

Task 1.7 The Final Data Base and Verification

Double Counting

When combining the expanded data from the three PT survey modes, a correction factor was added to compensate for double counting that theoretically occurs. Explaining the situation for buses:

The bus surveys were expanded to represent all bus passengers travelling by bus for a full weekday. A number of ferry and train surveys have bus listed as the access or egress mode. When these are added to the expanded bus questionnaires, an excess of bus trips are recorded in the database.

This occurs for all three PT modes. The solution adopted for this survey expansion was to reduce the expansion factor of “multi-leg” questionnaires by a factor of a half or a third, depending on whether the questionnaire has two or three PT legs, respectively.

Documentation

The spreadsheet data delivered by Gravitass was converted to into a Microsoft Access database and a common format was used for all three PTIS datasets.

Data was separated into three groupings:

- Per Vehicle: Data which is the same for all passengers boarding the same PT vehicle, e.g. date, weather conditions, direction, region.
- Per Stop: Data which is the same for all passenger boarding the same PT vehicle at the same location, e.g. boarding time, number of adults/children boarding, number of questionnaires handed out
- Per Questionnaire: Data that is unique to each questionnaire response, e.g. question responses, stop got off.

Standard coding common to all surveys was applied to the databases in line with the coding compatibility specification. The codes and their descriptions applicable to the PTIS are listed in Table 1.

In addition to these codes which are common across all surveys performed for ATM2, as much additional information has been maintained in the PTIS dataset as possible that is deemed relevant to further analysis. This includes most question responses, and address geocoding details.

Table 1– PTIS Synthesised Common Codes

Code	Description
PERIOD	Time period
TRIPPURP	Trip purpose
PROD	Trip Direction (Production/Attraction)
MODE1	Mode of first leg of trip
MODE2	Mode of second leg of trip
MODE3	Mode of third leg of trip
MMODE	Main mode of transport for surveyed trip
CARAV	Level of car availability
OZONE	ART3 Zone of origin
DZONE	ART3 Zone of destination

Verification

Table 2, Table 3 and Table 4 list the population represented by the PTIS database whole and disaggregate by region/route, and other coarse groupings.

Table 2– PTIS Database Validation Data (Part 1)

	Bus		Ferry		Train		Total	
Direction	DB	Count	DB	Count*	DB	Count	DB	Count
In	83,327	82,638	6,043	5,621*	9,523	11,257	98,893	99,516
Out	82,092	78,773	6,043	6,042	9,523	11,786	97,657	96,601
PERIOD	DB	Count	DB	Count	DB	Count	DB	Count
AM Peak	38,635	47,815	3,486	3,096	6,608	6,535	48,729	57,446
Interpeak	58,536	45,296	2,510	2,523	3,196	4,421	64,241	52,240
SchoolPeak	16,491	24,258	661	615	1,771	2,400	18,923	27,273
PM Peak	35,150	37,703	3,368	3,901	5,338	7,429	43,856	49,034
Offpeak	16,606	6,339	2,062	1,527	2,132	2,258	20,800	10,124
Region of PT Service	DB	Count	DB	Count	DB	Count	DB	Count
Central	59,198	55,752					59,198	55,752
North	31,163	29,245					31,163	29,245
South	28,623	26,658					28,623	26,658
East	21,274	18,819					21,274	18,819
West	19,048	17,298					19,048	17,298
Crosstown	6,113	5,621					6,113	5,621
Unknown		8,018						
Bayswater			800	382			800	382
Birkenhead			850	449			850	449
Devonport			4,637	2,230			4,637	2,230
GulfHarbour			140	-			140	-
Half Moon Bay			1,075	-			1,075	-
PineHarbour			165	95			165	95
StanleyBay			224	148			224	148
Waiheke			4,067	1,707			4,067	1,707
WestHarbour			129	73			129	73
South Eastern					5,545	6,987	5,545	6,987
Southern					6,354	6,780	6,354	6,780
Western					7,147	9,276	7,147	9,276
Total	165,419	161,411	12,086	11,663	19,045	23,043	196,550	196,117

Note: Inbound ferry counts have not been seasonally adjusted the outbound ferry counts are mostly surveyor counts from the survey days.

Table 3– PTIS Database Validation Data (Part 2)

Expanded database values (count data not available for these categories).

Sex	Bus	Ferry	Train	Total
Male	66,031	5,519	8,251	79,801
Female	98,854	6,532	10,677	116,064
<i>Missing</i>	533	35	117	685
Household Licence Count	Bus	Ferry	Train	Total
1	17,430	377	1,205	19,012
2	57,957	6,154	7,752	71,862
3	34,500	2,051	4,260	40,811
4	35,218	1,852	3,656	40,727
5	18,596	1,526	1,937	22,058
<i>Missing</i>	1,717	126	236	2,080
Trip Purpose	Bus	Ferry	Train	Total
HB (home-based) work	44,088	5,030	7,987	57,104
HB education, excl. primary	51,737	1,502	5,459	58,698
HB shop	10,955	187	389	11,531
HB social	4,197	337	260	4,794
HB other	11,569	953	849	13,371
HB Business travel	16,426	2,079	2,042	20,547
NHB Business travel (both ends)	2,161	204	222	2,588
NHB travel, workplace one end	5,795	393	623	6,811
NHB travel, EB one end	2,650	267	202	3,119
NHB (non-home-based) other	15,840	1,091	943	17,874
<i>Not categorised</i>		43	69	112
PROD (Production/Attraction)	Bus	Ferry	Train	Total
From Home	79,776	5,315	8,622	93,713
To Home	59,197	4,790	8,369	72,356
Non-Home-Based	26,446	1,981	2,054	30,482
CARAV	Bus	Ferry	Train	Total
Choice1 (1 car in household)	23,656	1,500	2,229	27,385
Choice2 (2 cars in household)	29,134	3,400	4,428	36,963
Choice3 (3+ cars in household)	33,614	2,835	5,583	42,032
Competition1 (1 car in household)	29,228	2,344	3,032	34,604
Competition2 (2 cars in household)	17,652	1,058	1,877	20,587
Competition3 (3 cars in household)	0	0	0	0
Captive to public transport	28,863	757	1,564	31,184
<i>Missing</i>	3,271	191	332	3,794
Total	165,419	12,086	19,045	196,550

Table 4– PTIS Database Validation Data (Part 3)

Expanded database values (count data not available for these categories).

MAIN MODE	Bus	Ferry	Train	Total
Car Driver		177		177
Car Passenger		70		70
Public Bus Passenger	160,254			160,254
Train Passenger	2,489		19,045	21,535
Ferry Passenger	2,675	11,839		14,514
MODE1 (Mode of access at origin)	Bus	Ferry	Train	Total
Car Driver	5,577	2,858	3,369	11,804
Car Passenger	5,515	1,178	1,532	8,225
Motorcycle driver/passenger			5	5
Taxi Passenger	462	289	39	790
Public Bus Passenger	11,304	1,666	1,059	14,029
Train Passenger	1,926	241	318	2,485
Ferry Passenger	1,946	77	136	2,159
Walk	138,481	5,419	12,447	156,348
Cycle	67	342	120	529
Other	141	17	20	177
MODE3 (Mode of egress at destination)	Bus	Ferry	Train	Total
Car Driver	3,564	2,557	2,745	8,866
Car Passenger	1,773	1,127	1,558	4,458
Motorcycle driver/passenger			5	5
Taxi Passenger	427	327	40	794
Public Bus Passenger	9,639	1,700	1,114	12,453
Train Passenger	671	282	320	1,274
Ferry Passenger	774	96	171	1,042
Walk	148,386	5,643	12,982	167,011
Cycle	142	327	97	566
Other	43	26	12	81
Total	165,419	12,086	19,045	196,550

It should be noted that the PTIS surveys were carried out in two periods:

- Bus surveys:
 - 6 weeks beginning 17th July 2006 – week beginning 21st August 2006
- Ferry, train and a small number of ‘mop-up’ bus surveys:
 - 2 weeks beginning 9th October 2006 – week beginning 16th October 2006

The bus survey although larger in terms of the number of questionnaires collected, covered a smaller percentage of timetabled services than in either the ferry or train surveys, both of which surveyed almost all outbound services. As a result, greater importance was placed on the ETM data in the bus survey to expand to the bus-travelling population. The bus ETM data used represents the average daily weekday patronage for the 5 weeks from 24th July 2006 to week beginning 21st August 2006

(within the same period as specified above for the bus survey). This means that the bus questionnaires are expanded to represent this period of time.

The train and ferry surveys used the ETM/patronage data collected only for determining the percentage to be added to account for trips made outside survey times (“off peak”). As a result, train and ferry populations represent the patronage levels of October 2006 – when the surveys were performed on these public transport modes.