



Cardiff Taxi Licensing Study 2019

Part 1: Taxi Rank Operations and Public Attitude Survey

Cardiff Council

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Cardiff Taxi Licensing Study 2019: Part 1: Taxi rank Operations and Public Attitude Survey

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Table of Contents

1	Introduction.....	2
1.1	Background	2
1.2	Study Objectives	2
1.3	Report Structure.....	3
2	Study Background	5
2.1	Licensed Vehicle Market in Cardiff	5
2.2	Licensed Vehicle Legislation.....	8
2.3	Policy Context.....	8
2.4	Additional Context	9
3	Study Scope.....	11
3.1	Survey Programme	11
3.2	Taxi Rank Surveys	11
3.3	Public Attitude Survey	12
4	Results of Taxi Rank Surveys.....	14
4.1	Survey Response.....	14
4.2	Survey Methodology.....	16
4.3	Passenger Demand.....	17
4.4	Taxi Occupancy	18
4.5	Effective Taxi Demand	21
4.6	Taxi Supply.....	21
4.7	Comparison of Taxi Demand and Supply	22
4.8	Average Delay Calculations.....	24
5	Results of Public Attitude Surveys.....	29
5.1	Survey Response.....	29
5.2	Survey Administration	29
5.3	Economic and Residency Status.....	29
5.4	Understanding of Licensed Vehicle Flagging and Rank Waiting	31
5.5	Recent Journeys	32
6	Current Market Conditions	43
6.1	Significant Unmet Demand	43
6.2	Analysis of Market Conditions.....	43
6.3	Public Perceptions	51
7	Comparison with 2016 Study.....	53
7.1	Background	53
7.2	Taxi Rank Survey.....	53
7.3	Public Attitude Survey	57
7.4	Availability of Taxis.....	57
7.5	Understanding of Taxis and Private Hire Vehicles	58
7.6	Suggested Improvements.....	58
8	Summary.....	60
8.1	Summary.....	60
	Appendix A: Taxi Rank Locations	62
	Appendix B: Comparison of Demand and Supply.....	65
	Appendix C: Comparison of Market Conditions 2016 and 2019.....	82

E Executive Summary

Executive Summary

- E.1 Cardiff Council (CC) controls the issuing of taxi licences in Cardiff. Following a previous study in 2010 where there was no evidence of significant unmet demand, the Council imposed a moratorium on the issue of new taxi licences. This restriction was left in place following studies that took place in 2013 and 2016.
- E.2 Under DfT Taxi and Private Hire Vehicle Licensing Best Practice Guidance, a new study is required at a maximum interval of three years when a quantity restriction is in place. A new study is now due.
- E.3 AECOM has been commissioned by CC to undertake this study, comprising of analysis of taxi activity in the city centre, and surveys to establish the attitudes of the public, trade, and key stakeholders. The study has been approached with consideration to the DfT's Best Practice Guidance throughout.
- E.4 The main objectives of the study are as follows:
- To identify the current level of demand for taxis within Cardiff;
 - To assess whether the supply of taxis matches the demand;
 - To better understand the operations of taxis and private hire vehicles in and around Cardiff; and
 - To identify areas of the service that could be improved.
- E.5 In order to meet these objectives six different surveys have been undertaken. These surveys are described in three separate reports, with one overriding report summarising all the information and drawing the key conclusions and making recommendations. The four reports are listed below:

Report	Surveys
Cardiff Taxi Licensing Study 2019: Part 1: Taxi Rank Operations and Public Attitude Survey	<ul style="list-style-type: none"> • Taxi rank observation survey • Public attitude questionnaire
Cardiff Taxi Licensing Study 2019: Part 2: Driver and Proprietor Attitude Survey	<ul style="list-style-type: none"> • Licensed driver questionnaire • Vehicle proprietor questionnaire
Cardiff Taxi Licensing Study 2019: Part 3: Operator and Stakeholder Attitude Survey	<ul style="list-style-type: none"> • Stakeholder online questionnaire • Operator online questionnaire
Cardiff Taxi Licensing Study 2019: Part 4: Summary Report	<ul style="list-style-type: none"> • Summary of the above surveys

- E.1 This report is the Taxi Rank Operations and Public Attitude Survey, which summarises the results of two of the six surveys which have taken place; the taxi rank observations and a public attitude survey. The data collected from these surveys has been analysed to determine the current level of service and market conditions in Cardiff. The key conclusions are listed below:
- E.2 The taxi rank surveys show excess taxi supply across the city in all time periods, when compared to the effective taxi demand from passengers. The supply and demand profiles follow very similar patterns across each day type. The average delay time for passengers has remained similar to the 2016 study; 0.8 seconds in 2019 compared to 0.9 in 2016. The average taxi delay has increased slightly to 8.9 minutes, compared to 8.4 minutes in 2016.
- E.3 There were rare occasions of unmet demand, with Saunders Road the only rank showing unmet demand lasting longer than 10 minutes. Further analysis of the data showed the rank size is a possible contribution to this delay, as large numbers of passengers arrive at once from the train station whilst there is a continual supply of taxis. This is supported by the public attitude survey which cited this location as in need of improved taxi ranks. There was no evidence of insufficient taxis from the public attitude survey, and a lack of taxis was not cited as a reason to not travel by licensed vehicle by any respondent.
- E.4 The Taxi Market Condition Assessment Matrix applied to both 2016 and 2019 shows little difference in market conditions. The evidence suggests that the continuation of the moratorium on the issue of new taxi licences has not disadvantaged passengers.

1 Introduction

1 Introduction

1.1 Background

- 1.1.1 Cardiff Council (CC) controls the issuing of taxi licences in Cardiff. Following a previous study in 2010 where there was no evidence of significant unmet demand, the Council imposed a moratorium on the issue of new taxi licences. This restriction was left in place following a review studies that took place in 2013 and 2016.
- 1.1.2 Under Department for Transport (DfT) Taxi and Private Hire Vehicle Licensing Best Practice Guidance¹, a new study is required at a maximum interval of three years when a quantity restriction is in place. A new study is now due.
- 1.1.3 AECOM has been commissioned by CC to undertake this study, comprising of analysis of taxi activity in the city centre, and surveys to establish the attitudes of the public, trade, and key stakeholders. The study has been approached with consideration to the DfT's Best Practice Guidance throughout.
- 1.1.4 The term "Taxi" is commonly used to refer to both Hackney Carriages and Private Hire Vehicles (PHVs). However, for clarification, in this report the term "Taxi" is used to refer to Hackney Carriages in line with the Law Commission report titled "Taxi and Private Hire Services"². Where the report includes analysis that refers to PHVs, this will be clearly stated.

1.2 Study Objectives

- 1.2.1 The main objectives of the study are as follows:
- To identify the current level of demand for taxis within Cardiff;
 - To assess whether the supply of taxis matches the demand;
 - To better understand the operations of taxis and private hire vehicles in and around Cardiff; and
 - To identify areas of the service that could be improved.
- 1.2.2 In order to meet these objectives six different surveys have been undertaken. These surveys are described in three separate reports, with one overriding report summarising all the information and drawing the key conclusions and making recommendations. The four reports are listed below:

Report	Surveys
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Cardiff Taxi Licensing Study 2019: Part 4: Summary Report	<ul style="list-style-type: none"> • Summary of the above surveys

- 1.2.3 This report is the Taxi Rank Operations and Public Attitude Survey which analyses and summarises the findings of the taxi rank and public attitude surveys to help determine the current level of service and market conditions in Cardiff.

¹ <https://www.gov.uk/government/publications/taxi-and-private-hire-vehicle-licensing-best-practice-guidance>

² <https://www.gov.uk/government/publications/taxi-and-private-hire-services>

1.3 Report Structure

1.3.1 Following this introduction, the report is structured as follows:

- Section 2 provides the background to the study, including details of the licensed vehicle market in Cardiff and current law and policy;
- Section 3 sets out the methodology of the study, providing details of the surveys and consultations undertaken;
- Section 4 summarises the key results from the taxi rank surveys, including analysis of demand and supply and average waiting times for both passengers and taxis;
- Section 5 outlines the results of the public attitude surveys, including information about existing licensed vehicle usage patterns, perceived service quality and potential improvements;
- Section 6 analyses the results of the various surveys with a view to determining whether there is currently excess demand or excess supply in the taxi market;
- Section 7 compares the 2016 study results with the new 2019 results;
- Section 8 summarises the findings and provides the key recommendations of the study.

2 Study Background

2 Study Background

2.1 Licensed Vehicle Market in Cardiff

- 2.1.1 Cardiff is one of the fastest growing European Capital cities, and this rapid rate of expansion puts pressure on local transport infrastructure and services. Licensed Vehicles, in the form of Taxis and Private Hire Vehicles, provide an important service to the public allowing them to move round the city.
- 2.1.2 It is important to understand the differences between taxis and private hire vehicles. A Taxi (also known as Hackney Carriage) can be hailed at the roadside, and will have a "Taxi" roof sign and a licence plate displayed on the rear of the vehicle. In Cardiff the vehicles are either black with a white bonnet and white licence plate on the rear or a London Cab style vehicle. For clarification, in line with the Law Commission report titled "Taxi and Private Hire Services"³ from May 2014, this report will use the term taxi rather than hackney carriage.
- 2.1.3 A Private Hire Vehicle (PHV) cannot be hailed at the roadside; all private hire vehicles must be pre-booked via a licensed private hire operator. There is no light on its roof and a yellow licence plate is displayed at the rear of the vehicle. If a private hire vehicle stops when hailed it is likely that the vehicles insurance may be invalidated.
- 2.1.4 At the current time Cardiff City Council licenses 937 taxis with a further 63 licences currently on hold, with a further 4 suspended. Given that the population of Cardiff is 362,756 (2017 mid-year estimate), this equates to one taxi per 369 people; a slight increase compared with 2010 when the moratorium was originally introduced. In addition, there are currently 1294 licensed private hire vehicles, which is a 23% increase from the 2016 study. The total number of licensed drivers has increased from 2045 to 2319.

Table 2.1
Comparison of Licence Numbers in 2010, 2013, 2016 and 2019

Licensed Vehicles/Drivers	2010	2013	2016	2019
Taxis	875	896	901	937
Private Hire Vehicles	865	827	1056	1294
Drivers	2045	2022	2148	2319

- 2.1.5 Table 2.2. compares the number of licensed taxis per head of population in a number of local authorities of comparable size to Cardiff.

Table 2.2
Comparison of Taxi Licences per Population

Location	Population Estimate (2017 mid-year estimate)	Taxi Licence Numbers	Number of People per Taxi Licence
Nottingham	331,100	411	806
Leicester	353,540	329	1075
Cardiff	362,756	937	369
City of Bristol	459,252	639	719

- 2.1.6 Taxis operate from 12 official ranks located throughout the city, the locations and hours of operation of which are identified in Table 2.3. It should be noted that the ranks at Saunders Road (Cardiff Central Station) and Heath Hospital are located on private land and are not maintained by the Council. The locations of the ranks are displayed on a map in **Appendix A**.

³ <https://www.gov.uk/government/publications/taxi-and-private-hire-services>

2.1.7 It is worth noting the closure of the Tredegar Street Taxi rank since the 2016 survey.

Table 2.3
Location and Hours of Operation of Official Taxi Ranks

Location	Hours of Operation
(1) Albert Street	24 hrs
(2) Churchill Way	24 hrs
(3) Greyfriars Road	24 hrs
(4) Havelock Street	24 hrs
(5) Heath Hospital	07:00-23:00
(6) Lower St Mary Street (East)*	24 hrs
(7) Lower St Mary Street (West)*	24 hrs
(8) Mermaid Quay	24 hrs
(9) Mill Lane (South)	24 hrs
(10) Park Place	24 hrs
(11) Saunders Road (Cardiff Central Station)	24 hrs
(12) St Mary Street / Guildhall Pl	24 hrs

*Indicates night time closure due to road closure on weekend nights

2.1.8 In addition, there are a number of unofficial taxi ranks around the City Centre, which are generally in operation at night. This includes unofficial ranks at Greyfriars Road, St Mary Street (outside O'Neill's and Walkabout) and Wood Street/Westgate Street. Sophia Gardens is the current National Express coach stop and there is an unofficial taxi rank for passenger pick-up and drop-off. Table 2.4 summarises the location and approximate hours of operation of each unofficial rank.

Table 2.4
Location and Approximate Hours of Operation of Unofficial Taxi Ranks

Location	Hours of Operation
(A) St Mary Street (outside Walkabout)	Informal
(B) Greyfriars Road (Unofficial)	Informal
(C) Sophia Gardens	Coach stop – 24 hrs
(D) St Mary Street (outside O'Neill's)	Informal
(E) Wood Street / Westgate Street	Informal

- 2.1.9 Cardiff Council regulates the fares which are charged by taxis in Cardiff. The fare tariff is split into three main components; the initial fee for entering the vehicle and travelling 103 yards (94.18 m) or part thereof; a distance related charge rate for each subsequent 207 yards (189.28m) travelled; and a time based charge rate for periods when the taxi is not in motion. Additional charges are applied according to the time of day and year, the number of passengers on board and additional bulky items that may be transported in taxis from time to time. The current fare tariff is summarised in Table 2.5.

Table 2.5
Cardiff Taxi Fare Tariff December 2015

Authorised Fare Tariff	
First 103 yards (94.18 metres) or part thereof	£2.50
If distance exceeds 103 yards (94.18m) for first 103 yards (94.18m)	£2.50
For each subsequent 207 yards (189.28m)	£0.20
Waiting Time	
For each period of 48 seconds	£0.20
Extra Charges	
For hiring between midnight and 6 am and on Sundays, and Bank Holidays	£1.00
For hiring between 8pm Christmas Eve and 6am on 27 th December and between 8pm New Years Eve and 6am 2 nd January	£3.00
For each passenger exceeding four	£1.00 each
For bicycles, cabin trunks (minimum size 36" x 24" x 18") and items of furniture	£0.50 each
The extra charge for night time, Sundays and Bank Holidays will not apply when extra charge for Christmas and New Year applies.	
Contamination	
For the fouling of a vehicle	£50.00
On all journeys within the boundary of the City and County of Cardiff the driver must use the meter which must not exceed the authorised fare scale shown above. Fares for journeys ending outside the area of the City and County of Cardiff, and in respect of which no fare or rate of fare was agreed before the hiring was effected, must not exceed the authorised fare scale as shown above.	

2.2 Licensed Vehicle Legislation

2.2.1 Licensed Vehicle legislation is not set out in any single act, but is fragmented and complex falling under the following six key pieces of legislation;

- The Town Police Clauses Act 1847;
- The Town Police Clauses Act 1889;
- The Transport Act 1985;
- The Local Government (Miscellaneous Provisions) Act 1976;
- The Equality Act 2010; and
- The Wales Act 2017.

2.2.2 The Town Police Clauses Act of 1847 set out the regulatory system in respect of taxis. The Act sets out the definition of a taxi, what would be on a licence and how the carriages could operate. The Act made it illegal to ply for trade without a licence with a strict fine for those convicted, and also stated that there would be a fixed penalty for any driver refusing service. The Town Police Clauses Act 1889 contains amendments to the act from 1847.

2.2.3 The Local Government Act 1976 set down the mechanism for the licensing of vehicles and drivers as well as the basis for enforcement. This Act does however concentrate on private hire vehicles. This Act allows the local licensing authority to set conditions for drivers and their cabs if they are considered reasonably necessary, for example in relation to the vehicle style, colour etc. The local authority also has the power to refuse a licence application and to remove a licence if the driver is not seen to be fit to hold it, for any reasonable reason.

2.2.4 Following on from the 1976 Act, the Transport Act 1985 set down the requirements for continued licence control and allows for the control of licence numbers. The Act also set out the conditions under which shared taxis and taxi buses could be introduced. It also covers the provision of designated bays from which taxis could be hired. The Wales Act 2017 reassigns the control of this legislation to the National Assembly of Wales as part of the devolved settlement for Wales.

2.2.5 The Equalities Act 2010 replaces The Disability Discrimination Act 1995, and covers the requirements for taxi accessibility and other matters in Part 12.

2.2.6 In addition to this legislation is the Department for Transport (DfT) Taxi and Private Hire Vehicle Licensing: Best Practice Guidance. This document sets out the role of licensing and in particular references the best approach to quantity restrictions.

2.3 Policy Context

2.3.1 The Transport (Wales) Act 2006 made provision for a new transport planning system in Wales where the Local Transport Plans (LTPs) prepared by each local authority are replaced with Regional Transport Plans (RTPs) produced by the four regional transport consortia in Wales.

2.3.2 Cardiff Council was one of 10 authorities in the South East Wales Transport Alliance (Sewta), the regional consortium for South East Wales. Sewta's RTP was published in January 2010 following release of the Welsh Assembly Government's Wales National Transport Plan (NTP). Sewta ceased to operate in September 2014. As of January 2015 Cardiff Council adopted a new LTP for 2015-2020, and in January 2016 Cardiff Council adopted a Local Development Plan (LDP) for Cardiff.

2.3.3 Both Cardiff's LTP 2015-2020 and Cardiff's LDP, however, make no direct reference to taxis and private hire vehicles, beyond supporting facilities for taxis to enable transfer between transport modes.

2.3.4 At present there is a moratorium on the issue of new taxi licences, and as such a new study is required to assess the current market within three years of the previous study. This new study should be approached with the interests of the travelling public in mind, and consider what benefits or disadvantages the moratorium has on them, or the removal of the moratorium would have.

2.3.5 The DfT Best Practice Guidance sets the need to demonstrate that there is no evidence of significant unmet demand, and states “it is sometimes argued that delays associated only with peaks in demand ... are not ‘significant’ for the purpose of the Transport Act 1985”. However, in line with DfT guidance, significant unmet demand at peak times should be taken into consideration and will be in this study.

2.4 Additional Context

2.4.1 Following The Wales Act 2017, which saw devolution of taxi legislation to the National Assembly of Wales, Welsh Government launched a consultation on a White Paper for taxi and private hire licensing law reform in Wales, in December 2018. The White Paper seeks to provide unity across Wales for taxis and private hire vehicles, introducing national standards, enforcement powers, local authority information sharing for safeguarding, and introducing a Joint Transport Authority to oversee licensing functions.

2.4.2 The consultation closed in March 2019, and a Summary of Response was issued in July 2019. There was overall support for the proposals, although proposals for a Joint Transport Authority saw little support. The responses will be used to help with future proposals; legislation is unchanged at the time of this study.

2.4.3 Since the 2016 study, there are additional private hire operators that utilise booking apps operating in the city.

3 Study Scope

3 Study Scope

3.1 Survey Programme

- 3.1.1 The primary aim of this study is to establish whether there is any significant unmet demand for taxi services in Cardiff. A study was carried out in 2002 which showed that there was a significant unmet demand for taxis in Cardiff and therefore the introduction of a cap could not be justified. A second study in 2010 found there was not any significant unmet demand for taxis in Cardiff, and therefore a moratorium on the issue of new licences was introduced. Subsequent studies in 2013 and 2016 found there was no significant unmet demand and as such the moratorium remained in place.
- 3.1.2 In accordance with the DfT guidance, when a cap is in place a new study should be carried out up to a maximum of 3 years after the previous study. This study is an update of the 2016 study and therefore uses very similar methods of data capture and analysis.
- 3.1.3 Two data capture exercises were undertaken, taxi rank observation surveys and a public attitude survey, which together enable both the assessment of the quality of service to existing passengers and the existence of significant unmet demand. The conclusions in this report are largely based on the rank observation results with the data from the public attitude survey being used to provide supplementary information.

3.2 Taxi Rank Surveys

- 3.2.1 The taxi rank survey programme was undertaken over a four-month period from March to June 2019. A total of 966 hours of observations were undertaken across 12 official and 5 unofficial ranks during this time period.
- 3.2.2 Manual observations were carried out across a range of days and time periods encompassing weekdays (Monday to Friday), weekends (Friday night and Saturday) and Sundays. At each rank, surveyors recorded the supply and demand for taxis in 5-minute intervals throughout the survey period. Table 3.1 shows the total number of hours observed at each taxi rank. Where some ranks were closed or not operational for certain periods this has been noted below. Some ranks were observed via video footage rather than on street observations.
- 3.2.3 A number of ranks do not have a full 72 hours surveyed; 24 hours for each of the three day types. Heath Hospital is not a 24 hour rank and therefore is not surveyed for the full day; only its hours of operation. Lower St Mary Street (East) was combined with Lower St Mary Street (West) during the weekend survey period due to taxis switching between ranks. The Walkabout, O'Neill's, and Greyfriars Road unofficial ranks are only surveyed on the late Friday night / early Saturday morning to coincide with peak demand at these locations.

Table 3.1
Allocation of Taxi Rank Observations

Location	Hours Observed
Albert Street	72
Churchill Way	72
Greyfriars Road	72
Havelock Street	72
Heath Hospital	45.7
Lower St Mary Street (East)	48 ²
Lower St Mary Street (West)	72 ¹
Mermaid Quay	72
Mill Lane	72
Park Place	72
Saunders Road (Cardiff Central Station)	72
St Mary Street / Guildhall Place	72
Sophia Gardens*	72
St Mary Street (outside O'Neill's)*	4.8
St Mary Street (outside Walkabout)*	4.8
Wood Street / Westgate Street*	72
Greyfriars (Unofficial)*	4.9

* Unofficial taxi ranks

¹ Time inclusive of road closure on Friday and Saturday (weekend) nights – 22:40 – 03:50

² Activity on Lower St Mary Street East and West were recorded together during the weekend

3.3 Public Attitude Survey

- 3.3.1 A survey of 491 people was conducted across May and June 2019. The aim of the survey was to assess peoples' views on the quality of the taxi and private hire vehicle services in Cardiff.
- 3.3.2 In 2010, the survey response was controlled by quotas on age and sex of respondent linked to 2001 Census data for Cardiff residents. This approach was not replicated in the 2013 and 2016 studies as it recognised that the users of licensed vehicles in Cardiff include other groups as well as residents, and the same approach has been used in this study. However, the survey responses have been compared to the 2011 Census data for Cardiff to ensure that they remain reasonably representative of the current demographics in the City, as shown in Section 5.

4 Results of Taxi Rank Surveys

4 Results of Taxi Rank Surveys

4.1 Survey Response

- 4.1.1 In order to construct a representative profile of demand at each rank over the period of a week, a number of assumptions are made.
- 4.1.2 Firstly “daytime” observations refer to observations made between 07:00 and 18:59 hours, and “night time” observations refer to observations made between 19:00 and 06:59 hours. These are then divided further into distinct time periods, which are designed to represent different types of activity. The hours covered by each time period are defined in Table 4.1 below.

Table 4.1
Definition of Time Periods⁴

Time of Day	Time Period	Hours
Daytime	AM Peak (AM)	07:00 – 09:59
	Interpeak (IP)	10:00 – 15:59
	PM Peak (PM)	16:00 – 18:59
Night time	Off-peak night (OPN)	19:00 – 23:59
	Off-peak morning (OPM)	00:00 – 06:59

- 4.1.3 Secondly, the week has been split into three day types – Weekday, Weekend and Sunday. These day types are defined as follows:

Table 4.2
Definition of Day Types

Day Type	Time Period
Weekday	07:00 Monday to 18:59 Friday
Weekend	19:00 Friday to 06:59 Sunday
Sunday	07:00 Sunday to 06:59 Monday

- 4.1.4 Each of the 12 official taxi ranks was surveyed on a weekday, weekend and a Sunday. Table 4.3 summarises the number of hours of observations that were carried out at each of the taxi ranks on each day in each time period.

⁴ The time periods are standard definitions which refer to the prevailing traffic conditions rather than specifically to taxi usage.

Table 4.3
Taxi Rank Observations (No. of hours surveyed)

Taxi Rank	Weekday					Weekend					Sunday				
	AM	IP	PM	OPN	OPM	AM	IP	PM	OPN	OPM	AM	IP	PM	OPN	OPM
Albert Street	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Churchill way	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Greyfriars Road	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Havelock Street	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Heath Hospital	3	6	3	2	0.3	1.5	6	3	2	0	1.58	6	3	1.5	0
Lower St Mary Street (East)	3	6	3	5	7	0	0	0	0	0	3	6	3	5	7
Lower St Mary Street (West)	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Mermaid Quay	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Mill Lane (South)	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Park Place	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Saunders Road	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
St Mary Street/Guildhall Place	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Duke Street/ Castle Street	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Greyfriars Road (Unofficial)	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Sophia Gardens	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Wood Street	3	6	3	5	7	3	6	3	5	7	3	6	3	5	7
Walkabout	0	0	0	0	0	0	0	0	1.33	3.5	0	0	0	0	0
O'Neill's	0	0	0	0	0	0	0	0	1.33	3.5	0	0	0	0	0
Greyfriars (Unofficial)	0	0	0	0	0	0	0	0	1.42	3.5	0	0	0	0	0

Grey squares indicate periods when checks were carried out, but no activity was observed.

- 4.1.5 Table 4.3 shows an almost complete coverage across the survey periods for weekday, weekend, and Sunday readings. The Heath Hospital rank does not operate for 24hrs like the rest of the official ranks and hence have not been surveyed outside of their operating periods. Unofficial ranks have limited coverage because they are not in use for long periods of time and therefore no observations have been carried out during these times.

4.2 Survey Methodology

- 4.2.1 As in 2016, the taxi rank surveys record all passenger and taxi activity at each rank in 5 minute intervals. The surveys record all taxis departing from the rank during the 5-minute period and the number of passengers in each vehicle. The surveys also record the number of passengers and/or taxis queuing at the rank at the end of each 5-minute period. The surveys also record any potential customers who walked away from a rank without getting into a taxi and/or any taxis that drive away from the rank without getting a fare.
- 4.2.2 Using this data, it is possible to calculate a wide range of indicators that are useful in determining the prevailing market conditions. Firstly, the record of all taxis leaving the rank and the number of passengers in each can be used to determine the total passenger demand and the total taxi supply in each 5-minute period and also the average vehicle occupancy (i.e. the average number of passengers per vehicle).
- 4.2.3 When making a comparison between the demand for and the supply of taxis, it would be inaccurate to directly compare passenger demand and taxi supply, as more than one person will often share a taxi. In order to make a direct comparison it is necessary to estimate the effective taxi demand; that is, the number of taxis that would be required to serve the existing passenger demand, assuming that current taxi occupancy rates remain the same. Effective taxi demand is calculated by dividing the average passenger demand by the average taxi occupancy.
- 4.2.4 Finally, and most importantly, using the passenger and taxi activity data and the queue length at the end of each 5-minute period, it is possible to estimate how long each person and taxi in the queue at the end of a 5-minute period has been waiting. This calculation assumes that the queue is arranged in the order that people arrive and therefore the first people to depart in each 5-minute period will be the people who have been waiting the longest. The following example illustrates the calculation methodology (refer to Figure 4.1).

Figure 4.1 – Example Passenger Demand Data

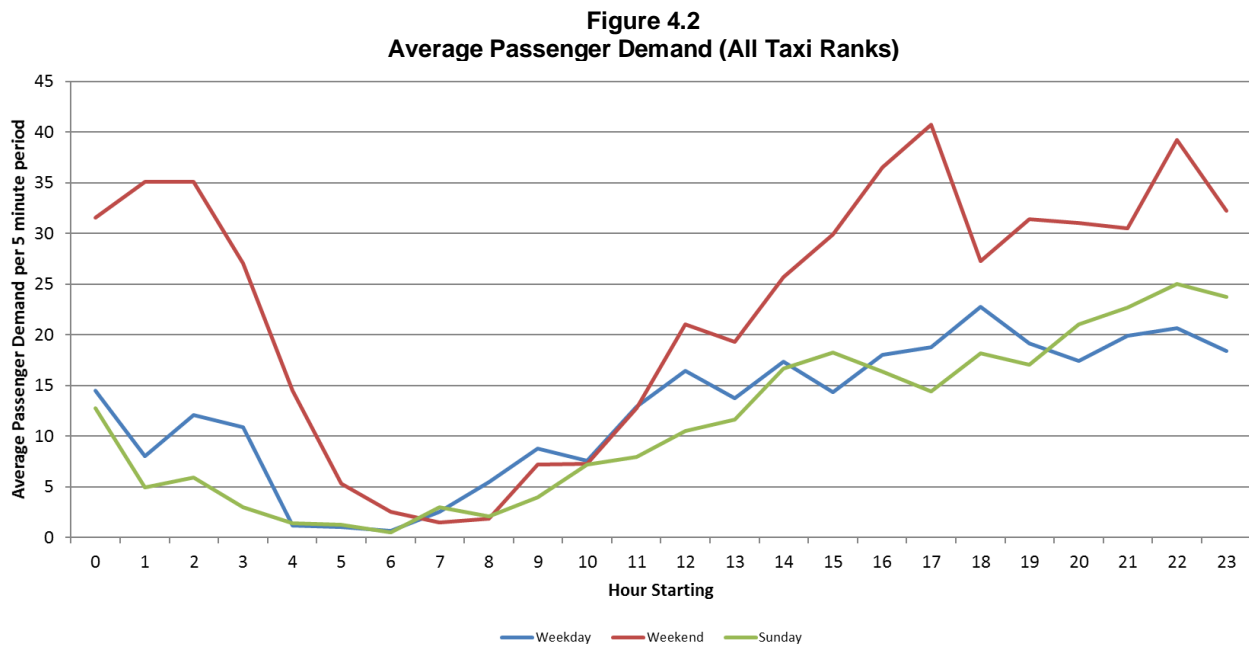
Time Period	Passenger Arrivals	Passenger Departures	Queue Length	Queue Profile
T			6	
T+1	1	3	4	
T+2	2	2	4	
T+3	2	5	1	

- 4.2.5 The passenger indicated in red arrives at some point in time period T and is at the back of the queue (6th) at the end of that period. During the following 5-minute period, T+1, 3 passengers depart leaving the red passenger 3rd in the queue, while 1 person has joined behind. In the next time period, T+2, 2 further passengers depart, leaving the red passenger at the front of the queue with three further passengers behind. In time period T+3, 5 passengers including the red passenger depart. It can be calculated that the red passenger has waited two full 5-minute period (T+1 and T+2), plus the time taken to obtain a taxi in period T+3. As the passenger was the first of five passengers to depart in this period and assuming that passengers departed at regular intervals, it is estimated that the passenger has waited 1 minutes in time period T+3, giving a total wait time of 11 minutes. This figure ignores the time spent waiting in time period T as it is unknown exactly when the passenger joined the queue. On this basis it can be considered to be a conservative estimate of the passengers' wait time.

4.2.6 The wait time is calculated in this manner for all passengers in the queue at the end of each 5-minute period and also for any passengers that have departed during that 5-minute period. An average is taken, which represents the overall average wait time for passengers at that rank during that 5-minute period. A similar calculation can be performed for taxis to estimate their average wait time during each 5-minute period.

4.3 Passenger Demand

4.3.1 The data collected from the taxi rank surveys has been used to estimate overall passenger demand by day type and time period from which the peak passenger demand across the city can be derived. Figure 4.2 shows the average passenger demand in a 5 minute period in each hour for weekdays, weekends and Sundays. Passenger demand was also calculated by rank; copies of the graphs showing each ranks passenger demand and taxi supply data can be found in **Appendix B**.



4.3.2 A number of key observations can be made from this graph. Firstly, the passenger demand is peaked, particularly on weekends. The peaks occur in the early evening, late night, and early morning when other transport choices are limited or in high demand.

4.3.3 On weekdays, passenger demand builds from around 7am, eventually plateauing at 11am, where demand fluctuates between 14-18 passengers every 5 minutes across all ranks until 4pm. Demand peaks at around 6pm at around 23 every five minutes across all ranks. Demand reduces and plateaus again between 18 and 21 passengers from 7pm to midnight. The profile then shows that demand generally declines, with a trough at 1am of 8 passengers per 5 minutes, followed by a pickup between 2am and 3am, before dropping towards 0 passengers. The rank that shows the greatest amount of passenger demand throughout the day is Saunders Road which peaks at 6pm with 10 passengers every 5 minutes; it also has a number of smaller peaks throughout the day. This is largely as a result to Saunders Road’s close proximity to Cardiff Central rail station and the peaks likely reflect multiple trains dropping off passengers simultaneously. Another notable rank for passenger demand is Lower St Mary Street (West) which sees increased passenger demand in the late evening and early morning; peaking at 2am at about 6 passengers per 5-minute period. This is likely as a result of this rank being positioned by a number of public houses including the Prince of Wales, Walkabout, and O’Neill’s.

- 4.3.4 Weekend demand profile shows a similar trend but with increased volume. The passenger demand begins to build up 8am, peaking at 5pm where the demand is around 41 passengers per 5-minute period. It then sharply declines and plateaus at around 30 passengers per 5-minute period before peaking again at 10pm with 39. The third peak occurs at 1 and 2am when demand is 35 passengers per 5-minute period. The peaks are the notable differences between the weekend and weekday profiles; they are likely because of passengers going to and from public houses and at a time where public transport is not viable and personal circumstance prevents use of private vehicle usage. Similar to the weekday result, the Saunders Road rank has the highest demand between 7am and 7pm with peaks of around 11 passengers per 5-minute period at 12pm, 2pm, and 5pm, which is likely due to the proximity to Cardiff Central Station. The rank with the largest demand between 7pm and 7am is St Mary Street / Guildhall Place with a peak demand at 11pm and midnight of about 12 passengers per 5-minute period. There is a plateau of 10 passengers per 5-minute period between 1am and 3am, this profile follows the behaviour of evening passengers patronising the drinking and eating establishments within the city centre.
- 4.3.5 The Sunday profile is very similar to the weekday profile. The most notable difference is the absence of a peak in passenger demand in the early morning; most likely from a lack of evening socializing. As with the other day profiles, Saunders Road experiences the greatest demand of all the official ranks with a peak at 11pm of approximately 14 passengers per 5-minute period; it also plateaus between 2pm and 4 pm at around 5 passengers.

4.4 Taxi Occupancy

- 4.4.1 As part of the taxi rank survey, the number of passengers that departed in each taxi was recorded. Using this data, it is possible to calculate the average taxi occupancy and see whether there are certain locations or time periods where average occupancy is particularly high or low. Table 4.4 summarises average taxi occupancy by day, period and location.
- 4.4.2 The overall taxi occupancy over all locations is 1.8 passengers per taxi. There is limited variation by day type. Weekdays have the lowest average occupancy of 1.6, followed by Sundays with 1.8 passengers per taxi, and weekends having the highest average occupancy of 2.0 passengers per taxi.
- 4.4.3 On weekdays, taxi occupancy is higher in the off-peak morning period than during the daytime, perhaps reflecting that a higher proportion of taxi journeys made are leisure related, with people travelling in larger groups to and from their destinations, while daytime trips would be largely business related and hence would have more people travelling on their own or in small groups.
- 4.4.4 At weekends, there is a noticeable increase in average taxi occupancy in the OPM period where there is an average of 2.3 people. The reason can be attributed to passengers using the taxis to get to and from leisure establishments, travelling as a group. This is largely concentrated around Lower St Mary Street, Mermaid Quay, Mill Lane, Park Place, and the unofficial ranks. This also can be explained by passengers travelling in groups for leisure purposes given how close three of these ranks are to the pubs and nightclubs around the west side of the city centre. All of these ranks have an occupancy higher than 2 passengers.
- 4.4.5 There is less variation across the day on Sundays compared to the weekday and weekend; average occupancy stays between 1.6 and 1.8 passengers. The average occupancy across all time periods and ranks is higher than the weekday but lower than the weekend; this can be attributed to a reduction of business related trips and visitors using the taxi services to get to and from the retail centres. This is further evidenced by the fact that the average peak rank occupancy for a number of the ranks occurs in the interpeak period, when said retail centres will be open.

Table 4.4
Average Taxi Occupancy

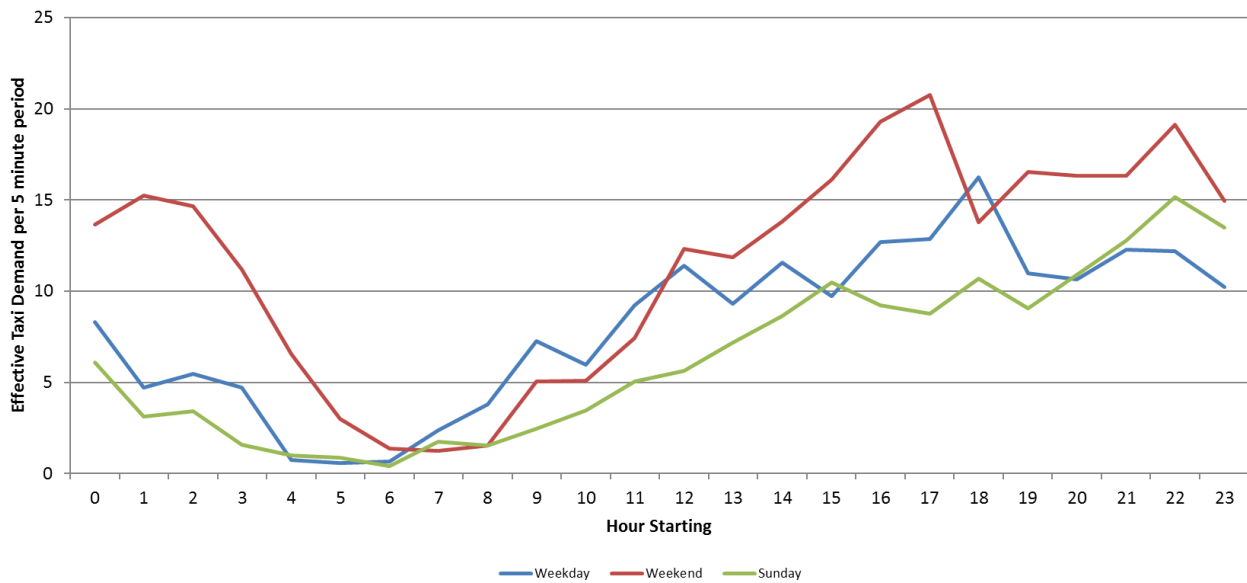
Location	Weekday						Weekend						Sunday						Overall
	AM	IP	PM	OPN	OPM	Daily	AM	IP	PM	OPN	OPM	Daily	AM	IP	PM	OPN	OPM	Daily	
Albert Street	1.2	1.4	1.4	1.3	1.0	1.3	1.2	1.4	1.3	1.3	-	1.3	-	1.3	1.9	1.2	-	1.4	1.3
Churchill way	1.3	1.4	1.1	1.5	1.6	1.4	1.7	1.3	1.5	1.8	2.3	1.8	1.5	1.6	1.9	1.5	1.7	1.6	1.6
Greyfriars Road	1.5	1.4	1.5	1.3	2.1	1.6	1.4	1.9	2.2	2.0	2.2	2.0	1.0	1.7	1.5	1.9	1.9	1.7	1.8
Havelock Street	-	1.0	-	-	-	1.0	-	-	-	-	-	-	-	-	-	1.0	-	1.0	1.0
Heath Hospital	1.4	1.5	1.5	1.2	-	1.5	1.5	1.2	1.4	1.0	-	1.3	1.0	1.5	1.5	1.8	-	1.5	1.4
Lower St Mary Street (East)	-	-	-	-	1.9	1.9	-	-	-	-	-	-	1.6	2.5	2.0	3.0	2.5	2.2	2.2
Lower St Mary Street (West)	3.0	1.3	1.3	2.3	2.4	2.2	2.0	2.5	2.6	2.6	2.5	2.6	1.6	2.5	2.0	1.8	1.8	2.0	2.2
Mermaid Quay	1.4	1.4	1.4	1.9	2.5	1.7	1.0	2.4	2.5	1.9	2.2	2.1	1.5	1.8	1.7	2.1	2.3	1.9	1.9
Mill Lane (South)	1.3	1.7	1.8	1.6	1.4	1.6	-	2.1	2.2	1.8	2.3	2.1	2.0	2.1	1.2	1.5	1.4	1.8	1.9
Park Place	2.0	1.3	1.3	1.5	1.4	1.4	1.3	1.5	1.5	2.4	2.5	2.0	1.7	1.6	1.4	1.5	2.0	1.5	1.7
Saunders Road	1.1	1.5	1.6	2.0	1.6	1.6	1.3	2.0	2.1	2.1	1.9	1.9	1.3	1.6	1.6	2.0	1.8	1.7	1.7
St Mary Street/Guildhall Place	1.1	1.4	1.4	1.6	1.9	1.5	1.1	1.5	2.1	1.6	1.9	1.8	1.3	1.6	1.8	1.9	1.8	1.8	1.7
Sophia Gardens	-	1.6	2.0	1.3	2.0	1.7	-	2.0	1.5	1.9	2.0	1.9	-	1.6	1.6	1.5	1.2	1.5	1.7
Wood Street	-	1.3	1.3	1.5	1.6	1.5	1.5	1.7	1.7	1.9	1.6	1.7	2.0	1.3	1.8	1.9	1.8	1.8	1.7
Greyfriars Road (Unofficial)	-	-	-	-	-	-	-	-	-	1.8	2.6	2.5	-	-	-	-	-	-	2.5
St Mary Street (Walkabout)	-	-	-	-	-	-	-	-	-	2.2	2.4	2.4	-	-	-	-	-	-	2.4
St Mary Street (O'Neill's)	-	-	-	-	-	-	-	-	-	2.6	3.0	2.9	-	-	-	-	-	-	2.9
Grand Total	1.3	1.4	1.4	1.7	1.9	1.6	1.3	1.7	1.9	2.0	2.3	2.0	1.6	1.8	1.7	1.8	1.8	1.8	1.8

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4.5 Effective Taxi Demand

4.5.1 As noted above, the effective taxi demand represents the number of taxis that would be required to serve the existing passenger demand, assuming that current taxi occupancy rates remain the same, and is calculated by dividing the average passenger demand by the average taxi occupancy. Figure 4.3 shows the effective taxi demand across all taxi ranks on a weekday, weekend and Sunday.

**Figure 4.3
Effective Taxi Demand (All Taxi Ranks)**

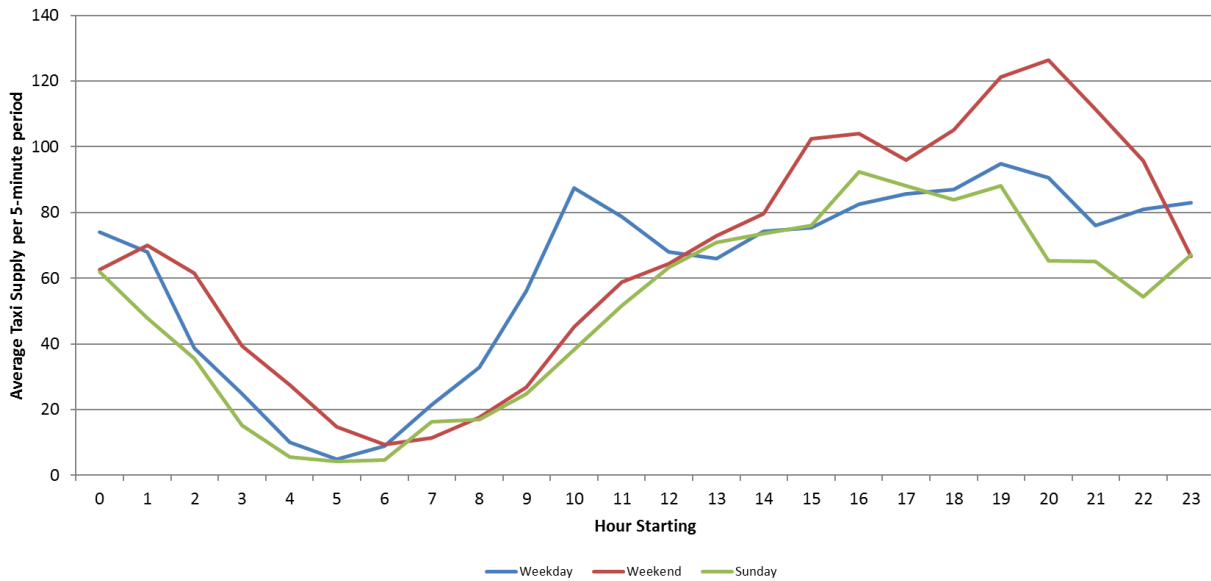


4.5.2 When comparing Figure 4.3 with 4.2 it is evident that they share a similar profile; showing that the fluctuations in passenger demand across the day match those of the effective taxi demand. The effective taxi demand is approximately half that of the passenger demand; this is to be expected given that the average occupancy is approximately 1.8 passengers. One thing that should be noted is that the difference between the weekend and weekday profiles in Figure 4.3 is not as great as in Figure 4.2. This is as a result of the passenger occupancy on the weekend being typically higher than the weekday.

4.6 Taxi Supply

4.6.1 As well as recording passenger demand, the taxi rank surveys also recorded the number of taxis departing in 5 minute intervals and the number of taxis queueing at the end of each 5-minute period. This data has been used to identify the pattern of taxi supply across the week. Figure 4.4 shows the average taxi supply across the city centre by day type and hour. Analysis of the taxi supply at each rank is provided in **Appendix B**, where it is directly compared to passenger demand and effective taxi demand.

**Figure 4.4
Average Taxi Supply (All Taxi Ranks)**



4.7 Comparison of Taxi Demand and Supply

4.7.1 By comparing “effective taxi demand” with “taxi supply”, it is possible to get an indication of whether the taxi market in Cardiff is operating in equilibrium (i.e. demand and supply are broadly matched), or whether there are too many or too few taxis. Figures 4.5 – 4.7 show the relationship between taxi supply, passenger demand and effective taxi demand on a weekday, a weekend and a Sunday.

4.7.2 It should be noted that taxi supply always exceeds the taxi demand for all days.

4.7.3

Figure 4.5
Comparison of Demand and Supply: Weekday

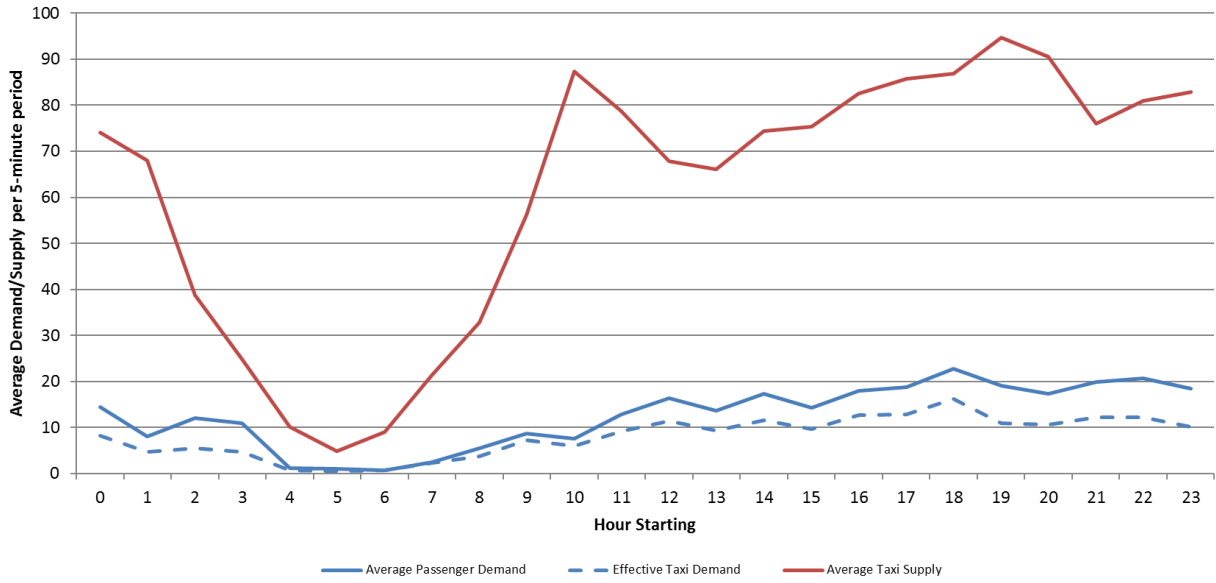
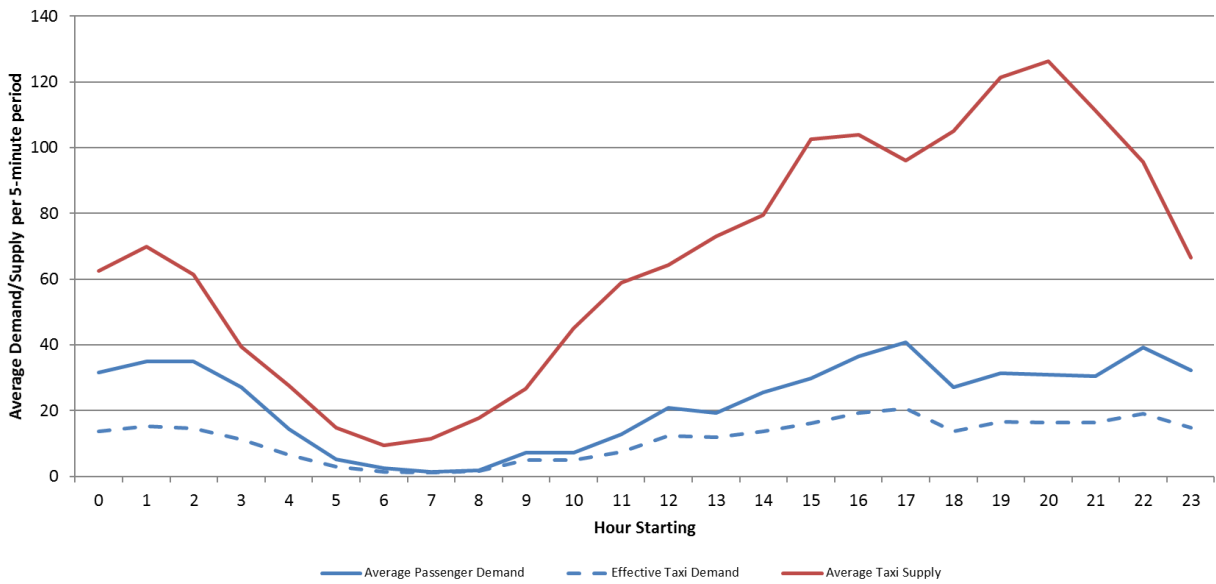
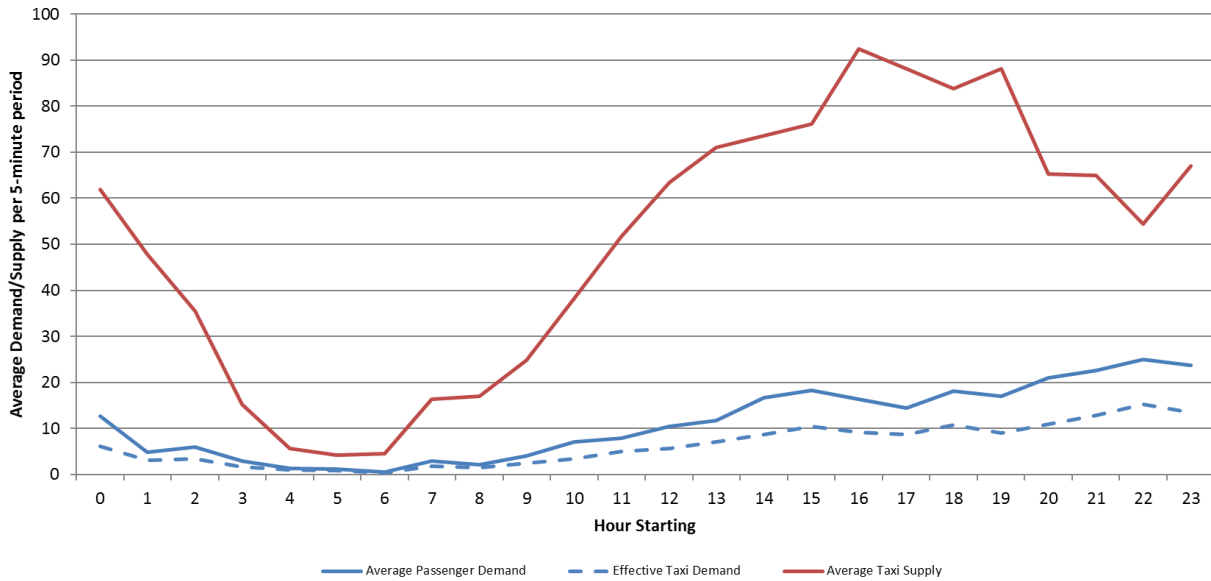


Figure 4.6
Comparison of Demand and Supply: Weekend



**Figure 4.7
Comparison of Demand and Supply: Sunday**



4.8 Average Delay Calculations

4.8.1 As well as understanding the total demand for and supply of taxis, it is also important to investigate the average delay experienced by taxi passengers and drivers; that is, the average length of time that a passenger must wait before they are able to hire a taxi and the average length of time that a taxi driver must wait before getting a fare. The methodology for this has been set out in section 4.2. A comparison of the 2016 and 2019 results is provided in Section 7.2.

Average Passenger Delays

4.8.2 Using the data collected in the taxi rank observation surveys and the calculation methodology set out above, average passenger delays have been calculated for each taxi rank by day type (weekday, weekend and Sunday) and time period (AM peak, interpeak, PM peak and off-peak). Table 4.5 summarises the average passenger delay in seconds.

4.8.3 From the dataset it is evident that the average delay time for passengers is around 2 seconds; indicating that a taxi is usually available immediately in most locations. The location with the longest average delay is Saunders Road with an average delay of 8.5 seconds. Saunders Road is located next to the rail station and is subjected to high fluctuations in passenger demand which coincides with train arrivals. The delay in the dataset is likely because of a large number of train passengers arriving at the rank at the same time, emptying the rank of its taxis, resulting in a delay before more taxis arrive to refill it. The longest delay is experienced on Sunday when passengers were waiting for 24 seconds on average; largely because of an average waiting time of 111 seconds at during the OPN period.

4.8.4 Considering all ranks other than Saunders Road; there is very little delay at all. All other ranks have average passenger delays of less than 1 second. The reason for this low waiting time is likely due to a considerably larger taxi supply than effective taxi demand; the profiles of Figures 4.5-4.7 support this. Generally, the taxi supply for all ranks by far exceeds their demand; there are exceptions to this where the taxi supply of certain ranks will drop to zero during quiet periods but will pick up again before demand starts to build.

Average Taxi Delay

- 4.8.5 As well as identifying the average passenger delay it is important to consider the taxi delay. Average taxi delays have been calculated for each taxi rank by day (weekday, weekend and Sunday) and period (AM peak, interpeak, PM peak and off-peak). Table 4.6 shows the average waiting time for taxis.
- 4.8.6 The analysis indicates that the average taxi delay is high; especially when compared to the passenger delay. All average delays are below 15 minutes, but notably long delays take place at the Sophia Gardens Coach Station during the weekday of 17.9 minutes, and on the Sunday at Heath Hospital and St Mary Street / Guildhall Place with daily averages of 16.9 and 16.1 minutes respectively.
- 4.8.7 Overall average taxi delays are highest on the Sunday day type, with shortest delays on the weekend. The longest delays on weekdays and Sundays are during the interpeak period, whereas on weekends the longest delays are during the PM peak.
- 4.8.8 The longest delays occur on the St Mary Street / Guildhall Place rank on Sunday during the interpeak period where taxi delays almost average half an hour. This is closely followed by Sophia Gardens during the weekday off-peak morning period.

Table 4.5
Average Passenger Delay (seconds)

Location	Weekday						Weekend						Sunday						Overall
	AM	IP	PM	OPN	OPM	Daily	AM	IP	PM	OPN	OPM	Daily	AM	IP	PM	OPN	OPM	Daily	
Albert Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.6	0.2
Churchill Way	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greyfriars Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.2	0.0	0.0	0.0	0.0	1.1	0.4
Havelock Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heath Hospital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Lower St Mary Street (East)	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower St Mary Street (West)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mermaid Quay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Mill Lane (South)	0.0	1.6	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Park Place	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saunders Road	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	2.0	1.9	0.0	0.0	0.0	111.3	1.7	23.7	8.5
St Mary Street/Guildhall Place	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Sophia Gardens	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5	0.0	2.4	0.8
Wood Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Greyfriars Road (Unofficial)	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	-	-	-	-	-	-	0.0
St Mary Street (Walkabout)	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	-	-	-	-	-	-	0.0
St Mary Street (O'Neill's)	-	-	-	-	-	-	-	-	-	0.0	0.0	0.0	-	-	-	-	-	-	0.0
Grand Total	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.9	0.1	0.3	0.7	0.2	0.0	9.2	0.1	2.1	0.8

Table 4.6
Average Taxi Delay (minutes)

Location	Weekday						Weekend						Sunday						Overall
	AM	IP	PM	OPN	OPM	Daily	AM	IP	PM	OPN	OPM	Daily	AM	IP	PM	OPN	OPM	Daily	
Albert Street	8.7	8.1	5.2	8.5	0.8	5.7	3.6	6.2	15.3	9.6	0.0	5.9	4.5	8.6	8.8	6.9	0.0	5.2	5.6
Churchill Way	6.8	11.0	7.8	10.8	19.3	12.5	5.8	10.9	11.8	8.9	10.0	9.7	2.2	9.1	13.3	15.3	10.5	10.5	10.9
Greyfriars Road	4.0	13.8	14.7	12.2	11.2	11.6	5.9	11.8	8.4	10.4	3.8	8.0	3.2	12.5	13.6	11.7	16.5	12.5	10.7
Havelock Street	0.0	6.0	1.4	0.0	0.0	1.7	0.4	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.6	0.0	0.1	0.6
Heath Hospital	10.3	9.6	8.9	16.9	1.3	10.4	11.7	10.4	19.2	25.1	-	15.0	8.0	20.6	15.1	14.5	-	16.9	13.9
Lower St Mary Street (East)	0.0	0.0	0.0	0.0	2.8	0.8	-	-	-	-	-	-	9.2	9.9	10.2	3.4	0.5	5.8	3.3
Lower St Mary Street (West)	0.5	11.3	9.9	8.1	9.0	8.4	18.2	14.6	15.4	8.9	5.2	11.2	9.2	9.9	10.2	9.3	9.3	9.5	9.7
Mermaid Quay	3.4	11.3	7.8	10.3	3.5	7.4	4.6	8.5	6.8	5.4	4.1	5.9	5.4	11.2	8.4	12.1	2.6	7.8	7.0
Mill Lane (South)	14.1	14.4	13.9	13.9	10.5	13.0	18.9	11.2	6.8	10.6	3.4	9.2	15.4	11.7	10.9	12.9	10.4	12.0	11.4
Park Place	22.5	13.1	9.3	8.5	1.5	9.4	4.1	11.5	8.6	16.1	8.0	10.2	7.0	17.8	18.0	14.4	3.9	11.7	10.4
Saunders Road	8.6	13.8	9.7	12.2	9.3	11.0	9.8	7.5	9.2	17.9	7.4	10.2	10.0	9.8	15.0	9.5	10.1	10.5	10.5
St Mary Street/Guildhall Place	3.2	16.3	13.0	9.3	7.8	10.3	2.8	14.9	10.2	7.3	5.0	8.3	16.3	29.4	14.9	13.3	7.1	16.1	11.6
Sophia Gardens	2.8	23.1	7.2	12.8	28.3	17.9	0.0	13.6	26.8	13.4	8.4	12.0	0.0	9.7	9.1	6.9	18.2	10.3	13.4
Wood Street	0.0	2.1	11.3	12.4	11.4	7.8	0.4	4.4	11.2	6.5	3.2	4.8	0.5	6.6	11.3	10.6	12.5	9.0	7.2
Greyfriars Road (Unofficial)	-	-	-	-	-	-	-	-	-	5.8	4.7	5.0	-	-	-	-	-	-	5.0
St Mary Street (Walkabout)	-	-	-	-	-	-	-	-	-	1.5	1.5	1.5	-	-	-	-	-	-	1.5
St Mary Street (O'Neill's)	-	-	-	-	-	-	-	-	-	1.5	1.5	1.5	-	-	-	-	-	-	1.5
Grand Total	6.1	11.0	8.6	9.4	8.9	9.1	6.4	9.7	11.5	9.7	4.6	8.0	6.4	11.9	11.3	9.9	7.8	9.6	8.9

5 Results of Public Attitude Surveys

5 Results of Public Attitude Surveys

5.1 Survey Response

- 5.1.1 A public attitude interview survey has been carried out with the aim of collecting information to supplement the taxi rank surveys. In particular, the public attitude survey allowed an assessment of frequency of licensed vehicle use, passenger delays for all methods of hire (flag down, telephone and rank), passenger satisfaction with the service they received and general attitudes to the use of both taxis and private hire vehicles in Cardiff.
- 5.1.2 The survey was structured into three parts. The first part obtained information about the individual completing the questionnaire. The second part sought information about people's understanding of the differences between taxis and private hire vehicles and information about their last trip. The third part addressed more general information about people's usual use and recorded views on improvements and safety.
- 5.1.3 It should be noted that although 491 interviews were completed in total, not all the table totals add up to 491. This is due to not all questions requiring an answer, some respondents failed to answer some of the questions that were asked, and some questions require multiple responses. Where the latter case applies, this will be highlighted in the title of the table.

5.2 Survey Administration

Table 5.1
Survey Sample and 2011 Census by Age and Sex

Category	2011 Census Percent	Actual Sample	
		Frequency	Percent
16 – 34	40.7%	180	36.7%
35 – 64	43.1%	242	49.3%
65+	16.3%	50	10.2%
No Answer	-	19	3.9%
Total	100.0%	491	100.0%
Male	48.8%	226	46.0%
Female	51.2%	248	50.5%
No Answer	-	17	3.5%
Total	100.0%	491	100.0%

- 5.2.1 Table 5.1 demonstrates that the age structure of the sample conforms relatively well to the 2011 Census, although the 16-34 and 65+ age groups have been marginally under-sampled. The mix of male and female respondents is broadly similar to the 2011 Census with the majority of respondents being female.
- 5.2.2 A set target quota was not used because, as Table 5.3 below shows, the survey captured the views of visitors as well as Cardiff residents and so it may not be representative to match the 2011 Census demographics exactly.
- 5.2.3 The remainder of the survey results are reported below. For the purposes of clarity, the word "licensed vehicle" is used when the responses refer to both taxis and private hire vehicles. Where the responses relate specifically to taxis or private hire vehicles, this will be clearly stated.
- 5.3 Economic and Residency Status**
- 5.3.1 The economic status of respondents is given in Table 5.2. 57% of the 2019 respondents were in full time employment and approximately 18% were in part time employment. Approximately 4% were not in employment at the time of the survey with a further 6.5% being students. Around one in ten respondents were retired.

Table 5.2
Economic Status of Respondents

Status	Raw Data	
	Frequency	Percent
Full time	280	57.0%
Part time	88	17.9%
Student	32	6.5%
Retired	47	9.6%
Unemployed	21	4.3%
No answer	23	4.7%
Total	491	100.0%

5.3.2 Table 5.3 indicates the residency status of respondents. The Cardiff and Non-Cardiff respondents are roughly equal at 37% and 33%. Around 30% of respondents failed to answer the question.

Table 5.3
Residency Status of Respondents

Status	Raw Data	
	Frequency	Percent
Cardiff	180	36.7%
Not Cardiff	161	32.8%
No Answer	150	30.5%
Total	491	100.0%

5.3.3 Table 5.4 shows the mobility requirements of the respondents and whether they have any health problems that limit their day-to-day activities. The table shows that 5% of respondents confirmed that they had health problems that cause limitations; a third of which were limited a lot by their health. Half of the respondents were not inhibited, 1 in 10 respondents preferred not to say. A third of respondents did not answer the question.

Table 5.4
Level of Limitation Owing to Health Problems

Status	Raw Data	
	Frequency	Percent
Yes, Limited a Lot	8	1.6%
Yes, Limited a Little	16	3.3%
No	251	51.1%
Prefer Not to Say	54	11.0%
No Answer	162	33.0%
Total	491	100.0%

5.4 Understanding of Licensed Vehicle Flagging and Rank Waiting

- 5.4.1 Respondents were asked if they had given up trying to flag down or wait at a rank for a taxi in the last 3 months. Most respondents, around 76%, said no or did not answer the question. The remaining 24% of responses said that they had given up trying to flag down a taxi.
- 5.4.2 The 119 respondents who indicated that they had given up trying to flag down or wait at a rank were asked three subsequent questions: "If yes, where was your destination", "If yes, what was your reason for giving up?"; "If yes, Why did you / the driver refuse?", and "If yes, You can comment further or give a different reason here". The responses to the latter three questions are shown in Tables 5.5, 5.6, and 5.7.

Table 5.5
Reasons for Giving Up Waiting

Reason	Raw Data	
	Frequency	Percent
Lack of taxis	41	34.5%
Taxi already booked	17	14.3%
Passenger refused the fare	32	26.9%
Driver refused the fare	24	20.2%
No Answer	5	4.2%
Total	119	100.0%

Table 5.6
Reason for Passenger / Driver Refusing Fare

Reason	Raw Data	
	Frequency	Percent
Driver not using meter	14	25.0%
Distance was too short	18	32.1%
Price	15	26.8%
No Answer	9	16.1%
Total	56	100.0%

Table 5.7
Further Comments or Alternative Reasons for Giving Up Waiting

Reason	Raw Data	
	Frequency	Percent
Too expensive	40	33.6%
Length of Journey – Too Short	30	25.2%
Lack of taxis at rank	25	21.0%
Driver competency	3	2.5%
Booked another vehicle	3	2.5%
Length of journey – Too long	2	1.7%
Driver did not want to leave rank	2	1.7%
Disabled accessibility	1	0.8%
No answer	13	10.9%
Total	119	100.0%

- 5.4.3 Of the 24% of respondents who stated they gave up waiting for a taxi, 41 (35%) said this was due to a lack of taxis. Further comments were provided by 11 of these respondents, five of whom suggested there were no taxis available in the area they were trying to hire a taxi. Other comments were related to the high price, the lack of a disabled access vehicle and the busy time of day for taxis.
- 5.4.4 Respondents were then asked if they thought all licensed vehicles (i.e. taxis and private hire vehicles) can pick up from ranks or be flagged down; their responses are summarised in Table 5.8. Around 40% of the respondents that answered this question correctly; that only licensed taxis can pick up from taxi ranks or be flagged down whereas PHVs cannot. This suggests that the general public has an overall lack of awareness of the difference between taxis and PHVs

Table 5.8
Public Awareness of the Difference Between Taxis and PHVs

Can all licensed vehicles pick up from ranks or be flagged down?	Raw Data	
	Frequency	Percent
Yes	207	42.2%
No	191	38.9%
No answer	93	18.9%
Total	491	100.0%

5.5 Recent Journeys

- 5.5.1 Respondents were each asked if they had made a journey by licensed vehicle in the Cardiff area in the last month. The responses to this question are in Table 5.9 below.

Table 5.9
Journeys Made by Licensed Vehicle in the Last Month

Licensed Vehicle Journeys in the Last Month	Raw Data	
	Frequency	Percent
Yes	238	48.5%
No	227	46.2%
No answer	26	5.3%
Total	491	100.0%

- 5.5.2 Those respondents who indicated that they had made a recent journey by licensed vehicle, were then questioned about their last trip in terms of the following;
- Type of licensed vehicle (i.e. hackney carriage or private hire vehicle);
 - Vehicle quality
 - Driver quality
 - Price
 - Waiting time
- 5.5.3 It should be noted that the number of total responses for each rating category does not exactly match the number of respondents that replied "Yes" in Table 5.9.

Type of Licensed Vehicle

- 5.5.4 The type of licensed vehicle used on the respondents' last trip is shown in Table 5.10 below; percentages are of those who answered the previous question in the affirmative not the total number of respondents. Around 40% of respondents used PHVs whilst approximately a quarter of respondents used Hackney Carriages. However, nearly 35% of respondents did not know what type of vehicle they used on their last trip.

Table 5.10
Licensed Vehicle Type for Last Trip

Licensed Vehicle Type	Raw Data	
	Frequency	Percent
Hackney Carriage	61	25.6%
PHV	95	39.9%
Do not know	81	34.0%
No Answer	1	0.4%
Total	238	100.0%

Vehicle Quality

- 5.5.5 Respondents were asked how they would rate the quality of the vehicle (Very Good, Good, Average, Poor, or Very Poor); percentages are of those who answered the question in Table 5.9 in the affirmative not the total number of respondents. Their responses are summarised in Table 5.11. Approximately 60% of the respondents considered the vehicle quality above average, around a third rated it about average, whilst one in 20 thought that it was below average. Taxis generally rated lower than PHVs for vehicle quality, with 51% of respondents rating them average or below, compared to 27% of PHVs.

Table 5.11
Rating of the Vehicle Quality of Last Journey

Type of Licensed Vehicle	Number of Answers	Vehicle Quality					Total
		Very Good	Good	Average	Poor	Very Poor	
Taxi	59	18.6%	30.5%	44.1%	1.7%	5.1%	100.0%
Private Hire Vehicle	95	29.5%	42.1%	22.1%	5.3%	0.0%	98.9%
Do not know	84	10.7%	40.5%	39.3%	4.8%	0.0%	95.2%
Total	238	20.2%	38.7%	33.6%	4.2%	1.3%	97.9%

Driver Quality

- 5.5.6 Respondents were asked how they would rate the quality of their driver (Very Good, Good, Average, Poor, or Very Poor); percentages are of those who answered the question in Table 5.9 in the affirmative not the total number of respondents. Their responses are summarised in Table 5.12. Driver quality has a slightly lower rating overall than the vehicle quality with around 9% of respondents considering the quality of their driver to be "Poor" or "Very Poor", approximately 35% consider their experience of the driver to be about average, and about 55% rated the driver to be above average quality. Similar to vehicle quality, taxis generally rated lower than PHVs for driver quality.

Table 5.12
Rating of the Driver Quality of Last Journey

Type of Licensed Vehicle	Number of Answers	Driver Quality					Total
		Very Good	Good	Average	Poor	Very Poor	
Taxi	59	18.6%	28.8%	32.2%	13.6%	6.8%	100.0%
Private Hire Vehicle	95	25.3%	41.1%	29.5%	3.2%	1.1%	100.0%
Don't Know	84	8.3%	40.5%	42.9%	6.0%	1.2%	98.8%
Total	238	17.6%	37.8%	34.9%	6.7%	2.5%	99.6%

Price

- 5.5.7 Respondents were asked how they would rate the price of the journey (Very Good, Good, Average, Poor, or Very Poor); percentages are of those who answered the question in Table 5.9 in the affirmative not the total number of respondents. Their responses are summarised in Table 5.13. Price has been rated the lowest of all the categories with approximately 16% considering the price to be Poor or Very Poor, just over 40% of the respondents thought that the price was Average, and around 42% thought that the fare was good value.

Table 5.13
Rating of the Price of the Last Journey

Type of Licensed Vehicle	Number of Answers	Price					Total
		Very Good	Good	Average	Poor	Very Poor	
Taxi	59	13.6%	20.3%	37.3%	20.3%	8.5%	100.0%
Private Hire Vehicle	95	20.0%	31.6%	38.9%	7.4%	2.1%	100.0%
Do not know	84	8.3%	28.6%	44.0%	13.1%	2.4%	96.4%
Total	238	14.3%	27.7%	40.3%	12.6%	3.8%	98.7%

Waiting Time

- 5.5.8 Respondents were asked how they would rate how reasonable they thought the waiting time was (Very Good, Good, Average, Poor, or Very Poor); percentages are of those who answered the question in Table 5.9 in the affirmative not the total number of respondents. Their responses are summarised in Table 5.14. Around half of the respondents thought that the waiting time was "Good" or "Very Good", about one third considered the waiting time to be average, and approximately 12% thought the waiting time was unreasonable.

Table 5.14
Rating of the waiting time of last journey

Type of Licensed Vehicle	Number of Answers	Waiting Time					Total
		Very Good	Good	Average	Poor	Very Poor	
Taxi	59	22.0%	23.7%	33.9%	10.2%	6.8%	96.6%
Private Hire Vehicle	95	30.5%	31.6%	32.6%	3.2%	1.1%	98.9%
Do not know	84	13.1%	33.3%	35.7%	16.7%	0.0%	98.8%
Total	238	22.3%	30.3%	34.0%	9.7%	2.1%	98.3%

- 5.5.9 Respondents were then given the opportunity to justify any "Poor" or lower ratings that they gave the previous categories; the percentage values are percentages of people who answered "Poor" or "Very Poor" in the previous four categories. This was an open question with no multiple-choice questions, but multiple respondents had the same comment. The comments are summarised in Table 5.15. The most cited reason for low ratings, according to 46% of the respondents, is

that the cost of using licensed vehicles is too high; which reflects the answers given to the previous questions. Driver competence and waiting time had similar numbers of comments; around 20% each. Vehicle Standard was also another sizable portion of comments at around 15%.

- 5.5.10 A few different comments made up around 15% of the responses; these included vehicles not arriving for pick up, inadequate disabled access, low overall quality of service, longer than reasonable journey time, and driver refusing the fare. It should be noted that the total responses for this question is higher than the number of people that rated their experience as poor; this is because of two main reasons. The first being that a few respondents didn't complete the survey correctly; the second is that some of the respondents gave multiple comments. This means that the values in the frequency column are representative of the number of comments rather than the number of respondents.

Table 5.15
Reasons for Rating Poor/Very Poor

Reasons for poor/very poor	Raw Data	
	Frequency	Percent
Expensive	26	49.1%
Waiting Time	13	24.5%
Driver Competency	11	20.8%
Vehicle Standard	8	15.1%
Vehicle Did Not Respond	2	3.8%
Disabled Access	2	3.8%
Long Journey Time	2	3.8%
Driver Refused Fare	2	3.8%
Quality of Service	1	1.9%
Total	65	122.64%

Frequency of Licensed Vehicle Use

- 5.5.11 Respondents were asked how regularly they use licensed vehicles to travel. Approximately 40% of respondents stated that their use of licensed vehicles was rare whilst one in ten said that they used them on a daily or weekly basis. Over a quarter of respondents stated that they used licensed vehicles once a month, around one in twenty use them once a year, and nearly 15% have never used a licensed vehicle. Of the respondents only 1% did not answer the question.

Table 5.16
Frequency of Licensed Vehicle Use

Frequency of Licensed Vehicle Use	Raw Data	
	Frequency	Percent
Daily	5	1.0%
Weekly	44	9.0%
Monthly	135	27.5%
Yearly	30	6.1%
Rarely	204	41.5%
Never	68	13.8%
No Answer	5	1.0%
Total	491	100.0%

Reasons for Not Using Licensed Vehicles More Often

- 5.5.12 Respondents were asked what their reasons were for not using licensed vehicles to travel more often; this is a non-multiple-choice question where respondents could answer the question however they saw fit. The responses are summarised in Table 5.17. The table shows that nearly half of the respondents did not answer the question. Of the other half of respondents, the main reasons for not taking a licensed vehicle is that a personal vehicle is preferable, they are too expensive, and that they simply do not need to use them. Together these reasons account for the attitude of 35% of the survey respondents.
- 5.5.13 The other 15% of respondents presented cited several different reasons; such as preferring other modes of transport, not feeling safe using licensed vehicles, had bad experience in the past, and not being local to the area. They also stated that they only take a taxi when their destination is not easy to get to. Two of the respondents said that they preferred to use app services such as Uber or Lyft; these are classified as private hire vehicles and suggests that a portion of the public is not aware of this.

Table 5.17
Reasons for Not Travelling Via Licensed Vehicle

Reason	Raw Data	
	Frequency	Percent
Prefers personal vehicle	74	15.1%
Expensive	55	11.2%
Does not need them	47	9.6%
Prefers other public transport	34	6.9%
Not Local to the Area	15	3.1%
Previous bad experience	14	2.9%
Does not feel safe	7	1.4%
Only when destination is secluded	3	0.6%
Prefers to cycle	2	0.4%
Prefers to use app service	2	0.4%
Prefers to walk	1	0.2%
Only uses them when travelling in a group	1	0.2%
No Answer	236	48.1%
Total	491	100.0%

Method of Hire

- 5.5.14 This question asked respondents how they generally pick up a licensed vehicle. The number of responses to this question exceeds the number of survey respondents; the question instructed respondents to select all the means that they personally hire vehicles so some of the respondent have selected multiple responses. Table 5.18 summarises the responses.
- 5.5.15 The table shows that over a third of the responses state that they pick up a taxi by phoning in advance. Hiring from a rank and hiring online or by using an app are roughly split; each are about a quarter of the responses. Approximately 15% of the time people flag cabs down and 2% other means are used. All respondents to the survey answered this question.

Table 5.18
Method of Licensed Vehicle Hire

Method of hire	Raw Data	
	Frequency	Percent
Phone	213	37.3%
Online/App	140	24.5%
Rank	132	23.1%
Flagged	77	13.5%
Other	9	1.8%
No Answer	0	0.0%
Total	491	100.0%

Passenger Safety

- 5.5.16 Respondents were asked whether they felt safe using the taxis in Cardiff; the answers are binary yes or no. Most respondents (56.2%) said that they felt safe when using Taxis and PHVs. Approximately 17% of respondents did not feel safe and around a quarter did not answer the question.

Safety Improvement Suggestions

- 5.5.17 Respondents were asked if they did not feel safe in using licensed vehicles in Cardiff; what improvements could be made to make them feel more secure. The responses to this question are summarised in Table 5.20. The total number of respondents for this question exceeds the number of respondents that answered “no” in the previous question. As a result, some of the responses to this question may not be related to improving safety and would be classified under general improvements. The total for the no answer category only includes those who answered “no” in the previous question, this accounts for about 15% of the total respondents for this question. The total in Table 5.20 includes all that responded to this question as well as everyone who answered “no” in the previous question and did not answer this one.
- 5.5.18 The table shows that most responses relate in some way to improving safety of taxis. Improvements to regulations represent around 24% of the responses, approximately 26% relate to improving customer service and diversifying the driver pool, and 24% are infrastructure improvements such as adding panic buttons to licensed vehicles. The remainder of people that answered this question voiced improvements to driver training, language training, and pricing structure; the latter specifically refers to making the use of the meter mandatory.

Table 5.20
Suggested Improvements to Passenger Safety

Suggestions	Raw Data	
	Frequency	Percent
Improve Customer Service and Driver Diversity	23	25.6%
More stringent regulation	21	23.3%
Improve safety measures	19	21.1%
Improve Driver Training	8	8.9%
Improve Driver Language Skills (English and Welsh)	2	2.2%
Reduce the Price / Mandatory Meter Usage	1	1.1%
No Answer	16	17.8%
Total	90	109.8%

Understanding of Fares

- 5.5.19 Respondents were asked what they thought a daytime three-mile journey would cost. The responses are summarised in Table 5.21. Approximately 44% of respondents did not answer the question; all those that did estimated that it would cost below £10. Around one in five respondents thought that the cost of the journey would be below £5 whilst around a third estimated that it would cost between £5 and £9.

Table 5.21
Price Estimates for a Three Mile Journey

Licensed Vehicle Type	Raw Data	
	Frequency	Percent
£0.01 - £1.00	0	0.0%
£1.01 - £2.00	1	0.2%
£2.01 - £3.00	12	2.4%
£3.01 - £4.00	14	2.9%
£4.01 - £5.00	83	16.9%
£5.01 - £6.00	57	11.6%
£6.01 - £7.00	43	8.8%
£7.01 - £8.00	47	9.6%
£8.01 - £9.00	19	3.9%
£9.01 - £10.00	0	0.0%
£10.01 - £12.50	0	0.0%
£12.51 - £15.00	0	0.0%
£15.01 - £17.50	0	0.0%
£17.51 - £20.00	0	0.0%
£20.01 - £30.00	0	0.0%
£30.01 - £100.00	0	0.0%
Don't know	1	0.2%
Other	0	0.0%
No Answer	214	43.6%
Total	491	100.0%

Cardiff Taxi Numbers

- 5.5.20 Respondents were asked whether they thought that Cardiff had enough taxis. Table 5.22 summarises the responses to this question. The table shows that around half of respondents did not know whether the number of licensed vehicles were sufficiently meeting demand. Approximately 34% thought that the quantity of taxis was sufficient, compared with 9% who felt there are insufficient numbers. Around 9% of the respondents did not answer the question.

Table 5.21
Licensed Vehicles Meeting Demand

Taxi Numbers	Raw Data	
	Frequency	Percent
Sufficient	168	34.2%
Insufficient	44	9.0%
Do not know	237	48.3%
No Answer	42	8.6%
Total	491	100.0%

Taxi Improvement Suggestions

- 5.5.21 Respondents were asked what improvements could be made to licensed vehicles in Cardiff. Table 5.23 summarises the responses. Note that the values in the frequency column refer to suggestions rather than respondents; each respondent can make more than one suggestion. The table shows that approximately 40% of respondents answered this question; of those around a quarter suggested improvements to vehicle and driver regulation. Another quarter cited customer service as an aspect of Cardiff taxis that needs to improve. Reductions in fares and increasing the number of ranks had similar quantities of suggestions at roughly 15% of the suggestions made each.
- 5.5.22 Around one in ten suggestions stated that the taxi numbers needed to increase where as one in twenty say that their numbers need to be reduced. Suggestions related to driver training accounted for about 5% of the improvements, 2% said that efficiency needed to be improved, and one respondent suggested that they shouldn't be called "Hackney Carriages".

Table 5.22
Suggested Improvements to Taxis Within Cardiff

Suggestions	Raw Data	
	Frequency	Percent
Vehicle and driver regulation	48	9.8%
Customer service	45	9.2%
Increase number of ranks and improve quality	32	6.5%
Reduce fare and make meter usage mandatory	25	5.1%
Increase number of taxis	17	3.5%
Driver training	10	2.0%
Reduce number of taxis	8	1.6%
Security for passengers	4	0.8%
Improve efficiency	4	0.8%
Should not be called Hackney Carriages	1	0.2%
No Answer	302	61.5%
Total	496	101.0%

Location of new ranks

- 5.5.23 Respondents were then asked where they would like to see new ranks. The summary of suggestions is in Table 5.23. As with the "Taxi Improvements Suggestions", the frequency column refers to the number of suggestions rather than respondents. Some respondents made more than one recommendation which is why the total in the table is greater than the total number of respondents. Approximately 66% of the survey respondents provided no suggestions.

- 5.5.24 Approximately 10 percent of the suggestions state that there needs to be more ranks in the city centre; some sites were further specified such as, Motorpoint Arena, Principality Stadium, Westgate Street, Greyfriars Road, and Churchill Way. Many of these areas already have ranks in them; it is likely that they are recommending expansions to these existing ranks. Around 5% of the suggestions indicate that more ranks are wanted in the Cardiff Bay area. Another 5% of suggestions voice a need for more ranks in the more suburban areas of Cardiff and in areas that are not in the city centre. Approximately 2.5% of the suggestions placed the hospital as a location that requires more taxi ranks. As with the recommendation of more ranks in the city centre, there is already a taxi rank outside Heath Hospital; this may mean that the respondents want the rank expanded or its operation hours increased.
- 5.5.25 Some of the suggestions did not provide specific locations, rather places where the demand required it, or where the ranks would not cause heavy congestion; these account for around 2.5% of the responses. Approximately 3% of the suggestions rejected the notion that more ranks were needed in Cardiff.

Table 5.23
Suggestions of New Taxi Rank Locations

Suggestions	Raw Data	
	Frequency	Percent
Centre of Cardiff	45	9.2%
Cardiff Bay	27	5.5%
Hospital	13	2.6%
Edge of the City Centre/Cardiff	11	2.2%
Everywhere	10	2.0%
Areas where demand is large	10	2.0%
Near the train station	7	1.4%
Penarth	4	0.8%
Newport Road	4	0.8%
Vale of Glamorgan	3	0.6%
Principality Stadium/Motorpoint Arena	2	0.4%
Airport	2	0.4%
Greyfriars Road	2	0.4%
In areas that are not prone to heavy congestion	2	0.4%
Heavily populated areas	1	0.2%
Newly finished developments	1	0.2%
Sully	1	0.2%
Churchill Way	1	0.2%
Westgate Street	1	0.2%
Cathays	1	0.2%
Wants more ranks but unsure of the location	3	0.6%
No more ranks	15	3.1%
No answer	333	67.8%
Total	499	101.63%

Other Comments

- 5.5.26 Respondents were then given the opportunity to add any comments that they had about Cardiff licensed vehicles. The responses are summarised in Table 5.24. As with the other written answers in this survey, all values in the frequency column other than “no answer” refer to the number of comments rather than the number of respondents; the total is the sum of comments and respondents that did not answer the question. The majority of respondents, approximately 75% of respondents did not provide further comments.
- 5.5.27 The two most common comments have an even split at around 4% each; one called for non-Cardiff Taxis to be banned from operating within the city limits, the other said that the cost of trips should be made cheaper. Comments about improving driver training and regulation accounts for approximately 6% of the total. Other comments of note include reference to a disproportionate distribution of taxis across Cardiff, and reiteration of lack of good customer service and lack of safety features. More, less frequent comments include reference to a lack of diversity in the driver pool, requests for more penalties for discrimination, complaints about PHV response times, recommendations on improving disabled access, declarations that public transport is preferable. Some of the respondents, around 1.5%, took this as an opportunity to voice their satisfaction of the taxis and PHVs in Cardiff.

**Table 5.24
Other Comments on Cardiff Licensed Vehicles**

Suggestions	Raw Data	
	Frequency	Percent
Reduce the cost of trips	22	4.5%
Ban non-Cardiff registered vehicles from operating within the city	21	4.3%
Improve licensed vehicle regulation	18	3.7%
Improve driver training	13	2.6%
There is unmet demand and excess supply in different places	11	2.2%
Driver customer service is poor / drivers are rude	11	2.2%
Licensed vehicles need to be safer for passengers	10	2.0%
Opinion of taxi service is good	6	1.2%
Drivers are refusing short trips	5	1.0%
Disabled and elderly access to licensed vehicles is needed	4	0.8%
Ban drivers from discriminating behaviour	3	0.6%
Licensed vehicles are generally bad	3	0.6%
Increase the diversity of the driver pool / more female drivers	2	0.4%
Public transport is cheaper and easier	2	0.4%
Response time for private hire vehicles is unsatisfactory	1	0.2%
No more ranks are needed	1	0.2%
No answer	376	76.6%
Total	509	103.67%

6 Analysis of Current Market Conditions

6 Current Market Conditions

6.1 Significant Unmet Demand

- 6.1.1 The legislation with regard to the control of the number of taxi (hackney carriage) licences is set out in The Transport Act 1985. The Act states that *“the grant of a [hackney carriage] licence may be refused, for the purposes of limiting the number of hackney carriages in respect of which licences are granted, if, but only if, the person authorised to grant licences is satisfied that there is no significant demand for the services of hackney carriages (within the area to which the licence would apply) which is unmet”*.⁵
- 6.1.2 The term “significant unmet demand” is not defined; the interpretation therefore differs from authority to authority and study to study. One option is to define a threshold for passenger queues at taxi ranks, with “unmet demand” deemed to have occurred when the threshold is exceeded. While this approach is relatively simple to apply, it will not reliably determine market conditions when there is significant variability in the level of activity at individual ranks. For example, if the queue threshold is set too low, the queue of passengers at busy taxi ranks may regularly exceed the threshold, indicating the presence of unmet demand, even though individual passengers experience little or no delay in practice. Conversely, if the queue threshold is set too high, the queue of passengers at quieter taxi ranks may never exceed the threshold, indicating that there is not an excess demand, even though individual passengers may experience unacceptably long delays.
- 6.1.3 A better measure of the existence of unmet demand is to consider average passenger delay; the length of time that an individual passenger will wait on average before they are able to hire a taxi. However, this must also be considered in the context of the average taxi delay – the length of time that a driver must wait on average before getting a fare – before the potential presence of unmet demand can be identified. It is this latter approach that has been adopted for this study.
- 6.1.4 Once the presence of unmet demand has been determined, further assessment is required to determine whether it is significant or not. This assessment includes consideration of the duration for which there is unmet demand and the time at which it occurs. For example, if the presence of unmet demand is identified for a 5-10 minute period with “normal” conditions prevailing in the prior and subsequent time periods, it is likely to be the result of an atypical event (e.g. a large group of people arriving in a short space of time) and therefore should not be considered as significant. Similarly, if the period of unmet demand occurs in a time period or at a rank where passenger demand and/or taxi supply is typically low (e.g. in the early morning) then it is not unreasonable to expect that average wait times will be longer than in busier periods and again it should not be considered as significant. Only if the unmet demand occurs over a sustained length of time during a time period when it is reasonable to expect that there should be a supply of taxis (e.g. weekday daytime) should it be deemed significant.

6.2 Analysis of Market Conditions

- 6.2.1 For the purposes of this study, average delay thresholds have been set at 2 minutes for passengers and 5 minutes for taxis. For a given taxi rank in a particular 5-minute period, if the average passenger delay is less than 2 minutes and the average taxi delay is less than 5 minutes, the market conditions at that rank are considered to be in “equilibrium” (EQ) – i.e. demand and supply are broadly matched. If average passenger delay is 2 minutes or more but average taxi delay is less than 5 minutes, this indicates demand is exceeding supply and suggests that unmet demand (UD) may be present. Conversely, if average passenger delay is less than 2 minutes and average taxi delay is 5 minutes or more, this indicates that supply is exceeding demand and that there may be unused supply (US). In the unlikely event that average passenger delay exceeds 2 minutes and average taxi delay exceeds 5 minutes, it is not possible to reach a firm conclusion about the market conditions, as it suggests the presence of unstable market conditions usually associated with an atypical event.
- 6.2.2 The assessment matrix is summarised in Table 6.1 below.

⁵ Transport Act 1985 – Section 16

Table 6.1
Taxi Market Condition Assessment Matrix

		Average Passenger Delay	
		< 2 mins	≥ 2 mins
Average Taxi Delay	< 5 mins	Equilibrium	Unmet Demand
	≥ 5 mins	Unused Supply	Unstable

- 6.2.3 Using the data collected in the Taxi Rank Surveys, the average passenger and taxi delays have been calculated each rank in each 5-minute period surveyed. Based on these calculations the prevailing market conditions at each rank by time period for a weekday, weekend, and Sunday respectively. "No Activity" refers to periods when there was no passenger demand and no taxi supply (i.e. the rank was empty)
- 6.2.4 Where the rank has no associated bar, this is due to the rank not being surveyed during the related time.

Figure 6.1
Analysis of Market Conditions: Weekday Official Ranks

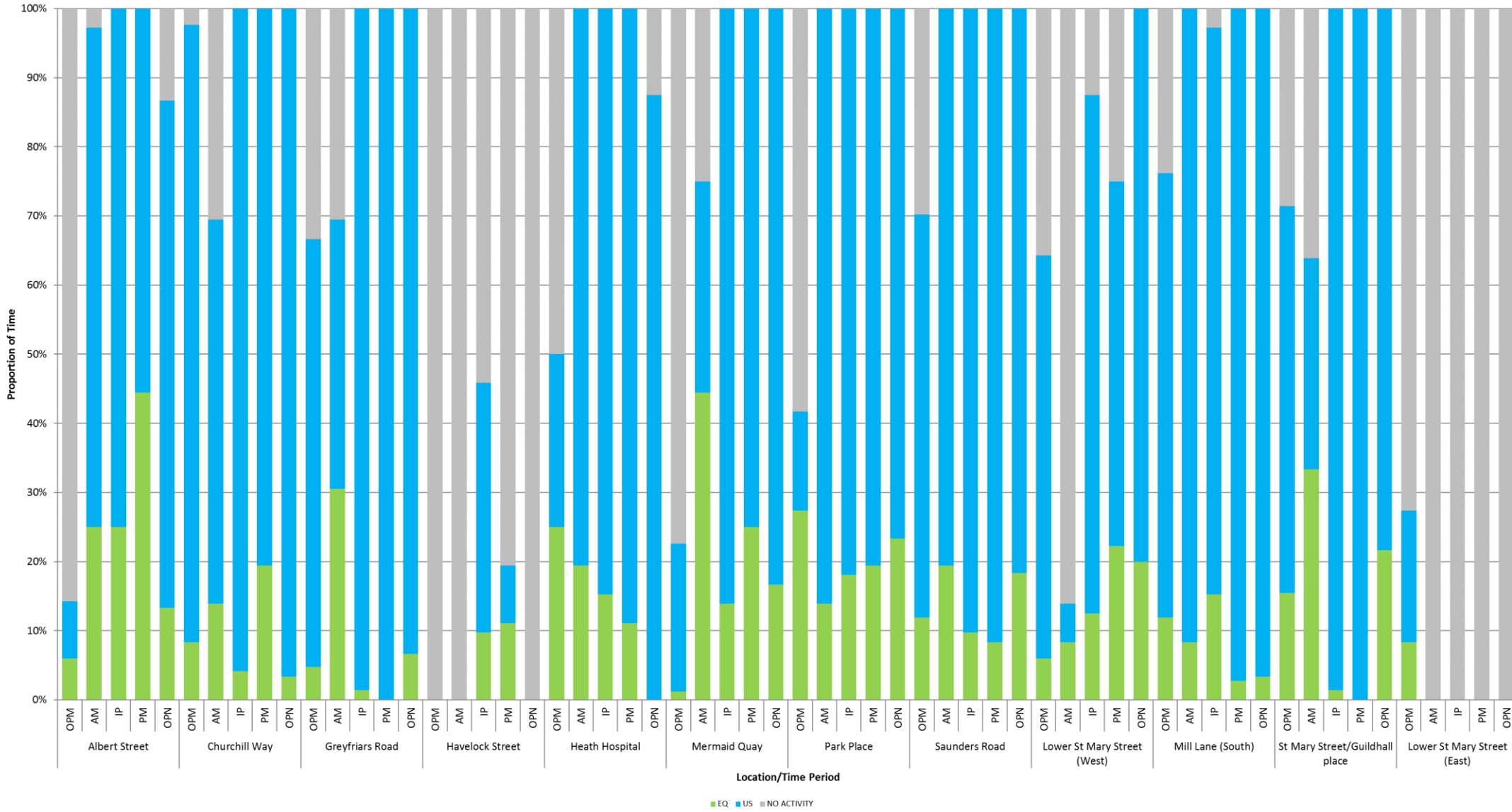


Figure 6.2
Analysis of Market Conditions: Weekday Unofficial Ranks

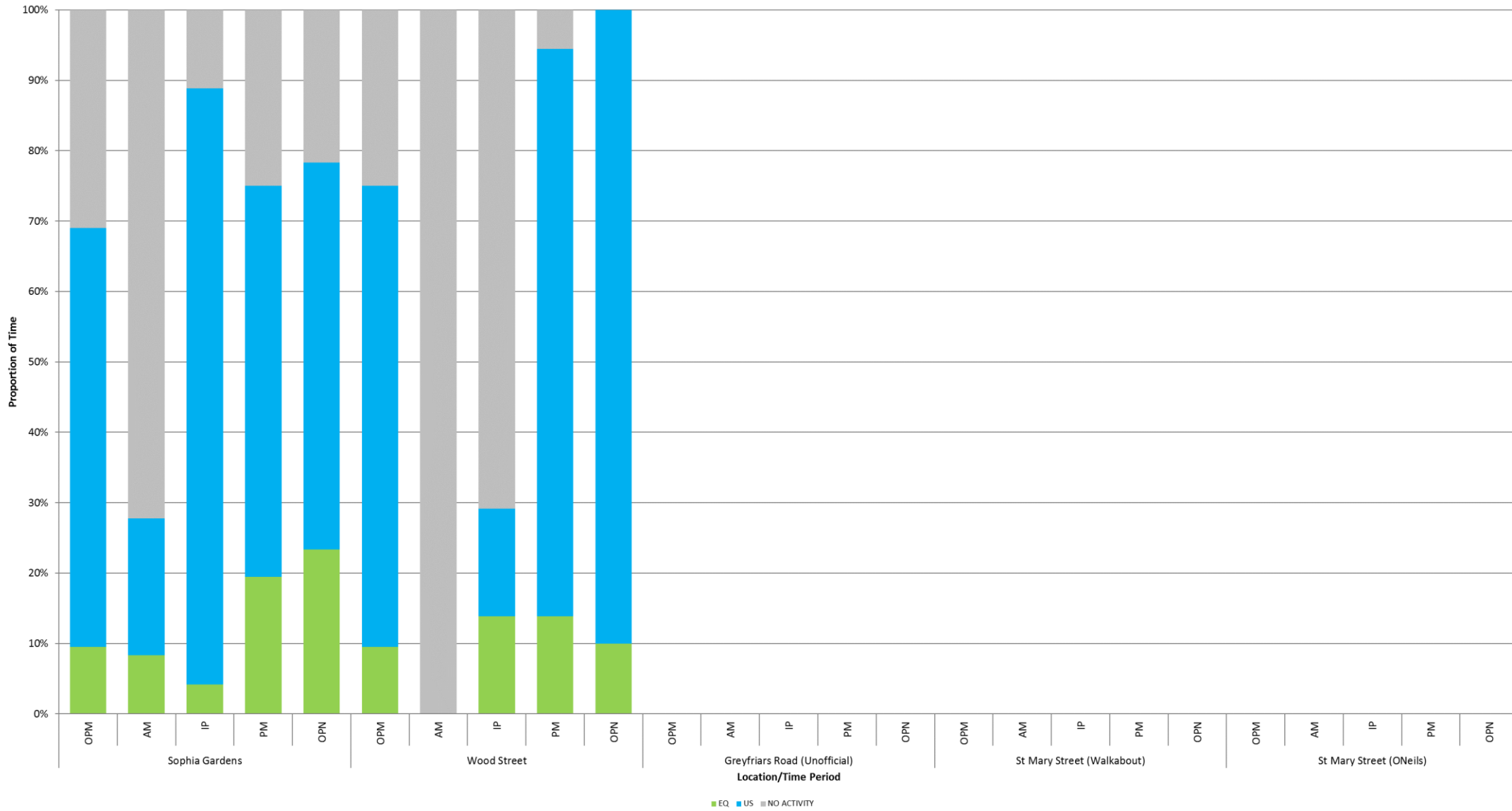


Figure 6.3
Analysis of Market Conditions: Weekend Official Ranks

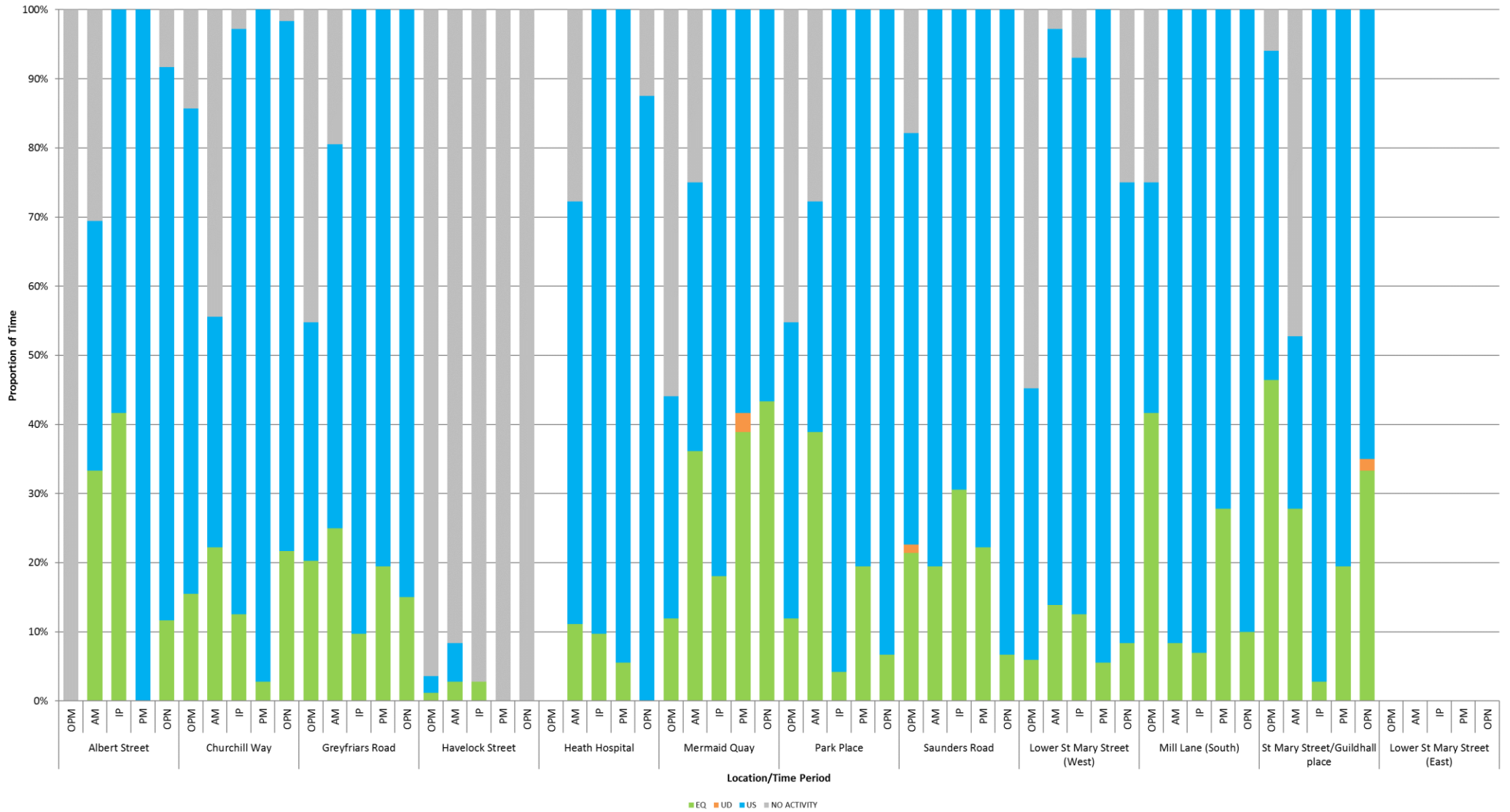


Figure 6.4
Analysis of Market Conditions: Weekend Unofficial Ranks

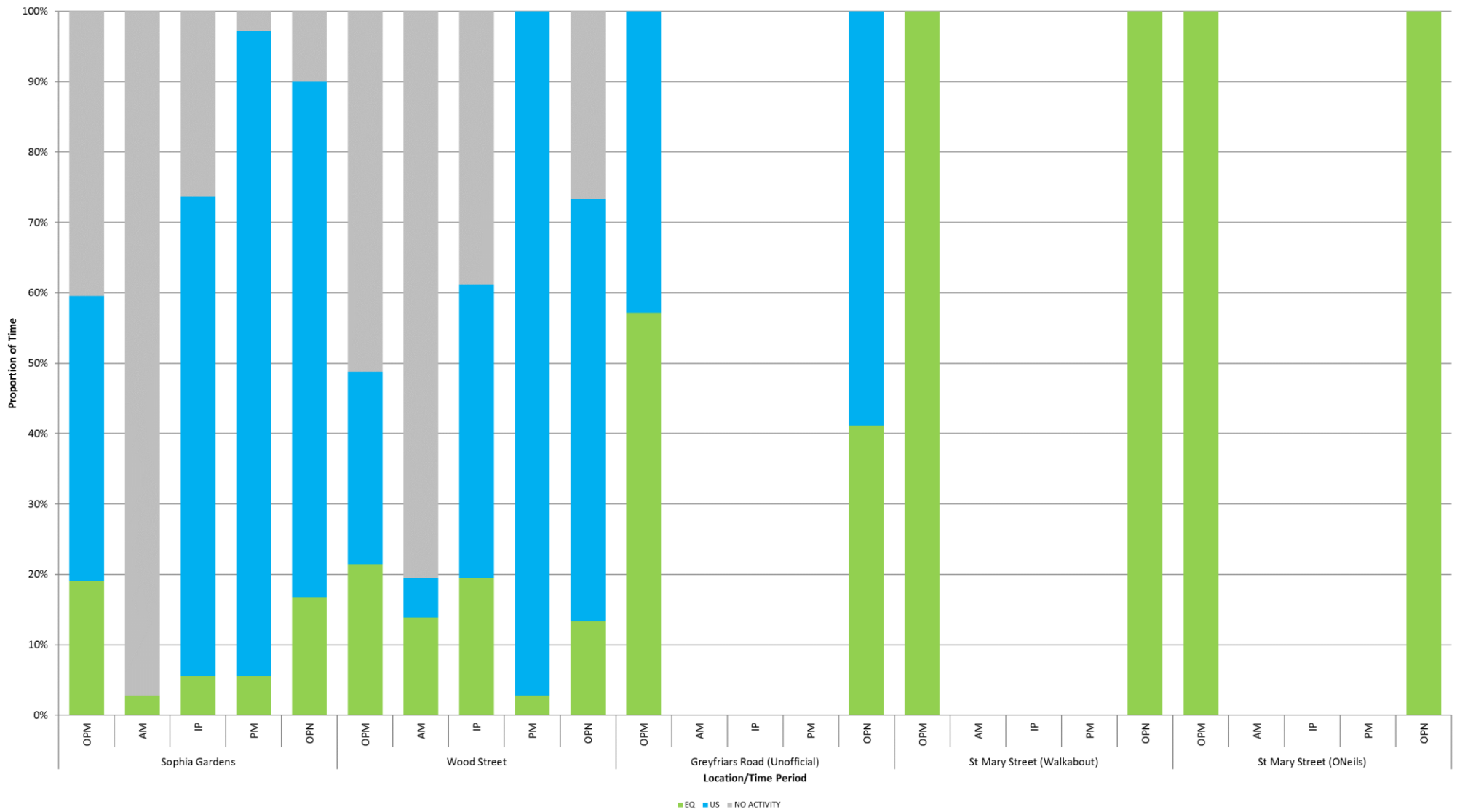


Figure 6.5
Analysis of Market Conditions: Sunday Official Ranks

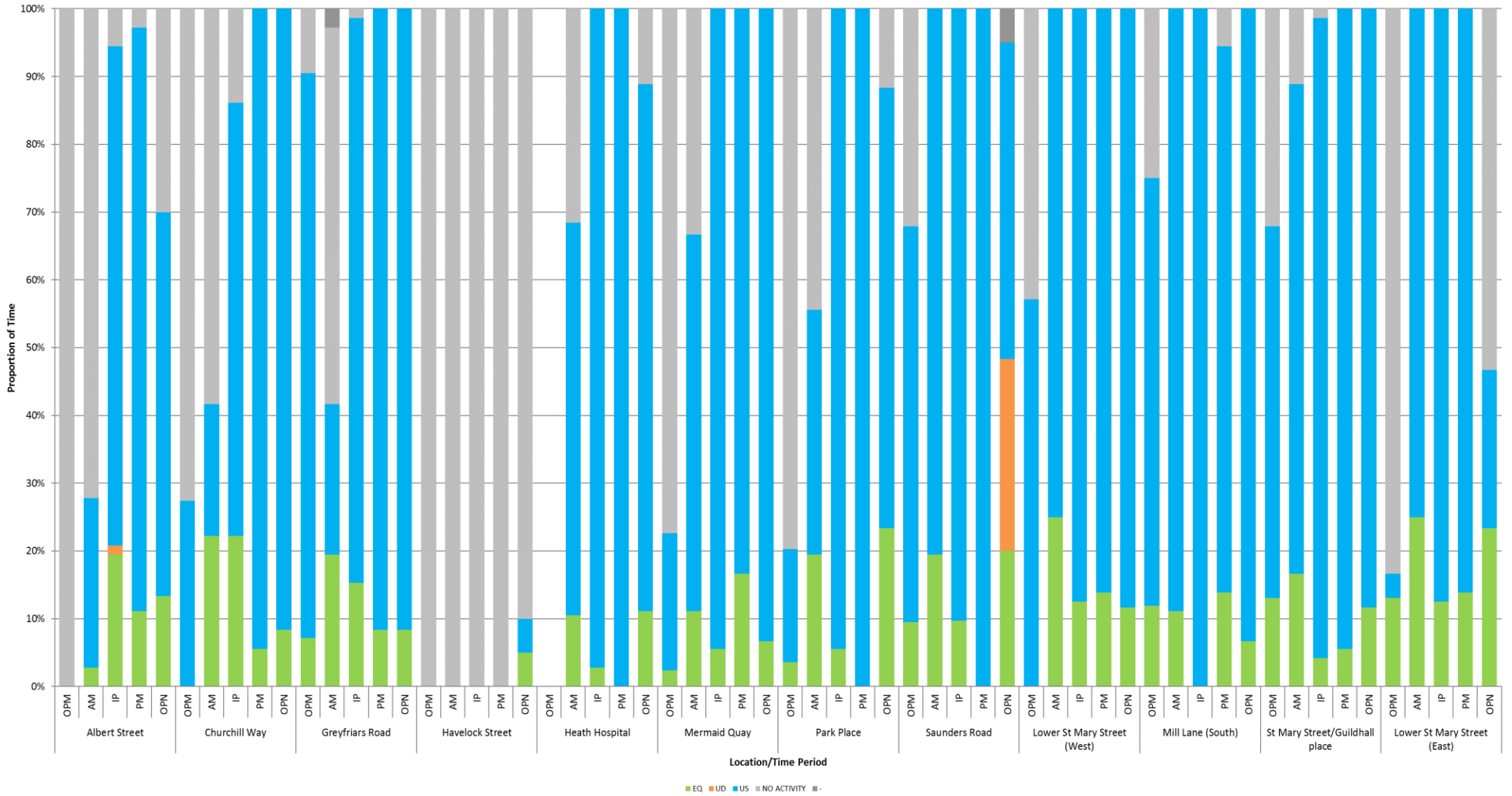
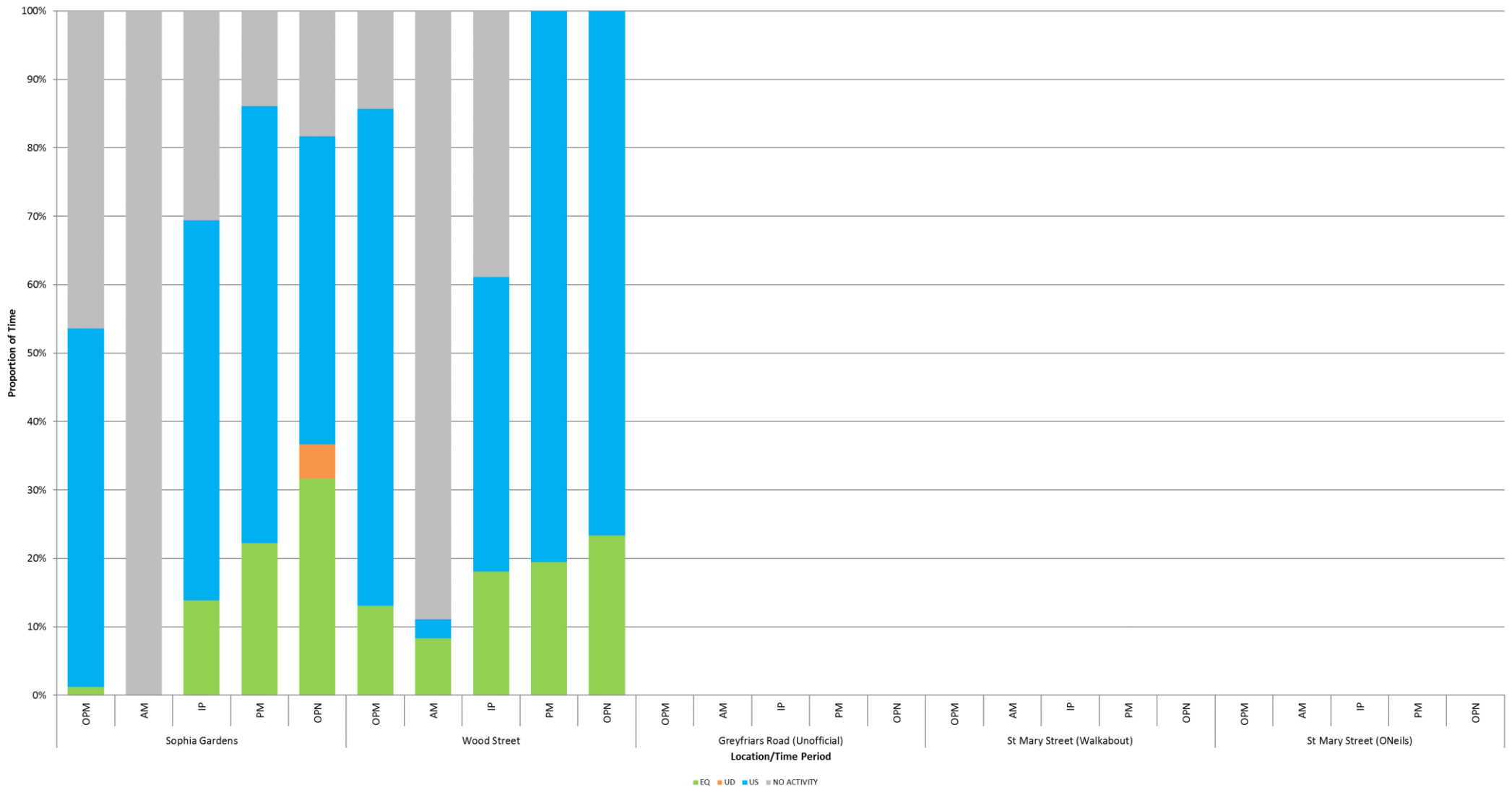


Figure 6.6
Analysis of Market Conditions: Sunday Unofficial Ranks



- 6.2.5 As noted above, this assessment in isolation does not definitively indicate the presence of UD or US; it is merely indicative of the potential presence of these market conditions.
- 6.2.6 The most notable incident of unmet demand occurs during the measured Sunday off-peak night (OPN) period on Saunders Road; this rank primarily services rail users due to its proximity to Cardiff Central Rail Station. The rank experienced a twenty-minute period of unmet demand starting at 20:55, followed by approximately one hour's worth of intermittent unmet demand between 22:05 and 23:25. Between the first and second period of unmet demand the rank experienced a 45-minute period equilibrium or unused supply. During the period of intermittent unmet demand, there were recordings of equilibrium. Average taxi delay just before the second period of unmet demand was approximately ten minutes; this implies that a large queue of passengers built up over the following five-minute period. This is likely caused by several trains arriving consecutively and many passengers seeking to travel by taxi. The rank would have emptied quickly as a result; it would also take some time to fill back up again. This theory is supported by calls for increased rank space at the station.
- 6.2.7 Other incidents of unmet demand occur on the weekend surveyed periods on the Mermaid Quay, Saunders Road, and St Mary Street / Guildhall Place. The Mermaid Quay rank experiences a five-minute period of unmet demand starting at 16:30; it is at equilibrium for the time periods either side of this. The rank on Saunders Road also experiences a five-minute period of unmet demand starting at 02:40; 25 minutes preceding this, the rank had unused supply with long driver wait times, it is likely that a large number of rail passengers emptied the rank very quickly. There is a period of unmet demand on the St Mary Street / Guildhall Place rank that starts at 23:50 and lasts for five minutes; the rank is in equilibrium on either side of this period. These incidents are isolated and are not indicative of a problem caused by an insufficient number of licensed vehicles within the city.
- 6.2.8 The unofficial Sophia Gardens rank experiences a total of 15 minutes of unmet demand on the observed Sunday period; one five-minute period starting at 21:30 and a ten-minute period starting at 22:35. The conditions on either side of both of these periods is either in equilibrium or there is no activity. As this is the National Express coach drop-off/pick-up, it is likely this is due to a coach arriving and a large number of passengers attempting to hire a taxi at the same time.

6.3 Public Perceptions

- 6.3.1 The analysis of the data from the taxi rank observations indicates the presence of unused supply in the taxi market in Cardiff, however this is not immediately apparent from the responses to the public attitude survey. When asked about suggestions for improvements, as seen in Table 5.22, 3.4% indicated that there should be an increase in taxis whilst 1.6% felt that there should be a reduction in the number of taxis. This suggests that the general public do not feel that there are too many taxis in Cardiff, or at least do not perceive it to be a significant problem.
- 6.3.2 Overall the public attitude survey did not indicate the need for more taxis. Table 5.5 shows that of the 119 respondents that said that they gave up flagging down a taxi, 41 indicated that this was from a lack of taxis. However, this is not backed up by the rank surveys as only 87 people walked away from the rank whilst 7,163 left in a taxi. Furthermore, when asked whether they felt that there were sufficient numbers of taxis in Cardiff, 34% said that there are and 9% said that there are not. In addition, "lack of taxis" was not cited as a reason for why respondents did not use taxis more regularly.

7 Comparison with 2016 Study

7 Comparison with 2016 Study

7.1 Background

7.1.1 Following the Cardiff Taxi Study, conducted in 2010, Cardiff Council placed a moratorium on the number of taxi licences available. The DfT Best Practice Guidance states that “*where restrictions are imposed the matter should be regularly reviewed...*” and that “*... the issue to be addressed first in each reconsideration is whether the restrictions should continue at all*”. In reaching its decision, the licensing authority should consider the following points:

- *What benefits or disadvantages arise for the travelling public as a result of the continuation of controls?*
- *What benefits or disadvantages would result for the travelling public if controls were removed?*
- *Is there any evidence that removal of controls would result in a deterioration in the amount or quality of taxi service provision?*

7.1.2 Even if the licensing authority takes the view that continued restriction can be justified in principle, further consideration is required over the level at which it should be set, that is whether the moratorium should remain at the same level or be increased.

7.1.3 In order to determine whether there is justification for maintaining the moratorium in Cardiff and if so the level at which the limit should be set, the results of the 2019 taxi rank survey and the public attitude survey have been compared with the results of the previous 2016 study to determine how the conditions have changed over that period. The results of this comparison are summarised below.

7.2 Taxi Rank Survey

7.2.1 The survey methodology was the same between 2016 and 2019, and so is directly comparable.

7.2.2 The DfT guidance references three points licence quantity controls should not do. Therefore, it is useful to compare the 2016 data to see what affect the moratorium is having. These three points are as follows.

Quantity controls should not:

- Reduce the availability of taxis;
- Increase wait time for consumers;
- Reduce choice and safety for consumers.

Change in Demand and Availability

7.2.3 The change in demand and availability of taxis will show if there has been any reduction in availability of taxis. Figures 4.2 – 4.4 from Section 4 show the average passenger demand, effective demand and average taxi supply over the 24 hour period for each day type.

7.2.4 Figures 7.1 – 7.3 below show the comparisons between 2019 and 2016.

Figure 7.1: Comparison of Average Passenger Demand

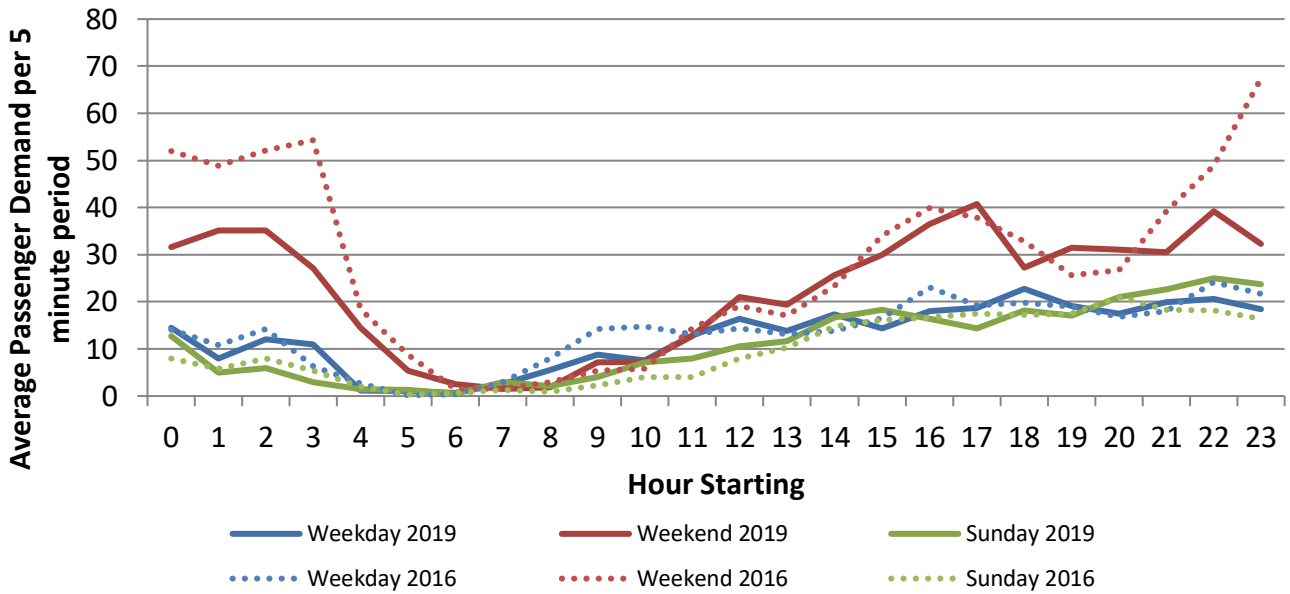


Figure 7.2: Comparison of Effective Taxi Demand

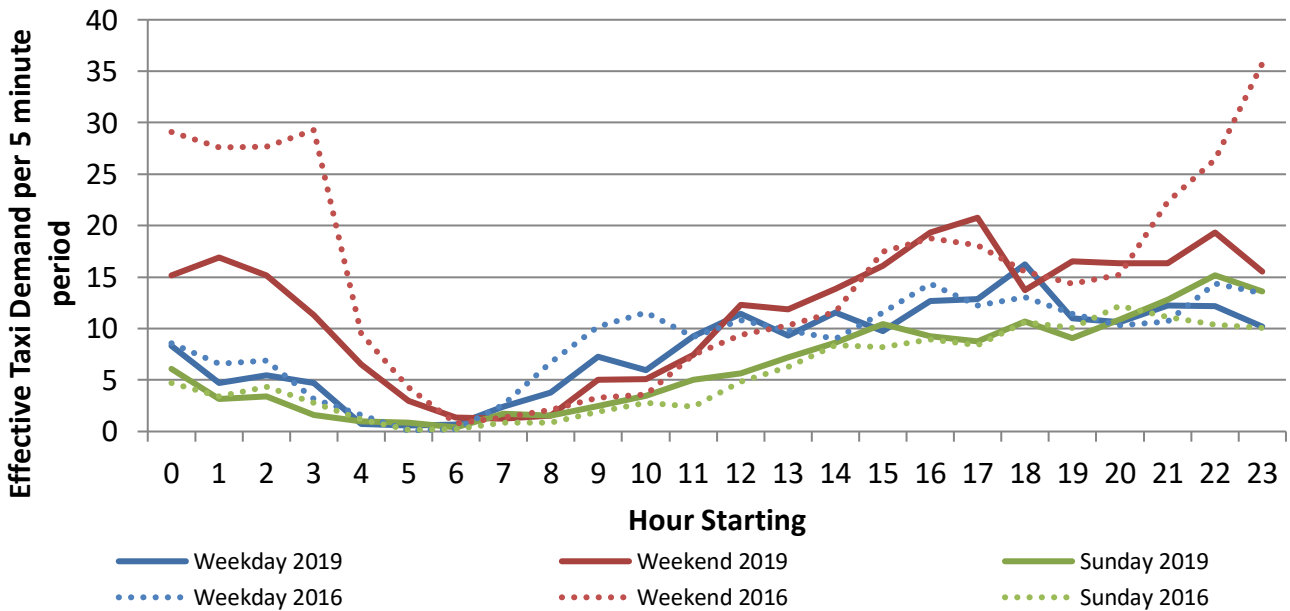
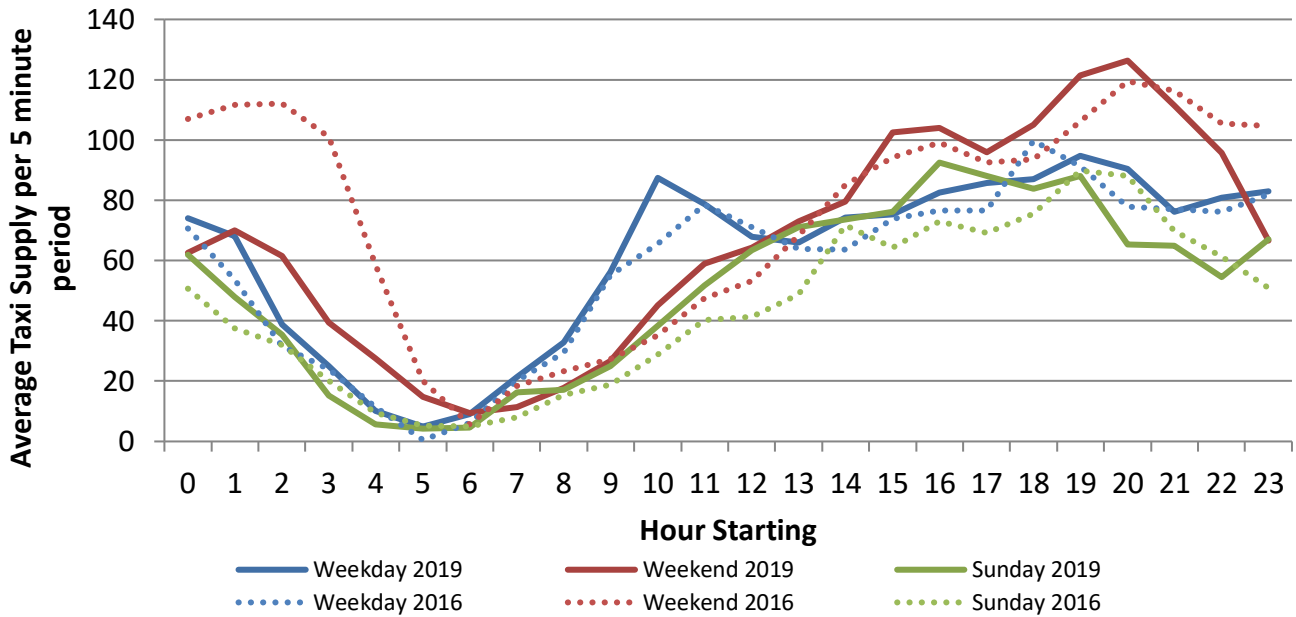


Figure 7.3: Comparison of Average Taxi Supply



7.2.5 The most significant change between 2016 and 2019 is the reduction in activity on the weekends in the late evening and early morning; the greatest reduction occurs around midnight where the effective taxi demand and the passenger demand reduces by 50%. The reduction in passenger demand during this period is around 30%, effective taxi demand and supply has reduced by 40%. The conditions for the Weekday and Sunday have remained relatively consistent; one deviation is between 08:00 and 10:00 where both passenger and taxis demand reduces by 50%.

7.2.6 The correlation between passenger demand and taxi supply has not changed between the two years; the peak and trough periods for demand and supply are comparable. The passenger demand drops to nearly zero at around 05:00-06:00 across all three average day types; the taxi supply during this period is also zero but begins to build up an hour before passenger demand begins to rise.

Change in Passenger Wait Time

7.2.7 Table 7.1 compares the average passenger wait times in 2016 and 2019, to see if there has been an increase in wait time for passengers whilst the moratorium is in place.

Table 7.1
Comparison of Average Passenger Wait Times

Location	2016				2019			
	Weekday	Weekend	Sunday	Overall	Weekday	Weekend	Sunday	Overall
Albert Street	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.2
Churchill Way	3.7	0.8	3.1	2.6	0.0	0.0	0.0	0.0
Greyfriars Road	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.4
Havelock Street	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Heath Hospital	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lower St Mary Street (East)	-	0.0	-	0.0	0.0	0.0	0.0	0.0
Lower St Mary Street (West)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mermaid Quay	0.0	0.0	0.8	0.3	0.0	0.5	0.0	0.2
Mill Lane (South)	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1
Park Place	0.5	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Saunders Road	0.0	0.0	0.0	0.0	0.0	1.9	23.7	8.5
St Mary Street / Guildhall Pl	0.0	1.9	0.0	0.0	0.0	1.2	0.0	0.4
Tredegar St	0.0	0.0	0.0	0.0				
Duke St / Castle St	-	0.0	-	0.0				
Kingsway	-	-	-	-				
Marshalled - Mill Lane	-	-	-	-				
Greyfriars Road (Unofficial)	-	7.6	-	0.0	-	0.0	-	0.0
Sophia Gardens	7.6	3.4	16.1	8.9	0.0	0.0	2.4	0.8
St Mary St (O'Neill's)	0.0	0.0	-	0.0	-	0.0	-	0.0
St Mary St (Walkabout)					-	0.0	-	0.0
Wood St / Westgate St	0.0	0.0	-	0	0.0	0.0	0.0	0.0
Grand Total	0.8	0.5	1.5	0.9	0.0	0.3	2.1	0.8

Official ranks shown in grey no longer exist, and unofficial ranks have changed

Ranks which were not observed on a particular day type are marked with a –

- 7.2.8 The analysis indicates that the overall passenger wait time was 0.9 seconds in 2016 and 0.8 seconds in 2019; showing a marginal decrease over the three years. This includes the wait times on the Saunders Road rank which, as discussed previously, come as a result of periods of unmet demand. However, these were isolated incidents were not representative of the rank, and therefore do not have a significant impact on the overall passenger wait time. There is evidence to suggest this may be due to the size of the rank rather than taxi supply.

Change in Significant Unmet Demand

- 7.2.9 The percentage split between taxi rank conditions being classed as equilibrium, unused supply (US), unmet demand (UD), unstable or no activity is shown below in Table 7.1. Charts showing the same information are included in **Appendix C**.

Table 7.2
2016 and 2019 Market Conditions Comparison

Market Condition	Weekday		Weekend		Sunday	
	2016	2019	2016	2019	2016	2019
Equilibrium (EQ)	11.27%	11.59%	21.81%	16.43%	9.22%	10.23%
Unmet Demand (UD)	0.28%	0.00%	0.18%	0.08%	0.26%	0.54%
Unused Supply (US)	51.83%	59.58%	54.75%	58.82%	55.34%	60.44%
Unstable	0.07%	0.00%	0.05%	0.00%	0.03%	0.10%
No Activity	36.54%	28.83%	23.22%	24.67%	35.16%	28.69%
Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

- 7.2.10 The results show that on weekends the amount of time that the market is operating in equilibrium has decreased by a few percentage points, and on weekdays and Sundays has increased by approximately 1%. The proportion of time where there is unmet demand has slightly decreased on weekdays and weekends and a slight increase on Sundays. The proportion of time where there is unused supply has increased by around 5% on both weekends and Sundays, whilst on weekdays it has increased by approximately 8%. Overall the assessment shows that the market conditions have remained largely unchanged since 2016, suggesting that the moratorium on the issue of new taxi licences has not disadvantaged passengers.

7.3 Public Attitude Survey

- 7.3.1 The public attitude survey covered a sample of 491 people on the streets of Cardiff in 2019, 733 in 2016, and 1000 in 2013. Many questions were unchanged from the 2016 study. A question was added to determine whether respondents whether they had health issues that limited their ability to travel. The reduced sample was compared to the 2011 census to confirm it was comparable and therefore deemed a suitable representation.

7.4 Availability of Taxis

- 7.4.1 In 2013, 2016, and 2019 respondents were asked to give suggestions for improvements to taxi service. In 2013, improved availability was listed by 3.5% of the respondents in comparison to 0.4% in 2016 and 3.4% in 2019. In contrast, reduced taxi numbers were listed by 0.4% in 2013, 0.5% in 2016, and 1.6% in 2019.
- 7.4.2 Additionally, respondents were asked to give the reasons they did not use licensed vehicles more often in 2016 and 2019. Availability was listed by 1.2% in 2016 and wasn't cited at all in 2019. These results indicate that there has been very little change in public perception on availability, particularly with the drop in reasons for why licensed vehicles are not used more often. Respondents were asked directly whether they felt that there are enough taxis in Cardiff, with 9.0% reporting insufficient numbers in 2019 compared with the 7.8% in 2016, suggesting little change over the last 3 years and no emerging problem.

7.5 Understanding of Taxis and Private Hire Vehicles

- 7.5.1 In both years, the question on whether the respondent thought that all licensed vehicles can be hired on ranks and by flagging them down was asked. In 2016 30% said yes compared with 38.9% in 2019 showing that understanding has reduced. Furthermore 42% said no in 2019 compared with 52% in 2016.

7.6 Suggested Improvements

- 7.6.1 In 2016, the top rated suggestion improvements were related to the cost of fares and customer service. This has been replicated in the 2019 survey as well as showing an increase of suggestions for improvements to regulation, implying that the situation has not improved over the last three years. A further comment that rated highly was banning licensed vehicles not registered in Cardiff from operation in the city. This is a new trend which wasn't highlighted in the 2016 study.

8 Summary

8 Summary

8.1 Summary

- 8.1.1 Cardiff Council (CC) controls the issuing of taxi licences in Cardiff. Following a previous study in 2010 where there was no evidence of significant unmet demand, the Council imposed a moratorium on the issue of new taxi licences. This restriction was left in place following further studies in 2013 and 2016.
- 8.1.2 Under Department for Transport (DfT) Taxi and Private Hire Vehicle Licensing Best Practice Guidance⁶, a new study is required at a maximum interval of three years when a quantity restriction is in place. A new study is now due.
- 8.1.3 AECOM has been commissioned by CC to undertake this study, comprising of analysis of taxi activity in the city centre, and surveys to establish the attitudes of the public, trade, and key stakeholders. The study has been approached with consideration to the DfT's Best Practice Guidance throughout.
- 8.1.4 The main objectives of the study are as follows:
- To identify the current level of demand for taxis within Cardiff;
 - To assess whether the supply of taxis matches the demand;
 - To better understand the operations of taxis and private hire vehicles in and around Cardiff; and
 - To identify areas of the service that could be improved.
- 8.1.5 In order to meet these objectives six different surveys have been undertaken. These surveys are described in three separate reports, with one overriding report summarising all the information and drawing the key conclusions and making recommendations. The four reports are listed below:

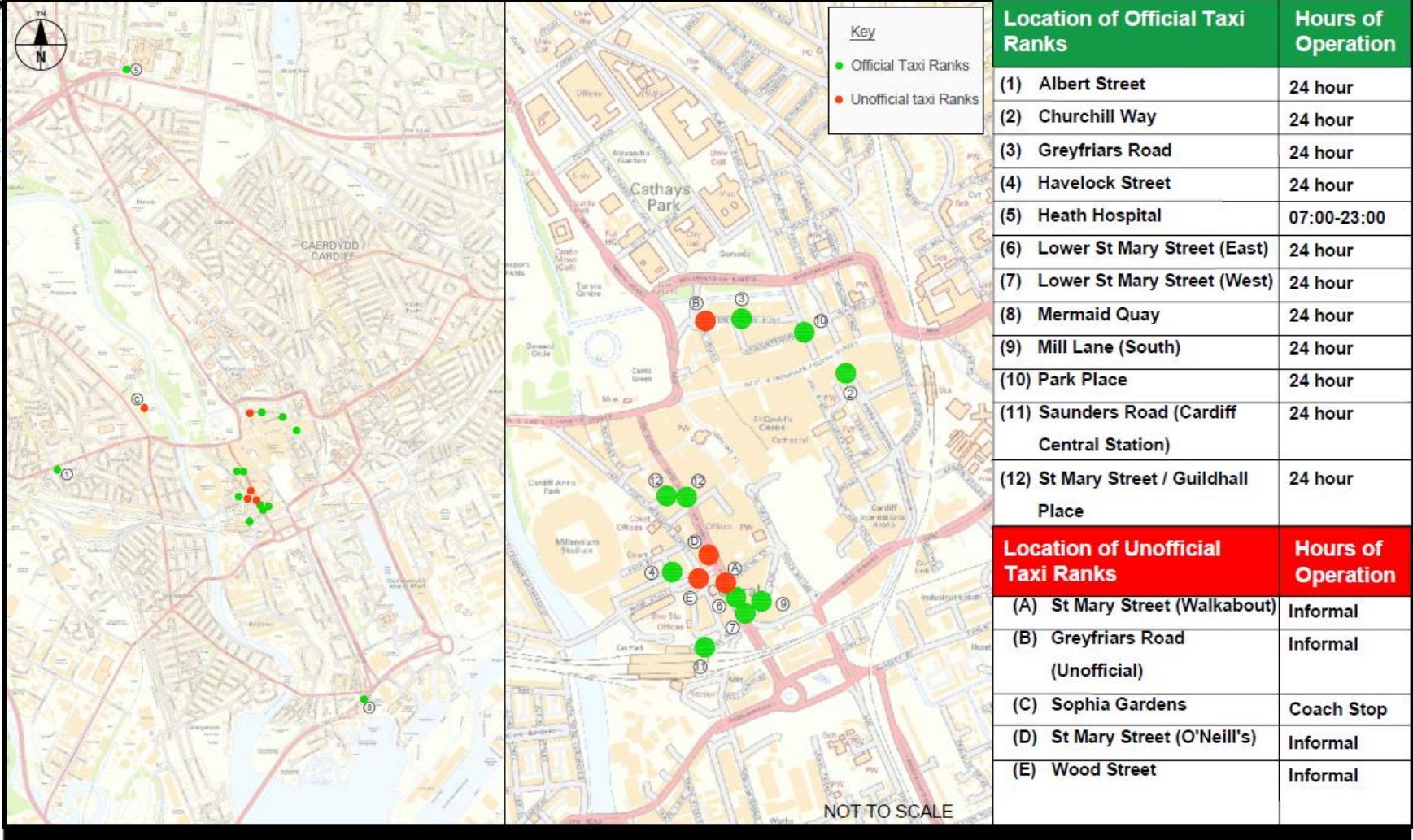
Report	Surveys
Cardiff Taxi Licensing Study 2019: Part 1: Taxi Rank Operations and Public Attitude Survey	<ul style="list-style-type: none"> • Taxi rank observation survey • Public attitude questionnaire
Cardiff Taxi Licensing Study 2019: Part 2: Driver and Proprietor Attitude Survey	<ul style="list-style-type: none"> • Licensed driver questionnaire • Vehicle proprietor questionnaire
Cardiff Taxi Licensing Study 2019: Part 3: Operator and Stakeholder Attitude Survey	<ul style="list-style-type: none"> • Stakeholder online questionnaire • Operator online questionnaire
Cardiff Taxi Licensing Study 2019: Part 4: Summary Report	<ul style="list-style-type: none"> • Summary of the above surveys

- 8.1.6 This report is the Taxi Rank Operations and Public Attitude Survey which analyses and summarises the findings of the taxi rank and public attitude surveys to help determine the current level of service and market conditions in Cardiff.
- 8.1.7 The Taxi Rank Survey was very thorough, providing an almost complete assessment of all sites at all times. The exception being the unofficial ranks where surveys were conducted during the operating hours.
- 8.1.8 Surveys show the passenger demand on weekdays begins to build at around 07:00 reaching a peak at around 18:00. The Sunday surveys show a similar trend whilst the weekend profile is greatly exaggerated.
- 8.1.9 Occupancy surveys suggest an average occupancy of 1.8 people per taxi, this figure is higher during the weekend and lower during weekday daytimes, which is consistent with the trip purpose expected during these times.
- 8.1.10 Effective taxi demand and taxi supply follow a similar profile as the passenger demand throughout the day, however the peaks and troughs are less pronounced. Compared against the passenger demand data, despite the consistency of the patterns, a clear oversupply of taxis can be seen across the network.

⁶ <https://www.gov.uk/government/publications/taxi-and-private-hire-vehicle-licensing-best-practice-guidance>

- 8.1.11 Passenger delay analysis showed no delays being experienced by passengers; the average delay time is 0.8 seconds. There is an exception to this where passengers at Saunders Road on Sunday experience a delay of almost 2 minutes. The reason for this is attributed to the fact that this is the rank that services the rail station and as a result is subjected to periods of high demand. The continual supply of taxis suggests the size of the rank may be in part a cause of the delay, which is supported by comments in the public attitude survey.
- 8.1.12 The public attitude survey highlighted a possible lack of awareness of the difference between Taxis and PHVs; 38.9% of survey respondents believed that all licensed vehicles can pick up from a taxi rank or be hailed at the roadside.
- 8.1.13 The survey asked how much people thought a specified trip would cost, the results showed a more refined spread of responses when compared to 2016. This shows that the public awareness of the pricing structure has improved.
- 8.1.14 The main reasons stated for not using licensed vehicles were a preference for alternative means of transportation, followed by the cost is too high, and that they simply “don’t need to” use them. All other reasons, including concerns about safety, previous bad experience, and not being local to the area were given by below 5% of the respondents.
- 8.1.15 There was a low response to the question about potential improvements to the taxi service; around 61% of respondents didn’t answer the question. For those that did answer it, a large number of the suggestions were related to improvements to customer service, taxi regulation, and reducing the cost of fares. 3.5% of suggestions called for an increase in taxi numbers whilst 1.6% want their numbers reduced.
- 8.1.16 A Taxi Market Condition Assessment Matrix has been determined to account for both passenger delays and taxi delays. This matrix was applied to each rank during each time interval for each day. These graphs determined using the matrix show rare 5-10 minute occasions where the status of the rank is deemed to have unmet demand; Saunders Road during the Sunday night period being the only exception. However, each of the ranks spend much of their time with unmet supply, this is supported by the Public Attitude Survey, which indicated no need for more taxis.
- 8.1.17 The criteria for retaining a quantity control is that the conditions have not changed sufficiently to result in reduction in the availability of taxis, increased waiting times for consumers or a reduction in the choice and safety for consumers. The surveys in this report do not indicate that such a significant change has occurred.
- 8.1.18 The level the quantity control is set at should also be reviewed, as such a comparison between the 2016 data and the 2019 data has been completed to determine if the conditions have changed sufficiently to warrant a change in the level of licence numbers that is set. Passenger demand has significantly dropped whereas the taxi supply has remained consistent. Average passenger delay times have been compared and are unchanged from 2016.
- 8.1.19 The Taxi Market Condition Assessment Matrix applied to both 2016 and 2019 shows little difference in market conditions, particularly when considering Saunders Road as a separate unique case. The evidence suggests that the continuation of the moratorium on the issue of new taxi licences has not disadvantaged passengers.

**Appendix A:
Taxi Rank Locations**



Cardiff Taxi Licensing Study 2019

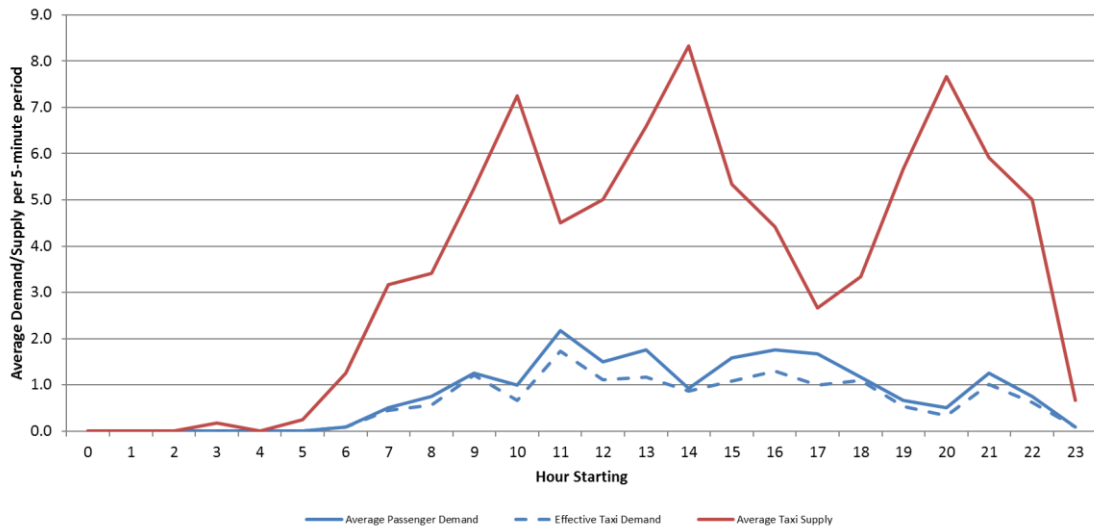
Taxi Rank Locations
Appendix A



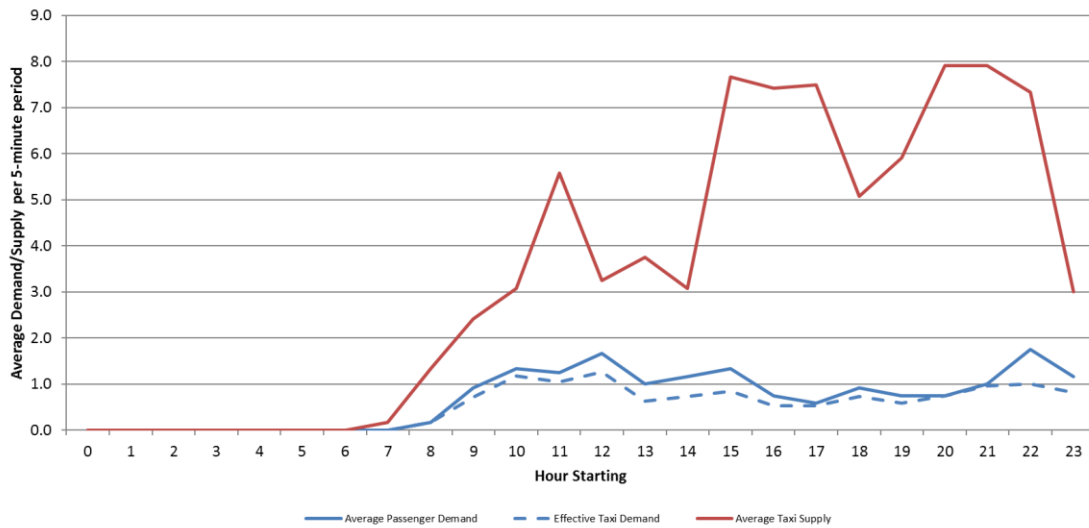
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**Appendix B:
Comparison of Demand and Supply**

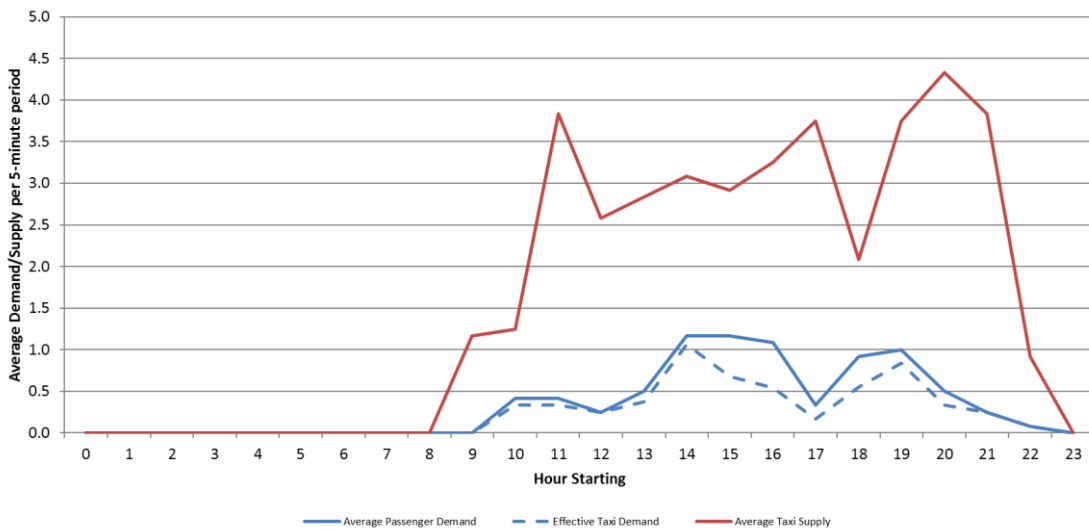
Albert Street Comparison of Demand and Supply: Weekday



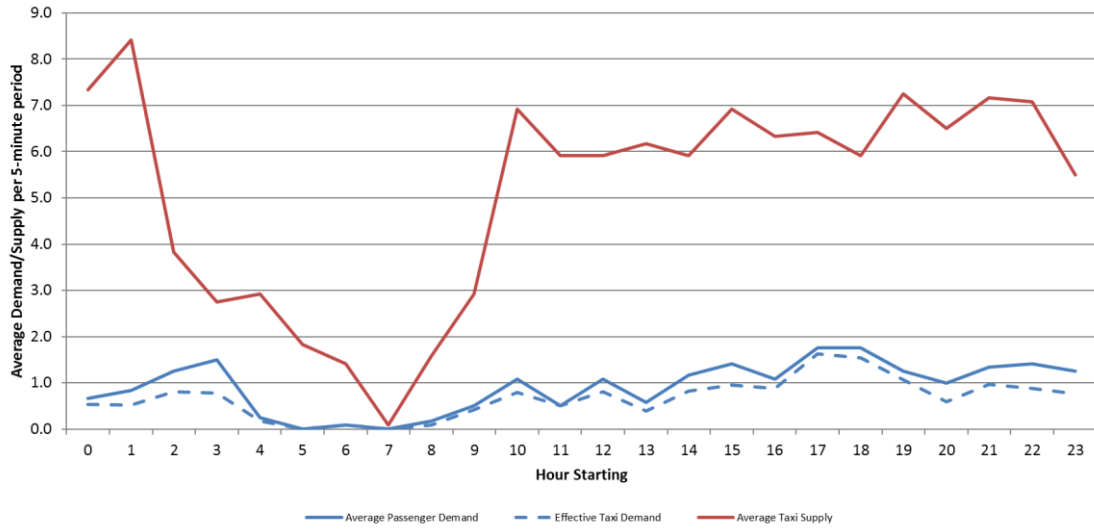
Comparison of Demand and Supply: Weekend



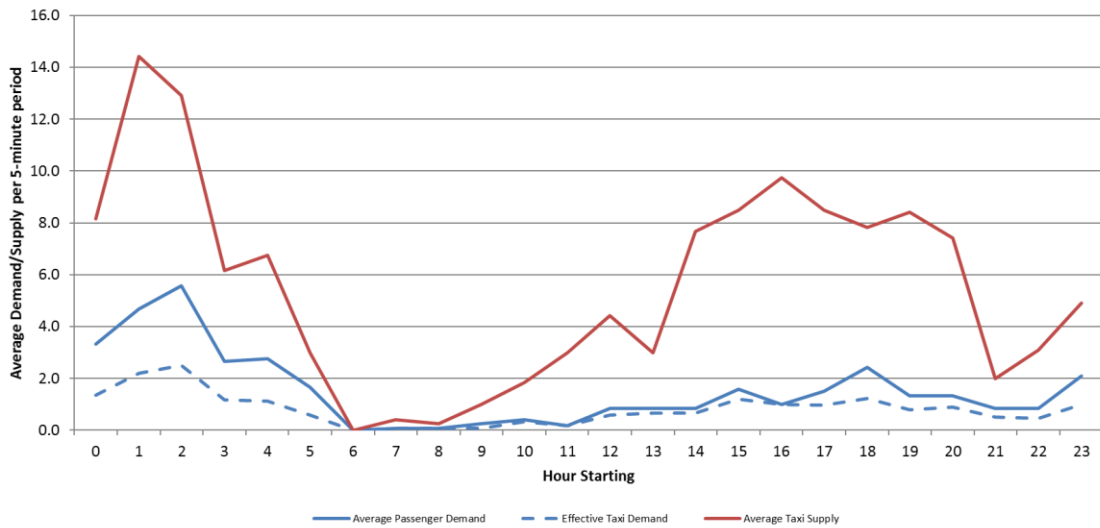
Comparison of Demand and Supply: Sunday



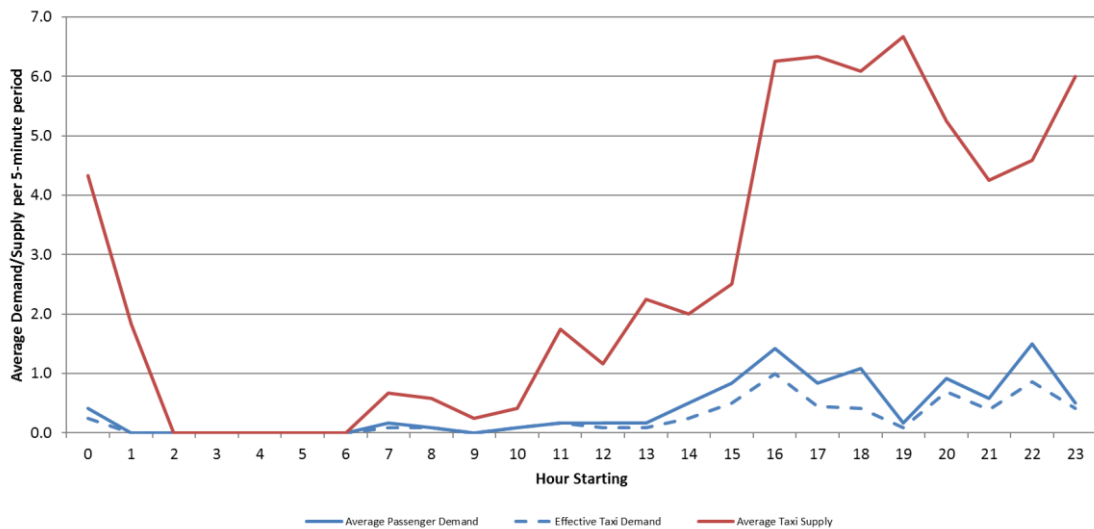
Churchill Way Comparison of Demand and Supply: Weekday



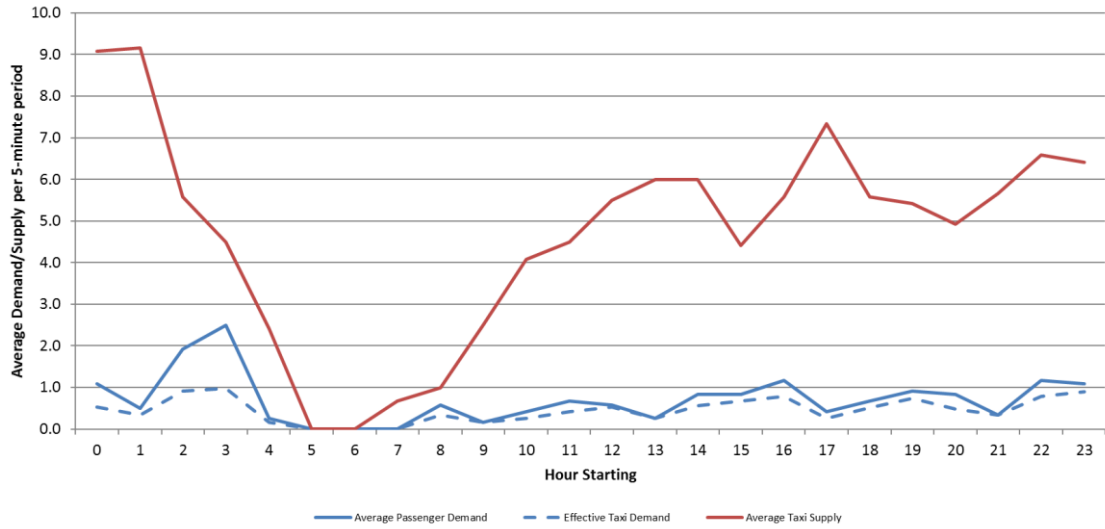
Comparison of Demand and Supply: Weekend



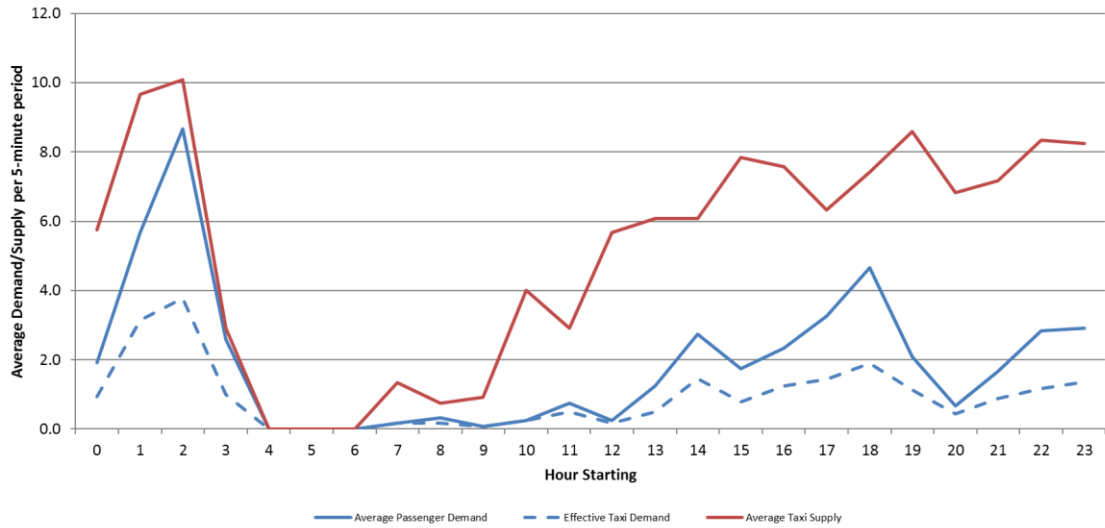
Comparison of Demand and Supply: Sunday



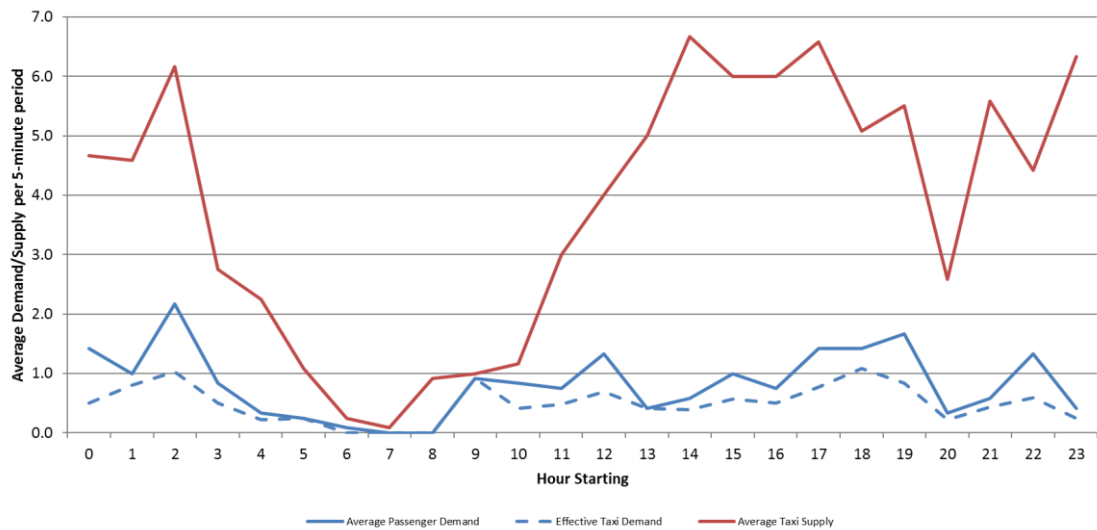
Greyfriars Road Comparison of Demand and Supply: Weekday



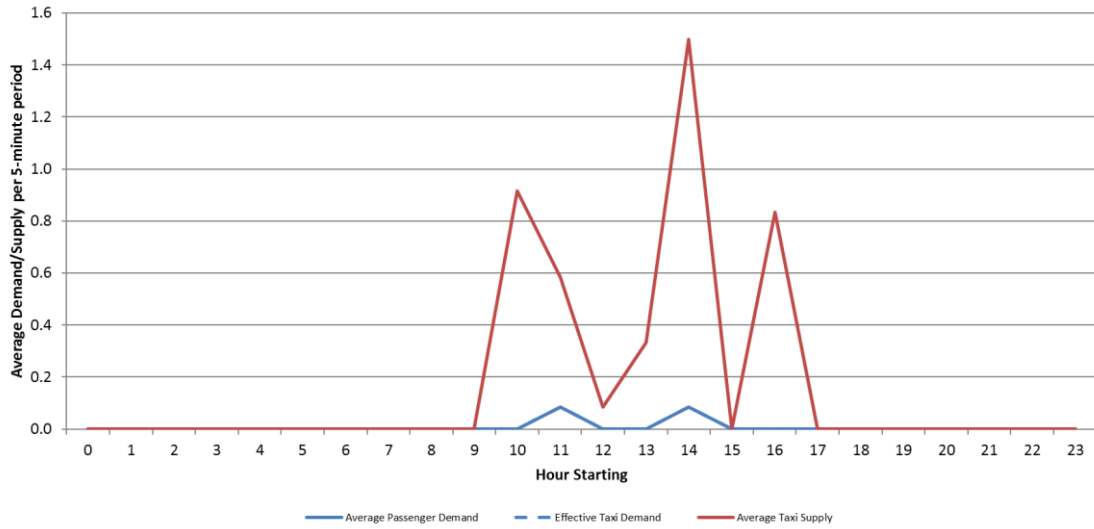
Comparison of Demand and Supply: Weekend



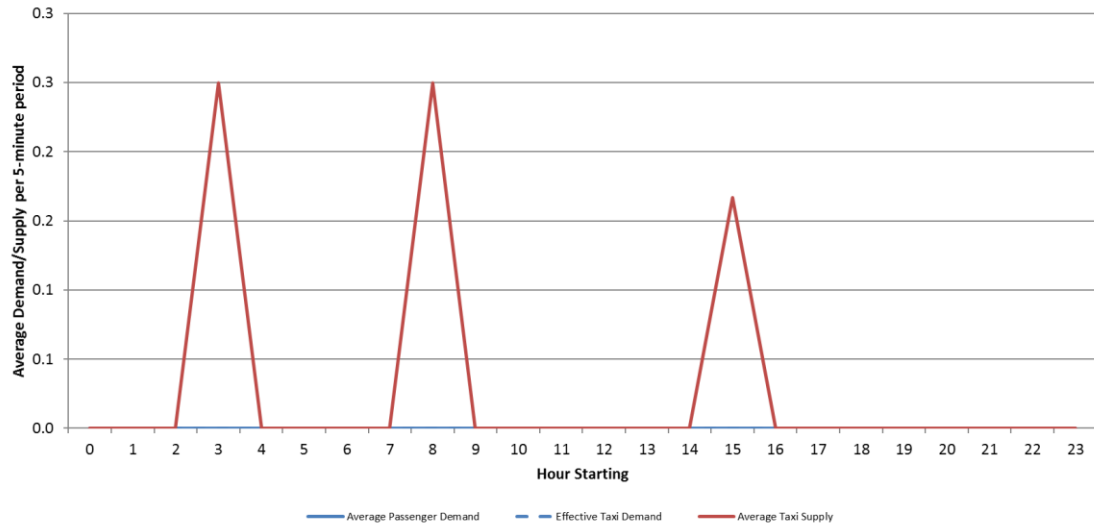
Comparison of Demand and Supply: Sunday



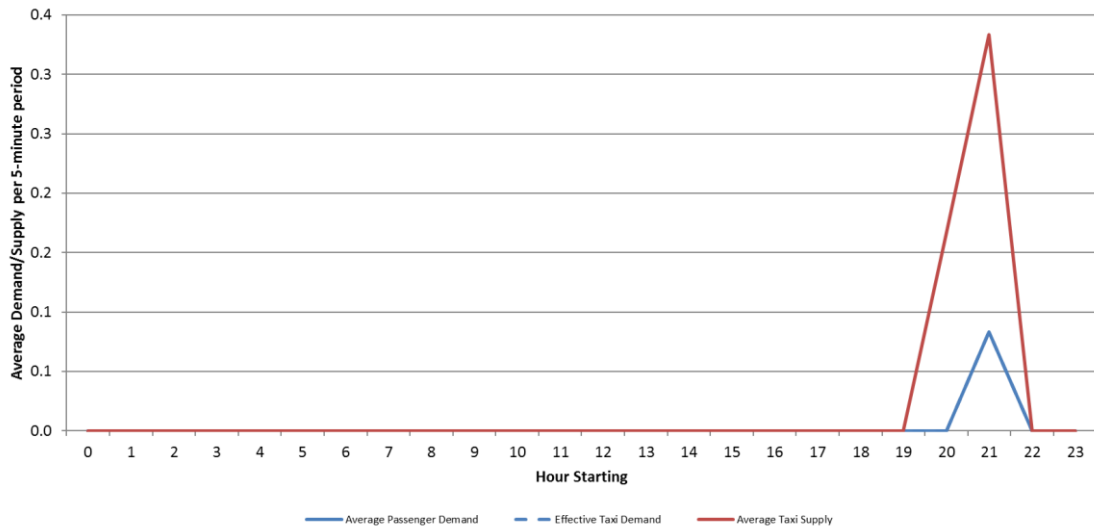
Havelock Street Comparison of Demand and Supply: Weekday



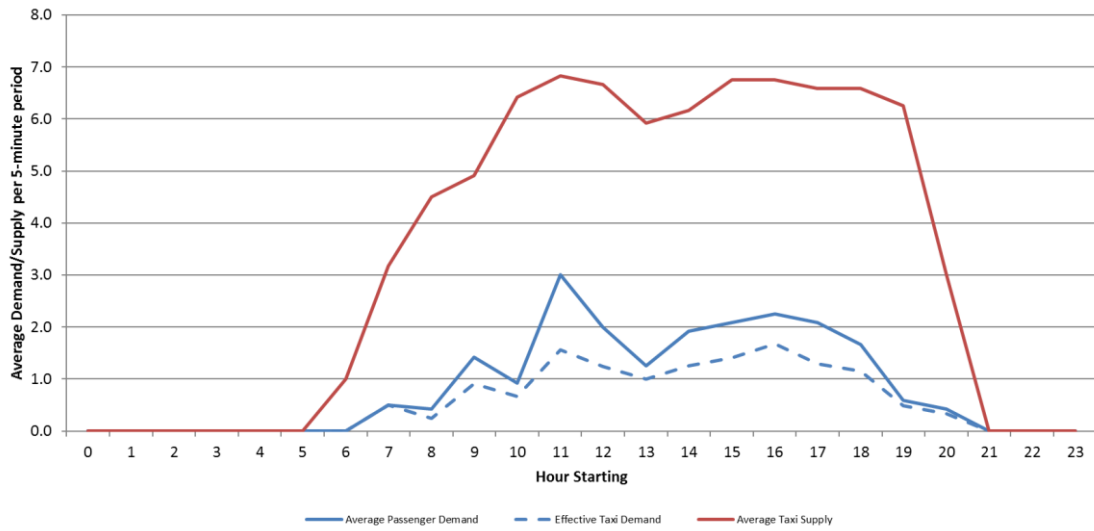
Comparison of Demand and Supply: Weekend



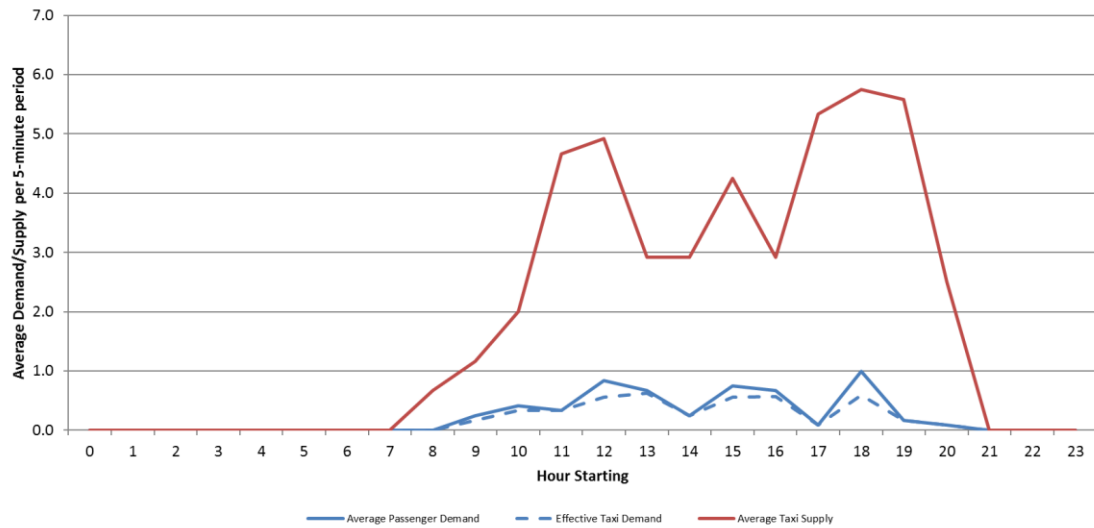
Comparison of Demand and Supply: Sunday



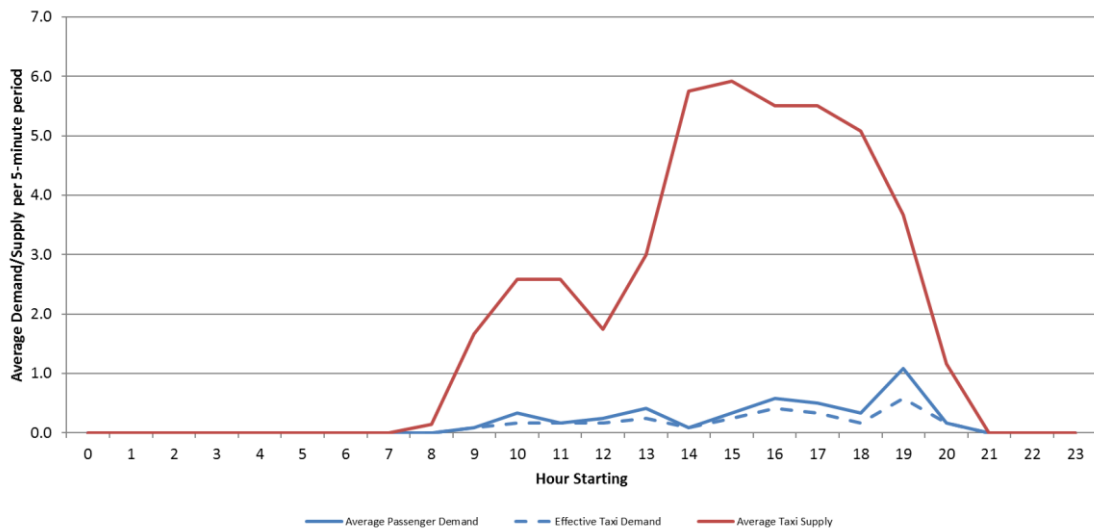
Heath Hospital Comparison of Demand and Supply: Weekday



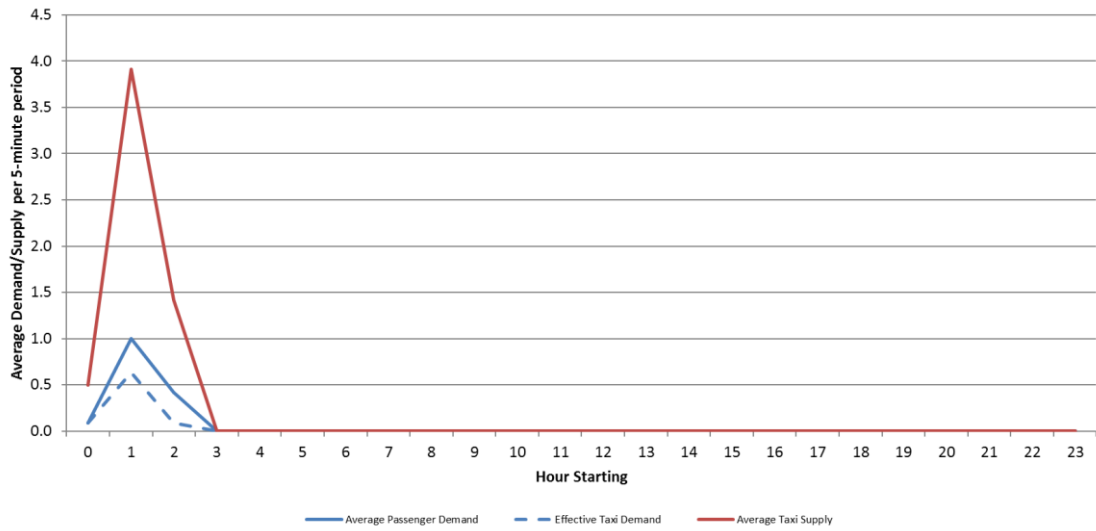
Comparison of Demand and Supply: Weekday



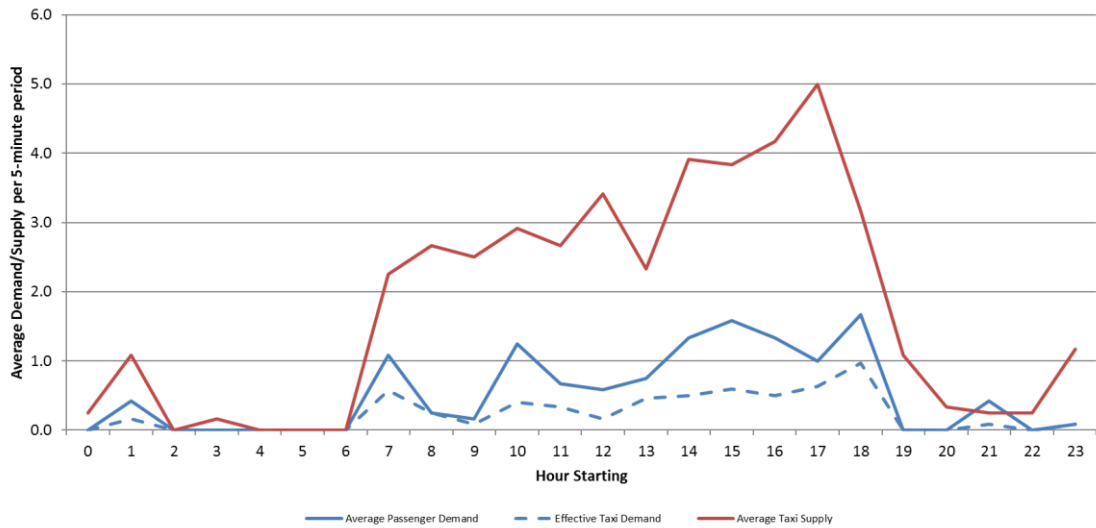
Comparison of Demand and Supply: Sunday



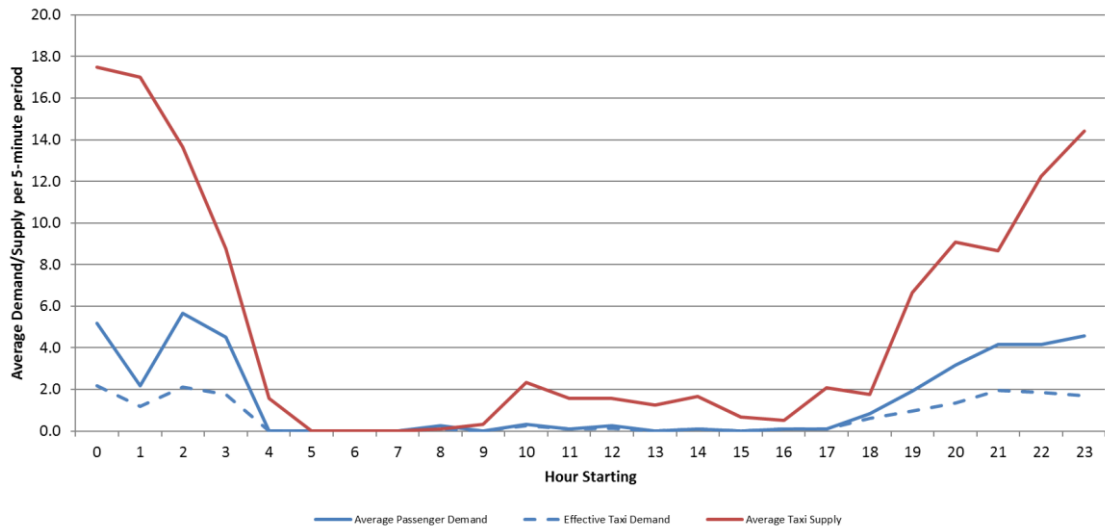
Lower St Mary Street (East) Comparison of Demand and Supply: Weekday



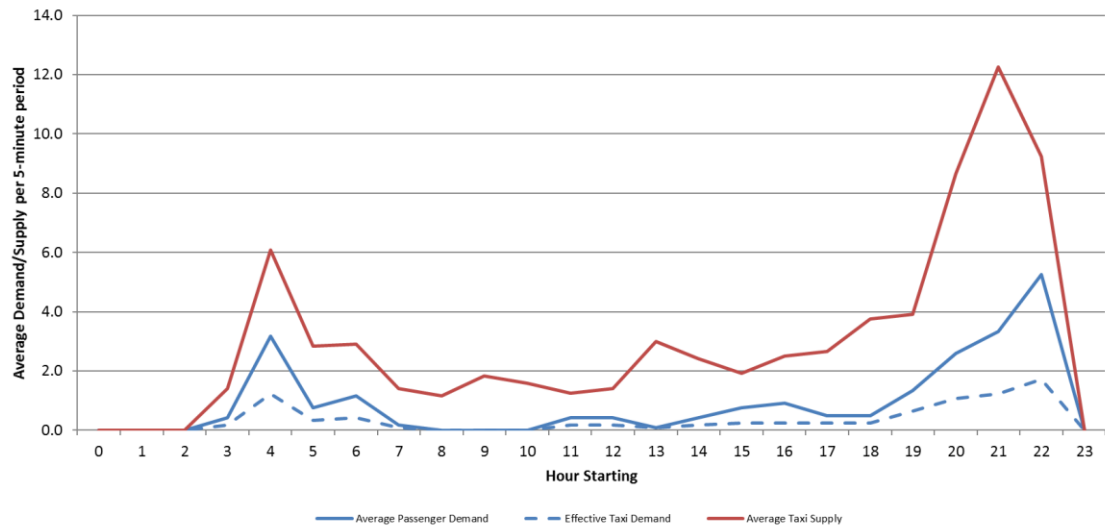
Comparison of Demand and Supply: Sunday



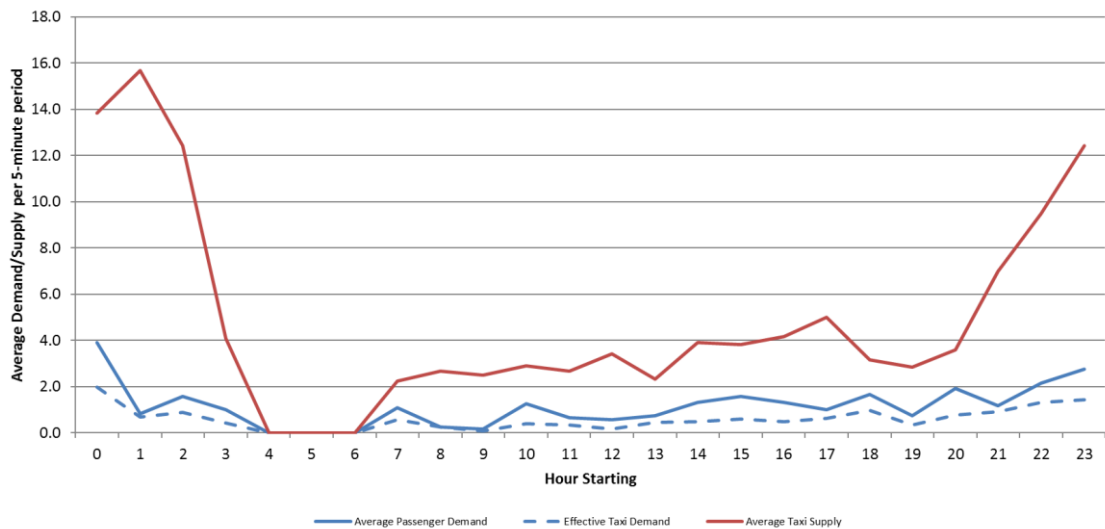
Lower St Mary Street (West) Comparison of Demand and Supply: Weekday



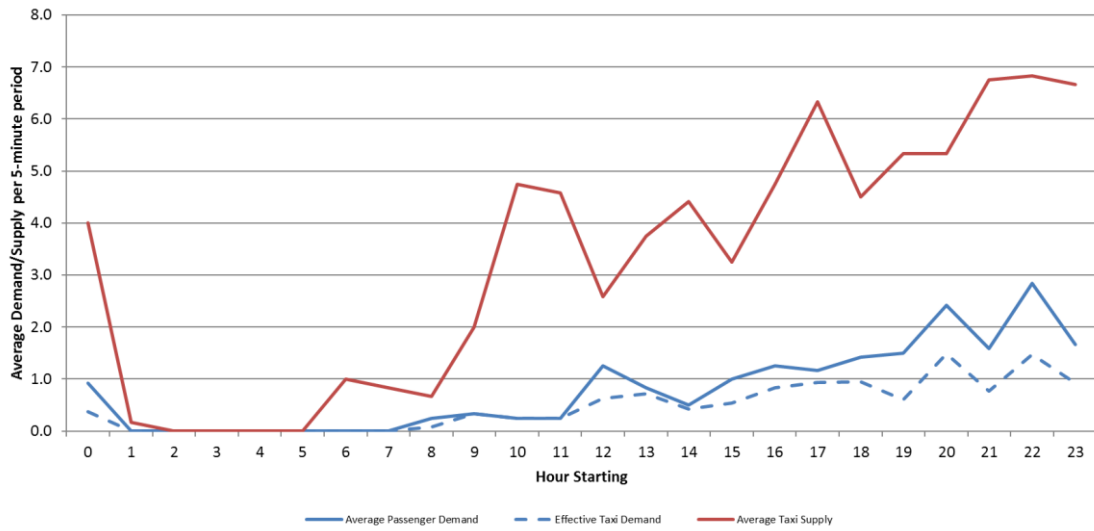
Comparison of Demand and Supply: Weekend



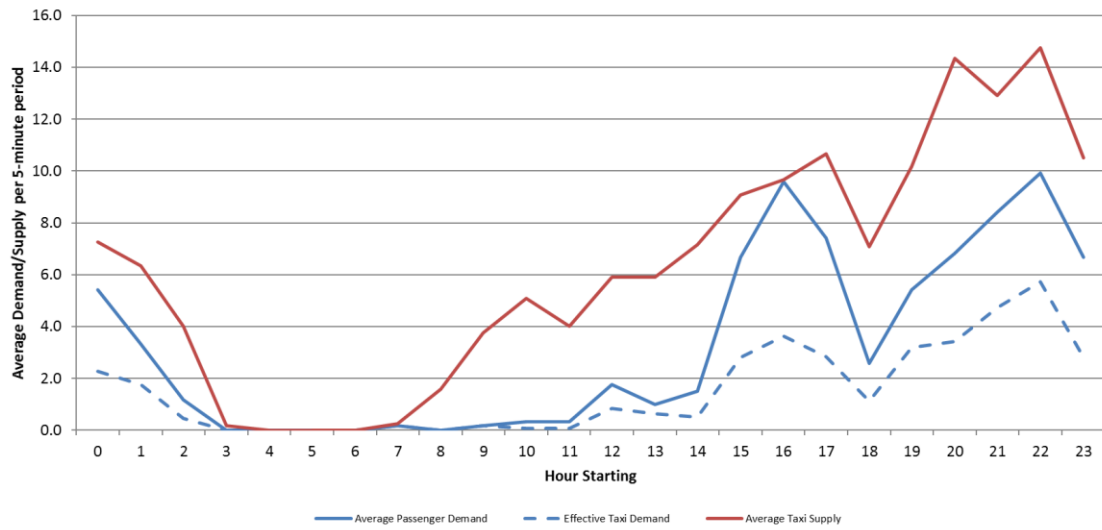
Comparison of Demand and Supply: Sunday



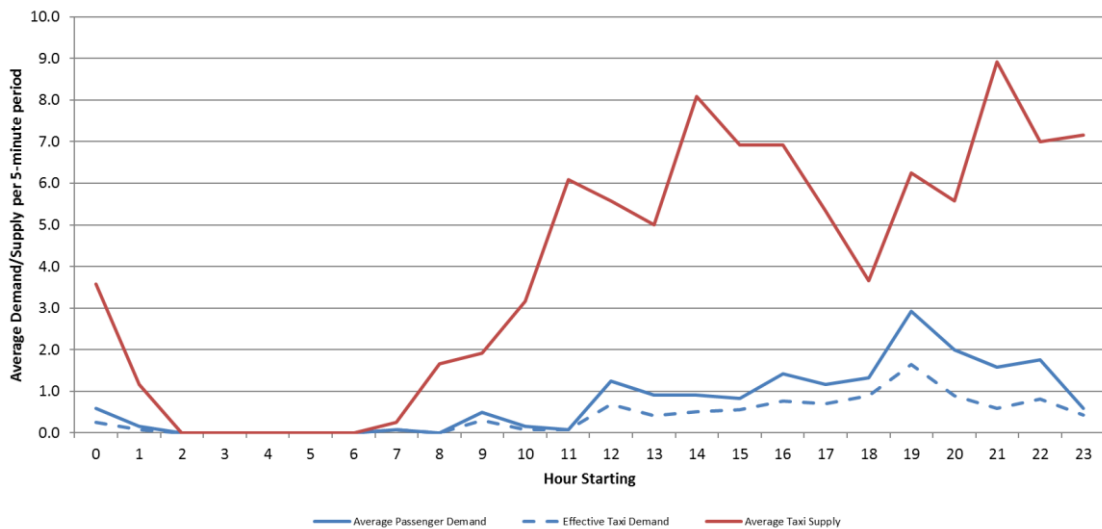
Mermaid Quay Comparison of Demand and Supply: Weekday



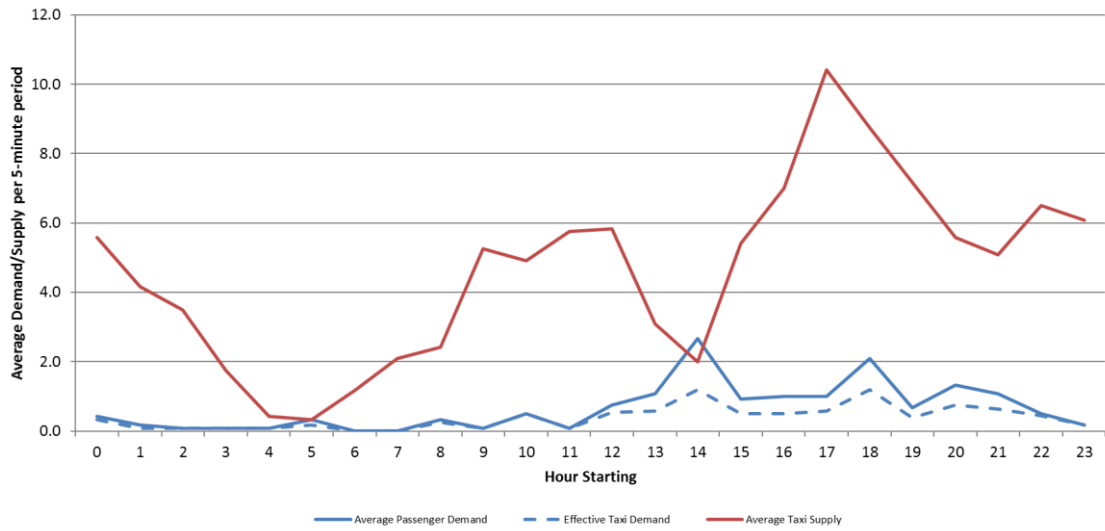
Comparison of Demand and Supply: Weekend



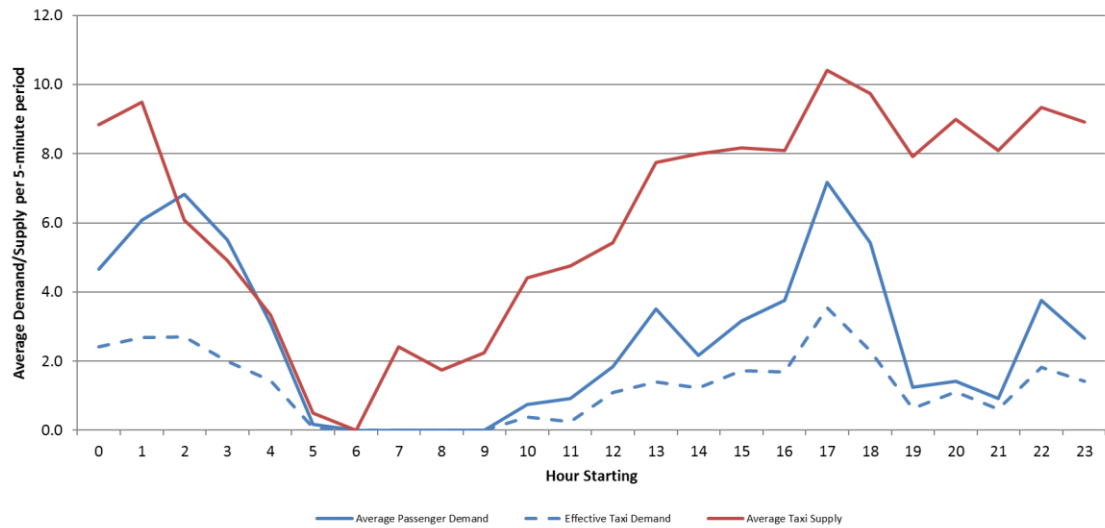
Comparison of Demand and Supply: Sunday



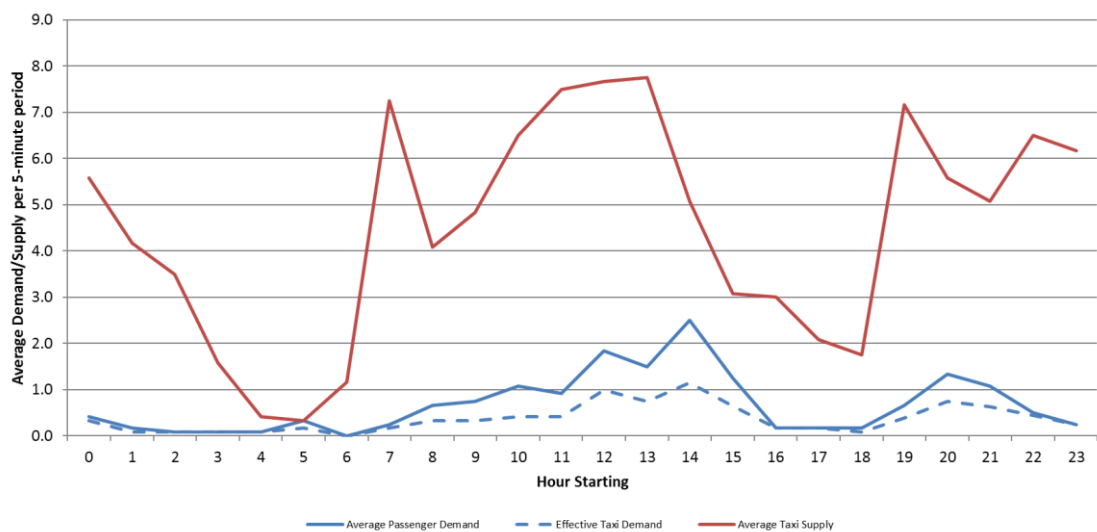
Mill Lane (South) Comparison of Demand and Supply: Weekday



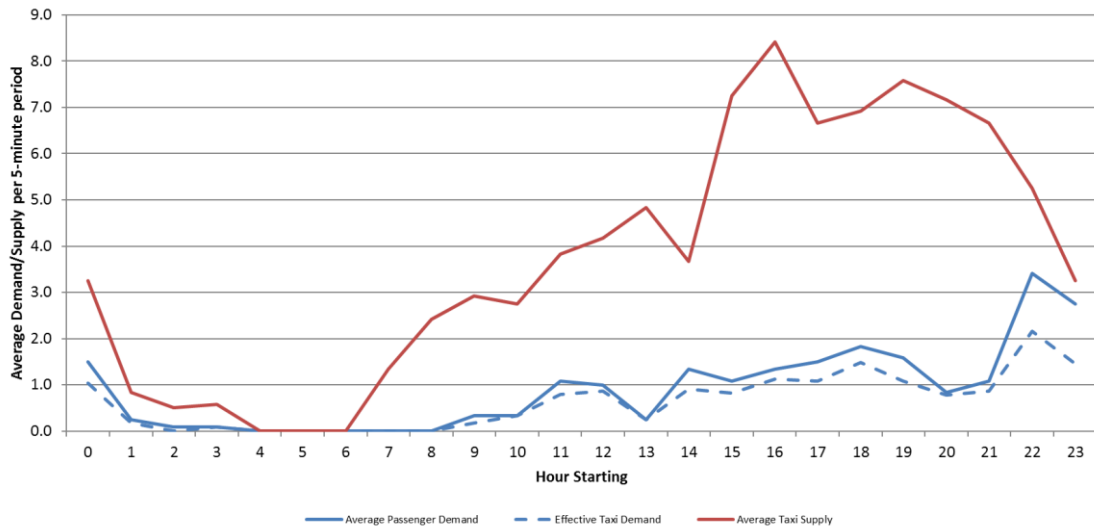
Comparison of Demand and Supply: Weekend



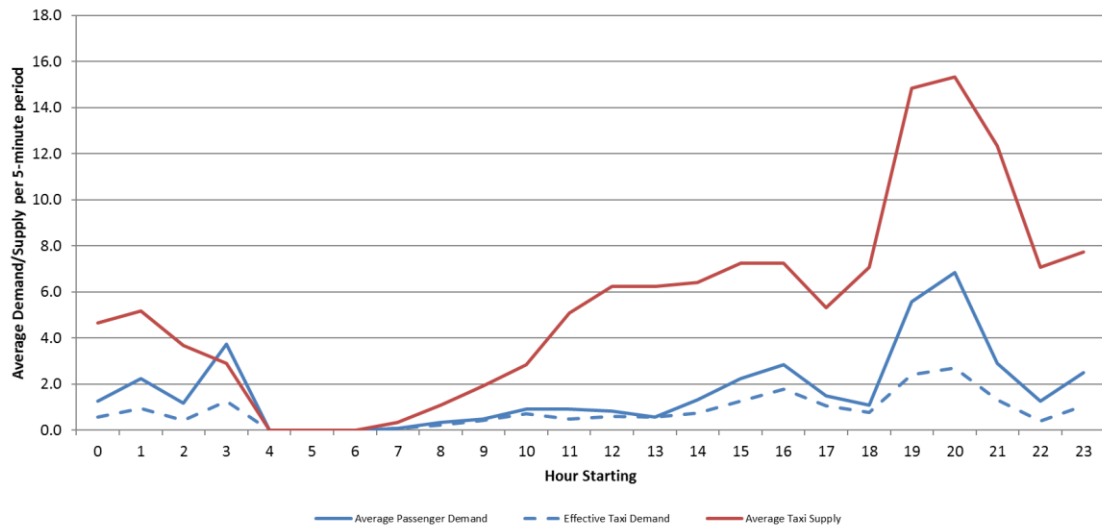
Comparison of Demand and Supply: Sunday



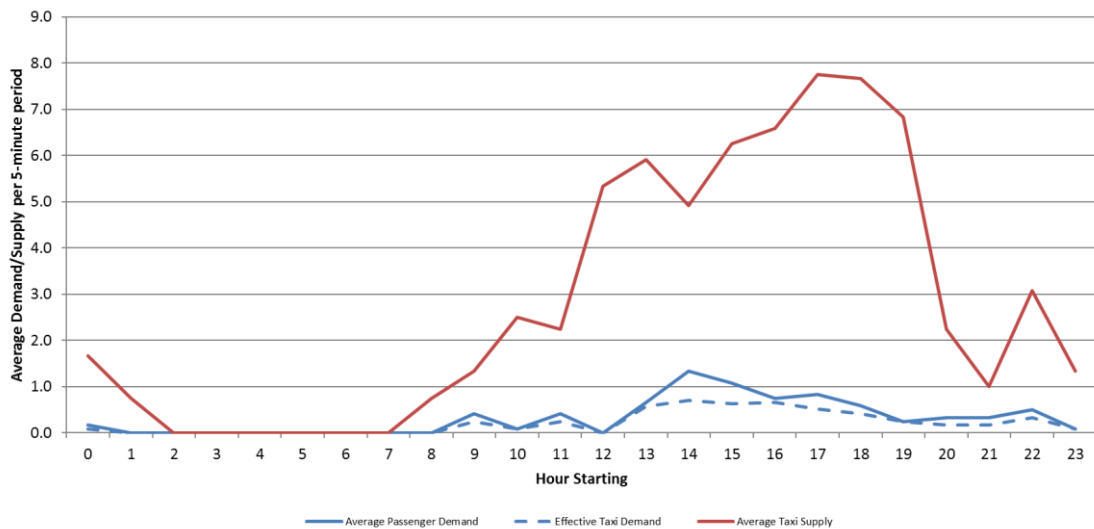
Park Place Comparison of Demand and Supply: Weekday



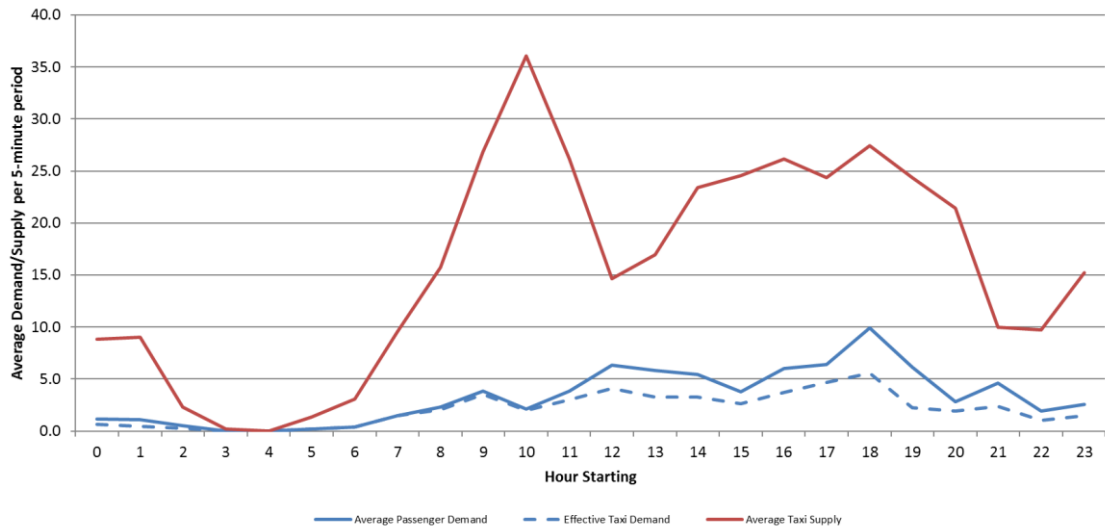
Comparison of Demand and Supply: Weekend



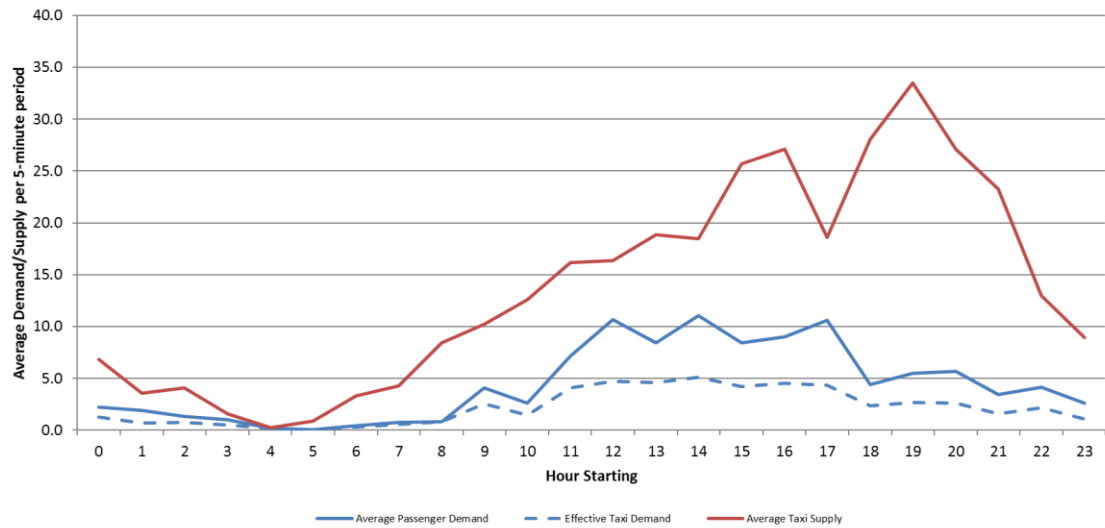
Comparison of Demand and Supply: Sunday



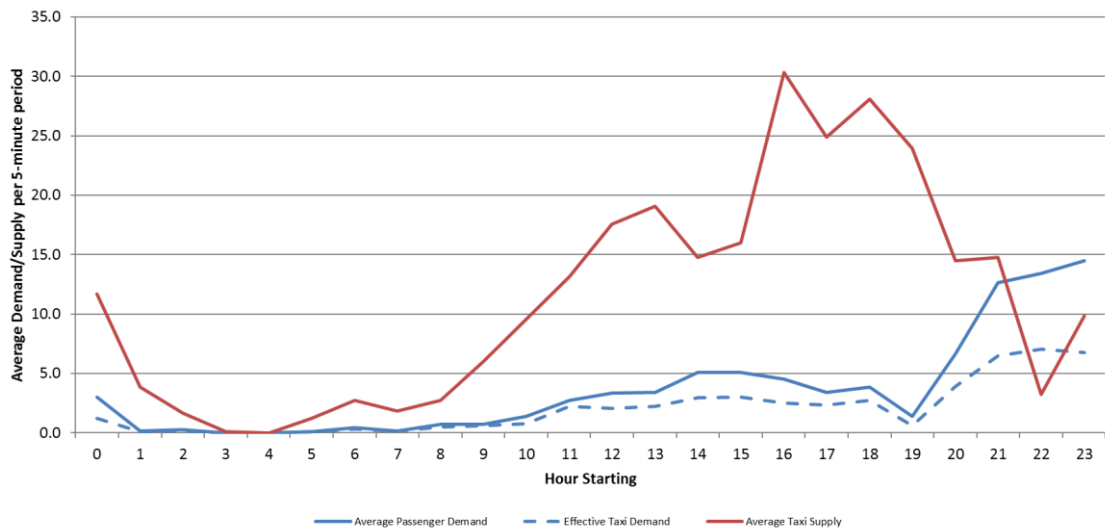
Saunders Road Comparison of Demand and Supply: Weekday



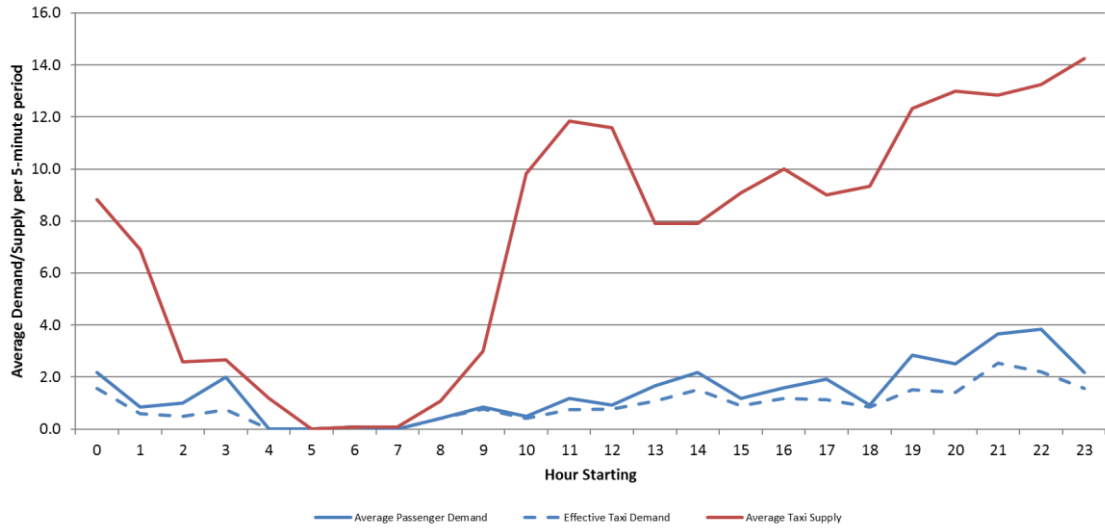
Comparison of Demand and Supply: Weekend



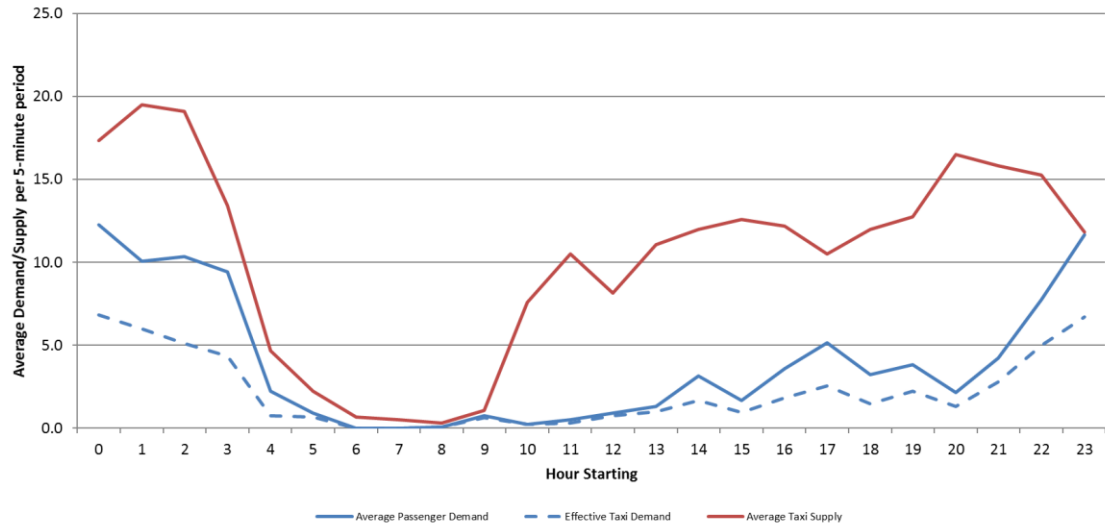
Comparison of Demand and Supply: Sunday



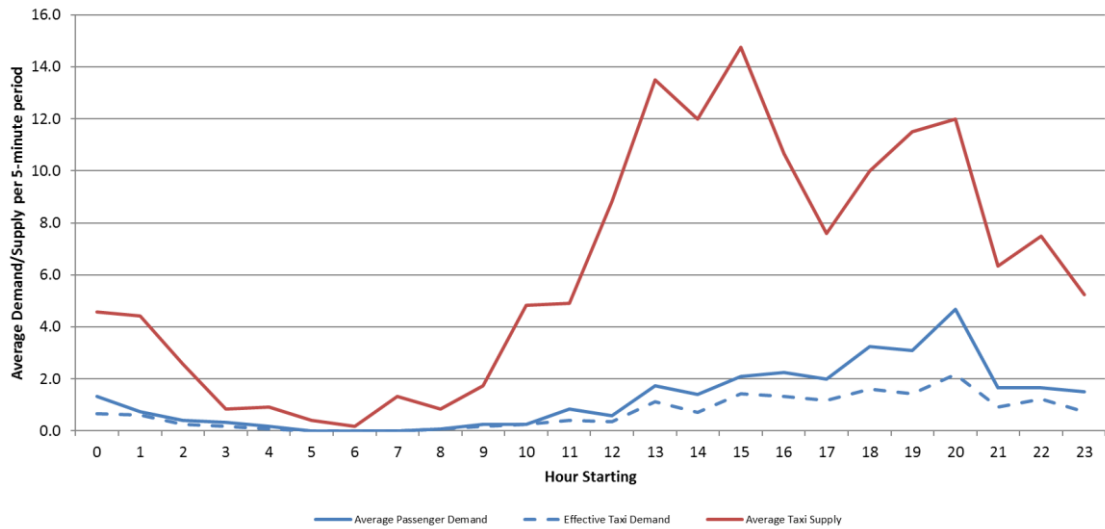
St Mary Street / Guildhall Place Comparison of Demand and Supply: Weekday



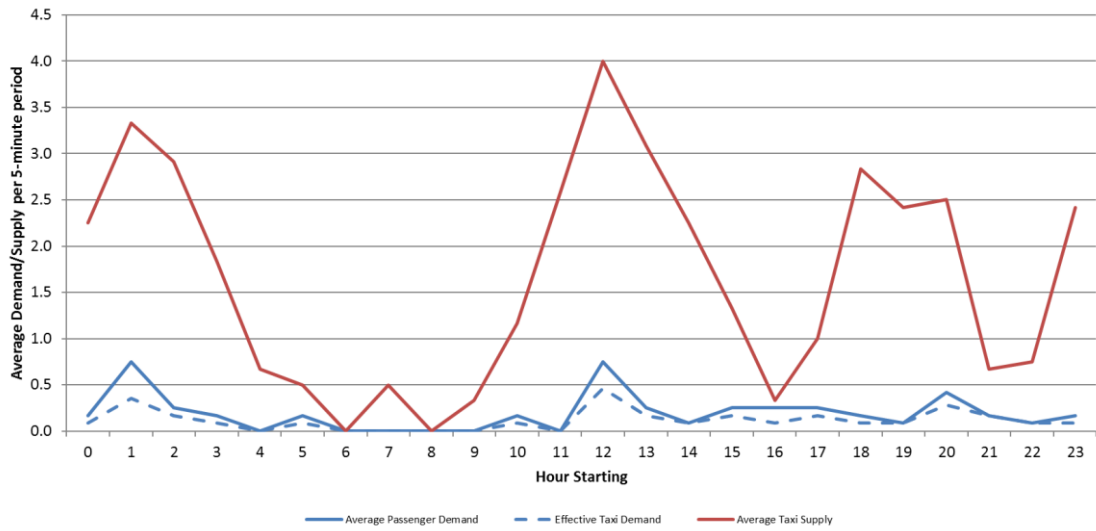
Comparison of Demand and Supply: Weekend



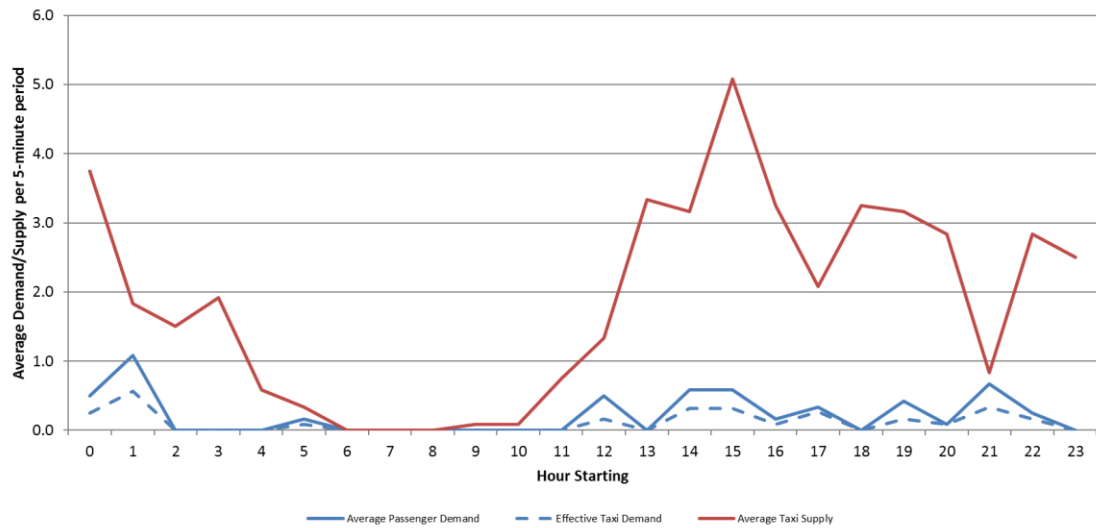
Comparison of Demand and Supply: Sunday



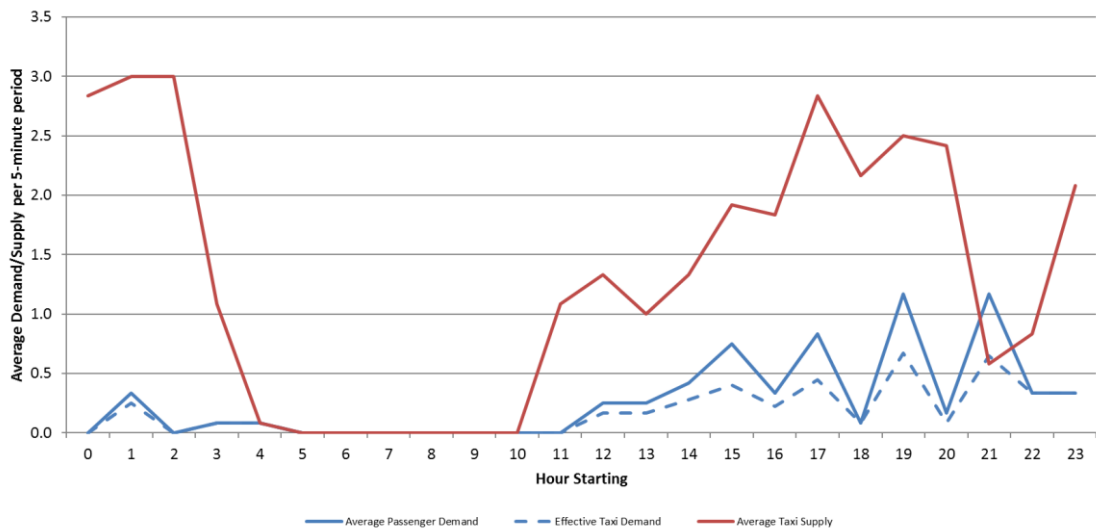
Sophia Gardens Comparison of Demand and Supply: Weekday



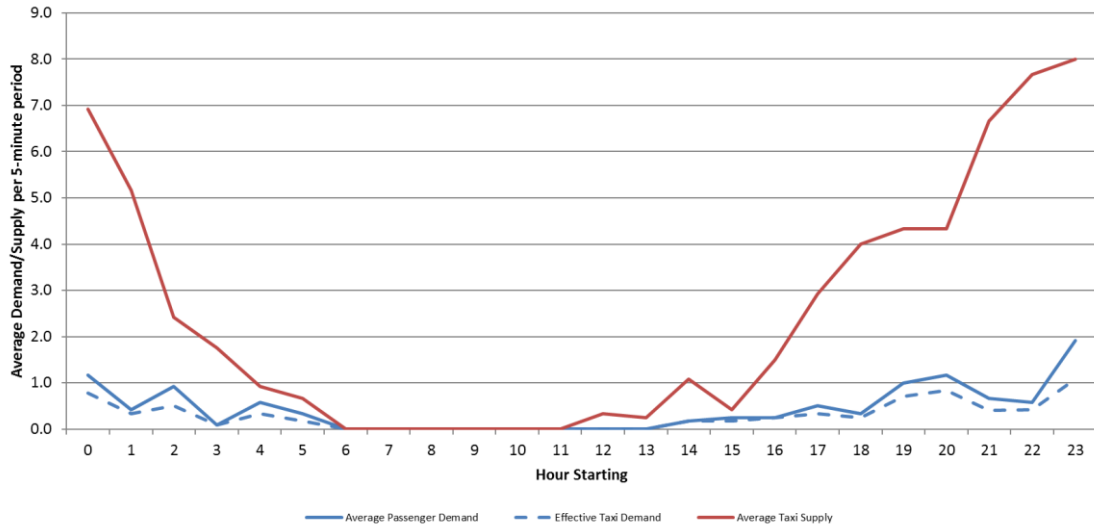
Comparison of Demand and Supply: Weekend



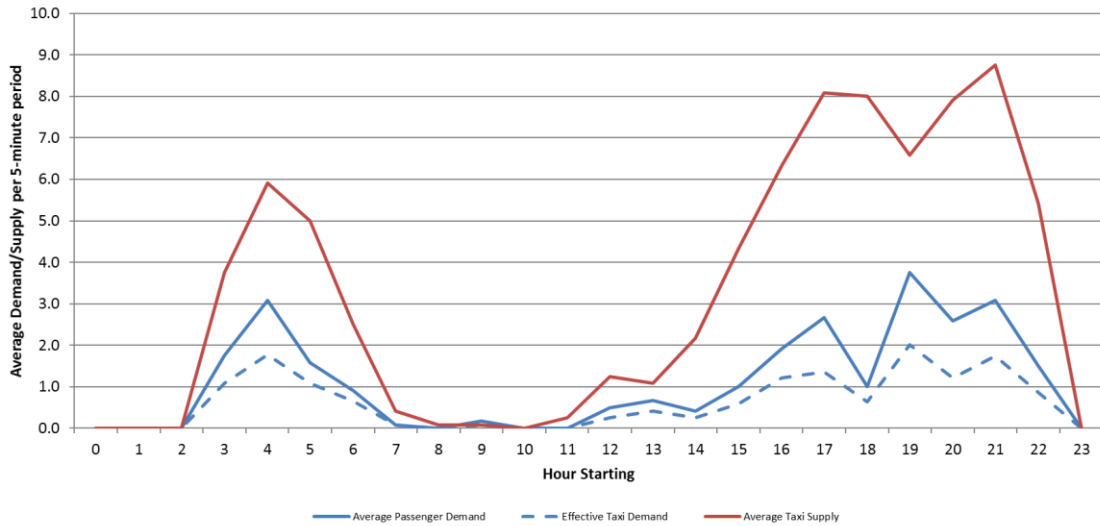
Comparison of Demand and Supply: Sunday



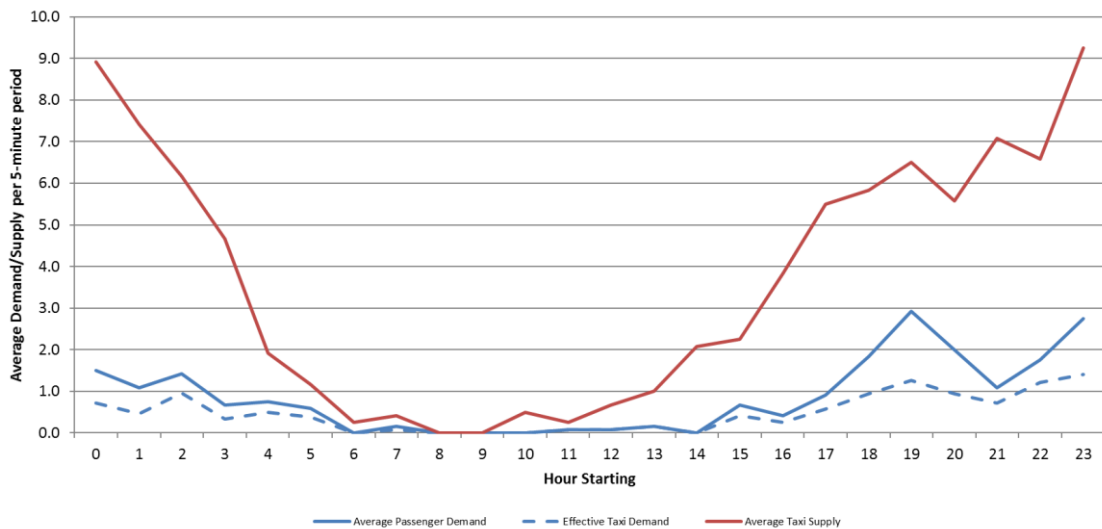
Wood Street Comparison of Demand and Supply: Weekday



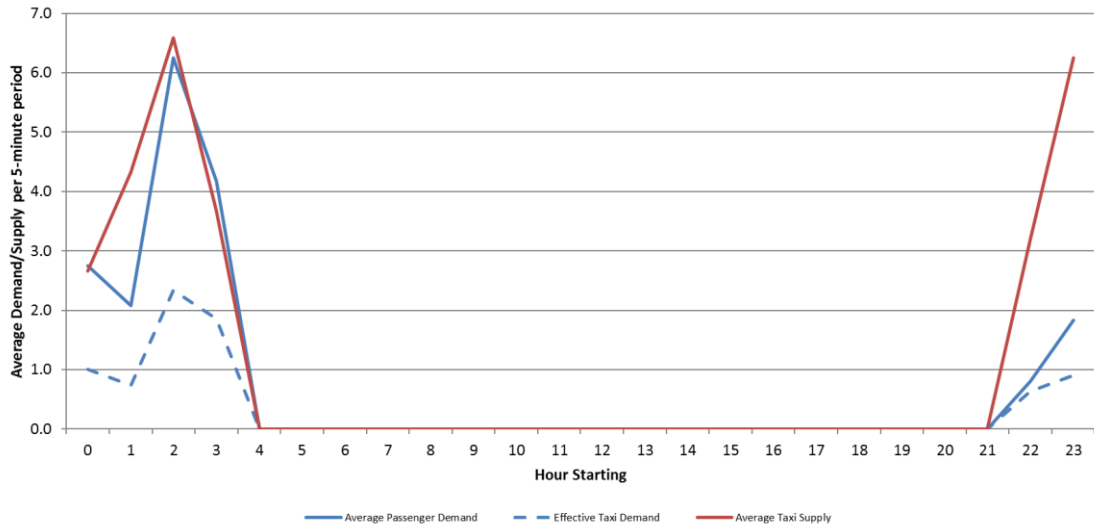
Comparison of Demand and Supply: Weekend



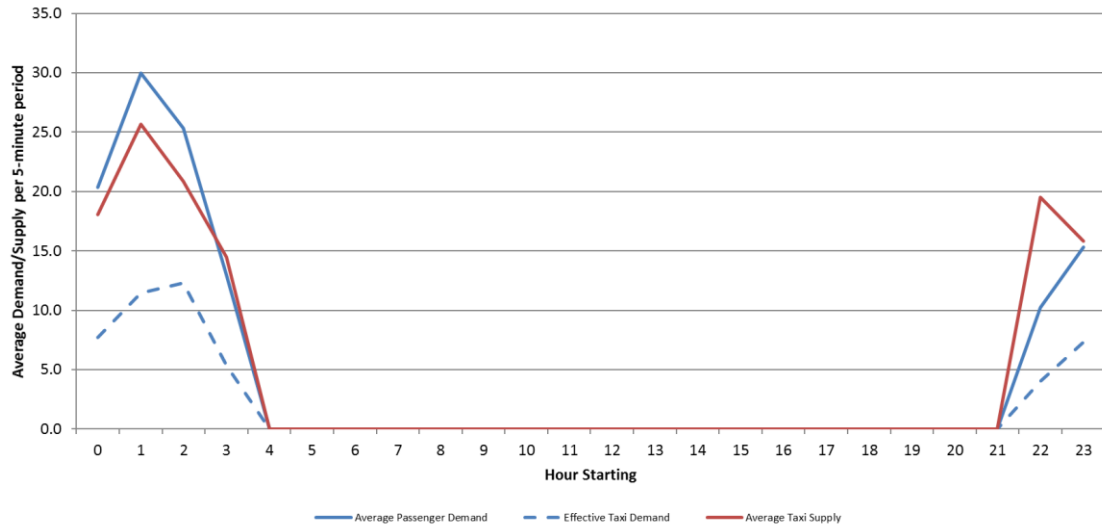
Comparison of Demand and Supply: Sunday



Greyfriars Road (Unofficial)
Comparison of Demand and Supply: Weekend



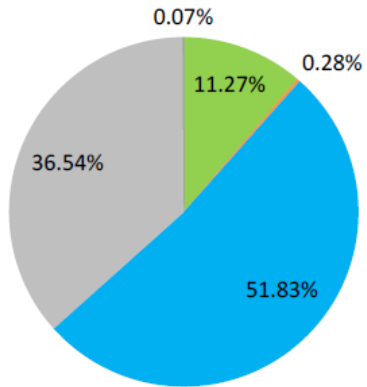
St Mary Street (Walkabout)
Comparison of Demand and Supply: Weekend



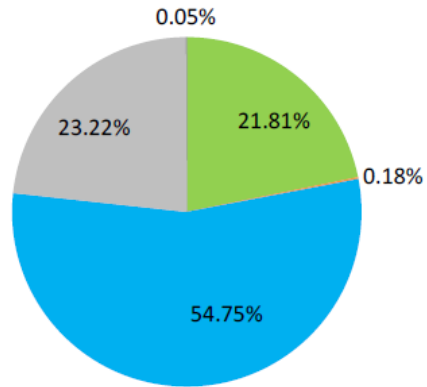
**Appendix C:
Comparison of Market Conditions
2016 and 2019**

2016

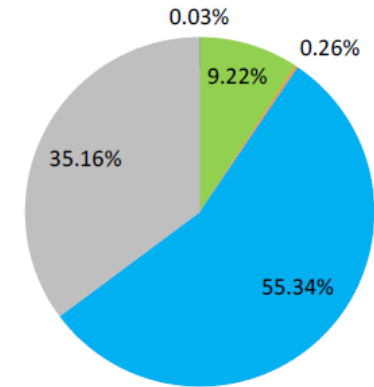
Weekday



Weekend



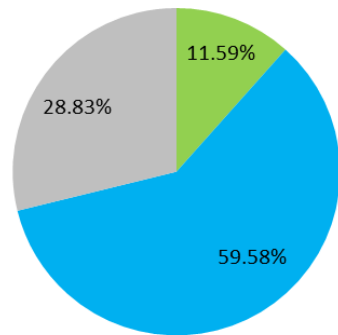
Sunday



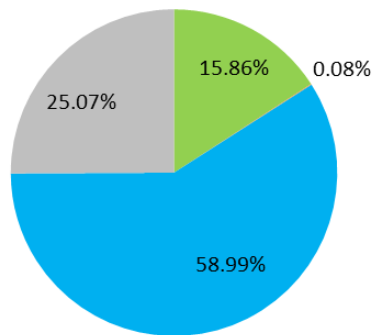
■ EQ ■ UD ■ US ■ NO ACTIVITY ■ UNSTABLE

2019

Weekday



Weekend



Sunday

