V&A Dundee Economic Impact Assessment

Year 1 impacts

for

V&A Dundee

FINAL REPORT

January 2020

ekosgen

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Summary of economic impact assessment

Introduction

This section draws together the findings of the impact assessment and sets out the conclusions and implications for V&A Dundee. Undertaking the impact assessment of the first year is an important opportunity to take stock, understand what it has achieved locally, nationally and internationally, and consider how its performance and impacts can be maximised going forward, building on the undoubted success in year one.

Year 1 performance

At the heart of Dundee's Waterfront regeneration project, V&A Dundee has quickly established itself as a cornerstone of Dundee's cultural offer. It is also important at Scottish level as a champion of design in Scotland. It has made progress against its four principal strategic objectives by showcasing design in a Scottish context, providing design education and skills, engaging with business, creating a world-class attraction, and contributing to the culture-led regeneration of Dundee.

The museum has performed very strongly in its first year, far exceeding visitor numbers originally forecast. It has delivered major exhibitions with international appeal, been shortlisted for and won a number of prestigious awards, and achieved international media coverage. There is no doubt that it has successfully established itself on the world stage as an important cultural attraction. Following particularly high visitor numbers in the first two full months following opening, monthly visitor numbers have been broadly steady, with any fluctuations likely reflecting school holiday periods or no paid exhibition on offer.

The museum has attracted new, first-time visitors to the city, many of whom would not have visited Dundee without it. Encouragingly, there is evidence that a substantial proportion of people who have visited V&A Dundee are likely to return which is extremely positive and an important indicator of sustainability.

Based on its remarkable performance, estimations of annual visitor numbers to 2024/25 have been revised upwards. The new forecasts reflect experiences of comparable museums, and assumptions around anticipated visitors to different types of exhibitions as well as visits without an exhibition.

Gross economic impacts

Based on visitor survey evidence, V&A Dundee's success in attracting visitors has translated to strong economic impacts. The gross impacts of V&A Dundee's first year of operation are very good, and higher than forecast at all levels (Dundee, Tay Cities Region, Scotland). At the Dundee level, V&A Dundee supports 696 FTE, and generates £13.9 million of income and £21.0 million GVA.

This is primarily driven by the higher than forecast visitor numbers to the museum. This includes residents of parts of Scotland outside Tay Cities Region, residents of the rest of UK and overseas visitors. It is also driven by a proportion of overseas visitors, who are staying outwith the Tay Cities Region and visiting the museum. These visitors are on relatively long, multi-day visits to Scotland, and consequently their spend per head is high.

Table 1: Total (direct, indirect and induced) gross economic impacts, Dundee, Tay Cities Region and Scotland – on-site and off-site

	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	696	992	2,143
Income (£million)	13.9	20.4	42.8
GVA (£million)	21.0	32.2	75.4

Source: Consultants' calculations

Net economic impacts

Net impacts (those that would not be realised if V&A Dundee did not exist) are much stronger than anticipated at the Dundee and the Tay Cities Region, again in part as a result of the high visitor numbers. In Dundee, V&A Dundee's operation, and the visitor spend generated, supports an additional 370 FTE jobs[1], and generates £7.6 million of additional income and £10.9 million additional GVA.

Net impacts at the Scotland level are at a similar scale to those originally forecast.

Table 2: Total (direct, indirect and induced) net economic impacts, Dundee, Tay Cities Region and Scotland – on-site and off-site

	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	370	294	104
Income (£million)	7.6	6.2	2.0
GVA (£million)	10.9	9.2	3.8

Source: Consultants' calculations

It is worth noting that in future years, the additionality of visitors from outside Scotland (both UK and overseas) may change. It is expected that overseas visitors, for example, will have made travel plans well in advance, and V&A Dundee would not have been open when travel itineraries were decided. Therefore there may be an increase in the numbers travelling specifically to visit V&A Dundee (i.e. additional overseas visitors) in future.

Informing future investment

Though forecast future visitor numbers are still expected to drop off from current levels anticipated, they are still higher than originally forecast. V&A Dundee can therefore be expected to continue generating significant economic impacts in future years. Broad estimates for visits in the 2020/21 financial year are in the region of 511,000; this estimate includes provision for a range of exhibition types. Assuming the same visitor profile and spend level as in Year 1 of V&A Dundee's operation, it is expected that this could generate:

- £14.4 million of gross GVA at the Dundee level; this equates to net GVA of £7.7 million.
- £46.9 million of gross GVA at the Scotland level; this equates to net GVA of £2.4 million.

If funding was secured to host higher-profile exhibitions which attracted an extra 50,000 visitors per year (but V&A Dundee maintained the number of two major exhibitions per year), then it is reasonable to expect it could generate the following additional impacts:

- £1.1 million of gross GVA at the Dundee level; this equates to net GVA of around £520,000.

[1] It may be that these are either new jobs, safeguarded jobs, or incremental increases in individual employees' hours worked.

- £4.3 million of gross GVA at the Scotland level; this equates to net GVA of £218,000.

Given the possibility of increasing numbers and additionality of future overseas visitors to the museum, this could be considered a conservative estimate. Therefore there appears to be a strong rationale for investing in blockbuster exhibitions to attract higher numbers of visitors to the museum. It is worth exploring the advantages of an additional exhibition or exhibitions over and above those already programmed, taking account of the likely costs of doing so, available exhibition space and the time requirements for exhibition changeovers.

As demonstrated by the 3D Festival impact assessment set out in Section 3, a similar destination-driving event can reasonably be expected to deliver net additional impacts of £475,000 turnover and £160,000 GVA at the Dundee level, and £950,000 turnover and £360,000 of GVA at the Scotland level. It is possible that these net impacts may be higher for a dedicated festival, as it can be expected that the festival would be the primary reason for attending for many attendees. There is a growing trend for more city-based and urban festivals, such as TRNSMT in Glasgow and Wild Life Brighton, so this is something that Dundee can tap into, and use design and creativity as a USP on which to base and promote the event.

Growing the number of visitors from outwith Scotland (i.e. overnight visitors) that can be considered additional, i.e. so that V&A Dundee is a primary driver for their visit, would considerably increase net impacts. Spend from overseas visitors is higher than day visitors and domestic overnight visitors due to the need for accommodation, and the length of stay. Therefore being able to secure a greater share of this as additional impact will have a strong positive effect on the net impact of the museum. Securing additional domestic visitors will also help to offset the forecast decrease in additionality of the domestic audience over time (i.e. it is generally assumed that over time, there will be a decrease in the visitor attraction as the main driver for the visit).

An effective marketing and communications strategy for both domestic and overseas visitors will help to secure new visitors from local, national and international markets. For the latter in particular, V&A Dundee may wish to consider specific targeting at that short break market, as visitors from this market segment are likely to display higher levels of additionality than visitors on a long-stay holiday of 14+ days. Short break visitors may also be encouraged to extend their stay, through being made aware of other attractions and cultural activities elsewhere in Scotland.

Conclusions

V&A Dundee has realised significant success in its first year, and has far exceeded original expectations. This achievement, and its wider successes, should not be understated.

As the report demonstrates, the impacts generated by the museum's operation represent a considerable uplift to the Dundee and Tay Cities Region economy, and make a good contribution to the wider Scottish economy in terms of jobs created and GVA generation. The impact at the Dundee level through the museum's operation as a medium-sized enterprise is making, and will undoubtedly continue to make, a significant contribution to the city's creative and cultural sector, and wider economy.

When considered alongside the museum's wider strategic impacts, V&A Dundee's achievements in such a short space of time are substantial. V&A Dundee is very much an 'anchor' development, not only for the Waterfront regeneration programme but for the city as a whole, and is driving additional economic activity for Dundee and the wider Tay Cities Region.

With strong forecast visitor numbers, V&A Dundee is in a good position to capitalise on this early success going forward. It can remain a driving influence in Dundee's culture-led regeneration, and is well-placed to continue generating substantial economic and wider impacts through its operation and through the visitors that come to the museum, for Dundee, the Tay Cities Region and more widely across Scotland.

It has provided good value per public pound invested in its first year of operation. Future investment in V&A Dundee, for example to secure additional high-profile exhibitions, can help to secure sustained impacts that maximise the potential demonstrated though its early success. It will also help to ensure that V&A Dundee can continue to play its important role in Dundee's culture-led regeneration and make significant contributions to the cultural capital of Dundee, alongside raising Scotland's profile as a place to live, work, invest, study and visit.

1 Introduction

Overview

1.1 ekosgen and Reference Economic Consultants were commissioned in July 2018 to undertake an economic impact assessment of V&A Dundee. V&A Dundee is a major development both for Dundee, and more widely for the cultural sector across Scotland and the UK. It is the first ever dedicated design museum in Scotland and the first V&A museum outside of London. V&A Dundee is also the first building in the UK to be designed by world-renowned Japanese architect, Kengo Kuma.

1.2 The museum acts as an 'anchor' development at the heart of Dundee's £1 billion waterfront regeneration, which also includes residential, office, retail and leisure developments, the redeveloped Dundee train station and the development of new marina facilities. The regeneration programme aims to create over 7,000 new jobs in the city as well as attracting tourists and investment to the city.[2]

1.3 V&A Dundee celebrated its one-year milestone in September 2019, and had welcomed over 830,000 visitors since its opening. This has far exceeded original forecasts, and can rightly be considered a success. The museum is already making strong contributions to the cultural currency of Dundee, and is also helping to drive destination development in the city. It is also changing perceptions about the city, and is helping to raise aspirations amongst Dundee businesses, communities and residents.

Aims of the study

1.4 The study was commissioned to assess the impact of V&A Dundee at the local, regional and Scottish levels. Stage 1 set out the forecast impacts ahead of the first year of operation. Stage 2 examines the actual impacts of the first 12 months of the museum being open. Its findings are intended to:

- Demonstrate the economic impact of V&A Dundee for its first 12 months of operation, and specifically those impacts arising from on-site activity and off-site visitor spend;
- Support improved strategic thinking to inform key business decisions and business planning, including opportunities for self-generated income;
- Support city and regional partners in providing vital intelligence to attract major investors and encourage new businesses;
- Capture how major investment can act as a catalyst for regeneration and placemaking; and
- Evidence the potential to generate additional value for the economy.

Approach

1.5 The second phase of the study ran from August 2019 to November 2019, and the research was undertaken through:

- **Desk review and preparatory research**: This included reviewing V&A Dundee's business plan, and its levels of employment, wages payments and purchases of goods and services, as well as research undertaken by Scotinform on updated forecast visitor numbers and profiling.

[2] https://www.dundeewaterfront.com/invest/whydundee

- **Survey analysis**: The results of two surveys undertaken by Scotinform in the first 12 months were used to underpin the estimates of off-site visitor spend. The first was a quarterly survey of visitors to V&A Dundee which collected a range of information including party size, place of residence and expenditures with businesses in the wider economy. Second, a more general monthly survey of visitors was undertaken and the information from that on party size and place of residence was added to the data from the first survey to increase the robustness of the visitor profile.
- **Economic impact assessment**: From the desk research and data gathered by Scotinform we then undertook an economic impact assessment of the actual impact for the first 12 months of operation. This involved refining the economic impact assessment framework used to capture the data and steps needed to calculate the impact. With all the data and benchmarks in place, we then used the framework to calculate gross off-site, gross on-site and net impacts. This was based on considering the museum as both a commercial entity and visitor attraction.

Report structure

1.6 The report is structured as follows:

- **Section 2** summarises the impacts identified in Phase 1, specifically for: construction of V&A Dundee; operational impacts for the 12-month period prior to opening; estimates for Year 1 of the museum's opening; and the 3D Festival held on the opening weekend;
- **Section 3** provides a brief overview of Year 1 of operation, including the business plan, activities undertaken and visitor performance;
- **Section 4** outlines the actual economic impact of V&A Dundee arising from its first 12 months of operation, based on our economic impact assessment framework.

1.7 A Technical Annex provides the detail on the economic impact assessment calculations.

2 Summary of Phase 1 pre-operational impacts

Introduction

2.1 This section summarises the economic impacts identified in Phase 1. The review captured the following economic impacts:

- The economic impact of V&A Dundee at the pre-opening stage, specifically the actual impacts arising from its construction, and the estimate of the impact arising from its operation during the 12 months prior to opening; and
- Estimated impacts of its first 12 months of operation, based on operational information provided by V&A Dundee and initial visitor forecasts produced by Scotinform.

Construction impacts

2.2 During its construction phase of some three and a half years it generated total employment of **501 job years** and **£35.8 million** GVA in Dundee. At the Scotland level, impacts were much higher, demonstrating the extent of activity and the supply chain in the museum's build. Across the Scottish economy, **981 job years** and **£70.4 million** GVA were generated. These are in excess of previous estimates of construction impacts, and demonstrate the scale of the boost in employment and economic activity in the city over the life of the construction phase.

Table 2.1: Total construction impacts (direct, indirect and induced), Dundee, Tay Cities Region and Scotland

Employment						
	Dundee City		***Tay Cities Region***		***Scotland***	
FTE	*Job Years*	*FTE*	*Job Years*	*FTE*	*Job Years*	*FTE*
	501	50	585	58	981	98
Income						
	Dundee City		***Tay Cities Region***		***Scotland***	
£000	*Total*	*FTE basis*	*Total*	*FTE basis*	*Total*	*FTE basis*
	14,581	1,458	16,941	1,694	28,911	2,891
GVA						
	Dundee City		***Tay Cities Region***		***Scotland***	
£000	*Total*	*FTE basis*	*Total*	*FTE basis*	*Total*	*FTE basis*
	35,806	3,581	41,321	4,132	70,365	7,037

Source: Consultant calculations

Pre-opening operational impacts

2.3 V&A Dundee's operating company, Design Dundee Limited, was established in 2010 and it has incrementally grown as an organisation as the museum developed. An SME in its own right, it has made an impact in the Dundee economy. In the year prior to opening its doors it directly supported the equivalent of **37 full time jobs**. This rises to **46 full time jobs** when indirect and induced economic impacts are included which represents over **£0.5 million GVA** in Dundee; the impact on the Scottish economy has been an additional **62 FTEs** and **£1.3 million GVA**. These impacts represent a sizeable addition to Dundee's economy.

Table 2.2: Summary of total pre-opening on-site impacts (direct, indirect and induced)

Measure	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	46	47	62
Income (£000)	1,524	1,539	1,918
GVA (£000)	522	553	1,292

Source: Consultant calculations

Estimated Year 1 economic impacts

2.4 Post-opening, V&A Dundee was expected to generate, in its first year of operation, gross impacts of **178 FTE jobs** and **£10.3 million** GVA in the Dundee economy alone; at the national level this increased to **604 FTE jobs** and **£23.0 million** GVA in the Scottish economy.

2.5 Importantly, when considering those impacts that would not have otherwise occurred without V&A Dundee (the **net** impacts), the museum was expected to generate additional impacts of **175 FTE** jobs and almost **£5.8 million** GVA for the Dundee economy, and **106 FTE** jobs and GVA of c.**£4.4 million** that was additional in the Scottish economy.

2.6 It was considered that these forecast impacts represented a good level of additional economic activity for Dundee's creative and cultural sector, and indeed for its economy as a whole. The anticipated net impacts would therefore represent a considerable uplift in economic value in the city.

2.7 These impacts, however, were based on initial forecast visitor numbers produced by Scotinform, which were developed before the opening of V&A Dundee. In the first two-and-a-half months or so of opening, the museum attracted significantly higher numbers than expected with over **280,000** people having already visited the museum; almost the total visitor target for 2018/19. As identified in Section 3, the visitor estimates were far exceeded during the first full year of opening. The actual impacts arising from the museum's first year of operation are set out in Section 4.

Table 2.3: Total (direct, indirect and induced) forecast Year 1 net economic impacts, Dundee, Tay Cities Region and Scotland [3]

Measure	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	175	175	106
Income (£000)	3,459	3,288	1,937
GVA (£000)	5,752	6,459	4,417

Source: Consultant calculations

3D Festival economic impacts

2.8 The 3D Festival was held in Slessor Gardens on V&A Dundee's opening weekend, during the evening of Friday 14th September 2018 and daytime of Saturday 15th September 2018. The festival was organised by V&A Dundee to mark the official opening of the museum, to raise the profile of the city and its transformation and to engage young people and the community of Dundee. This was a free public event and approximately 22,600 people attended in total.

2.9 The 3D Festival was supported by EventScotland, Year of Young People 2018, wealth managers Brewin Dolphin, DC Thomson, global self-service technology supplier NCR and Arts & Business Scotland. V&A Dundee worked in partnership with Dundee City Council to deliver the event at the heart of the rejuvenated Dundee waterfront.

[3] Off-site impacts are the central estimates

2.10 The economic impact of the 3D Festival was assessed through two routes. Firstly, we calculated the impact of the expenditure by V&A Dundee to deliver the festival. Secondly, we calculated the impact of the expenditure of visitors attending the festival. These two are then combined to show the total economic impact of the 3D Festival. The impacts are calculated at the Dundee City, rest of the Tay Cities (Angus, Perth and Kinross and Fife) and rest of Scotland spatial levels.

2.11 Taking into account a high level of additionality for the visitor spend of over 70%, the total net impacts are set out in Table 2.4. The 3D Festival generated a total impact of around £950,000 turnover at the Scotland level, 11.4 job years and c. £360,000 GVA. Around half of these impacts are realised at the Dundee level, accounting for the fact that the majority of the visitor spend occurred in Dundee and a significant proportion of the festival contractors are based in the city.

Table 2.4: Total net impacts by geography

Geography	Turnover	Job years	GVA
Dundee	£470,144	6.0	£168,353
Rest of Tay Cities	£110,496	1.6	£53,712
Rest of Scotland	£364,414	3.8	£135,025
Total	**£945,054**	**11.4**	**£357,090**

Source: Scotinform and consultant's calculations.

3 V&A Dundee: Overview of Year 1 operation

Introduction

3.1 This section sets out an overview of V&A Dundee's first full year of operation, running from 15th September 2018 to 14th September 2019. It sets out background detail from the museum's business plan, activities delivered and achievements in Year 1 and an overview of actual versus forecast visitor performance.

V&A Dundee Business Plan

Funders

3.2 V&A Dundee is at the heart of Dundee's ambitious and transformational £1 billion Waterfront regeneration project. The Waterfront project and V&A Dundee both support the creation of jobs and provide wider economic benefits, particularly in the tourism sector.

3.3 The museum building is an £80.1 million capital project. Capital funding for the project was agreed with contributions from the Scottish Government, The National Lottery Heritage Fund, Dundee City Council, the UK Government, Creative Scotland, Scottish Enterprise, and through a successful private fundraising campaign. Development funding and support for the pre-opening phase was provided by the Scottish Government; from The National Lottery Heritage Fund and Creative Scotland in capital grants; from private, corporate and charitable trust donations; and from in-kind and direct support from the founding partners.

3.4 Revenue funding is provided by Scottish Government, from the founding partners, from self-generated income and from ongoing fundraising. Ongoing in-kind financial support from founding partners is an essential part of the business model, as is revenue from commercial activities, including from retail, catering and event activity.

Mission statement, vision and strategic objectives

3.5 V&A Dundee's mission statement describes its enduring purpose as 'Enriching lives through design', with an accompanying vision 'To create an international centre for design, inspiring people and promoting the understanding of design'. A central part of this vision is to foster relationships between creative design, business and enterprise. The following four principal strategic objectives will guide V&A Dundee efforts over the 2018-2023 planning period:

1. To champion past, present and future design in a Scottish and global context;
2. To be a leader in design education, inspiring creativity and developing future skills for design and business innovation;
3. To create a world-class, must-see, sustainable cultural attraction; and
4. To play an integral role in developing Dundee and the region, generating civic pride and supporting regeneration.

3.6 The target market for V&A Dundee is those within the local market (60 minutes' drive time from the museum), those in peripheral and tourism markets, and the education market (e.g. schools, FE and HE students). As well as raising awareness of V&A Dundee across Scotland, the museum's outreach programmes will target more marginalised and isolated communities with opportunities to connect with design activity in their local area.

Cultural Activities[4]

Museum opening and 3D festival

3.7 V&A Dundee opened its doors on the weekend of Friday 14th and Saturday 15th September 2019. In total, around 27,000 people took part in events and previews to mark the museum's opening, including the public 3D Festival. Over 6,000 secured tickets in a ballot for the opening weekend. The economic impact of the 3D festival is set out in more detail in Section 2.

Paid exhibitions

3.8 Part of V&A Dundee's offer is a programme of changing exhibitions to showcase international design. V&A Dundee has hosted two paid exhibitions in the 12 months since its opening. The first of these was *Ocean Liners: Speed and Style*. The exhibition showcased the design and cultural impact of ocean liners on an international scale, focusing on their promotion, engineering, interior design, as well as the lifestyle on board.

3.9 The second exhibition, *Videogames: Design/Play/Disrupt*, explored the creative process behind playful, radical and provocative games through original design, concept art and prototypes. The current exhibition, *Hello, Robot*, aims to explore how robots impact on our lives, and how design is changing robotics.

3.10 The paid exhibitions in the period of review attracted over 138,000 visitors.

Scottish Design Galleries

3.11 A key draw of V&A Dundee is the Scottish Design Galleries, which includes as its centrepiece Charles Rennie Mackintosh's The Oak Room. The galleries explore Scotland's design landscape across over 500 years, considering the everyday relevance of design and processes that underpin it through stories of Scottish design and its international impact. Across the first year of opening, the Scottish Design Galleries attracted over 650,000 visitors.

Learning programme and outreach

3.12 V&A Dundee runs a formal Learning programme which has separate programmes for schools, young people, creative industries, communities and families. It aims to connect communities across Scotland with their design heritage and with contemporary design, and ensure audiences of all ages have equal opportunities for learning. The Thomson Learning Centre provides a dedicated space in the museum to deliver learning activities, which includes workshops, talks, events and is home to V&A Dundee's designer in residence studio.

Design for Business

3.13 One of V&A Dundee's main approaches to business engagement in its first year has been through the Design for Business (DfB) programme, which is a national initiative designed to encourage greater innovation in business through an increased focus on design. The programme is expected to have had a positive impact on business productivity and entrepreneurship, and directly addresses innovation and productivity issues which are central to Scotland's current Economic Strategy.

[4] V&A Dundee's National Lottery Heritage Fund Final Evaluation Report provides more detailed information about the museum's activities during its first year of opening https://www.vam.ac.uk/dundee/info/policies

Achievements[5]

3.14 V&A Dundee has had a number of notable achievements in the first year of operation, including delivering major exhibitions and winning awards. These are summarised in this section.

3.15 Firstly, V&A Dundee delivered two major exhibitions – *Ocean Liners: Speed and Style* and *Videogames: Design/Play/Disrupt* – in its first year. V&A Dundee also delivered four exhibitions in the Michelin Design Gallery. All of these exhibitions showcase and promote new Scottish design creativity.

3.16 V&A Dundee has also won and been shortlisted for a number of awards, for its management, its impact on Dundee and Scotland and for the architecture of the museum building. These include:

- Winning a Royal Institute of British Architects (RIBA) National Award;
- Winning the Wallpaper* Design Award for 'Best New Public Building', beating a number of high-profile international designs;
- Winning the Institute of Directors (IoD) Scotland Award for Transforming Scotland;
- Winning the Herald Higher Education Awards 'Outstanding Contribution to the Local Community Award'; and
- Shortlisted for the Art Fund Museum of the Year 2019 title, the biggest museum prize in the world.

3.17 The opening of V&A Dundee coincided with the publishing of 'The Story of Scottish Design'[6] book, edited by Philip Long, Director of V&A Dundee, and Joanna Norman, Director of the V&A Research Institute at V&A South Kensington and Lead Curator of the Scottish Design Galleries. This is the first book to be published on the history of Scottish design, covering the period from 1500 to present day.

3.18 V&A Dundee has also attracted international media attention, promoting both the attraction itself and Dundee as a tourist destination. This has included:

- TIME magazine list of World's Greatest Places 2019 (which saw V&A Dundee feature on the front cover);
- Condé Nast Traveller City Breaks UK: The 10 Best for 2019;
- National Geographic's The Cool List 2019;
- The Sunday Times Best Places to Live 2019;
- Lonely Planet Best in Europe 2018;
- Bloomberg's Where to Go in 2018; and
- The Wall Street Journal's Where to Travel in 2018 list.

3.19 Finally, commissioned research has shown the growth of Dundee's tourism industry in the first six months of 2019 (post-opening) compared to the same period for 2018 (pre-opening). This has shown a 19% increase in the number of visitors to Dundee over this period, largely thought to be as a result of the V&A Dundee opening[7]. This growth in visitors has increased the economic impact of tourism in the city to over £10 million per month, and contributed to an increase in employment in the visitor economy.

[5] Further information on achievements in V&A Dundee's first year of opening can be found here: https://www.vam.ac.uk/dundee/info/830000-visitors-welcomed-in-first-year/

[6] https://www.vam.ac.uk/shop/the-story-of-scottish-design.html

[7] https://www.dundeecity.gov.uk/news/article?article_ref=3489

Visitor performance

Original forecast attendance

3.20 Ahead of V&A Dundee's opening in September 2018, a series of visitor forecasts were undertaken by Scotinform. These forecasts:

- Identified core and peripheral market areas for V&A Dundee, based on travel time to Dundee. It was determined that some 785,000 people lived within a 60-minute drive of the V&A Dundee – the core catchment area – and a further 1.5 million people lived between 60 and 90 minutes – the peripheral catchment area. This equated to c.42% of the Scottish population;
- Segmented this market based on Mosaic Scotland data, and determined each segment's propensity to visit V&A Dundee;
- Defined a tourism market for V&A Dundee, in this instance all domestic and overseas tourists within the 60-minute drive time area, which includes Dundee, Angus, Fife and Perthshire; and
- Established assumptions on the number of visits per year for each market segment. It was assumed that core catchment residents will visit 2.5 times per year, 1.5 times for peripheral catchment residents, and once for tourists.

3.21 The total potential market for V&A Dundee was estimated to contain almost 4 million individuals.

3.22 Based on the above, the projected annual attendance for V&A Dundee was arrived at (as set out in Table 3.1). After the first two years, the annual attendance is projected to stabilise at around 325,000.

Table 3.1: Original projected attendance for V&A Dundee

Market	2018/19[8]	2019/20
Core Catchment (within a 60-minute drive)	192,000	230,000
Peripheral catchment (60-90-minute drive)	69,000	86,000
UK tourists (to the core area)	18,000	23,000
Overseas tourists (to the core area)	12,000	17,000
Schools	***4,000***	***5,000***
Grand total	**295,000**	**362,000**

Source: Scotinform research for V&A Dundee

3.23 Since Scotinform's forecast for 2018/19 was for the financial year, ekosgen and Reference Economic Consultants calculated the first full-year attendance for V&A Dundee, based on Scotinform forecasts. It was estimated by ekosgen and Reference Economic Consultants that V&A Dundee would attract 440,269 visitors in its first year of operation. This figure was used to inform our forecast estimates of economic impact in Phase 1.[9]

Revised forecast attendance

3.24 Given the particularly strong performance of V&A Dundee in its first couple months of operation, Scotinform revised the forecast attendance figures for the first five years. The revised forecasts were

[8] Not full year – estimated from 15th September 2019.

[9] It should be noted that this differs from V&A Dundee's estimate that around 500,000 would attend the museum in the first 12 months. As such, the figure used by ekosgen and Reference Economic Consultants can be considered a more conservative estimate.

informed by the performance of comparator museums – Turner Contemporary, the Eden Project, the Riverside Museum, The Helix and Hepworth Wakefield.

3.25 The reforecasting was based on assumptions of visitors to a range of exhibitions by quarter, as well as visitors to the museum without an exhibition. The model also assumes that V&A Dundee will see a growing proportion of repeat visits over the period, rising from 20% in 2019/20 to 35% in 2024/25.

Actual attendance performance

3.26 For its first full year of operation from 15th September 2018 to 14th September 2019, V&A Dundee received a total of **833,015** visitors; by the end of September 2019, this had increased further to 856,835 visitors (Table 3.2).

3.27 In the first three weeks of opening, V&A Dundee had achieved almost 100,000 visitors, with the 100,000th visitor to V&A Dundee recorded on 8th October 2018. On 30th March 2019 the 500,000th visitor to V&A Dundee was recorded, a little over six months of operation – thus significantly exceeding the original estimate of half a million visitors by the end of the first year of opening.

Table 3.2: Actual footfall by month and average daily footfall at V&A Dundee 15th September 2018 – 30th September 2019

Month	Sep 18	Oct 18	Nov 18	Dec 18	Jan 19	Feb 19	Mar 19	Apr 19	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Total
Total footfall	69,519	142,384	77,745	51,617	54,289	62,565	45,776	61,008	56,690	56,708	63,371	69,525	45,638	856,835
Avg./day	4,345	4,593	2,592	1,665	1,751	2,234	1,477	2,034	1,829	1,890	2,044	2,243	1,521	2,347

Source: V&A Dundee data, 2019

3.28 The first two full months of opening – October and November 2018 – experienced the highest footfall for the first year of operation. This can be largely explained by the high profile opening of V&A Dundee, the 'novelty factor', and other tourism factors such as the school holidays in October.

3.29 From December 2018 to September 2019 the share of visits to V&A Dundee has been relatively steady, with peaks in February and April, and slight drops in March and September likely due to the fact that there was no paid exhibition on offer in those months.

3.30 V&A Dundee has contributed significantly to placemaking in Dundee. The museum has been successful in attracting first-time visitors to the city. More than one in five (22%) visitors to V&A Dundee from outside Dundee had not visited the city before. It has also been successful in encouraging additional tourism to the city, with around four in 10 (39%) visitors stating that the museum was the sole reason for their trip to Dundee.[10]

3.31 Although the vast majority of visitors in the first year have been first-time visitors to V&A Dundee, the visitor exit survey show that there is a high propensity to revisit. Almost eight in 10 (79%) of visitors stated that they were either very likely or quite likely to visit V&A Dundee again.

Visitor profile

3.32 As noted at Section 1 the profile of visitors was developed based on surveys undertaken by Scotinform and monthly attendance figures collected by V&A Dundee. These were used to provide a 12-month profile of day visitors to V&A Dundee which is shown at Table 3.3. Excluding visits over the

[10] Scotinform (2019) Exit Survey, 2018-19 – November 2019

opening weekend, there were around 822,000 visitors to V&A Dundee.[11] In total, around three quarters (74%) of visitors to V&A Dundee live in Scotland. 64% come from outside the Tay Cities region.

Table 3.3: 12-month visitor profile

Place of Residence	Number of Visitors	Proportion of Visitors
Dundee City	131,612	16%
Other Tay Cities Region	148,454	18%
Rest of Scotland	348,130	42%
Rest of UK	114,987	14%
Overseas	78,558	10%
Total	**821,741**	**100%**

Source: Consultants' calculations based on visitor surveys and V&A Dundee attendance data

3.33 These estimates are broken down further at Table 3.4. It shows the number of visitors making a day trip from home and those who were staying away from home overnight while making a visit to V&A Dundee.

3.34 More than two thirds (around 564,000 – 69%) visited V&A Dundee as part of a day trip from home, with the remaining 258,000 (31%) visiting the museum while staying away from home overnight. Around two thirds (67%) of those staying away from home were from outside Scotland – mostly in other parts of the UK.

Table 3.4: 12-month visitor profile by trip type[12]

Place of Residence	Total Number of Visitors	Day Trip From Home	Staying Away From Home Overnight
Dundee City	131,612	131,612	0
Other Tay Cities Region	148,454	144,209	4,245
Rest of Scotland	348,130	266,188	81,941
Rest of UK	114,987	8,919	106,068
Overseas	78,558	12,544*	66,014
Total	**821,741**	**563,472**	**258,269**

Source: Consultants' calculations based on visitor surveys and V&A attendance data

3.35 These estimates are used as the building blocks for the calculation of off-site impacts as set out at Section 4.

[11] This differs from the total visitor figure set out above and in Table 3.2, as Scotinform's visitor survey began following the opening weekend.

[12] Regarding visitors who stated that they lived overseas but were making a day trip from home, it is most likely that these are overseas nationals who are staying in Scotland for an extended period, e.g. students.

4 Year 1 economic impacts

Introduction

4.1 This section sets out V&A Dundee's economic impact in its first 12 months of operation from mid-September 2018 to mid-September 2019. This comprises the following:

- Impacts from V&A Dundee's first 12 months of operation at the museum (these are often termed *on-site* impacts, to denote those impacts that arise from activity at a particular location).
- Impacts from the spend in the wider economy by visitors to V&A Dundee (i.e. *off-site* impacts).

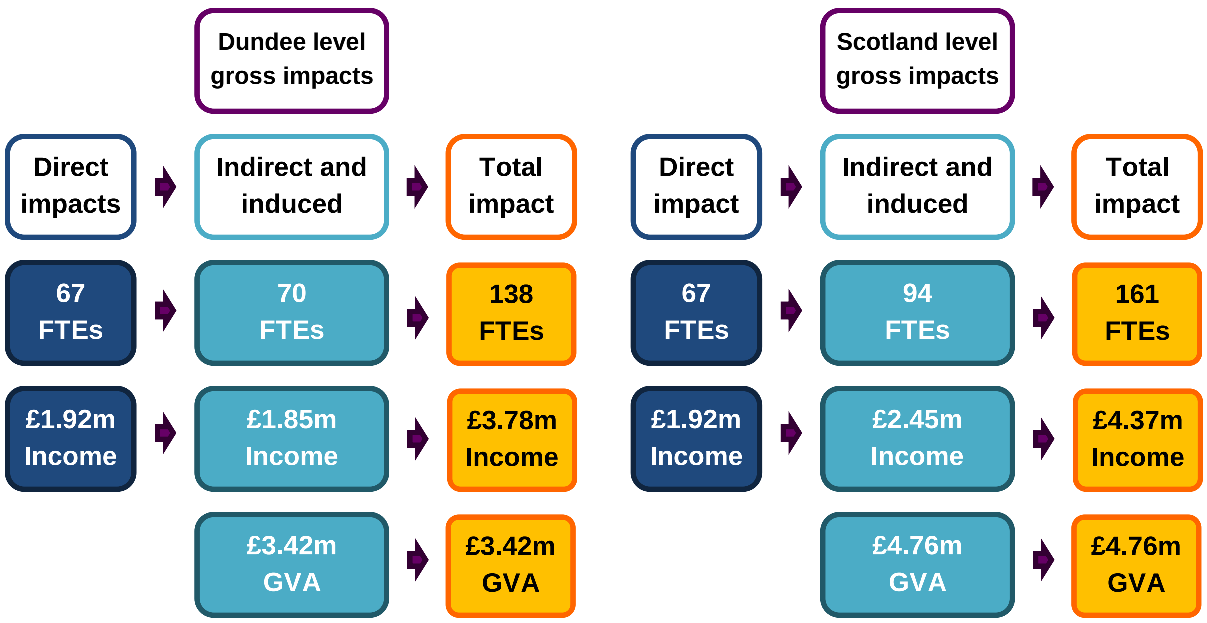
4.2 It should be noted that the impacts shown exclude those from the opening weekend 3D Festival (covered in the preceding section), and the net *off-site* impacts of evening events and activities rather than all impacts of these, as visitor footfall data was only capturing during regular daytime opening hours. The 3D Festival was subject to a separate impact assessment, as summarised in Section 3. It was not feasible to disaggregate V&A Dundee's on-site impacts (from staff and contractors) for evening events and activities, and as such these are included in the assessment.

4.3 Additionally, in some tables, column figures may not sum exactly to the total shown due to rounding. It should also be noted that for visitor spend (off-site) impacts, these are based on a sample survey, which included some visitors having to estimate how much they would spend during their trip.

Gross impacts from the museum's operation

4.4 The operation of V&A Dundee has had considerable impact in the city, during the museum's first 12 months of operation (Figure 4.1). With **138 FTEs overall, and a total of almost £3.42 million GVA in the Dundee economy**, the museum has delivered a considerable boost to the creative and cultural economy of Dundee, and to the city's economy as a whole. This contribution grows to **161 FTEs and over £4.76 million GVA to the Scottish economy which is very positive**.

Figure 4.1: Summary of gross impacts from the operation of V&A Dundee, Dundee, Tay Cities Region and Scotland



Source: Consultants' calculations

4.5 The following sections explore the impacts in more detail.

Employment

4.6 There was direct employment of **67 FTE** jobs within V&A Dundee across its first 12 months of operation (Table 4.1).[13]

4.7 There are two elements of indirect impacts. First, the activities of three contractors whose employees' place of work is at V&A Dundee itself. These companies provide catering, security, and cleaning services, and account for the vast majority of indirect impacts. A much smaller amount of impacts was generated by V&A Dundee's other purchases of goods and services.

Table 4.1: Employment impacts (FTE)
Dundee, Tay Cities Region and Scotland

	Dundee City	Tay Cities Region	Scotland
Direct	67	67	67
Indirect	62	65	78
Induced	8	10	16
Total	**138**	**142**	**161**

Source: Consultants' calculations

4.8 The total impacts range between **138 FTE** jobs in Dundee City, **142 FTE** in the Tay Cities Region as a whole and **161 FTE** in Scotland. At the local and regional levels, direct and indirect employment are broadly equally important in terms of the overall level of impacts. In contrast, at the Scotland level, there are higher indirect employment impacts (78 FTE) than direct employment impacts (67 FTE).

Income

4.9 Income impacts for V&A Dundee's first year of opening range from around **£3.8 million** at the Dundee and regional levels to around **£4.4 million** in Scotland (Table 4.2). Direct income accounts for most of the total impact in Dundee City and the Tay Cities Region. However, indirect income constitutes the largest proportion of total income impacts in Scotland.

Table 4.2: Income impacts (£000)
Dundee, Tay Cities Region and Scotland

	Dundee City	Tay Cities Region	Scotland
Direct	1,924	1,924	1,924
Indirect	1,643	1,712	2,044
Induced	209	263	403
Total	**3,776**	**3,900**	**4,372**

Source: Consultants' calculations

4.10 The overall average wage of FTE jobs supported by V&A Dundee's activity is approximately £27,000 in each of the three geographies. The average wage for V&A Dundee's direct employees is around £28,700 per FTE job. That is above the figure for the indirect employees, which is around £26,300 per FTE at each of the Dundee, regional and Scottish levels.

GVA

4.11 Because of the balance between trading income and public sector support and other funding sources, and the effect that the latter can have on GVA, calculating direct GVA is not appropriate in this

[13] Impacts arising from on-site operations *prior* to opening were identified in the Phase 1 report, as summarised in Section 3. The first year job impacts are in addition to the previous jobs created by the museum.

instance and so is not included in the impacts.[14] The total GVA impacts (Table 4.3) vary from around **£3.4 million** in Dundee and **c.£3.7** million in the Tay Cities Region to around **£4.8 million** in Scotland.

Table 4.3: GVA impacts (£000) (direct, indirect and induced), Dundee, Tay Cities Region and Scotland

	Dundee City	Tay Cities Region	Scotland
Direct[15]	-	-	-
Indirect	3,029	3,159	3,998
Induced	393	494	762
Total	**3,422**	**3,653**	**4,760**

Source: Consultants' calculations

Summary of total on-site impacts

4.12 Table 4.4 summarises the preceding results in terms of total (i.e. direct, indirect and induced) gross on-site impacts.

Table 4.4: Summary of total gross on-site impacts (direct, indirect and induced), Dundee, Tay Cities Region and Scotland

Measure	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	138	142	161
Income (£000)	3,776	3,900	4,372
GVA (£000)	3,422	3,653	4,760

Source: Consultants' calculations

Gross visitor spend impacts

4.13 Gross impacts arising from visitor spend (also known as *off-site* impacts) have been calculated based on the total number of visitors for V&A Dundee's first 12 months of opening, and survey data on visitor *outside* the museum elsewhere in Dundee, the region, and in Scotland. Details on the calculation of visitor spend are provided in Appendix 1.

Total expenditure estimates

4.14 Figure 4.2 describes total visitor off-site spend. It is around £33 million in Dundee, increasing to around £52 million in Tay Cities Region and £110 million for Scotland as a whole.

4.15 The visitor spend has two elements. First, the expenditures made by those *making a day trip from home*. This totals over £18 million in Scotland, largely comprising £13 million of spend in Dundee. The remaining £5 million was spent in either other parts of Tay Cities Region or elsewhere in Scotland. For example, a family who live in Glasgow visiting V&A Dundee for the day and spending some money back in Glasgow before returning home.

4.16 Those on a day trip from home are estimated to have spent an average of £33 per head outside V&A Dundee. Most (£23) of this is in Dundee itself.

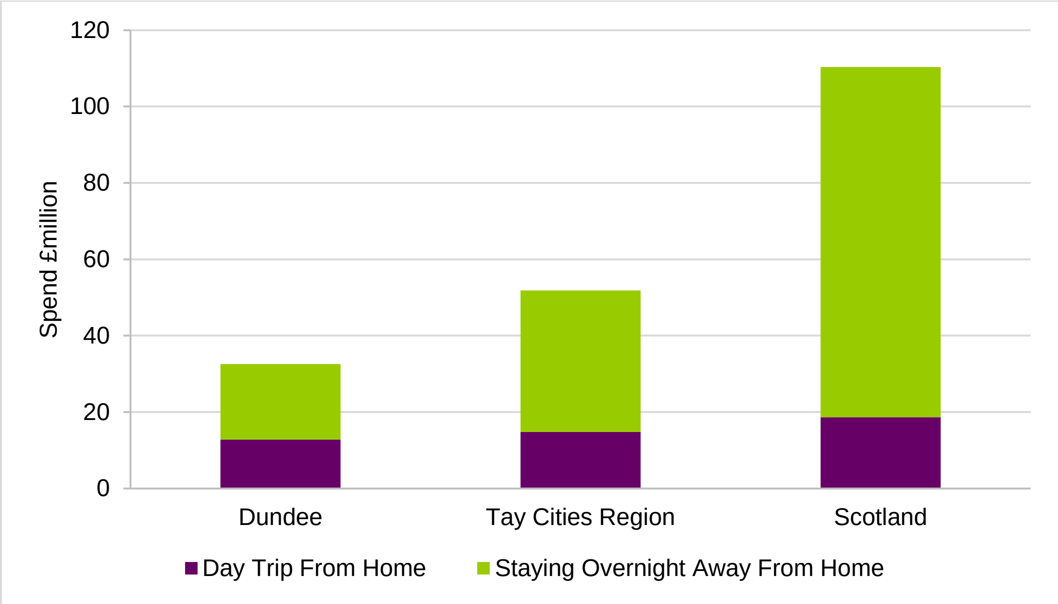
4.17 Second, the vast majority of the spend is made by visitors to V&A Dundee who are on *a trip that involves staying away from home overnight*. Their total spend is around £92 million in Scotland. That includes around £20 million in Dundee and £37 million in Tay Cities Region as a whole. Those staying

[14] Any significant public funding can act to distort GVA calculations; it is therefore more robust to exclude direct GVA from calculations in such instances.

[15] As explained in the text direct GVA is not considered to be a relevant measure in this case.

away from home estimated an average of £356 spend per head during their overall trip. Most (£212 per head) was spent or expected to be spent in parts of Scotland outside Tay Cities Region.

Figure 4.2: Off-site visitor spend (£million), in Dundee, Tay Cities Region and Scotland

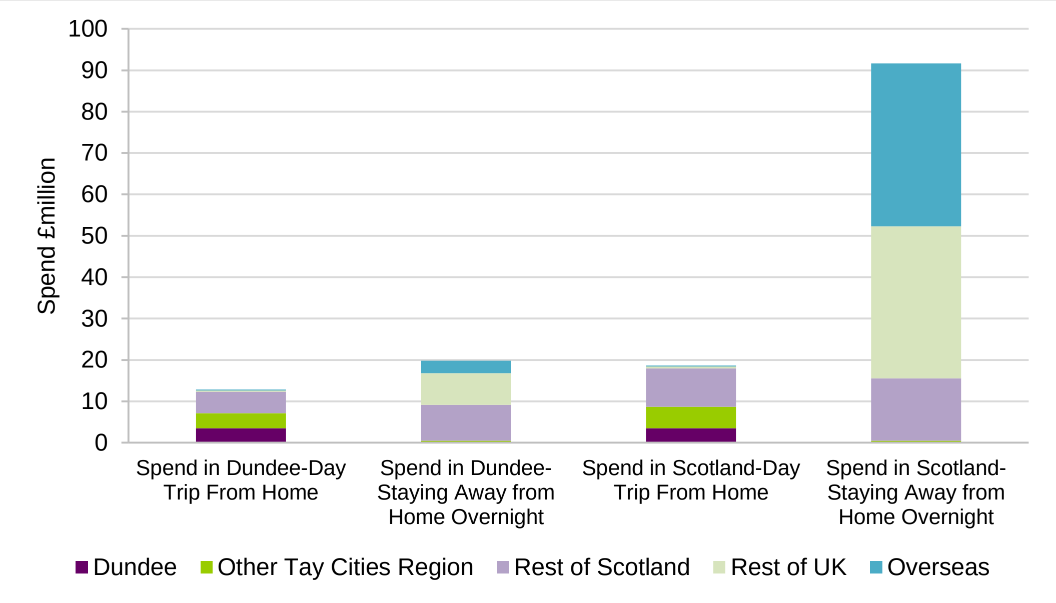


Source: Consultants' calculations

4.18 Figure 4.3 breaks down the expenditure in Dundee and Scotland by visitors' place of residence. The main points to note are that:

- Most day trip from home spend in Dundee – and in Scotland as a whole – comes from those who live in parts of Scotland outside Tay Cities Region.
- Spend in Dundee by those staying away from home overnight is very largely by visitors from Scotland outside Tay Cities Region or from parts of the UK outside Scotland.
- Over 80% of the visitor spend in Scotland by those staying away from home comes from those living outside Scotland.

Figure 4.3: Off-site visitor spend (£million), in Dundee and Scotland by visitor place of residence



Source: Consultants' calculations

4.19 Table 4.5 shows the total visitor spend in Dundee and Scotland as a whole by visitors' place of residence. Most (around £22 million; 67%) of the spend in Dundee comes from those living in Scotland outside Tay Cities Region or elsewhere in the UK.

4.20 At the Scottish level, more than two thirds of spend is by visitors who live outside Scotland. That spend is split broadly evenly between residents of England/Northern Ireland/Wales and those from overseas.

Table 4.5: Total Offsite Visitor Spend in Dundee and Scotland (£ million) by visitor place of residence

Location of Spend/ Place of Residence	Dundee City	Scotland
Dundee	3.5	3.5
Other Tay Cities Region	4.1	5.7
Elsewhere in Scotland	13.9	24.3
Elsewhere in UK	7.9	37.2
Overseas	3.2	39.6
Total	**32.6**	**110.3**

Source: Consultants' calculations

Gross visitor spend economic impacts

4.21 The off-site visitor spend supports a total impact of **558 FTE jobs**, **c.£ 10 million** income and over **£17 million** of GVA in Dundee (Table 4.6).

4.22 The impacts for the Tay Cities Region are more than one and a half times those in Dundee City alone. The visitor expenditure is estimated to support **1,982 FTE jobs** in the Scottish economy, along with around **£38 million** of income and in the region of **£71 million** GVA.

Table 4.6: Total (direct, indirect and induced) off-site economic impacts: Dundee, Tay Cities Region and Scotland

Measure	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	558	850	1,982
Income (£million)	10.2	16.5	38.4
GVA (£million)	17.6	28.6	70.7

Source: Consultants' calculations

4.23 The average wage of jobs supported by visitor spend varies between the three geographies: from around £18,200 per FTE in Dundee to around £19,400 per FTE in Tay Cities Region and Scotland as a whole. This reflects the relatively low levels of pay in the hospitality and retail sectors where, the visitor survey results show, much of the off-site spend occurs. This average is lower than that shown earlier for the on-site impacts (£27,000), as the museum's activity supports employment in higher-paid sectors.

Total gross impacts

4.24 Together, the museum's operation and the off-site visitor spend generated in Dundee a total gross impact of **696 FTE jobs, £14 million income and £21 million GVA** as shown at Table 4.7. Most of the impacts arise from visitor spend, rather than the activity at the museum itself. Total impacts in Tay Cities Region are **992 FTE jobs,** around **£20 million income and £32 million GVA**.

4.25 Finally, at the Scotland level, the impacts generated by the museum's operation and the resultant visitor spend are estimated to be around **2,150 FTE jobs, approaching £43 million income and c.£75 million GVA in the Scottish economy**.

Table 4.7: Total (direct, indirect and induced) gross economic impacts, Dundee, Tay Cities Region and Scotland

	Dundee City	Tay Cities Region	Scotland
Employment (FTE)			
V&A Dundee operation	138	142	161
Visitor spend	558	850	1,982
Total	**696**	**992**	**2,143**
Income (£million)			
V&A Dundee operation	3.8	3.9	4.4
Visitor spend	10.2	16.5	38.4
Total	**13.9**	**20.4**	**42.8**
GVA (£million)			
V&A Dundee operation	3.4	3.7	4.8
Visitor spend	17.6	28.5	70.7
Total	**21.0**	**32.2**	**75.4**

Source: Consultants' calculations

Net economic impacts

4.26 This section presents V&A Dundee's net economic impacts in its first 12 months of operation. Net impacts are those that would not be realised if V&A Dundee did not exist – thus, impacts from activity that could reasonably be expected to occur anyway are discounted.

4.27 The net impacts are based on the gross impacts set out in the section above. These were adjusted by applying net impact percentages to the gross impacts. These estimate the extent to which the economic impacts of various types of visitor would not occur in the absence of the museum.

Additionality decreases as the geographical scale increases, thus resulting in greater gross-to-net impact discounting. Further detail is set out in Appendix 1.

Net on-site impacts

4.28 The net impact percentages set out in Appendix 1 for each group within the museum's visitor market were applied to the gross on-site economic impacts shown earlier. The results are presented at Table 4.8.

Table 4.8: Total (direct, indirect and induced) net on-site economic impacts, Dundee, Tay Cities Region and Scotland

Measure	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	95	67	6
Income (£000)	2,615	1,841	172
GVA (£000)	2,370	1,724	188
Net/Gross	*69%*	*47%*	*4%*

Source: Consultants' calculations

Net visitor spend impacts

4.29 The net impact percentages set out in Appendix 1 for each group within the museum's visitor market were applied to the gross visitor spend impacts shown earlier. This produces the net visitor spend impacts shown at Table 4.9. Within Dundee City almost half of the gross impacts (49%) are also net impacts, which would not occur in the absence of V&A Dundee. Thus for every £10 visitors spent with businesses in Dundee, around £5 of this would not have been spent in the city in the absence of the V&A. This also equates to approximately £16 million of new off-site spending with Dundee businesses over the year.

4.30 The figures are lower for Tay Cities Region (27%) and Scotland (5%), which is to be expected – for example, impacts realised at the Scotland level may also be generated by other visitor attractions, and so may not be truly additional.

Table 4.9: Total (direct, indirect and induced) net off-site economic impacts, Dundee, Tay Cities Region and Scotland

Measure	Dundee City	Tay Cities Region	Scotland
Employment (FTE)	275	227	98
Income (£000)	5,010	4,370	1,871
GVA (£000)	8,538	7,470	3,583
Net/Gross	*49%*	*27%*	*5%*

Source: Consultants' calculations

Total net impacts

Table 4.10 summarises the total net impacts arising from museum activity and from visitor spend elsewhere in the economy. Because there are different levels of discounting to identify the impacts that are additional at each geography, the level of net impacts differs (e.g. the degree of additionality at the Scotland level is lower than at the Dundee level). Therefore the total impacts for each **cannot** be added together, and should not be read as such.

4.31 Overall, V&A Dundee is estimated to have generated total net impacts **of 370 FTE additional jobs, over £7.6 million additional income and approaching £11 million additional GVA in Dundee**. Most of these impacts arise from visitor spend outside of the museum. The total net impacts in Dundee are over 50% of the total gross impacts shown earlier.

4.32 At the **Tay Cities Region** level, V&A Dundee is estimated to have supported **294 FTE jobs, plus over £6 million income and more than £9 million GVA**. Again, most of the impacts are generated by visitor spend outside of the museum. The total net impacts for the Region are around 30% of the total gross impacts.

4.33 The net impacts in the **Scottish** economy are estimated to be an additional **104 FTE jobs, over £2 million additional income and over £3.7 million additional GVA**. Again, most of the impacts are generated by visitor spend outside the museum. The total net impacts for Scotland are around 5% of the total gross impacts.

Table 4.10: Total (direct, indirect and induced) net economic impacts, Dundee, Tay Cities Region and Scotland

	Dundee City	Tay Cities Region	Scotland
Employment (FTE)			
V&A Dundee operation	95	67	6
Visitor spend	275	227	98
Total	**370**	**294**	**104**
Income (£000)			
V&A Dundee operation	2,615	1,841	172
Visitor spend	5,010	4,370	1,871
Total	**7,626**	**6,210**	**2,043**
GVA (£000)			
V&A Dundee operation	2,370	1,724	188
Visitor spend	8,538	7,470	3,583
Total	**10,908**	**9,194**	**3,770**

Source: Consultants' calculations

4.34 These impacts demonstrate that V&A Dundee has generated a good level of additional economic activity for Dundee's creative and cultural sector, and indeed for its economy as a whole, in the first 12 months of its operation. Research undertaken in early 2018[16] estimated that prior to the opening of V&A Dundee, the creative and cultural sector in Dundee was worth almost £31 million and supported over 1,000 FTE jobs. The net impacts from V&A Dundee's operation and associated visitor spend represents a considerable uplift in economic value in the city. Direct income in the city as a result of employment at V&A Dundee[17] is expected to lift overall income and average wage for the sector.

[16] ekosgen (2018) Economic and Social Impact of Dundee's Cultural Strategy and Action Plan, a report for Scottish Enterprise and the Dundee Partnership

[17] It is also worth noting that V&A Dundee/Design Dundee Limited is an accredited Living Wage employer

Technical Annex

Approach to calculating the economic impacts

A.1: Introduction

This Appendix sets out the approach undertaken to calculate the economic impacts of V&A Dundee's first year of operation. These are the impacts excluding those from the opening weekend and the off-site impacts from night time events at the museum, as the footfall data provided by V&A Dundee only covers during regular daytime opening hours. The Appendix should be read in conjunction with results set out at Section 2 and Section 4 of the main report.

A.2: Scope of the economic impact assessment

Geographical areas

Impacts have been calculated for each of the following three areas:

- Dundee City;
- Tay Cities Region, i.e. Dundee City plus Angus, Fife and Perth & Kinross; and
- Scotland as a whole.

Economic impact measures

The measures used are:

- Employment, expressed in FTE (Full-Time Equivalent, year round) jobs;
- Income, i.e. gross annual wages/salaries excluding employer's contributions; and
- Gross Value Added (GVA).

They encompass direct, indirect and induced impacts. These three elements are added together to give a figure for total impact.

Two Types of Impact

The impacts comprise, first, on-site impacts. These arise from the operation of the museum itself.

Second, off-site impacts. These arise from the spend in the wider economy outside V&A Dundee by visitors to the museum. For example, a visitor having a meal in a café in Dundee following her visit to the museum; or a visitor staying overnight in an Edinburgh hotel before visiting V&A Dundee the following day.

The on-site and off-site impacts are added together to give total overall impacts.

A.3: Annual visitor numbers and profile

The breakdown of annual visitor numbers is shown at **Table 3.3** in the main report. They do not include those from the opening weekend or from night time events at the museum.

The breakdown is based on visitor numbers recorded by V&A Dundee, and information on party size and visitor place of residence taken from two surveys that Scotinform carried out at the museum.

The surveys generated 2,389 interviews across the 12 month period, comprising:

- A general survey of 1,182 visitors; and
- A survey of 1,207 visitors which also included questions on economic impacts.

The profile of visitors was based on the survey results weighted by the recorded number of visitors per month.

The visitor profile underpins the economic impact calculations. All impacts are calculated for 10 separate groups. That was on the basis that each group would have:

- A distinctive level and geographical distribution of spend; and
- Their overall trip making influenced to varying degrees by their decision to visit V&A Dundee.

The breakdown was, first, by place of residence:

- Dundee;
- Other parts of the Tay Cities Region;
- Rest of Scotland;
- Rest of UK; and
- Overseas.

Each of these five groupings was then split in two, between:

- Visitors to the museum making a day trip from home; and
- Visitors to the museum who were on a trip involving staying away from home overnight.

A.4: Gross economic impacts

A.4.1 Gross on-site impacts

Gross on-site economic impacts arise from the operation of V&A Dundee. They do not take account of the fact that some of these impacts would have occurred even if the museum did not exist.

Employment

Three Types of Impact

The employment impacts comprise three elements:

- Direct: the jobs of direct employees of V&A Dundee during all or part of the 12 month period.
- Indirect: employment that arises in other businesses from V&A Dundee's purchases of goods and services.
- Induced: employment created in the wider economy (shops, restaurants, etc.) through the spending from the wages of those directly and indirectly employed.

Total employment impact is direct plus indirect plus induced.

Direct employment

Data on employment levels were provided to us by V&A Dundee. We used the information provided to convert the number of jobs into FTEs.

Indirect employment

There are two sources of indirect employment:

- The purchases of goods and services by V&A Dundee; and
- Contractors whose staff are based at the museum site. They are three companies which provide food and beverages to visitors, security and cleaning.

Information on the financial value of **purchases** was supplied by the museum. It was split between those made from suppliers in Dundee, the rest of Tay Cities Region and elsewhere in Scotland.

V&A Dundee broke down these figures by broad category, e.g. travel, training, consultancy services. Each of these was assigned to the most appropriate Standard Industrial Classification (SIC) code.

For each category of spend, we then converted the financial value into employment by applying the ratio of turnover:employment from the latest available (2017) Scottish Annual Business Survey.

The *knock on* effects of the suppliers' own purchases was estimated through using Type I employment multipliers from latest available (2016) Scottish Input-Output Tables.

Only national level multipliers are available from these Tables. Therefore, we scaled down the data to estimate multipliers for Dundee and the other areas of the city region (i.e. Angus, Fife and Perth & Kinross). This reflects the fact that the suppliers to V&A Dundee would make a proportion of their *own* purchases from companies based outside these areas.

For example, a Fife-based supplier to V&A Dundee may make purchases from an Edinburgh-based company.

Based on our knowledge of the Dundee and Tay Cities Region economies and our experience in undertaking similar economic impact assessments the following scaling factors were applied. For Dundee based suppliers to V&A Dundee:

- Dundee economy: 40% of the Scottish level multiplier; and
- Tay Cities Region economy: 50% of the Scottish level multiplier.

For V&A Dundee suppliers based elsewhere in Tay Cities Region:

- Tay Cities Region economy: 50% of the Scottish level multiplier.

For impacts from the **contractors** V&A Dundee collected and supplied us with information on the number of employees and their hours worked for each of the three companies. The knock-on effect of these companies' *own* purchases were estimated based on a combination of:

- Information on the three companies' purchases supplied to us by V&A Dundee; and
- Use of Scottish Input-Output Tables multipliers.

Induced employment

Induced impacts from *direct* employment were calculated using the relevant (i.e. *Cultural services*) Type II multiplier data from the Scottish-Input Output Tables. For the induced impacts arising from *indirect* employment, the Type II multipliers used were from the same SIC groups used in the calculation of indirect employment.

Again, it was necessary to scale down the Scottish level multipliers for use at the Dundee and Tay Cities Region levels. This is because some purchases will be made from businesses in parts of Scotland outside the Tay Cities Region. Based on our knowledge of the Dundee and Tay Cities Region economies and our experience in undertaking similar economic impact assessments the following scaling factors were applied.

For Dundee based suppliers to V&A Dundee:

- Dundee economy: 70% of the Scottish level multiplier; and
- Tay Cities Region economy: 75% of the Scottish level multiplier.

For V&A Dundee suppliers based elsewhere in Tay Cities Region:

- Tay Cities Region economy: 75% of the Scottish level multiplier.

Income

Direct income

The direct income impact (i.e. total gross wages of employees) used a figure provided by V&A Dundee.

Indirect income

The *indirect income impact* in suppliers and contractors was calculated using ABS data on average wages. Subsequent impacts were calculated by applying the relevant Type I income multipliers from the Scottish Input-Output Tables. Again, for impacts at the sub-Scotland levels the national level multipliers were scaled down. This used the same factors as were applied in calculating indirect employment.

Induced income

These impacts were calculated on the same basis as induced employment.

GVA

As noted at **4.11** of the main report because of the balance between trading income and public sector support and other funding sources, and the effect that the latter can have on GVA, calculating *direct* GVA is not appropriate in this instance and so is not included in the impacts.

Indirect GVA impacts were calculated on the same basis as indirect employment. *Induced* GVA impacts were calculated on the same basis as induced employment.

A.4.2 Gross off-site impacts

Estimates of visitors' off-site expenditures

Gross on-site economic impacts arise from V&A Dundee's visitors who spend money in the wider economy as part of their trip to the museum. They do not take account of the fact that some of these impacts would have occurred even if the museum did not exist.

The Scotinform survey collected information on visitors' off-site spend in each of Dundee, rest of Tay Cities Region and the rest of Scotland. The visitor spend information was collected for each of the following ten categories:

- Overnight accommodation, including food and drink purchased at accommodation;
- Food and drink, at cafes, pubs, restaurants, etc.;

- Shopping: food related;
- Shopping: non-food related;
- Taxis and other public transport;
- Car hire;
- Vehicle fuel;
- Recreation (including visitor attractions other than V&A Dundee);
- Car parking; and
- Other.

That was done because the economic impact per £ of visitor spend varies between different categories of expenditure.

In some cases the reported spend was an estimate. That is because certain visitors' overall trip was not yet complete at the time they were surveyed at the museum. For example, a day tripper from home visiting the museum in the morning and then spending the afternoon in Dundee before returning home; a visitor from overseas whose visit to V&A Dundee was on the third day of a seven day trip to Scotland.

The survey results were then grossed up to the total number of annual visitors to V&A Dundee to give estimates of total off-site spend.

Conversion of Off-Site Spend Into Economic Impacts

Direct employment, income and GVA impacts were calculated in the same way as the impacts of V&A Dundee's purchases of goods and services (described at **A.4.1**). That is, through assigning each category of visitor spend to the most appropriate SIC code and then applying the relevant turnover: employment ratio from the Scottish Annual Business Survey.

"Other" expenditure was converted into direct employment using the weighted average of turnover: employment across the other nine categories of visitor spend.

Indirect impacts and *induced* impacts were then calculated in the same way used for V&A Dundee's own purchases as set out at **A.4.1**.

A.5: Net impacts

A.5.1: Converting gross impacts to net impacts

Net impacts are those that would *not* have arisen in the absence of V&A Dundee. Thus, they show the difference that the museum has made in terms of generating additional economic activity.

A.5.2: Net on-site impacts

All visitors (i.e. both those on a day trip from home and those staying away from home) were asked: "*Which one of the following best describes what you would have done if you had not visited V&A Dundee?*". They were asked to choose between one of the following:

- I would have stayed at home or gone to work.
- I would have visited Dundee and done something else instead.
- I would have visited Angus/Perth & Kinross/Fife and done something else.
- I would have done something else in another part of Scotland.

- I would have done something else outside of Scotland.

From the survey results it was possible to estimate how many of the visits to V&A Dundee were additional ones, i.e. were trips that would not have been made if the museum did not exist.

For example, a resident of Glasgow would have done something else in another part of Scotland (e.g. visited Kelvingrove Art Gallery and Museum). Thus, their trip to V&A Dundee was an additional one to Dundee and the Tay Cities Region. However, it was not additional *for Scotland as a whole* as that person would otherwise have made a day trip in Glasgow.

The results from the survey were grossed up to V&A Dundee's total annual visitor numbers. This produced the following "additionality factors" (as shown at **Table 4.8** of the main report) for trips for each of the three geographies:

- Dundee: 69%;
- Tay Cities Region: 47%; and
- Scotland: 4%.

Thus, for example, 69% of the visitors to V&A Dundee would not otherwise have undertaken other activities in Dundee.

The additionality factor for each of the three geographies was applied to their respective gross on-site impacts (i.e. employment, income and GVA) to produce the estimates of *net* on-site impacts.

A.5.3: Net off-site impacts

Day trips from home

Estimation of the net off-site impacts of day trippers was based on their response to the survey question used for net on-site impacts (as shown at **A.5.2**). That is, "*Which one of the following best describes what you would have done if you had not visited V&A Dundee?*". This was done on a case by case basis (i.e. for each individual interview) to reflect the actual level of off-site spend reported for each visitor party.

Thus, for example, if the resident of Glasgow would have done something else in another part of Scotland it was assumed that their off-site spend was additional in Dundee and the rest of Tay Cities Region, *but would otherwise have been made in Glasgow*. Thus, there would be no additional off-site spend in the economy of *Scotland as a whole*.

Visitors staying away from home overnight

The survey asked overnight visitors how many nights they had spent/expected to spend in each of Dundee, rest of Tay Cities Region and rest of Scotland. They were then asked how many nights they would have spent in each of these areas *had they not visited V&A Dundee during their trip*.

The difference between the two sets of results showed the additional nights spent in each of the three areas as a result of their visit to the museum. These were then summed to show the net percentage increase in total nights attributable to V&A Dundee in each of:

- Dundee;
- Tay Cities Region; and
- Scotland.

These percentage increases (i.e. additionality factors) were applied to the *gross* off-site impacts in each of these three geographies to produce net off-site impacts.

Total net off-site impacts

Total net off-site impacts were calculated by adding together total *net on-site* impacts and total *net off-site* impacts.

The additionality factors for the total net off-site impacts were (as shown at **Table 4.9** of the main report):

- Dundee: 49%;
- Tay Cities Region: 27%; and
- Scotland: 5%.

A.5.4: Total net impacts

Total net impacts = total net on-site impacts plus total net off-site impacts.

A.6: Calculating estimated impact of future investment

A.6.1: Estimating the impact of future investment

The impact of future visitor numbers in 2020/21 has been estimated by pro-rating the visitor spend (off-site) impacts identified from V&A Dundee's first year of operation. It is assumed that future visitors to the museum have the same profile and spend level as those in Year 1. It is also assumed that the museum has the same staffing levels and level and pattern of expenditure in future years, i.e. the on-site impacts are the same.

Since 2020/21 visitor numbers are forecast to be around 62% of Year 1 visitor numbers, then gross and net impacts are pro-rated on this basis.

The additional impacts arising from extra visitors attracted to further exhibitions is calculated in a similar manner. An additional 50,000 visitors is around 6% of the Year 1 visitor numbers, so gross and net visitor spend (off-site) impacts are pro-rated on this basis. On-site impacts are not factored into this calculation, as this is intended to demonstrate the extra impact arising from additional visitors.