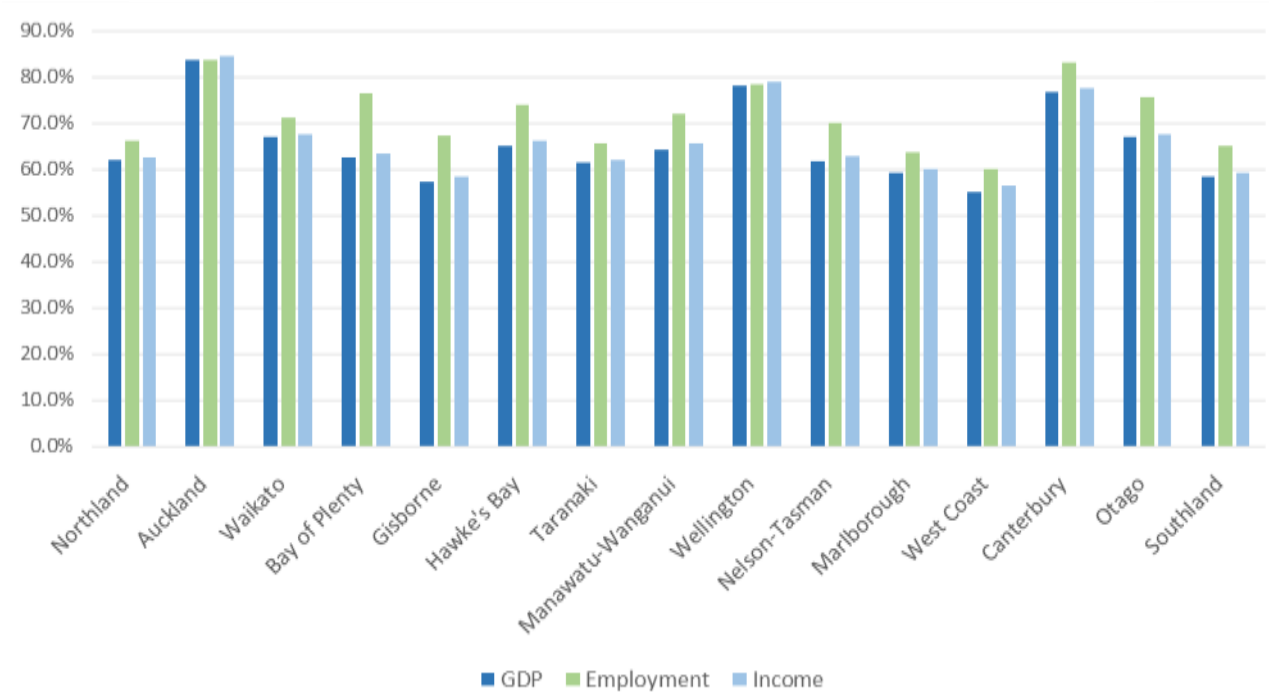
The employment and income effects show a similar distribution to the GDP effects. This is not surprising as there is a reasonably close relationship between economic activity, GDP, employment and income.

3.3 Spatial Concentration of Effects

The different i-SITEs tend to concentrate on their immediate surrounds, with a key focus on supporting local tourism activities. It is therefore, important to understand what portion of the economic effects are felt locally and how much flows out of the region.

In all regions, most of the GDP effects are felt locally with around two thirds of effects staying in the regions (see Figure 3-2).

Figure 3-2: Percentage of i-SITEs effects felt within region (where located)



In terms of employment a slightly larger share of effects are felt locally while the income effects are close the GDP effects. The average across the regions are:

- GDP 65.4%,
- Employment 71.5%, and
- Income 66.2%.

Auckland, Wellington and Canterbury retain the largest portions of the effects locally. This pattern matches New Zealand's inter-regional trade flows, where the smaller economic centres source some of their goods and services from the largest cities and regions.

3.4 Key Ratios

The operation of the i-SITE network is partially funded by local and regional entities such as Councils and Regional Tourism Organisations (RTO). One of the key uses for this report is to highlight the potential returns local councils or regions get for this "investment". One way to demonstrate this is by relating total economic impacts for each region, generated by the operation of the i-SITE with the money local entities, such as councils, provide.

Local authorities and RTOs contribute $11.3m to the operation of the i-SITE network. The greatest contributions came from the Waikato, Bay of Plenty, Wellington and Otago Regions. In these regions, the i-SITEs receive over $1m of public funding with Waikato funding being just under $2m.

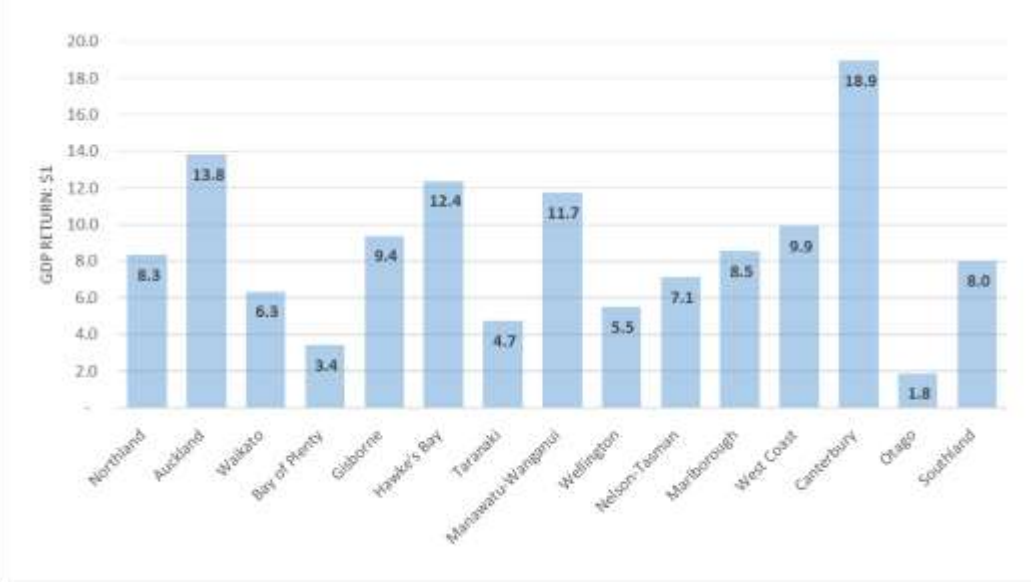
Conversely, some i-SITEs receive little to no public funding. To assist with the comparison, we calculated the average Dollar funding per visitor that publically funding i-SITEs received and applied this ratio to the unfunded i-SITEs. This allows us to compare the relative return on public investment. It is important to realise that the public funding is only a portion of the funds needed to operate the i-SITEs. Without the i-SITE funding, the overall network would face an $11.0m deficit. It is also important to note that of the 10 i-SITEs that do not receive public funding, only one runs a deficit.

Figure 3-3 compares the economic effects (GDP) facilitated by the public funding.

The return ratios vary from 1.8 in Otago to 18.9 in Canterbury. The average across the network is 8.7. A closer inspection of the figures used to calculate this ratio shows that the regions with high ratios have one (or more) i-SITEs with low funding levels relative to the general pattern. This is particularly evident in cases[11] such as the Christchurch Airport i-SITE, the SkyCity i-SITE, Queenstown i-SITE and Ruapehu i-SITE to name a few. The ownership structure of some i-SITEs mean that they are not funded publically resulting in the large spread in $ funding/visitor shown above. Appendix 2 shows the spread of $ funding/visitor across all regions and ownership types.

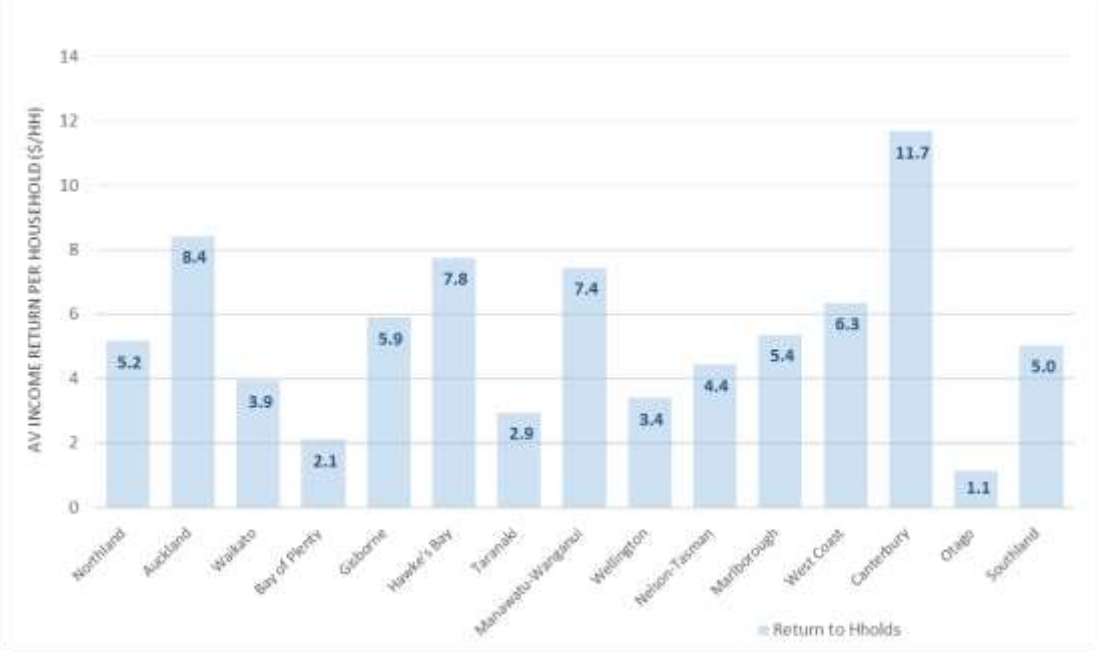
[11] Some of these i-SITEs are independently owned. In these cases they lift the regional average presented above.

Figure 3-3: GDP Return per $1 Funding



One component of the economic effects is income – salaries and wages returned to households as payment for labour. We express the income returned relative to the public funding contributed (on a per household basis). This shows the net effects on a 'per household basis'[12]. Figure 3-4 shows the relative household income effects for the within region effects (the income effects accruing to each region arising from i-SITEs within that region).

Figure 3-4: $ Income per Households: $ Cost per Household

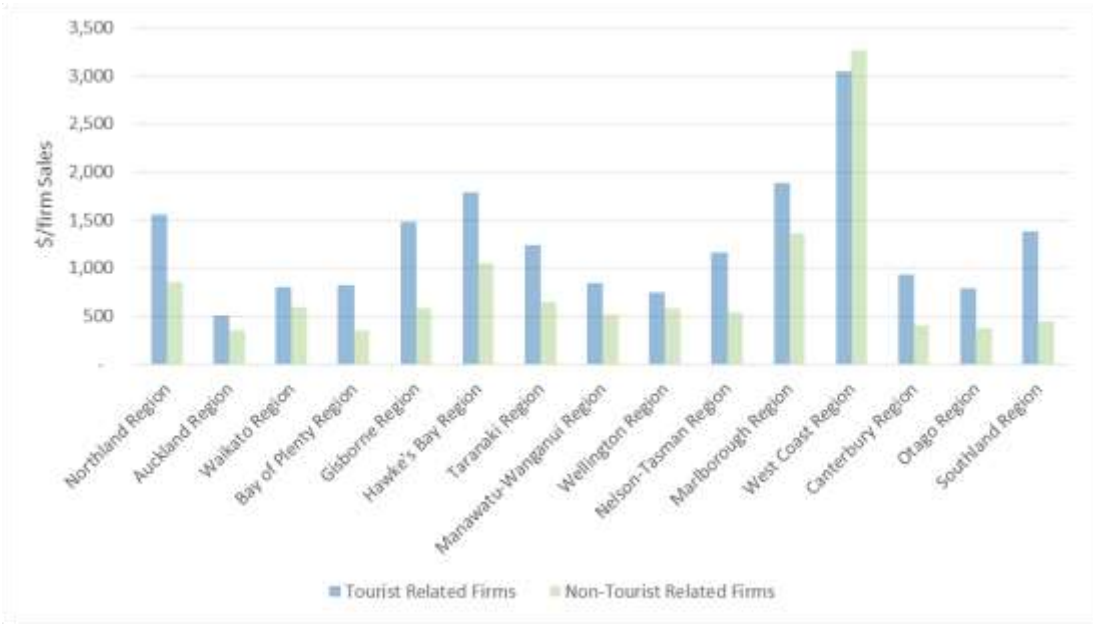


The overall profile of the income effects match the distribution outlined in . This is as expected because income is a portion of GDP. Nonetheless, it is important to view the income effects on a per household basis because households are indirect funders and stakeholders. It is important to not confuse households with ratepayers because ratepayers and households are not synonymous and ratepayers include business properties.

Across the regions, the average income returned to households for every $1 provided in funding is $5.2, varying between $1.1 and $8.4. This indicator relates to the i-SITEs' effects within the region where they are located and does not include the effects in other regions (the effects felt in one region arising from interregional trade).

i-SITEs are contributing to local economic activity by facilitating tourism spending. This is picked up as additional sales (which drive GDP effects). As expected, the largest share of these sales is concentrated in firms with exposure to tourist spending. In turn these firms purchase inputs (goods and services) from other, non-tourism related firms. The i-SITE network facilitates, on average, $1,265 additional sales for tourist related firms and $793 for non-tourist related firms. Figure 3-5 shows the average additional sales for tourist related and un-related firms in each region.

Figure 3-5: Sales Effect on firms ($)



The average sales per tourist firm ranges between $504 in Auckland to $3,050 in the West Coast. In terms of non-tourist firms, average sales per firm ranges between $346 and $3,260 in the same regions. This suggest that in smaller regions, e.g. Northland, Hawke's

Bay, Taranaki and Gisborne the i-SITEs sales effect on tourism firms are comparatively higher. This is because there are fewer firms sharing the sales benefits.

3.5 Effect of i-SITE operations

In addition to the facilitated effects, i-SITEs generate a set of economic effects by way of their own transactions (supply chains) and the salaries and wages they pay. These operational effects are relatively small. The 'operational' effects of the i-SITE network is put at:

- GDP effect of $18.6m,
- 290 employment opportunities in the wider economy,
- Income returned to households of around $11.2m.

The operational effects outlined above is derived from the visitor spending and a portion of the GDP$18.6m is included in the overall effect of i-SITEs. This portion is around $6.8m or 36.6% (of the $18.6m). It is included in the overall effect that i-SITEs facilitate (i.e. the $146.8m GDP impact).

The operational activities of i-SITEs are funded by visitors spending on goods and services at i-SITEs as well as the public funding made available to the i-SITEs. The rationale for funding i-SITEs is based on the understanding that they increase local tourist spending and that they generate local benefits. This analysis shows that this is the case and that i-SITEs play an important role in the tourism industry.

3.6 Concluding Remarks

Tourism is one of New Zealand's key sectors and the i-SITE network is an important component in this industry. The core benefit of i-SITEs is that they improve the visitor experience thereby unlocking spending. This spending creates a series flow on effects. Most of these effects are felt within at a regional level but due to interregional trade patterns, some effects and benefits are felt in other regions.

Despite the constraints of the modelling techniques used in this study and the issues encountered during the primary research phase, it is clear that the i-SITE network is making a positive economic contribution.

This research did not consider the non-monetary impacts of the i-SITEs and the network. These impacts may be substantial and could create wider economic effects arising from the social value of an i-SITE in a small community as it can be viewed as an important community facility. Other effects not included in this assessment include: the effects of future, return visits and the potential marketing value of i-SITEs. If these effects were to be included in the assessment it would, in all likelihood, increase the economic value of the i-SITE network.

4 Appendices

Appendix 1: Input-Output Modelling

One of the assets of Input-Output modelling is that the results it provides are easy to identify and digest, and relatively easy to use once Input-Output tables are available for a particular region. However, IO analysis is not without limitations, despite being widely applied in New Zealand and around the world. The most common limitations relate to the historical nature of IO Tables. We use IO tables derived from the 2006/7 Supply and Use Tables. We deflate the values to the relevant base year, estimate the economic effects and then re-inflate the values to show the effects in current terms.

With reference the IO modelling in general, a key assumption is that input structures of all industries (i.e. technical relationships) are fixed. In the real world, however, technical relationships will change over time. These changes are driven by new technologies, relative price shifts, product substitutions and the emergence of new industries. For this reason IO analysis is generally regarded as suitable for short-run analysis, where economic systems are unlikely to change greatly from the initial snapshot of data used to generate the base IO tables. In addition to the 'fixed structure' assumption, other important assumptions (and limitations) of IO models are:

- **Constant return to scale**: This means that the same quantity of inputs is needed per unit of output, regardless of the level of production. In other words, if output increases by 10 per cent, input requirements will also increase by 10 per cent.
- **No supply constraints**: IO assumes there are no restrictions to inputs requirements and assumes there is enough to produce an unlimited product.
- **The model is static**: No price changes are built in meaning that dynamic feedbacks between price and quantity (e.g. substitution between labour and capital) are not captured.

The following indicators are used to measure economic impact:

- **Gross Domestic Product. GDP** measures all payments to factors of production (land, labour and capital), and excludes all purchases of intermediate inputs. It broadly equates with Value Added (VA) which is also used as an indicator in economic impact assessments. Components of value added include compensation of employees (salary and wages), operating surplus (company profits), consumption of fixed capital (depreciation), net subsidies and taxes on production.
- **Employment** is measured in Modified Employee Count years (MECs). This is the number of full-time and part-time employees as well as working proprietors on an annual basis. This provides a measure of the labour demand associated with the estimate level of economic activity. Note that additional MEC-years do not necessarily require that additional persons be actually employed. It may mean existing employees or proprietors work longer hours to complete the additional work.

- **Income** is a measure of salaries and wages paid to employees in return for the labour. Income also includes a portion of the operating surplus to reflect dividends that are paid to business owners.

Appendix 2: Spread of $/Visitor by i-SITE Type

$/Visitor	Council	Trust	RTO	Independent	DOC
Otago	3.2	-	1.4	-	-
Canterbury	0.4	1.7	0.3	-	-
Auckland	2.3	-	1.2	-	-
Northland	1.9	-	-	-	0.3
Marlborough	-	-	0.3	-	-
Waikato	10.0	0.9	0.7	1.3	-
Southland	-	-	-	-	-
West Coast	2.8	3.1	-	-	1.4
Gisborne	-	-	1.1	-	-
Hawke's Bay	2.3	-	-	-	-
Wellington Region	9.3	0.2	1.8	3.2	-
Tasman	-	0.6	-	-	-
Nelson	-	-	-	-	-
Taranaki	6.5	-	-	-	-
Bay of Plenty	1.4	-	2.4	-	-
Manawatu-Wanganui Region	3.9	-	1.3	-	-
Calculations based on Deloitte Information					

Appendix 3: Visual Interpretation