Dundee Taxi Unmet Demand Survey

FINAL REPORT

Dundee City Council

June 2013

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Halcrow

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Document history

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Contents

1 Introduction

1.1 General

This study has been conducted by Halcrow on behalf of Dundee City Council (DCC). The overall objective is to provide a full survey of demand for taxis in Dundee and to determine whether or not significant unmet demand for taxis exists in terms of section 10(3) of the Civic Government (Scotland) Act 1982. Specific objectives of the study are to determine:

- whether there is any significant unmet demand for taxi services in Dundee; and
- if significant unmet demand is found, recommend how many licences would be required to meet this.

In 2007 the Scottish Government issued Best Practice Guidance for Taxi and Private Hire licensing. The Scottish Government reissued this guidance in April 2012 in recognition of a number of legislative changes. Essentially, the Government stated that the present legal position on quantity restrictions for taxis is set out in section 10(3) of the 1982 Act. The Scottish Government takes the view that decisions as to the case for limiting taxi licences should remain a matter for licensing authorities in the light of local circumstances. The Guidance provides local authorities with assistance in local decision making when they are determining the licensing policies for their local area. Guidance is provided on a range of issues including: flexible taxi services, vehicle licensing, driver licensing and training.

The Equality Act 2010 provides a new cross-cutting legislative framework to protect the rights of individuals and advance equality of opportunity for all; to update, simplify and strengthen the previous legislation; and to deliver a simple, modern and accessible framework of discrimination law which protects individuals from unfair treatment and promotes a fair and more equal society.

The provisions in the Equality Act will come into force at different times to allow time for the people and organisations affected by the new laws to prepare for them. The Government is considering how the different provisions will be commenced so that the Act is implemented in an effective and proportionate way. Some provisions came into force on the 1st October 2010 however most of the provisions for taxi accessibility are still to come into play.

Sections 165, 166 and 167 of the Equality Act 2010 are concerned with the provision of wheelchair accessible vehicles and place obligations on drivers of registered vehicles to carry out certain duties unless granted an exemption by the licensing authority on the grounds of medical or physical condition. Section 166 will allow taxi drivers to apply to their licensing authority for an exemption from Section 165 of the Equality Act 2010. The UK Government are still considering the commencement strategy for Section 165. This section when commenced will impose a duty on taxi and private hire car drivers with wheelchair accessible vehicles to provide assistance to disabled passengers.

2 Background

2.1 General

This section of the report provides a general background to the taxi market in Dundee and the relevant legislation governing the market.

2.2 Background to the Taxi Market in Dundee

Dundee is the fourth largest city in Scotland, located on the eastern coastline of Scotland. Dundee has a resident population of 147,300 (Office for National Statistics, 2013).

Dundee City Council currently does not have a numerical limit on the number of taxis it licences. At the start of the study the authority licensed 661 taxis. Some 57% are wheelchair accessible. This provides Dundee with a taxi provision of around one taxi per 223 resident population. DCC also licences approximately 137 private hire vehicles.

Plates 2.1 and 2.2 depict two taxi ranks in Dundee.

Plate 2.1 Nethergate

Plate 2.2 Rail Station

2.3 Taxi Fares and Licence Premiums

Taxi fares are regulated by the Local Authority. There are four tariffs across the following periods:

- Daytime – Monday to Sunday 6am to 10pm;
- Weekday evenings – Monday to Thursday 10pm to 6am;
- Weekend evenings – Friday to Saturday 10pm to 6am; and
- Festive period – Between 6pm on 24th December until 6am on 27th December and between 6pm on 31st December until 6am on 3rd January.

The standard charge tariff is made up of two elements; and initial fee (or 'drop') for entering the vehicle, and a fixed price addition of 15p for each subsequent 176 yards or part thereof, plus fixed additions depending on passenger numbers and luggage. Figure 2.1 outlines the fare structure in more detail.

Figure 2.1 – Dundee City Council Fare Tariff (May 2013)

Dundee City Council CHANGING FOR THE FUTURE

DUNDEE CITY COUNCIL - FARES FOR THE HIRE OF TAXIS

For the first passenger carried:-

CHARGES	TARIFF 1 DAYTIME	TARIFF 2 WEEKDAY EVENINGS	TARIFF 3 WEEKEND EVENINGS	TARIFF 4 FESTIVE PERIOD
Initial hire not exceeding 4/10th of a mile (704 yards) or 169 seconds of waiting time or a combination of both time and distance	Monday to Sunday 6am to 10pm **£2.98**	Monday to Thursday 10pm to 6am **£3.28**	Friday to Sunday 10pm to 6am **£3.58**	Throughout period **£4.17**
Each additional 1/10th of a mile (176 yards) or part thereof, or 42 seconds of waiting time or part thereof, or a combination of both time and distance	**15p**	**16p**	**18p**	**21p**

EXTRAS - ALL TARIFFS	For each passenger in excess of the first passenger	**30p**
	For each parcel carried in the luggage compartment, boot or rack	**30p**
FESTIVE PERIOD	Between 6pm on 24th December until 6am on 27th December and between 6pm on 31st December until 6am on 3rd January	

NB **No charge shall be made for a child's perambulator or carriage, any items designed to assist the mobility of users such as wheelchairs or walkers, a bag or bags containing loose groceries or shopping carried in a taxi, whether in the luggage compartment or inside the taxi.**

SOILING CHARGE (which results in the vehicle being taken off service for any period of time) Minimum - £25, Maximum - £50

1st April 2013

Source: Dundee City Council

The Private Hire and Taxi Monthly magazine publish monthly league tables of the fares for 363 authorities over a two mile journey. Each journey is ranked with one being the most expensive, and the May 2013 league table show Dundee rated 238 in the table, therefore Dundee has below average fares. Table 2.1 provides a comparison of where other statistically similar as well as geographically close authorities rank in terms of fares. It shows that fares in Dundee are below average for the area.

Table 2.1 – Comparison of Neighbouring Authorities in Terms of Fares (figures are ranked out of a total of 363 authorities with one being the most expensive)

Local Authority	Rank
Fife	158
Edinburgh	186
Angus	202
Perth & Kinross	216
Dundee	238

Source: Private Hire and Taxi Monthly, May 2013

3 Definition, Measurement and Removal of Significant Unmet Demand

3.1 Introduction

This section provides a definition of significant unmet demand derived from experience of over 100 unmet demand studies since 1987. This leads to an objective measure of significant unmet demand that allows clear conclusions regarding the presence or absence of this phenomenon to be drawn. Following this, a description is provided of the SUDSIM model which is a tool developed to determine the number of additional taxi licences required to eliminate significant unmet demand, where such unmet demand is found to exist. This method has been applied to numerous local authorities and has been tested in the courts as a way of determining if here is unmet demand for taxis.

3.2 Overview

Significant Unmet Demand (SUD) has two components:

- patent demand – that which is directly observable; and
- 'suppressed demand' – that which is released by additional supply.

Patent demand is measured using stance observation data. Suppressed (or latent) demand is assessed using data from the stance observations and public attitude survey. Both are brought together in a single measure of unmet demand, ISUD (Index of Significant Unmet Demand).

3.3 Defining Significant Unmet Demand

The provision of evidence to aid licensing authorities in making decisions about taxi provision requires that surveys of demand be carried out. Results based on observations of activity at taxi stances have become the generally accepted minimum requirement.

The definition of significant unmet demand is informed by two Court of Appeal judgements:

- R v Great Yarmouth Borough Council ex p Sawyer (1987); and
- R v Castle Point Borough Council ex p Maude (2002).

The Sawyer case provides an indication of the way in which an Authority may interpret the findings of survey work. In the case of Sawyer v. Yarmouth City Council, 16 June 1987, Lord Justice Woolf ruled that an Authority is entitled to consider the situation from a temporal point of view as a whole. It does not have to condescend into a detailed consideration as to what may be the position in every limited part of the Authority in relation to the particular time of day. The authority is required to give effect to the language used by the Section (Section 16) and can ask itself with regard to the area as a whole whether or not it is satisfied that there is no significant unmet demand.

The term 'suppressed' or 'latent' demand has caused some confusion over the years. It should be pointed out that following Maude v Castle Point Borough Council, heard in the Court of Appeal in October 2002, the term is now interpreted to relate purely to

that demand that is measurable. Following Maude, there are two components to what Lord Justice Keene prefers to refer to as 'suppressed demand':

- what can be termed inappropriately met demand. This is current observable demand that is being met by, for example, private hire cars illegally ranking up; and
- that which arises if people are forced to use some less satisfactory method of travel due to the unavailability of a taxi.

If demand remained at a constant level throughout the day and week, the identification and treatment of significant unmet demand would be more straight-forward. If there were more cabs than required to meet the existing demand there would be queues of cabs on stances throughout the day and night and passenger waiting times would be zero. Conversely, if too few cabs were available there would tend to be queues of passengers throughout the day. In such a case it would, in principle, be a simple matter to estimate the increase in supply of cabs necessary to just eliminate passenger queues.

Demand for taxis varies throughout the day and on different days. The problem, introduced by variable demand, becomes clear when driver earnings are considered. If demand is much higher late at night than it is during the day, an increase in cab supply large enough to eliminate peak delays will have a disproportionate effect on the occupation rate of cabs at all other times. Earnings will fall and fares might have to be increased sharply to sustain the supply of cabs at or near its new level.

The main implication of the present discussion is that it is necessary, when considering whether significant unmet demand exists, to take account of the practicability of improving the standard of service through increasing supply.

3.4 Measuring Patent Significant Unmet Demand

Taking into account the economic, administrative and legal considerations, the identification of this important aspect of significant unmet demand should be treated as a three stage process as follows:

- Identify the demand profile;
- Estimate passenger and cab delays; and
- Compare estimated delays to the demand profile.

The broad interpretation to be given to the results of this comparison are summarised in Table 3.1.

Table 3.1 – Existence of Significant Unmet Demand (SUD) Determined by Comparing Demand and Delay Profiles

	Delays during peak only	Delays during peak and other times
Demand is:		
Highly peaked	No SUD	Possibly a SUD
Not highly peaked	Possibly a SUD	Possibly a SUD

It is clear from the content of the table that the simple descriptive approach fails to provide the necessary degree of clarity to support the decision making process in cases where the unambiguous conclusion is not achievable. However, it does provide the basis of a robust assessment o the principal component of significant unmet demand. The analysis is therefore extended to provide a more formal numerical measure of significant unmet demand. This is based on the principles contained in the descriptive approach but provides greater clarity. A description follows.

The measure feeds directly of the results of observations of activity at the stances. In particular it takes account of:

- case law that suggests an authority should take a broad view of the market;
- the effect of different levels of supply during different periods at the stance on service quality;
- the need for consistent treatment of different authorities, and the same authority over time.

The Index of Significant Unmet Demand (ISUD) was developed in the early 1990's and is based on the following formula. The SF element was introduced in 2003 and the LDF element was introduced in 2006 to reflect the increased emphasis on latent demand in DfT Guidance.

ISUD = APD x PF x GID x SSP x SF x LDF

Where:

APD = Average Passenger Delay calculated across the entire week in minutes.

PF = Peaking Factor. If passenger demand is highly peaked at night the factor takes the value of 0.5. If it is not peaked the value is 1. Following case law this provides dispensation for the effects of peaked demand on the ability of the Trade to meet that demand. To identify high peaking we are generally looking for demand at night (at weekends) to be substantially higher than demand at other times.

GID = General Incidence of Delay. This is measured as the proportion of passengers who travel in hours where the delay exceeds one minute.

SSP = Steady State Performance. The corollary of providing dispensation during the peaks in demand is that it is necessary to focus on performance during "normal" hours. This is measured by the proportion of hours during weekday daytimes when the market

exhibits excess demand conditions (i.e. passenger queues form at stances).

SF = Seasonality factor. Due to the nature of these surveys it is not possible to collect information throughout an entire year to assess the effects of seasonality. Experience has suggested that taxi demand does exhibit a degree of seasonality and this is allowed for by the inclusion of a seasonality factor. The factor is set at a level to ensure that a marginal decision either way obtained in an "untypical" month will be reversed. This factor takes a value of 1 for surveys conducted in September to November and March to June, i.e. "typical" months. It takes a value of 1.2 for surveys conducted in January and February and the longer school holidays, where low demand the absence of contract work will bias the results in favour of the taxi trade, and a value of 0.8 for surveys conducted in December during the pre Christmas rush of activity. Generally, surveys in these atypical months, and in school holidays, should be avoided.

LDF = Latent Demand Factor. This is derived from the public attitude survey results and provides a measure of the proportion of the public who have given up trying to obtain a taxi at either a stance or by flagdown during the previous three months. It is measured as 1+ proportion giving up waiting. The inclusion of this factor is a tactical response to the latest DfT guidance.

The product of these six measures provides an index value. The index is exponential and values above the 80 mark have been found to indicate significant unmet demand. This benchmark was defined by applying the factor to the 25 or so studies that had been conducted at the point it was developed. These earlier studies had used the same principles but in a less structured manner. The highest ISUD value for a study where a conclusion of no significant unmet demand had been found was 72. The threshold was therefore set at 80. The ISUD factor has been applied to over 80 studies by Halcrow and has been adopted by others working in the field. It has proved to be a robust, intuitively appealing and reliable measure.

Suppressed/latent demand is explicitly included in the above analysis by the inclusion of the LDF factor and because any known illegal plying for hire by the private hire trade is included in the stance observation data. This covers both elements of suppressed/latent demand resulting from the Maude case referred to above and is intended to provide a 'belt and braces' approach. A consideration of latent demand is also included where there is a need to increase the number of taxi licences following a finding of significant unmet demand. This is discussed in the next section.

3.5 Determining the Number of New Licences Required to Eliminate Significant Unmet Demand

To provide advice on the increase in licences required to eliminate significant unmet demand, Halcrow has developed a predictive model. SUDSIM is a product of 20 years experience of analysing taxi demand. It is a mathematical model, which predicts the number of additional licences required to eliminate significant unmet demand as a function of key market characteristics.

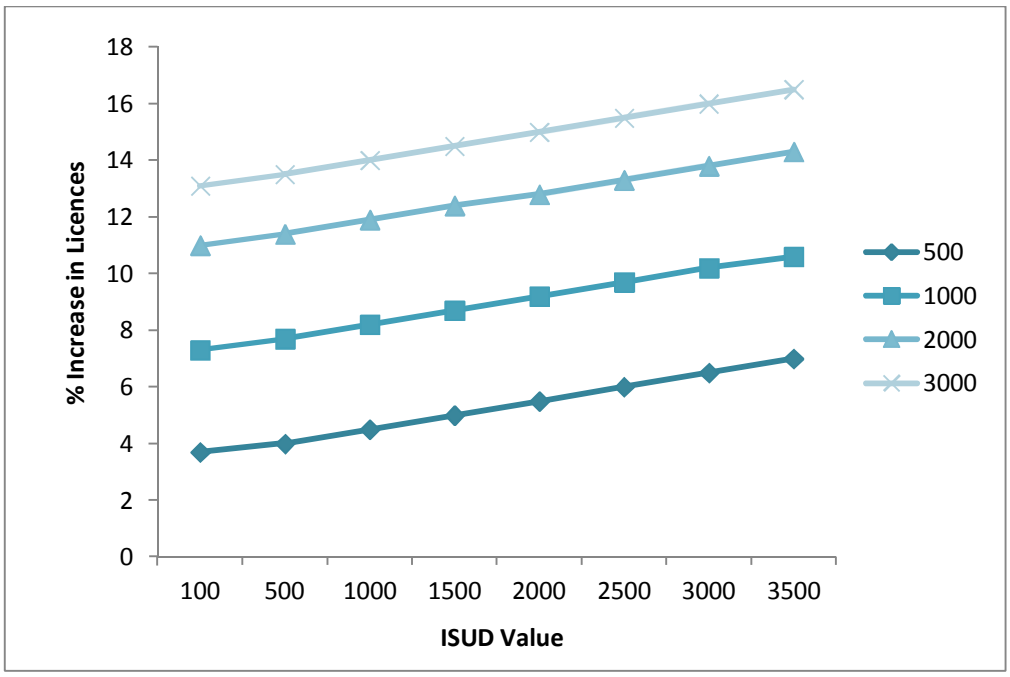
SUDSIM represents a synthesis of a queue simulation work that was previously used (1989 to 2002) to predict the alleviation of significant unmet demand and the ISUD factor described above (hence the term SUDSIM). The benefit of this approach is that it provides a direct relationship between the scale of the ISUD factor and the number of new taxi licences required.

SUDSIM was developed taking the recommendations from 14 previous studies that resulted in an increase in licences, and using these data to calibrate an econometric model. The model provides a relationship between the recommended increase in licences and three key market indicators:

- the population of the licensing Authority;
- the number of taxis already licensed by the licensing Authority; and
- the size of the SUD factor.

The main implications of the model are illustrated in Figure 3.1 below. The figure shows that the percentage increase in a taxi fleet required to eliminate significant unmet demand is positively related to the population per taxi (PPT) and the value of the ISUD factor over the expected range of these two variables.

Figure 3-1Forecast Increase in Taxi Fleet Size as a Function of Population per Taxi (PPT) and the ISUD value



Where significant unmet demand is identified, the recommended increase in licences is therefore determined by the following formula:

New Licences = SUDSIM x Latent Demand Factor

Where:

Latent Demand Factor = (1 + proportion giving up waiting for a taxi at either a stance or via flagdown)

3.6 Note on Scope of Assessing Significant Unmet Demand

It is useful to note the extent to which a licensing authority is required to consider peripheral matters when establishing the existence or otherwise of significant unmet demand. This issue is informed by R v Brighton Borough Council, exp p Bunch 1989[1]. This case set the precedent that it is only those services that are exclusive to taxis that need concern a licensing authority when considering significant unmet demand. Telephone booked trips, trips booked in advance or indeed the provision of bus type services are not exclusive to taxis and have therefore been excluded from consideration.

1 See Button JH 'Taxis – Licensing Law and Practice' 2nd edition Tottel 2006 P226-7

4 Evidence of Patent Unmet Demand – Stance Observation Results

4.1 Introduction

This section of the report highlights the results of the stance observation survey. The stance observation programme covered a period of 199 hours during May 2013. Some 10,492 passengers and 7,230 cab departures were recorded. A summary of the stance observation programme is provided in Appendix 1.

The results presented in this Section summarise the information and draw out its implications. This is achieved by using five indicators:

- The Balance of Supply and Demand – this indicates the proportion of the time that the market exhibits excess demand, equilibrium and excess supply;
- Average Delays and Total Demand – this indicates the overall level of passengers and cab delays and provides estimates of total demand;
- The Demand/Delay Profile – this provides the key information required to determine the existence or otherwise of significant unmet demand;
- The Proportions of Passengers Experiencing Given Levels of Delay – this provides a guide to the generality of passenger delay; and
- The Effective Supply of Vehicles – this indicates the proportion of the fleet that was off the road during the survey.

4.2 The Balance of Supply and Demand

The results of the analysis are presented in Table 4.1 below. The predominant market state is one of excess supply. Excess supply (queue of cabs) was experienced during 34% of the hours observed while excess demand (queues of passengers) was experienced 6% of the hours observed.

4.1The Balance of Supply and Demand in the Dundee Stance-Based Taxi Market (Percentage of hours observed)

Period		Excess Demand	Equilibrium	Excess Supply
Weekday	Day	0	63	38
	Night	3	56	42
Weekend	Day	8	56	36
	Night	15	53	33
Sunday	Day	0	79	21
Total 2013		**6**	**60**	**34**

NB – Excess Demand = Maximum Passenger Queue ≥3. Excess Supply = Minimum Cab Queue ≥3 – values derived over 12 time periods within an hour.

4.3 Average Delays and Total Demand

The following estimates of average delays and throughput were produced for each stance in Dundee (Table 4.2).

The survey suggests some 10,492 passenger departures occur per week from stances in Dundee involving some 7,230 cab departures. The taxi trade is concentrated at the stance at Nethergate accounting for 27% of the total passenger departures. On average cabs wait 21.61 minutes for a passenger. On average passengers wait 0.28 minutes for a cab.

4.2 Average Delays and Total Demand (Delays in Minutes i.e. 0.22 minutes is 13.2 seconds)

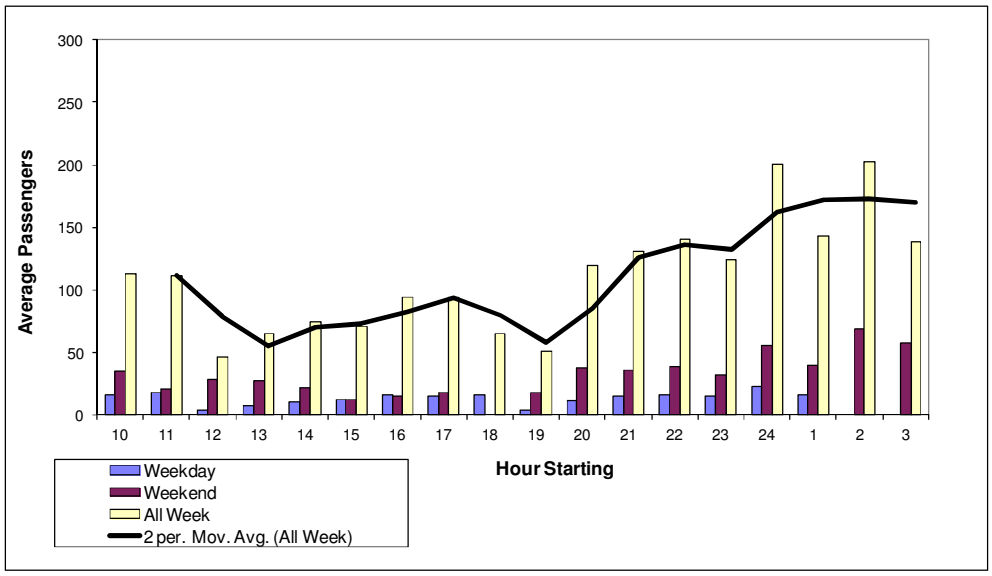
Stance	Passenger Departures	Cab Departures	Average Passenger Delay in Minutes	Average Cab Delay in Minutes
Rail Station	2,517	1,828	0.06	23.32
Nethergate	2,837	1,838	0.20	24.34
Market Gait	810	439	0.13	4.56
Meadowside	1,444	1,058	0.00	34.83
Nethergate DCA[2]	726	468	0.00	12.82
Lochee High Street	147	102	1.17	9.12
Brook Street, Broughty Ferry	1,664	1,286	1.18	13.34
Nine Wells Hospital	348	212	0.00	28.09
Total 2013	**10,492**	**7,230**	**0.28**	**21.61**

4.4 The Delay/Demand Profile

Figure 4.1 provides a graphical illustration of passenger demand for the Monday to Saturday period between the hours of 10:00 and 04:00.

[2] Instances of parked cars in the rank were observed during the study resulting in taxis being unable to rank

Figure 4.1 Passenger Demand by Time of Day in 2013 (Monday to Saturday)



The profile of demand shows demand increasing in the evening peaking at 1am. We therefore conclude that this is a 'highly peaked' demand profile. This has implications for the interpretation of the results (see Section 7 below).

Figure 4.2 Passenger Delay by Time of Day in 2013 (Monday to Saturday)

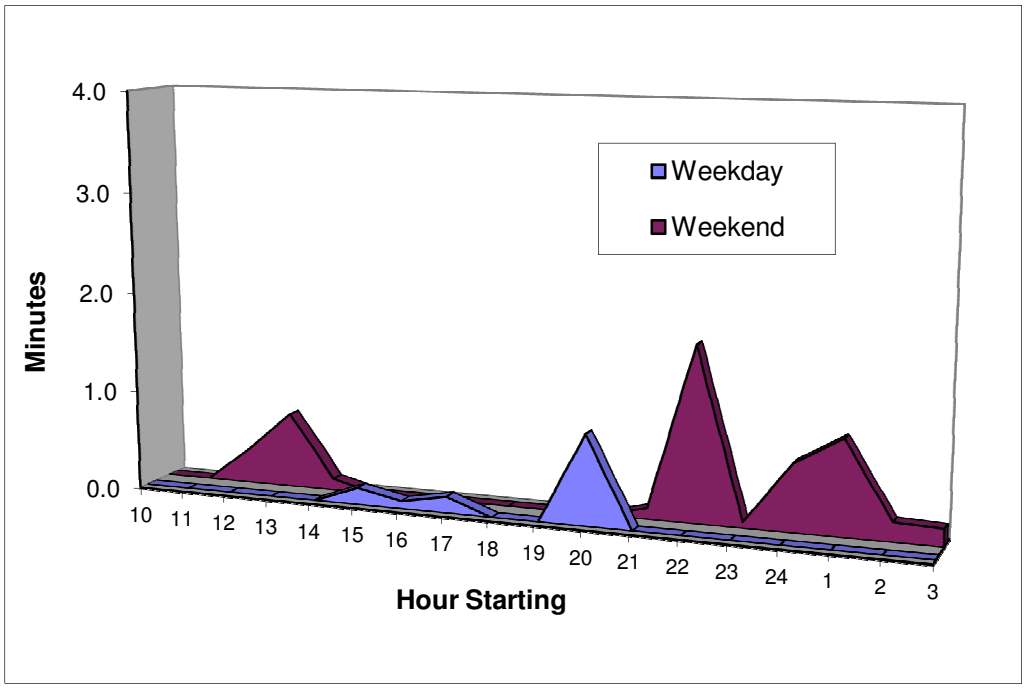


Figure 4.2 provides an illustration of passenger delay by the time of day for the weekday and weekend periods. It shows periods of delay on weekday afternoons and evenings. There is also some delay for a more extended period of time at weekends from 1100 to 1400, 2100 – 2300 and 0000-0200.

4.5 The General Incidence of Passenger Delay

The stance observation data can be used to provide a simple assessment of the likelihood of passengers encountering delay at stances. The results are presented in Table 4.3 below.

4.3 General Incidence of Passenger Delay (Percentage of Passengers Travelling in Hours Where Delay Exceeds One Minute)

Year	Delay > 0	Delay > 1 minute	Delay > 5 minutes
2013	9.28	2.93	0.81

In 2013 2.93% of passengers are likely to experience more than a minute of delay. It is this percentage that is used within the ISUD as the 'Generality of Passenger Delay'.

4.6 The Effective Supply of Vehicles

Observers were required to record the taxi licence plate number of vehicles departing from stances. In this way we are able to ascertain the proportion of the fleet that was operating during the survey.

During the daytime period (0700 to 1800) some 293 (44%) of the taxi fleet were observed at least once during the period of the study. During the evening/night-time period (1800 to 0700) some 180 (27%) of the taxi fleet were also observed at least once during the stance observations. In total 57% of the trade was observed at least once.

4.7 Comparing the Results for Dundee with Those of Other Unmet Demand Studies

Comparable statistics are available from other local authorities that Halcrow have recently conducted studies in and these are listed in Table 4.4. The table highlights a number of key results including:

- population per taxi at the time of the study (column one);
- the proportion of stance users travelling in hours in which delays of greater that zero, greater than one minute and greater than five minutes occurred (columns two to four);
- average passenger and cab delay calculated from the stance observations (columns five to six);
- the judgement on whether stance demand is highly peaked (column eleven); and
- a numerical indicator of significant unmet demand.

Table 4.4 A Comparison of Dundee with Other Authorities Studied (values in italics make up ISUD)

District and Year of Survey	Population per Hackney	Proportion Waiting at Ranks	*Proportion Waiting >= 1 Min*	Proportion Waiting >= 5 Mins	*Average Passenger Delay*	Average Cab Delay	*% Excess Demand*	Demand Peaked, Yes=0.5 No=1	ISUD Indicator Value
Dundee 13	**223**	**9.28**	***2.93***	**0.81**	***0.28***	**21.61**	***0***	**0.5**	**0**
Edinburgh 13	362	5.67	*2.73*	0.17	*0.32*	12.07	*5*	1	5
Blackpool 12	556	9.06	*4.86*	0.53	*0.38*	16.25	*0*	1	0
Chorley 12	2,978	6	*0*	0	*0.02*	15.90	*0*	1	0
Torridge 12	1,306	3	*0*	0	*0.11*	16.76	*0*	1	0
Braintree 12	1,714	3	*0.63*	0.05	*0.09*	22.57	*0*	1	0
Torbay 11	777	3	1.42	0.1	0.16	21.45	0	0.5	0
Wirral 11 *	1,080	4	0.41	0.16	0.12	20.19	0	0.5	0
Carrick 11	1,145	9	*5.55*	0	*0.39*	9.92	*4*	0.5	5
Penwith 11	1,261	14	*6.66*	2.29	*0.96*	7.98	*12*	0.5	41
Restormel 11	1,408	4	*3.41*	0	*0.26*	13.54	*0*	0.5	0
York 11	1,118	14	*5.96*	0.77	*0.93*	8.25	*9*	*1*	59.1
Crawley 11	924	6	*6.28*	0.64	*0.18*	21.88	*5*	1	6
Liverpool 11	308	5	*2.13*	0.37	*0.14*	20.64	*1*	*1*	0
West Berkshire 10 *	741	5	*3.84*	0.92	*0.37*	22.78	*3*	0.5	4
Sefton 10	1,015	7	*4.25*	0.55	*0.38*	19.15	*4*	*0.5*	2
Pendle 10	1,257	1	*0.03*	0.03	*0.03*	33.1	*0*	0.5	0
Brighton & Hove 09	474	11	*5.67*	1.19	*0.72*	8.91	*7*	0.5	16.2
Leicester 09	880	10	*9.53*	2.58	*1.52*	19.02	*0*	1	0
Oxford 09	1,266	10	*3.08*	0.07	*0.24*	10.43	*5*	1	4
Blackpool 09	556	4	*1*	0	*0.05*	18.96	*2*	0.5	1
Hull 09	1,465	12	*8.54*	0.99	*1.72*	9.34	*2*	0.5	18
Rochdale 09	1,937	3	*1.18*	0	*0.14*	12.92	*5*	1	1
North Tyneside 08	971	16	*1.18*	0.03	*0.38*	10.72	*8*	0.5	2
Rotherham 08	5,192	0	*0.09*	0	*0.01*	27.29	*0*	1	0
Preston 08	677	12	*5.28*	0	*0.61*	11.13	*7*	1.0	21
Scarborough 08	1,111	12	*5*	1.06	*0.49*	7.74	*7*	0.5	0
York 08	1,146	31	*11.5*	6.74	*3.21*	5.42	*31*	0.5	645
Barrow 08	474	14	*12.52*	0	*0.5*	6.85	*0*	0.5	0
Stirling 08	1,265	25	*18*	0.3	*0.7*	10.94	*2*	0.5	38
Torridge 08	1,202	7	*0.94*	0	*0.12*	14.99	*0*	1	0
Richmondshire 08	723	5	*1*	0.07	*0.22*	34.32	*1*	0.5	0.4
Exeter 07/08	1,883	7	*4*	0.6	*0.33*	15.27	*6*	1	9
Manchester 07	394	21	*6*	2.28	*1.59*	10.24	*14*	1	174
Bradford 07	1,630	18	*2*	0.03	*0.23*	17.64	*5*	1	2
Barnsley 07	3,254	5	*8*	0.22	*1.32*	11.93	*5*	1	58
Blackpool 06	556	31	*10*	0.34	*0.42*	10.34	*5*	0.5	11
Broadstairs 06	1,000	13	*13*	10	*3.25*	23.97	*4*	1	177
Margate 06	1,622	4	*1*	0	*0.05*	33.14	*0*	1	0
Ramsgate 06	1,026	2	*2*	2	*0.49*	19.57	*13*	1	13
Plymouth 06	669	7	*3*	1	*0.52*	11.58	*1*	1	2
Brighton 06	508	52	*23*	6	*0.73*	7.64	*6*	0.5	50
Thurrock 06	1,590	32	*13*	1	*0.22*	15.27	*0*	1	0
Trafford 06	2,039	55	*38*	6	*1.09*	13.15	*5*	1	249
Leicester05	880	21	*11*	1	*0.35*	19.36	*3*	1	12
Bournemouth 05	656	20	*11*	2	*0.37*	12.25	*1*	0.5	2
KEY	* Derestricted Authorities								

Halcrow

District and Year of Survey	Population per Hackney	Proportion Waiting at Ranks	*Proportion Waiting >= 1 Min*	Proportion Waiting >= 5 Mins	*Average Passenger Delay*	Average Cab Delay	*% Excess Demand*	Demand Peaked, Yes=0.5 No=1	ISUD Indicator Value
Bradford 03	2,171	19	*6*	0.77	*0.25*	14.89	*6*	1.0	9
Oldham 03	2,558	30	*12*	0.79	*0.48*	14.8	*7*	1.0	40
Thurrock 03	1,607	43	*14*	1.01	*0.50*	12.5	*2*	1.0	14
Blackpool 03	556	21	*4*	0.3	*0.13*	12.4	*6*	1.0	3
Wolverhampton 03	3,113	50	*31*	7.39	*1.49*	11.18	*14*	1.0	647
Carrick 02	1,335	28	*18*	7	*0.61*	10.53	*9*	1.0	99
Bournemouth 02	702	25	*15*	2	*0.67*	9.97	*1*	0.5	5
Brighton 02	540	60	*35*	12	*1.11*	8.31	*5*	0.5	97
Exeter 02	2,353	47	*18*	3	*0.71*	10.12	*20*	1.0	256
Wigan 02	2,279	28	*10*	0	*1.17*	11.98	*6*	1.0	70
Cardiff 01	656	51	*29*	6	*0.83*	8.77	*14*	0.5	168
Edinburgh 01	373	47	*29*	9	*1.27*	8.77	*13*	1.0	479
Torridge 01	1,298	25	*21*	0	*0.51*	9.32	*8*	0.5	43
Worcester 01*	941	40	*4*	1	*0.46*	12.3	*8*	0.5	7
Ellesmere Port 01	2,527	80	*48*	17	*2.49*	4.23	*49*	0.5	2,928
Southend 00	895	46	*29*	8	*1.92*	8.08	*4*	1.0	223
South Ribble 00 *	485	12	*0.25*	0.25	*0.07*	11.27	*0*	1.0	0
Leeds 00	1,693	83	*61*	33	*5.03*	7.92	*36*	1.0	11,046
Sefton 00	1,069	18	*8*	0.6	*0.28*	12.95	*6*	1.0	13
Leicester 00 *	956	10	*7*	3	*1.17*	20.19	*1*	1.0	8
Castle Point 00	2,286	28	*12*	3	*0.74*	8.6	*2*	0.5	9
AVERAGE	**1,294**	**20**	**10**	**3**	**1**	**14**	**6**		
KEY	* Derestricted Authorities								

4.8 Summary

The following points (obtained from stance observations) may be made about the results in Dundee compared to other areas studied:

- Population per taxi is lower than the average overall value (i.e. provision is better;
- The proportion of passengers who travel in hours where some delay occurs is 9.28%, which is much lower than the average for the districts analysed;
- Overall average passenger delay at 0.28 minutes is lower than the average value
- Overall average cab delay at 21.61 minutes is higher than the average for the districts shown; and
- The proportion of weekday daytime hours with excess demand conditions observed was 0%, lower than the average value.

5 Evidence of Suppressed Demand - Public Attitude Survey Results

5.1 Introduction

A public attitude survey was designed with the aim of collecting information regarding opinions on the taxi market in Dundee. In particular, the survey allowed an assessment of flagdown, telephone and stance delays, the satisfaction with delays and general use information.

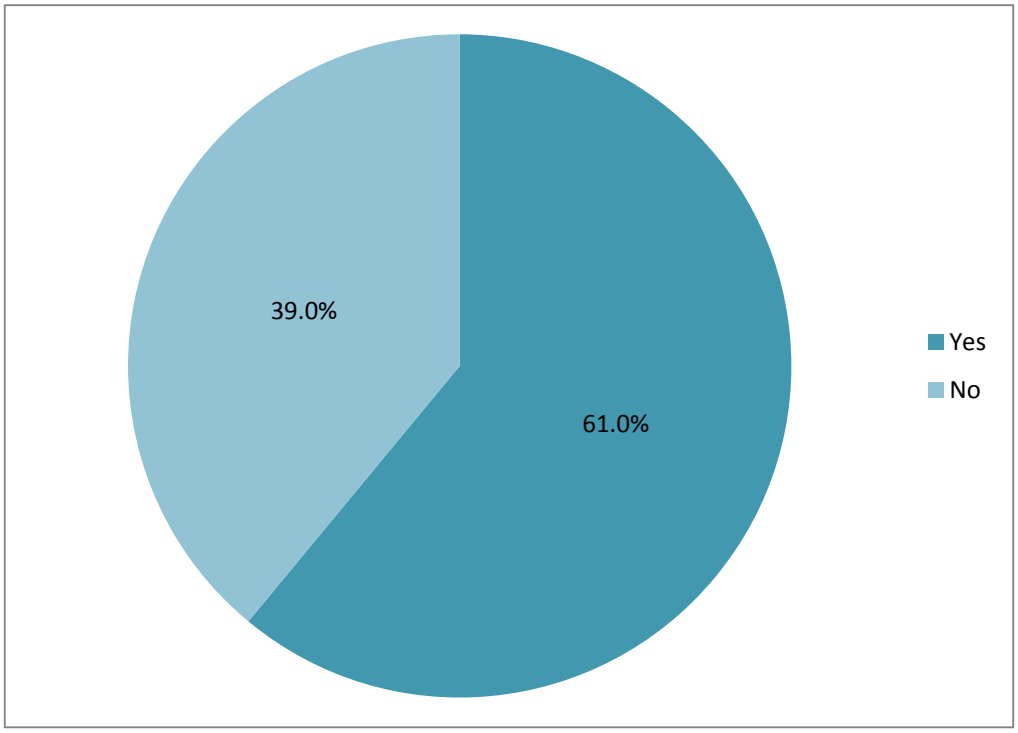
Some 505 on-street public attitude surveys were carried out in May 2013. The surveys were conducted across a range of locations within the Dundee licensing area. It should be noted that in the tables and figures that follow the totals do not always add up to the same amount. This is due to one of two reasons; first, not all respondents were required to answer all questions, and second, some respondents failed to answer some questions that were asked.

A full breakdown and analysis of the results are provided in Appendix 2.

5.2 General Information

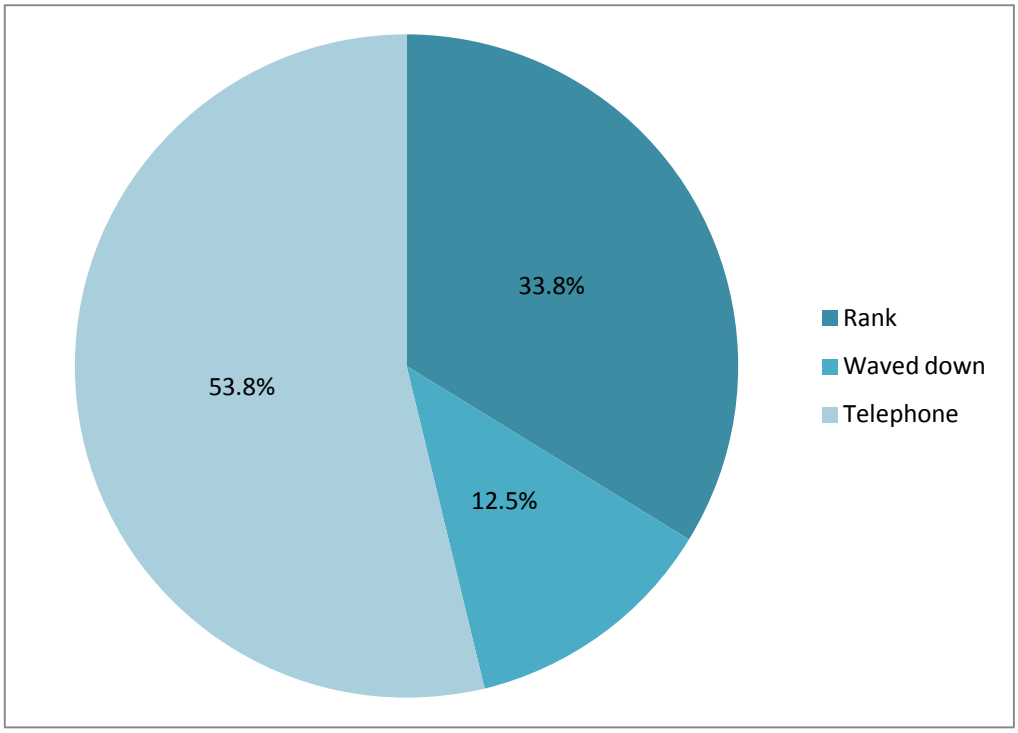
Respondents were each asked if they had made a journey by taxi in Dundee within the last three months. The survey found that 61% had used a taxi within this period. The results are displayed in Figure 5.1.

Figure 5.1'Have you made a trip by taxi in the last three months?'



Trip makers were then asked how they obtained their taxi. Some 33.8% of trip makers stated that they hired their taxi at a stance. Some 53.8% of hirings were achieved by telephone, with 12.5% of trip makers obtaining a taxi by on-street flagdown. Figure 5.2 reveals the pattern of hire.

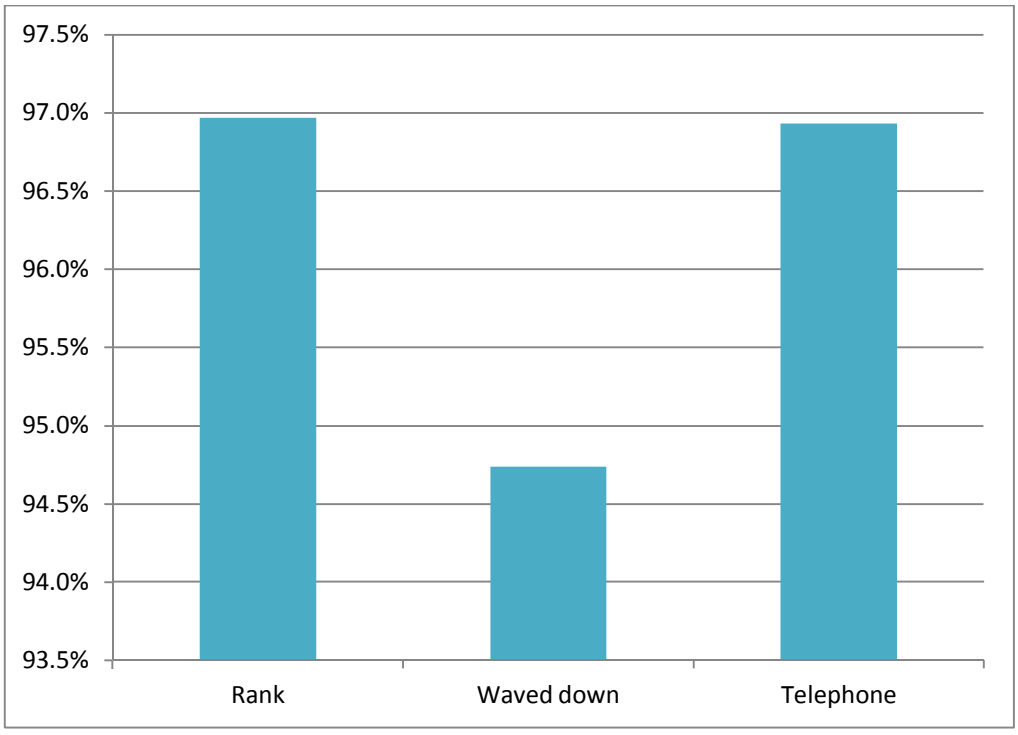
Figure 5.2 Method of Hire for Last Trip



Respondents were asked if they were satisfied with the time taken and the promptness of the vehicles arrival. The majority of people were satisfied with the time taken to obtain their vehicle (96.7%).

Figure 5.3 shows that for each method of obtaining a vehicle, the majority were satisfied with the length of time they had to wait. Those obtaining their taxi by rank provided the highest levels of satisfaction.

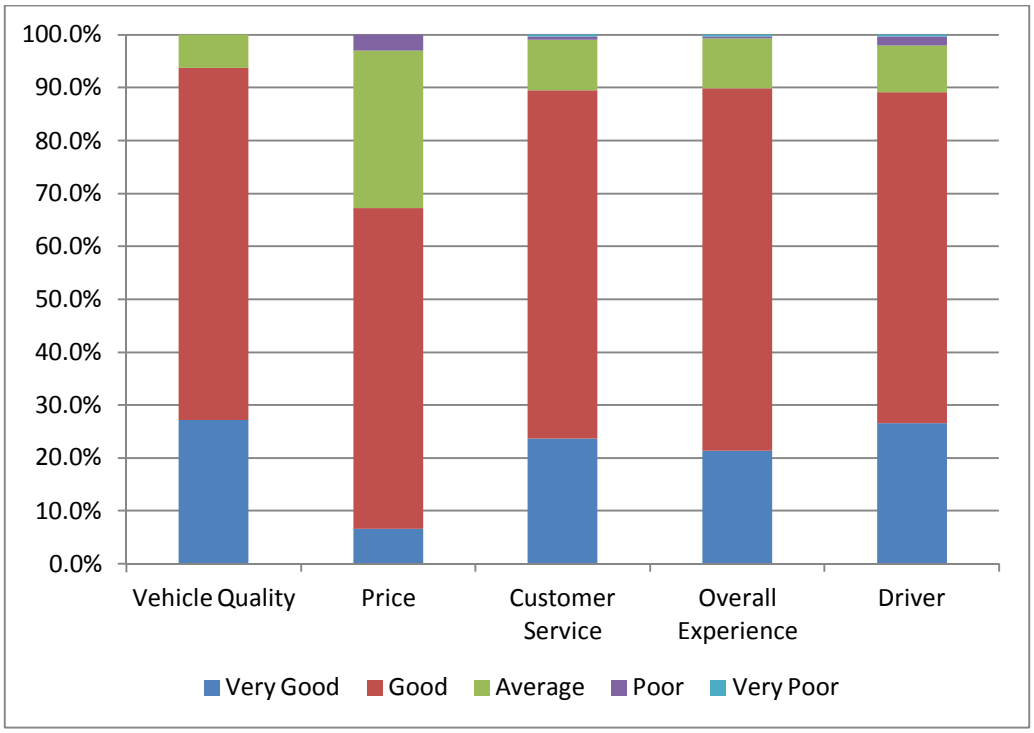
Figure 5.3 Satisfactions with Delay on Last Trip by Method of Hire



Respondents were asked to rate five elements from their last journey on a scale from very poor to very good. The results in Figure 5.4 show that the respondents generally consider standards to be good or very good. Those respondents who stated that part of the service was poor or very poor were asked to state their reasons why, and the following reasons were given:

- Too expensive compared to other cities;
- Rude drivers; and
- Drivers taking the wrong route.

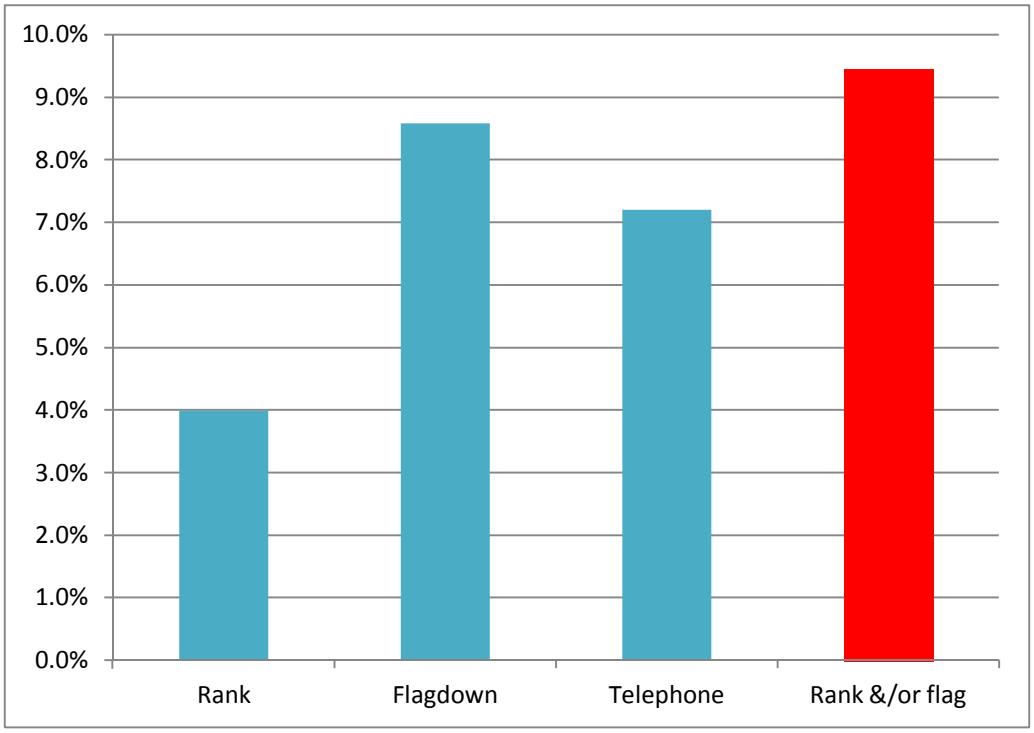
Figure 5.4 Rating of Last Journey



5.3 Attempted Method of Hire

In order to measure demand suppression, respondents were asked to identify whether or not they had given up waiting for a taxi at a stance, by flagging a taxi on the street or by precooking a taxi by telephone in Dundee in the last three months. The results are documented in Figure 5.5.

Figure 5.5 Latent Demand by Method of Hire – Given up trying to make a hiring?



As indicated in Figure 5.5, some 9.5% of respondents had given up waiting for a taxi at a stance and/or waving a taxi down in the last three months. This has implications or the interpretation of the results (See Section 7 below).

Respondents who had given up trying to obtain a taxi in the last three months were asked the location where they had given up waiting for a taxi. The most common areas were City Centre, West End, Perth Road and Dundee Campus. In addition, the majority of respondents had given up waiting at night.

Respondents were asked whether they felt that there were enough taxis in Dundee to suit their needs. Some 85% agreed with this statement.

Figure 5.6 Are there enough taxis to suit your needs?

5.4 Improvements

Respondents were asked whether they felt that taxi services in Dundee could be improved. Some 21.9% of respondents considered that services could be improved.

Of those who felt improvements were required the following were the most popular responses:

- Cheaper;
- Better drivers; and
- More taxis at night and peak times.

5.5 Stances

Respondents were asked if there were any locations in Dundee where new stances were needed. A total of 69.1% said that no new stances were needed in Dundee, whilst 23.2% did not know.

Respondents who stated they would like to see a new stance (7.8%) were subsequently asked to provide a location. The most common locations included:

- Blackness;
- Dundee Campus;
- Nine wells; and
- Wellgate.

5.6 Summary

Key points from the public attitude survey can be summarised as:

- Some 33.8% of hirings are from a stance;

- High levels of satisfaction with delay on last trip (96.7%) – rank providing the highest levels;
- Some 9.5% of people had given up trying to obtain a taxi at a stance or by flagdown; and
- Some 7.8% of people felt that new stances were needed in Dundee.

6 Consultation

6.1 Introduction

Guidelines issued by the Scottish Government state that consultation should be undertaken with the following organisations and stakeholders:

- All those working in the market;
- Consumer and passenger (including disabled) groups;
- Groups which represent those passengers with special needs;
- The Police;
- Local interest groups such as hospitals or visitor attractions; and
- A wide range of transport stakeholders such as rail/bus/coach providers and transport managers.

In order to consult with relevant stakeholders across Dundee, written consultation was undertaken.

6.2 Indirect (Written) Consultation

A number of stakeholders were contacted by letter. This assured the Scottish Government guidelines were fulfilled and all relevant organisations and bodies were provided with an opportunity to comment.

In accordance with advice issued by the Scottish Government the following organisations were contacted;

- Dundee City Council;
- Trade representatives;
- user/disability groups representing those passengers with special needs;
- local interest groups including hospitals, visitor attractions, entertainment outlets and education establishments; and
- rail, bus and coach operators.

A summary of the responses received are provided below.

<u>DHA</u>

The respondent made reference to the fact that Dundee has lost over 40,000 people and 60,000 jobs since the 1970,80s which has had a major effect on all businesses and the taxi trade. It was felt that there is a more than adequate number of taxis.

With regard to the current lack of a numerical limit it was felt that this only caters for businessmen and the council and has greatly reduced our income.

It was felt that there were a sufficient number of private hire cars.

The current split in the fleet of wheelchair and saloon vehicles was considered to create economic inequality between taxi operators. The type should all be the same.

Dundee Taxi Association

The taxi association consider that Taxis are easily accessible at all time of the day and are in abundance in all areas of Dundee as they can be seen queuing on ranks all over, sitting on double yellow lines, bus stops etc. trying to get onto ranks both day and night.

Dundee Taxi Association (DTA) find this open policy detrimental to the taxi trade due to the excess hours that they have to work with some drivers working as much as 80+ hours per week. Taxis are also not being replaced as often and squabbling amongst drivers to get on ranks is common place.

Private hire are considered readily available at all times due to the way that they are hired in Dundee. All private hire work from TAXI OFFICES and when the pubic phone for a TAXI they quite often are sent a Private Hire as it is the same number used to call both. The DTA find this very unusual as all other cities and towns have separate phone numbers for private hire.

Dundee City is in the process of heading for a 60/40 split of wheelchair and saloon taxis. With 60% being wheelchair, these taxis are made up of all different types and with saloons different types, the city has something unique with being able to offer a taxi to suit the needs of any member of the public regardless of their situation or disability.

The DTA find most taxis to be of a good, clean condition.

It was considered that most drivers approach their job with a good attitude. However, as in all trades some do not seem to bother.

It was considered that driver appearance could be better as Dundee has a dress code which many drivers do not adhere to, however this could be down to lack of enforcement.

In terms of ranks it was thought that some ranks are in good locations but others could be in much better locations. Other ranks are required. Locations the DTA would like to see for other ranks are at the bottom of Reform Street, one at Barrhead Travel Commercial Street, the Registrar Office in Commercial Street as the Registrar Office are about to relocate, extension to the Nethergate at the front, Lochee High Street at Farmfoods, Broughty Ferry at Marks and Spencer, a lay-by at G Casino for two taxis and a drop off point, (taxi marshal's could help with this), Hilltown on the one way section adjacent to Stirling Street, South Road lay-by at the top of Buttars Loan, Charleston Drive at the top of Aaron Drive, Coupar Angus Road, adjacent to the Park Hotel, Arbroath Road in the vicinity of the Boars Rock public house and the V&A museum.

They would also like to see weather shelters at the front of main ranks, a sign to inform the public where the start of the rank is, slightly higher kerbs at the front of ranks and better directional signs throughout the city so the public can identify where the taxi ranks are.

It was noted that Dundee has an adequate supply of wheelchair accessible vehicles.

The DTA felt that there is sufficient advertising for taxi and private hire, although taxis and private hire vehicles appear to be classed as "the same" to the public as there is not enough identification given between the two.

It terms of safety at ranks it was felt that taxi marshals would be beneficial at some of the main ranks at weekends/late evenings/early mornings.

In order to improve safety when using taxis it was felt that a separate luggage compartment in all taxis and private hire to comply with health and safety, a large taxi driver ID which should include a photo being displayed prominently on the front windscreen, also feel uncomfortable and disillusioned at the use of sat nav for local area as this does not give a good example to tourists/visitors to the city.

Unite Union

Unite considered there to be plenty of taxis plying for hire on every taxi rank in the city and that there is more than enough to cover demand. It was felt that the he policy of de restriction has had a devastating effect on the taxi trade in Dundee. Drivers are struggling to make a living, arguments amongst drivers trying to get onto ranks, also drivers having to work 15 hour shifts and more to keep their taxi cabs on the road and earn a wage.
It was felt that vehicle type and quality is of a good standard but due to the amount of taxis/ private hire vehicles, taxi drivers are keeping their cabs longer so the standard may slip. Driver's attitudes and quality was considered generally to be good but it was noted that some do let the trade down, driver appearance is the same some adhere to the dress code some do not.

In terms of ranks it was felt that the only rank in the city that is in the right place is the Nethergate rank, bus station and rail station. Additional ranks are required at the bottom of Reform Street, top of Commercial Street, barr head travel, top of Castle Street and proper signage directing the public to the taxi ranks.
It was felt that there are sufficient wheelchair accessible vehicles.

It was considered that safety wasn't an issue for people using taxis however taxi marshals may be of benefit on city centre ranks.

Dundee and Angus Chamber of Commerce

It was considered that there were more than enough taxis in Dundee. In terms of the de restriction policy the Chamber feels that it is short sighted and ill-judged. It has had the effect of reducing the overall quality of the taxi service in the city at a point in time when local agencies are trying to promote business and leisure tourism.

It was felt that vehicle and driver quality needs to be improved and that additional training of drivers was needed.

It was considered that there was sufficient rank space in Dundee. The Chamber considered that fares were too high in Dundee.

The Chamber considered that night time taxi marshals would be beneficial.

Concern was raised as to the level of topographical knowledge held by taxi drivers in Dundee. It was considered that reliance on sat navs gives a very poor image of the city

and its taxi service as these drivers seem unable to provide added value though local knowledge or to be good and confident ambassadors for the city.

Taxi drivers often provide the first and last impressions of the city. The importance of this role needs to be recognised, values and trained for, ideally with an internationally recognised quality mark, such as World Host.

Taxi drivers' licences are issued along with a list on conditions, some of which seem openly ignored – especially dress code.

7 Supply of Taxis

7.1 Introduction

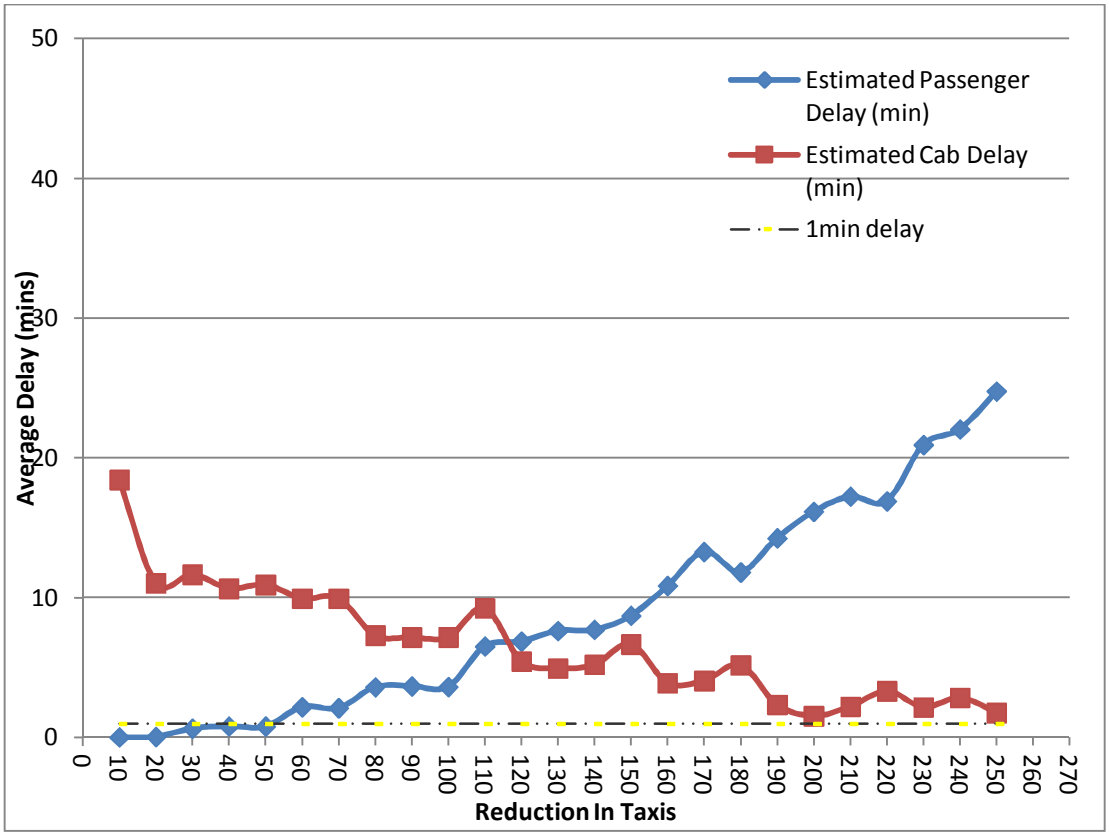
To examine the extent to which the recent increase in taxi numbers may have resulted in an excess supply of vehicles, relative to demand in Dundee, a simulation exercise has been conducted. The exercise used Halcrow's STAR4 simulation model (Simulation of Taxis at Ranks). The simulation takes a typical daytime observation period (in this case Rail Station rank between 10am and 6pm on 3rd May 2013) and estimates the impact of reducing the number of vehicles serving the rank on cab and passenger queues and delays. The analysis is intended to be indicative of the general impact of reduced supply and should not be interpreted as a recommendation for any given reduction in the size of the fleet. The results of the analysis are presented in Figure 7.1 below.

7.2 Analysis

The analysis shows that the removal of around 20 licences from circulation on the day in question would have been unlikely to have resulted in any passenger delay at the rank. On the other hand, cabs at the rank would have experienced significantly faster turn-around times. A reduction in the fleet beyond this would result in the introduction of passenger delay at the rank, with the level of passenger delay generally increasing as the fleet is reduced in size. Average passenger delay would reach 1 minute if the fleet were to be reduced by 50 vehicles.

This exercise was designed to show the effect of removing licenses during typical conditions however during non typical conditions i.e. busy night time rank the effect may be different.

Figure 7.1 Impact of Reduced Taxi Supply on Passenger and Cab Waiting Times during 'Typical' Market Conditions



8 Deriving the Significant Unmet Demand Index Value

8.1 Introduction

The data provided in the previous chapters can be summarised using Halcrow's ISUD factor described in Section 3.

The component parts of the index, their source and their values are given below;

Average Passenger Delay (Table 4.2)	0.28
Peak Factor (Figure 4.1)	0.5
General Incidence of Delay (Table 4.3)	2.93
Steady State Performance (Table 4.1)	0
Seasonality Factor (Section 3.4)	1
Latent Demand Factor (Section 5.3)	1.095
ISUD (0.28*0.5*2.93*0*1*1.095)	**0**

The cut off level for a significant unmet demand is 80. It is clear that Dundee is well below this cut off point as the ISUD is 0, indicating that there is **NO significant unmet demand**. This conclusion covers both patent and latent/suppressed demand

9 Summary and Conclusions

9.1 Introduction

This study has been conducted by Halcrow on behalf of Dundee City Council (DCC). The overall objective is to provide a full survey of demand for taxis in Dundee and to determine whether or not significant unmet demand for taxis exists in terms of section 10(3) of the Civic Government (Scotland) Act 1982.

This section provides a brief description of the work undertaken and summarises the conclusions.

9.2 Significant Unmet Demand

The 2013 study has identified that there is NO evidence of significant unmet demand for taxis in Dundee. This conclusion is based on an assessment of the implications of case law that has emerged since 2000, and the results of Halcrow's analysis.

The study identified low levels of passenger delay at 0.28 minutes. In line with this low passenger delay there were high satisfaction levels with using taxis.

The study also identified that the service to the public would not have been affected should there have been 50 less taxis in operation i.e. a fleet of 611.

9.3 Entry Control

Table 9.1 details the potential benefits and dis benefits of a number of policy changes. Introducing a policy of entry control would provide considerable benefit to the trade. The taxi trade have stated a clear desire for this policy to be introduced. In recent years a number of authorities have chosen to reintroduce the numerical limit (locally Aberdeen, UK wide - Sheffield, and North East Lincolnshire). It is too early to assess the effect of this policy change. Anecdotal evidence from taxi drivers across the UK suggests that the reintroduction of a numerical limit gives them the confidence to invest in newer vehicles.

However reintroducing the numerical limit brings about a need for regular (3 yearly) unmet demand surveys in order to comply with the Civic Government Act. The potential for litigation is also increased.

Table 9.1 Benefits and Disbenefits of Entry Control

	Potential benefit	Potential disbenefit
Maintain policy of no entry control	Promote innovation within the trade through competition; Reduce administrative costs by eliminating an area of potential litigation; Maintain low levels of passenger delay;	Potential demand for scarce roadspace for ranks
Reintroduce the numerical limit	Reduce the need for additional rank space; Reduce over ranking; Reduce vehicle emissions associated with circulating taxis;	Reintroduces the need for surveys; Reduce the availability of vehicles; Potential to increase passenger waiting times; Against best practice Reduce the availability of wheelchair accessible vehicles.

Evidence from the consultation exercise with the taxi and private hire trade suggests that a number of taxi respondents fell that there is a sufficient number of taxis across Dundee.

Other key stakeholders also thought that there were enough taxis in Dundee to serve the current demand. Members of the public were asked whether they perceive there to be a sufficient number of taxis across Dundee to meet their needs, and some 85% stated that there are enough.

There is no evidence to suggest that by limiting the number of taxis, the total fleet of vehicles available for hire (taxis and private hire) is reduced. Clearly there is a theoretical risk that restricting supply may have a number of side effects but this will be influenced by the level at which the limit on numbers is set. However, the evidence clearly suggests that in practice it is difficult to identify evidence that these unwanted effects are present.

Vehicles that form both elements of the trade are regulated and regularly checked for roadworthiness. In addition driver standards are maintained across both sections of the trade. Therefore it is difficult to accept that any limitation policy per se need have any adverse impact on customer safety.

Consultation and the rank observations conclude that there is no evidence of unmet demand in Dundee. Taxis have to wait on average 21.61 minutes for a taxi fare. In

terms of consumer benefit the study highlighted high levels of satisfaction with delays encountered.

Only 9.5% of members of the public had given up waiting for taxi at a rank and there were no instances of passengers being present at ranks which were not being serviced by taxis at some point during the observation periods. This suggests that demand is adequately being met by taxis at the ranks.

The rank observation programme highlighted that demand for hackney carriages at ranks is concentrated at the Nethergate and rail station taxi ranks. Demand peaks at night but passenger delay peaks across a range of day time and night time periods.

9.4 Recommendations

The 2013 study has identified that there is NO evidence of significant unmet demand for taxis in Dundee based upon a fleet level of 661 vehicles. This conclusion covers both patent and latent/suppressed demand and is based on an assessment of the implications of case law that has emerged since 2000, and the results of Halcrow's analysis.

On this basis the authority has discretion in its taxi licensing policy and may either:

- Maintain the current policy of derestriction; or
- Introduce a numerical limit.

Should the authority introduce a numerical limit we have identified that by reintroducing the limit at 661 there is no evidence of significant unmet demand. However the study has identified that if the fleet was to reduce to 611 vehicles there would be no affect to passengers in terms of passenger delay. Therefore should the limit be introduced we would suggest that this be no lower than 611 vehicles.

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