03 July 2012

Dear ████

Our Ref no: FOI/2012/0007

I refer to your FOI request dated 7th June last, for information relating to:

- Leap Card complaints and passenger feedback
- Leap Card reviews and audits
- Dublin Bus Realtime reviews and audits

I now attach information relating to the relevant records as well as copies of records where applicable.

In addition to the information requested I have included a document entitled "additional information" which will help your understanding of the Leap Card scheme in a broader context as well as how it is being used by public transport users. In terms of costs, using a Leap Card is up to 11% cheaper than Dublin Bus single tickets paid with cash, up to 17% cheaper than Luas singles, and up to 18% cheaper than DART and Commuter Rail singles.

You may appeal this decision by writing to the National Transport Authority, Dún Scéine, Iveagh Court, Harcourt Lane, Dublin 2. Please note that a fee of €75 applies for an appeal. Payment should be made by way of bank draft, money order, postal order or personal cheque made payable to the National Transport Authority. You should make any appeal within 4 weeks (20 working days) from the date of this notification; however, the making of a late appeal may be permitted in appropriate circumstances. The appeal will involve a complete reconsideration of the matter by a more senior member of the staff of the Authority.

If you have any more queries please let me know.

Yours sincerely

John O'Flynn
Business Development Contract Manager
john.oflynn@nationaltransport.ie

Additional Information (Leap Card)

Leap Card sales have just reached an important tipping point with over 100,000 people already using it to pay for their public transport journeys around Dublin.

Since its launch just 6 months ago, over 5.1 million passenger journeys have already been taken using a Leap Card and over €10 million travel credit has been topped up by users. Sales remain strong and the number of people using Leap continues to grow with approximately 2,000 people per week getting their card.

Leap Card, a beginner's guide
- Leap Card is the new way to pay for travel around Dublin. You can use it on all Dublin Bus, Luas, and DART services as well as Commuter Rail services in Dublin's 'Short Hop Zone'.
- Simply buy your Leap Card, at a Leap Card shop, there's about 400 in Dublin, or online at leapcard.ie, top it up with Travel Credit, and away you go.
- If you currently pay cash to buy single tickets on the participating services, you should get a Leap Card because:
  - Leap Card fares are up to 11% cheaper than Dublin Bus single tickets, up to 17% cheaper than Luas singles, and up to 18% cheaper than DART and Commuter Rail singles.
  - It's flexible and convenient - You can jump on participating transport services around Dublin when it suits you, without having to plan your journey or buy a specific ticket in advance. No more rooting around in your pockets for the right change. Just pay the appropriate fare with the Travel Credit on your Leap Card.
  - Once your travel credit runs low simply top it up again and away you go.
  - You can register your Leap Card online to protect your travel credit if your card is lost or stolen.

Further Leap Developments
Irish Rail Ticket Machines have recently been Leap enabled in Docklands and Connolly, with more stations planned soon once testing completes. Auto top-up is the next major development. We're testing it at the moment. A range of additional features are also in the pipeline including:

- Cards specifically for students

- More private bus operators, and Bus Éireann in the greater Dublin area
- Fare Capping– this is where the system will cap your use of Travel Credit at the price of an equivalent daily or weekly ticket
- Ticket products such as annual and monthly tickets

Leap Card complaints and passenger feedback

The most recent information on complaints and direct feedback relating to the Leap Card is below:

Total Service Contacts Created By Category (May 2012)

Template	Month	YTD
RPA_GENERAL_QUERY	240	2746
RPA_CLEARCARD_QUERY	26	204
RPA_ACCOUNT_QUERY	1181	8783
RPA_ORDERS_ISSUE	33	587
RPA_TOPUP_ISSUE	198	1462
RPA_REFER_TO_TRANSPORT_OPERATOR	22	568
RPA_COMPLAINTS	25	535
RPA_HOWTO_QUERY	119	1231
(blank)	1	5
RPA_FAULTY_CARD	68	410
RPA_LOST_STOLEN_CARD_QUERY	330	1288
RPA_PAYZONE_VENDOR_ISSUE	3	89
RPA_FAREDISPUTE	793	3260
RPA_REGISTRATION_QUERY	54	882

Over 5.1 million passenger journeys have already been taken using a Leap Card and over €10 million travel credit has been topped up by the 100,000+ users of Leap Card. With these figures in mind approximately 0.5% of card holders registered a complaint. If the figure is calculated on a per-journey basis, .01% of journeys resulted in a complaint.

Categories Description

The categories above are explained in more detail below. Please note, RPA is coded at the start of each category as the help centre contract to run the Leap contact centre was originally procured by RPA. The contract is now with NTA.

- RPA_GENERAL_QUERY - Template for general FAQ related queries in regards to the LeapCard scheme

- RPA_CLEARCARD_QUERY – relates to refund queries

- RPA_ACCOUNT_QUERY - Template for Account issues on the website, locked out / password reset

- RPA_ORDERS_ISSUE - Template for issues in regards to ordering cards online

- RPA_TOPUP_ISSUE- Template for issues in regards to ordering top-up online

- RPA_REFER_TO_TRANSPORT_OPERATOR - Template for calls in which we've had to advise the caller to ring the TO

- RPA_COMPLAINTS - Template for complaints received by a caller

- RPA_HOWTO_QUERY - Template for advising a caller over "How do I" queries such as topping up / touching on/off.

- (blank) - There was a brief period in which our templates had been removed, unfortunately this cannot be filled in after a case has been created.

- RPA_FAULTY_CARD - Template for faulty card issues.

- RPA_LOST_STOLEN_CARD_QUERY - Template for cases referring to callers saying they've lost their card / it's been stolen

- RPA_PAYZONE_VENDOR_ISSUE - Template for cases referring to shops calling about issues.

- RPA_FAREDISPUTE - Template for cases referring to issues from callers about fares on the TO, such as looking for a journey refund from Irish Rail.

Top Complaints

The most prominent complaints relate to customers:

- Being unable to topup at Irish Rail TVMs
- Having issues with collecting Online Topup from Irish Rail.
- Encountering Validators / Gates etc not working (Portmarnock, Blackrock, Killiney, Coolmine, Castleknock, Adamstown, Ashtown, Bray, Leixlip Confey, Connolly, Drumcondra, Glenageary, Lansdowne, Pearse)
- Encountering bus Drivers overcharging

Information on Leap related passenger feedback

An independent survey of Leap Card users was recently carried out by Millward Brown Lansdowne in order to gather user's feedback. 89% of respondents said they were either very satisfied or satisfied with using their Leap Card. Nearly half of Leap Card users (45%) stated they are using public transport more since getting a Leap Card. Leap Card users tend to be more frequent users of public transport with 87% traveling more than 4 times per week.

Users were also asked what sort of problems they had when using the Leap Card if any. The majority (80%) hadn't experienced any problems while using their Leap card. Of those that did, the following issues were raised:

- Topping up the Leap Card, particularly online

- Touching card on/off validators general

- Conductor not being able to check if touched on/off

- Knowing which validator to use on Dublin Bus

- Problems registering my card on Leap Card.ie

- Forgetting to touch on/off

- Being charged the incorrect amount for my journey

- Having to queue to get on the Dublin Bus despite having a card

The full report is enclosed.

NTA Leap Card Research
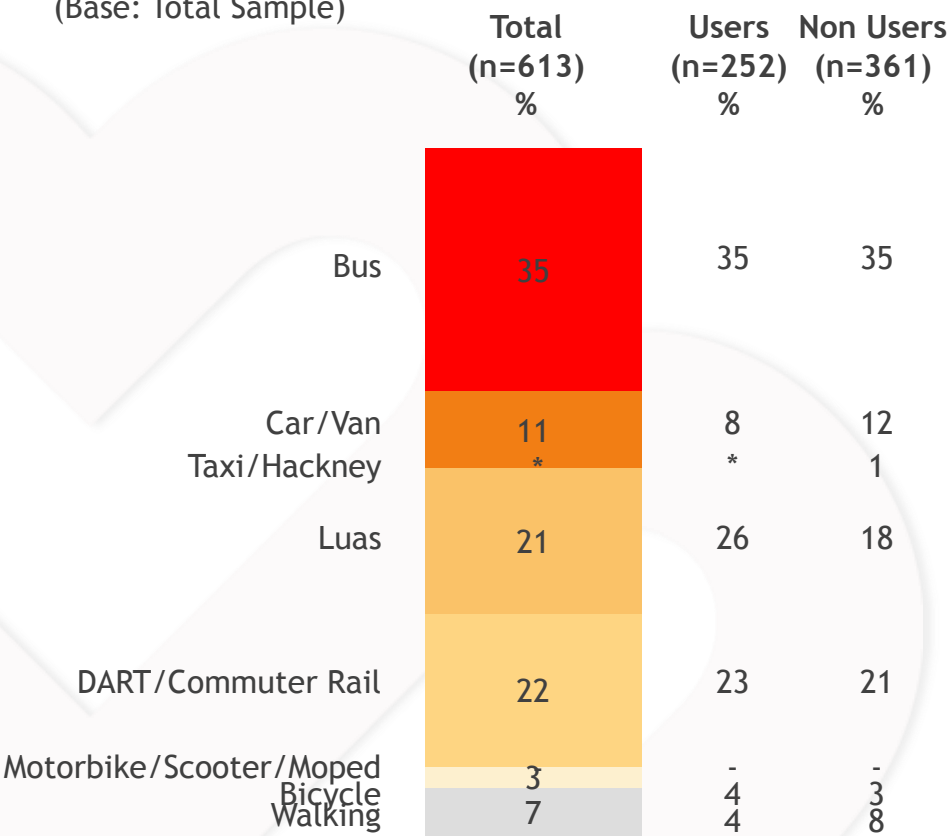
Prepared by Millward Brown Lansdowne

Executive Summary

- ✓ Overall Satisfaction with the Leap Card is at a very positive at 9 in 10 people.
- ✓ Nearly half of Leap Card users (45%) state they are using public transport more since getting a Leap Card. Leap Card users are more frequent users of public transport and more likely to be multi modal users.
- ✓ Three quarters of all those interviewed are aware that they are saving money by owning the card rising, to 87% of Leap Card Users.
- ✓ Leap Card has mainly replaced cash tickets since its launch.
- ✓ There is still potential among non users with 1 in 5 saying they would get a Leap Card – this potential is more likely to come from Commuter Train/DART and Bus. Triggers would be addition of Annual/Monthly/weekly & student tickets and able to use outside Dublin.
- ✓ Only just over 2 in 10 people claimed to have any problems with their Leap Card, more of there were DART/ Commuter rail users than Luas or Dublin Bus users. Satisfaction with online top up is lower with 6 in 10 people claiming to be satisfied with the service the main issues being with the website.
- ✓ Satisfaction with the information provided to the Leap Card users in on par with overall satisfaction at between 85-87%.
- ✓ Three quarters of all people interviewed have seen the Leap Card adverts that we showed or played. Recall of individual channels is above Millward Brown norms. Over 4 in 10 non users claimed that the ads would prompt them to purchase a card.

MillwardBrown
Lansdowne

General Transports Usage – Bus is the most used type of transport among this group. Leap Card is under represented in the School/college commute and for Leisure/sports & shopping trips.

Types of Transport
(Base: Total Sample)

	Total (n=613) %	Users (n=252) %	Non Users (n=361) %
Bus	35	35	35
Car/Van	11	8	12
Taxi/Hackney	*	*	1
Luas	21	26	18
DART/Commuter Rail	22	23	21
Motorbike/Scooter/Moped	3	-	-
Bicycle		4	3
Walking	7	4	8

Main purpose of Public Transport

	Users (Q3a) (n=252) %	Non Users (Q3b) (n=361) %
Travelling to/from work	71	43
Travelling to/from school/college	15	28
Travelling to/from business meetings	2	1
Shopping	4	13
Leisure/Sports	6	13
Other	1	1
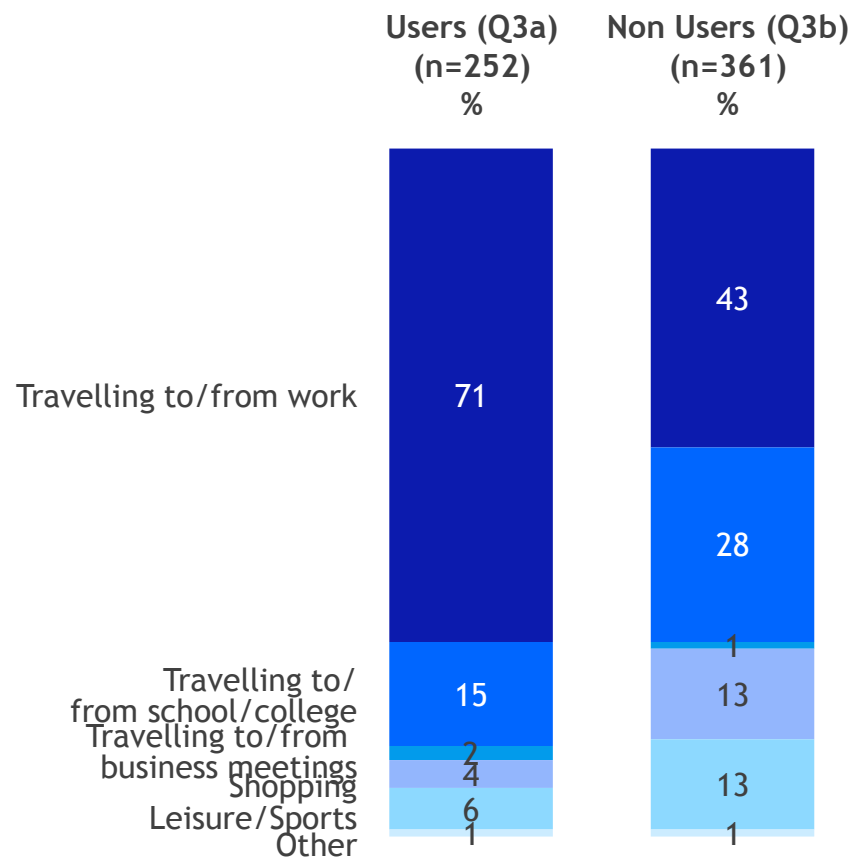
Q2b.   Thinking of all types of transport, which one do you use most often?
Q3a.   What is the main purpose that you use your Leap Card for?
Q3b   What is the main purpose that you use public transport for?

MillwardBrown
Lansdowne

Frequency of use of Public Transport – Interestingly most of the people we interviewed are frequent (more than 4 times a week) users of public transport.

(Base: All who have a Leap Card)

(Base: All who do not have a Leap Card)

Leap Card Users
(n=252)
%

Leap Card Non Users
(n=361)
%

Frequent users — 87

Non-frequent users — 13

Frequent users — 71

Non-frequent users — 29
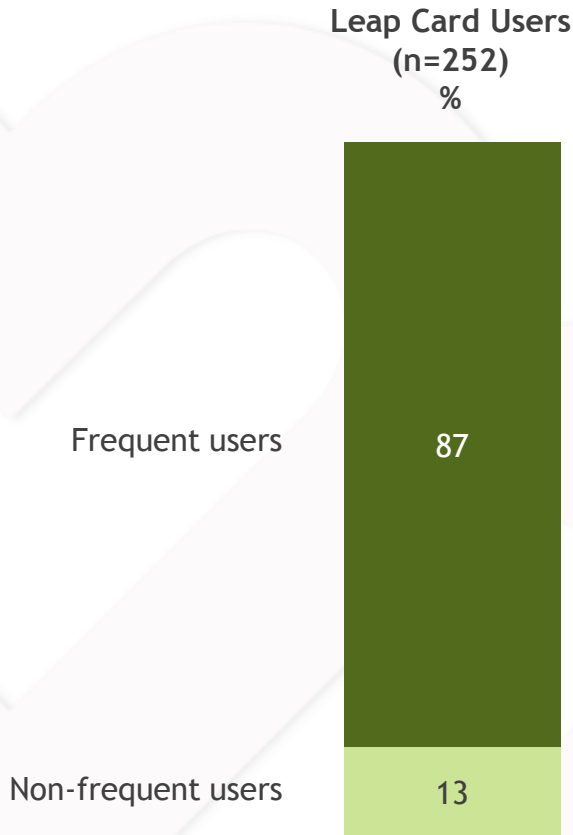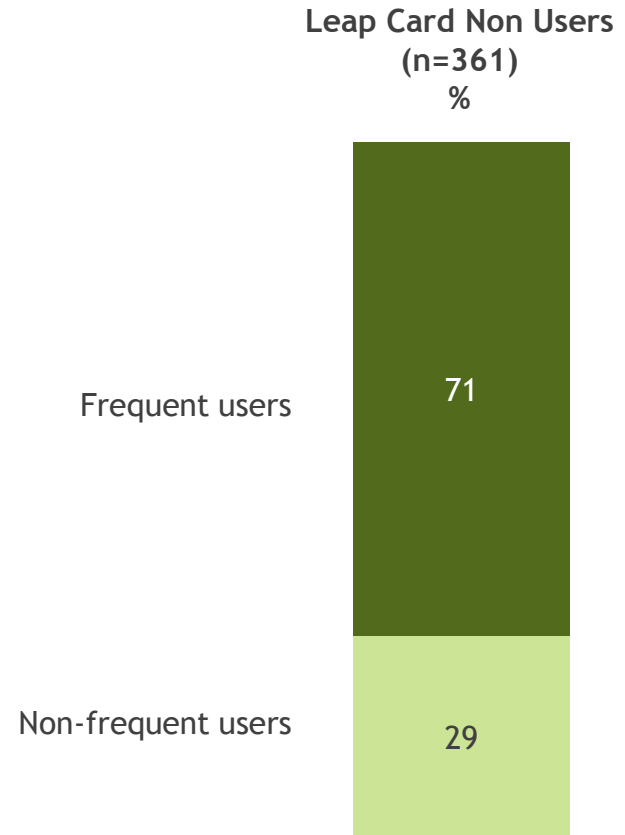
Are Leap Card users more likely to use public transport more because they have a Leap Card, or did they get a Leap Card because they are frequent travellers

Q4a.   How often do you use your Leap Card in a week?
Q4b.   How often do you use public transport?

MillwardBrown
Lansdowne

Leap Card Satisfaction – Overall satisfaction is positive with nearly 9 in 10 people scoring satisfied or very satisfied (this is a high score by anyone's standards)

(Base: All who have a Leap Card)

Total (n=252) %

Very satisfied	56
Satisfied	33
Neutral	7
Dissatisfied	4
Very dissatisfied	1

89%

Mean 4.38

hop, skip, jump

Q5. Overall how satisfied are with using your Leap Card, on a scale of 1 to 5 where 1 is very dissatisfied and 5 is very satisfied?

MillwardBrown
Lansdowne
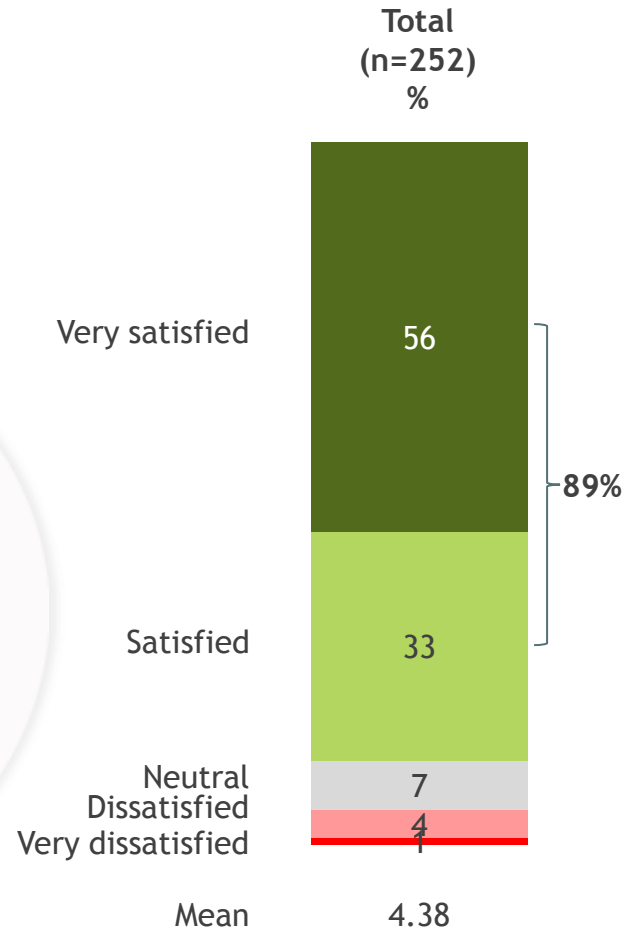
Leap Card Satisfaction – This satisfaction is very even across the different modes of transport

(Base: All who have a Leap Card)

Luas Leap Card Users (n=169) %

Dublin Bus Leap Card Users (n=175) %

DART/Commuter Rail Leap Card Users (n=104) %

	Luas	Dublin Bus	DART/Commuter Rail
Very satisfied	57	57	59
Satisfied	31	32	28
	88%	89%	87%
Neutral	6	9	10
Dissatisfied	4	2	3
Very dissatisfied	2	1	1
Mean	4.38	4.43	4.4

Q5. Overall how satisfied are with using your Leap Card, on a scale of 1 to 5 where 1 is very dissatisfied and 5 is very satisfied?

MillwardBrown Lansdowne

Increased Usage – Almost half of Leap Card users feel they use public transport more as a result of having the card

(Base: All who have a Leap Card)

Use Public Transport more often?

Total
(n=252)
%

45% Yes

No 55%

Q11. Since getting your Leap Card have you used public transport more?

MillwardBrown
Lansdowne

Increased Usage – This increased usage trend does not vary across the different mode users.

(Base: All who have a Leap Card)

Use Public Transport more since getting Leap Card?

Luas Leap Card Users (n=169) %

No 54%

Yes 46%

Dublin Bus Leap Card Users (n=175) %

No 52%

Yes 48%

DART/Commuter Rail Leap Card Users (n=104) %

No 53%

Yes 47%

Q11. Since getting your Leap Card have you used public transport more?

MillwardBrown Lansdowne

Non-Leap Card Users Potential to Purchase – A further 1 in 5 of non Leap Card users plan to purchase a card, further potential growth coming from Bus & Train/DART. Annual/monthly/weekly and student tickets are the key triggers

(Base: All who do not have a Leap Card)

Planning to Purchase?
(n=361)
%

19% Yes

81% No
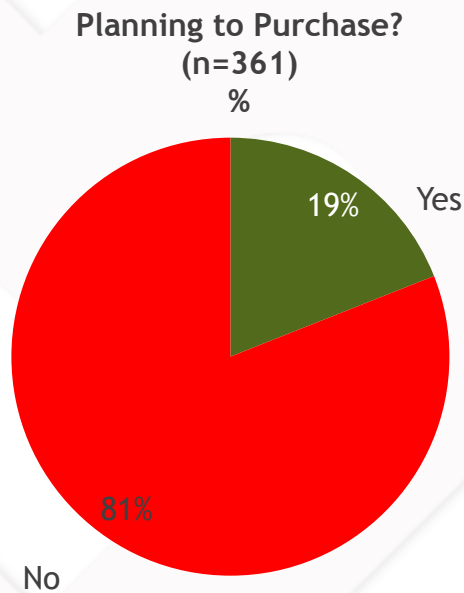
Modes	Yes %
Bus	22
Luas	14
Train/DART	23

Reason that would encourage purchase

(n=291)
%

Reason	%
If annual, monthly, weekly tickets were available on the Leap Card	17
If student tickets were available on the Leap Card	15
If I could use the card outside of the Greater Dublin Area	15
If I knew where to buy or top up the Leap Card	12
Don't use public transport enough	11
Lower cost	7
If I could top up automatically by direct debit from my bank account	6
Need more information	5
Don't know	3
Nothing	12
Other	4

Q14. Are you planning to get a Leap Card?
Q15. What would encourage you to get a Leap Card?

MillwardBrown
Lansdowne

Economic benefits – Three quarters are aware that the Leap Card can save them money on public transport usage.

(Base: Total Sample)

**Aware of the Economic Benefits
(n=613)
%**

No
26%

74% Yes

Q22. Are you aware that the Leap Card can save you money on the normal single ticket?

MillwardBrown
Lansdowne
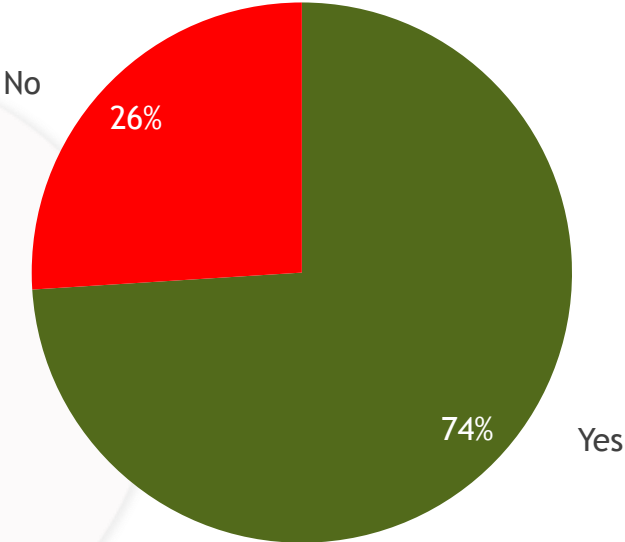
Money Saver – Roughly three quarters of respondents feel they are getting a 20% or less saving. Luas Users are more likely to quote under 10% than others

(Base: All those who are aware that the Leap Card saves them money)

How much do you think you save?

	Total (n=452) %	Leap Card Users (n=220) %	Non Leap Card Users (n=232) %	Dublin Bus General Users (n=315) %	Luas General Users (n=258) %	DART/ Commuter Rail General Users (n=205) %
Less than 10%	35	38	32	32	37	33
11-20%	40	49	33	43	38	43
21-30%	6	6	6	8	5	7
More than 30%	1		1	1	1	1
Don't know	17	7	28	16	19	16

MillwardBrown
Lansdowne
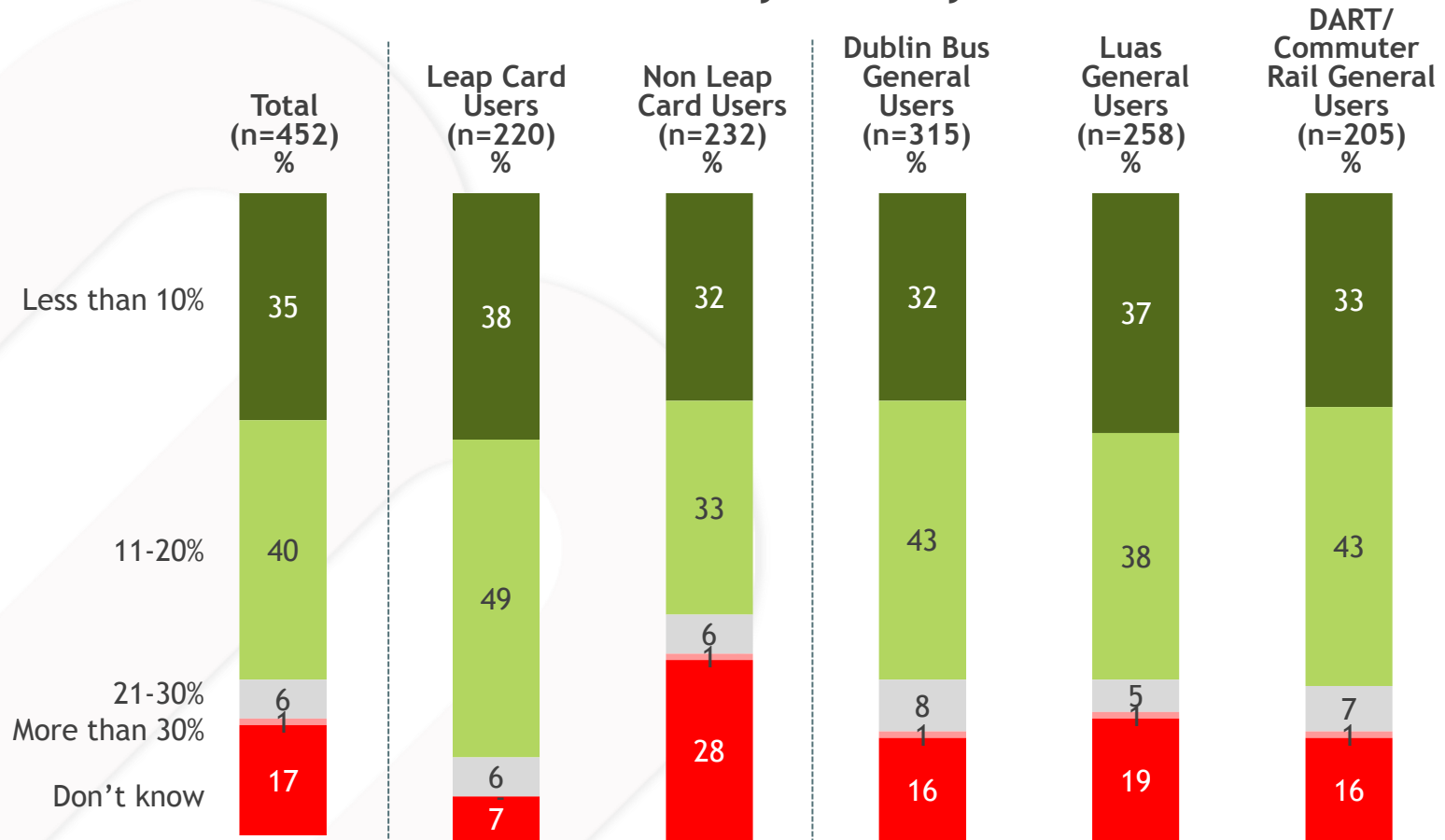
Cash was the main payment methods used before the introduction of the Leap Card, and also is the main payment used in general for non Leap Card users

	Payment method used before Leap Card Users (n=252) %	Current payment method Non-Leap Card Users (n=361) %
Cash	60	58
Annual, monthly, weekly, student tickets etc	26	24
5 day or 30 day Dublin Bus Rambler, Travel 90 Bus Ticket	15	13
Other Card	7	9
Other	*	*

Q10a. Before using the Leap Card how did you normally pay for public transport?
Q10b. How do you normally pay for your public transport?

MillwardBrown
Lansdowne
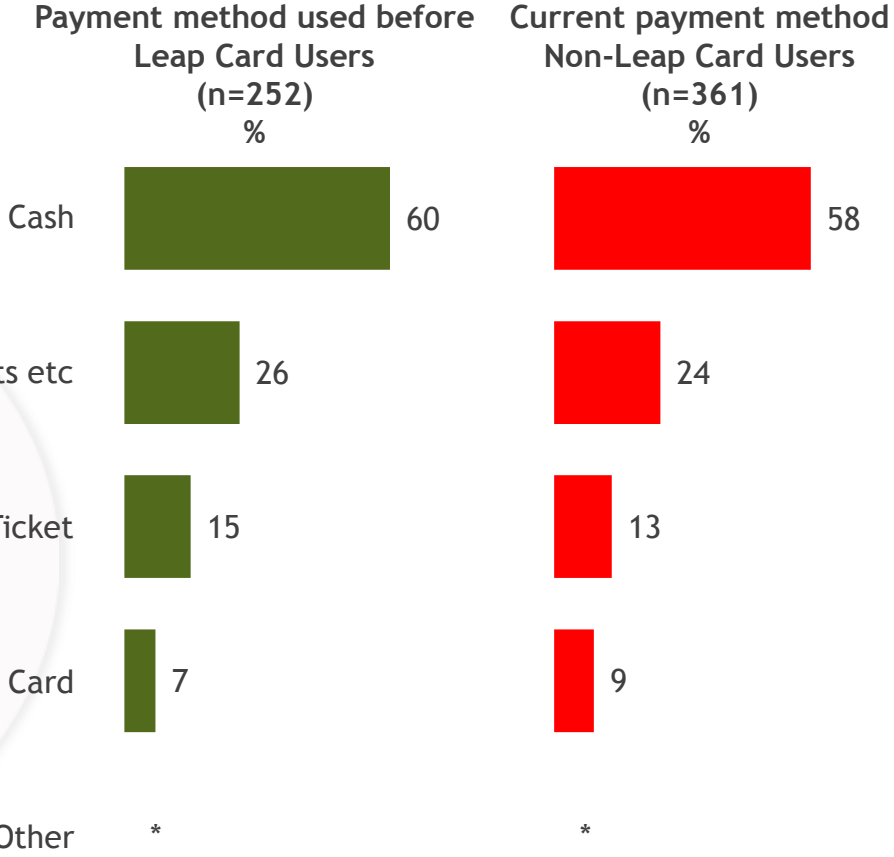
Payment Methods used before the introduction of the Leap Card
– the Leap Card did replace cash for most users, particularly on Dublin Bus.

(Base: All who have a Leap Card)

	Luas Users (n=169) %	Dublin Bus Users (n=175) %	DART/Commuter Rail Cards (n=104) %
Cash	58	61	57
Annual, monthly, weekly, student tickets	26	27	32
5 day or 30 day Dublin Bus Rambler, Travel 90 bus ticket	15	16	11
Other card	8	5	8
Other	1	1	-

Q10a. Before using the Leap Card how did you normally pay for public transport?

MillwardBrown
Lansdowne
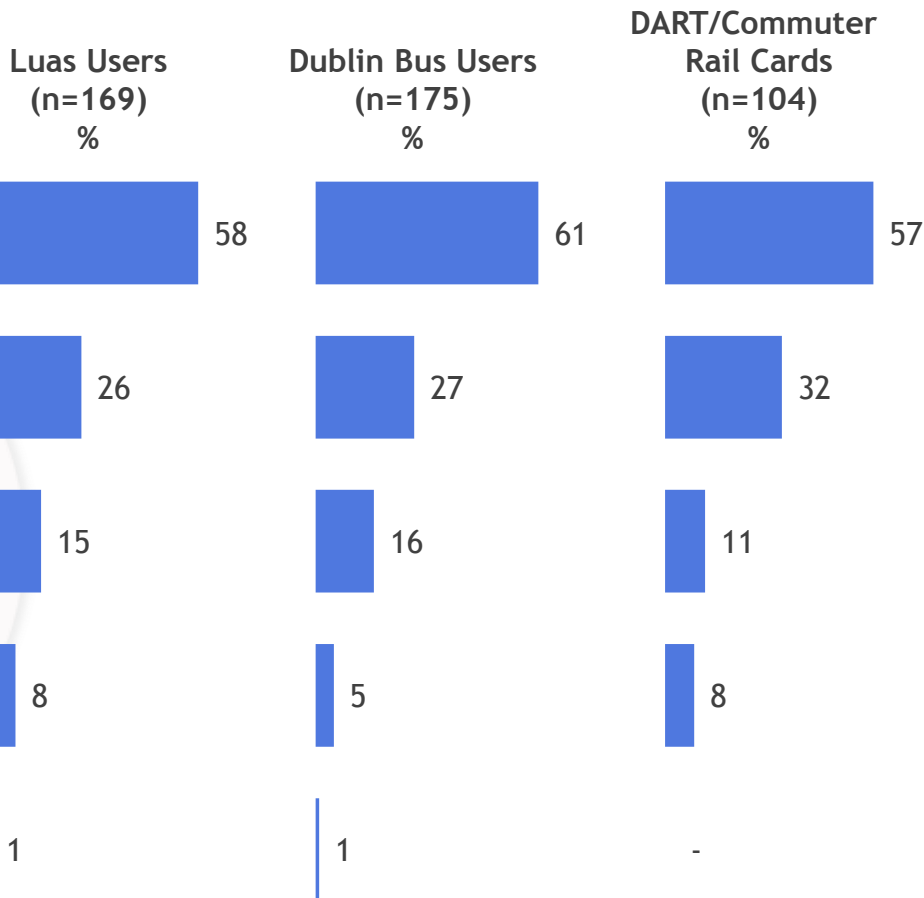
Problems with the Leap Card – only 2 in 10 people stated that they had any problems using their leap card

(Base: All who have a Leap Card)

Problems with the Leap Card?

Total
(n=252)
%

Yes
22%

No
78%

Q6. Did you have any problems with the Leap Card?

MillwardBrown
Lansdowne
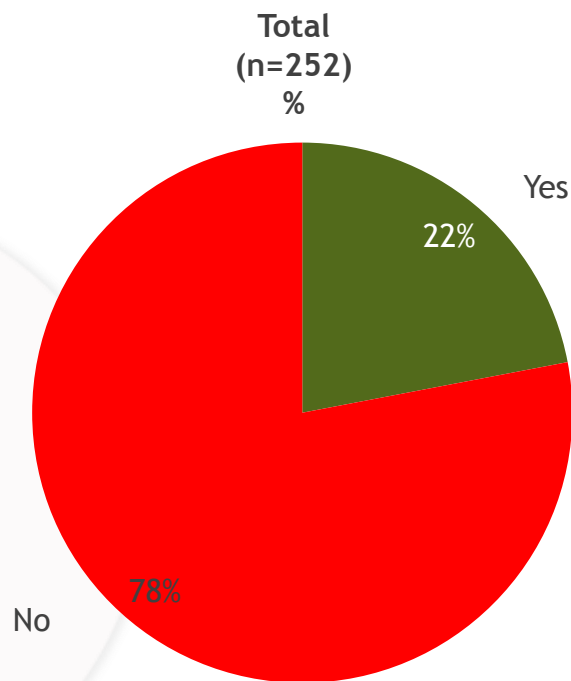
Problems with the Leap Card – there was marginally more problems with the Leap Card reported among DART / Commuter rail users

(Base: All who have a Leap Card)

Problems with the Leap Cars?

**Luas Users
(n=169)
%**

Yes 23%

No 77%

**Dublin Bus Users
(n=175)
%**

Yes 23%

No 77%

**DART/Commuter
Rail Users
(n=104)
%**

Yes 29%

No 71%

Q6. Did you have any problems with the Leap Card?

MillwardBrown
Lansdowne

Problems with Leap Card – Of the problems stated Topping up in General and Topping up online were the main two issues

(Base: All who have a Leap Card and have had problems with the card)

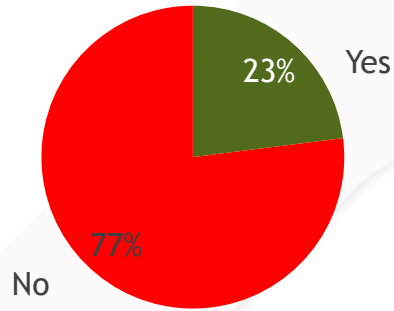|	Total (n=56) %	Luas Users (n=39) %	Dublin Bus (n=40) %	DART/ Commuter Rail Users (n=30) %
Topping up the Leap Card in general	23	26	28	27
Topping up Leap Card online	21	23	23	17
Touching card on/off validator at the LUAS	18	26	15	20
Touching card on/off validators general	14	18	13	17
Touching card on/off validator at DART or Commuter rail station	11	10	10	20
Touching card on/off validator on Dublin Bus	9	13	10	13
Conductor not being able to check if touched on/off	7	5	10	7
Knowing which validator to use on Dublin Bus	7	5	8	10
Problems registering my card on Leap Card.ie	7	8	5	10
Topping up at the Luas machine	5	5	5	7
Forgetting to touch off	5	8	3	7
Forgetting to touch on	5	3	5	7
Being charged the incorrect amount for my journey	5	3	3	7
Topping up at a shop / agent	4	5	3	3
Having to queue to get on the Dublin Bus despite having a card	4	5	5	3
Other	5	5	5	7

Q6a. What sort of problems did you have with the Leap Card?

MillwardBrown
Lansdowne

Online Top Up – Only just over 3 in 10 Leap Card users have topped up online and their satisfaction scores are at an average of roughly 3.5 out of 5 across the modes that they use. One in five are dissatisfied

(Base: All who have a Leap Card)

Ever Used
(n=252)
%

Yes 32%

No 68%

Satisfaction

(Base: All Leap Card users have used online top up)
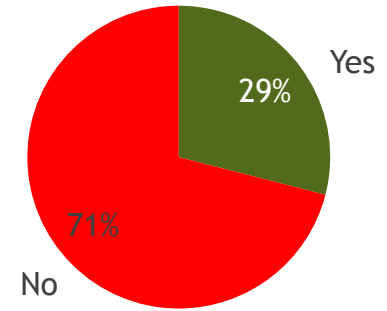
	Total (n=81) %	Luas Users (n=55) %	Dublin Bus (n=56) %	DART/ Commuter Rail Users (n=44) %
Very satisfied	31	36	29	34
Satisfied	35	25	36	41
Neutral	12	13	14	9
Dissatisfied	10	11	7	2
Very dissatisfied	12	15	14	14
Mean	3.62	3.58	3.57	3.8

65%

Q7. Have you used online top-up on your Leap Card?
Q8. How satisfied are with topping up your Leap Card on line, on a scale of 1 to 5 where 1 is very dissatisfied and 5 is very satisfied?

MillwardBrown
Lansdowne

Online Top Up – Of the 32% who claimed they had problems using the online top up the main issue was using the website with no one stating incorrect top up amount as a problem.

(Base: All who used online top up)
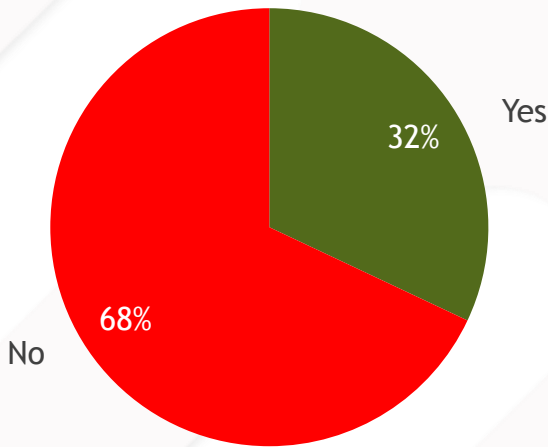
(Base: All those who had problems topping up)

Problems?
(n=81)
%

32% Yes

68%

No

Ever Used
(n=26)
%

Problems using the website to request top up — 62

Problems collecting my credit at a "load location" after having topped up online — 27

Problems with finding or not remembering my nominated "load location" — 4

Being topped up the incorrect amount of credit — -

Other — 12

Q9.   Did you have any problems with the online top up system?
Q9a.   What sort of problems have you had with the online top up system?

MillwardBrown
Lansdowne

Payment Methods Generally used by non Leap Card users

– non Leap card users predominantly use cash.

(Base: All who do not have a Leap Card)

	Luas Users (n=180) %	Dublin Bus Users (n=250) %	DART/Commuter Rail Cards (n=167) %
Cash	50	61	63
Annual, monthly, weekly, student tickets	28	23	25
5 day or 30 day Dublin Bus Rambler, Travel 90 bus ticket	14	14	8
Other card	12	7	9
Other	1	*	-

Q10b. How do you normally pay for your public transport?

MillwardBrown
Lansdowne
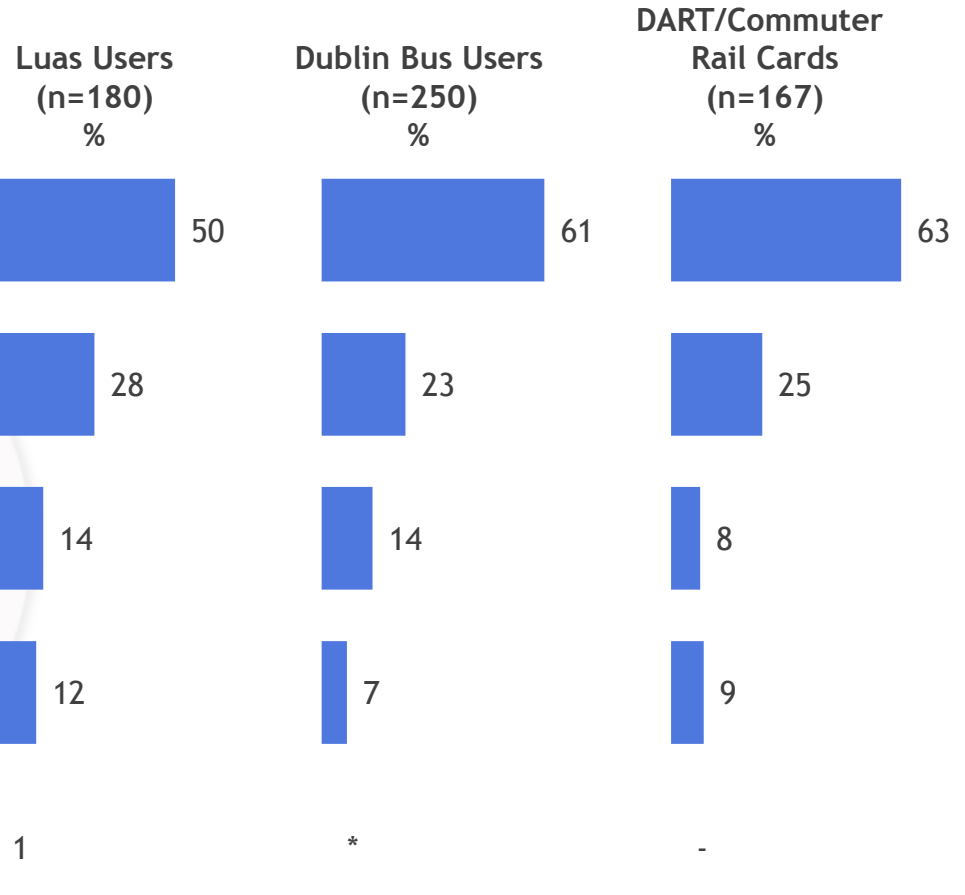
Information Provided – a very positive 8.5 out of 10 users of the Leap Card feel satisfied with the information provided to them, very few were dissatisfied

(Base: All who have a Leap Card)
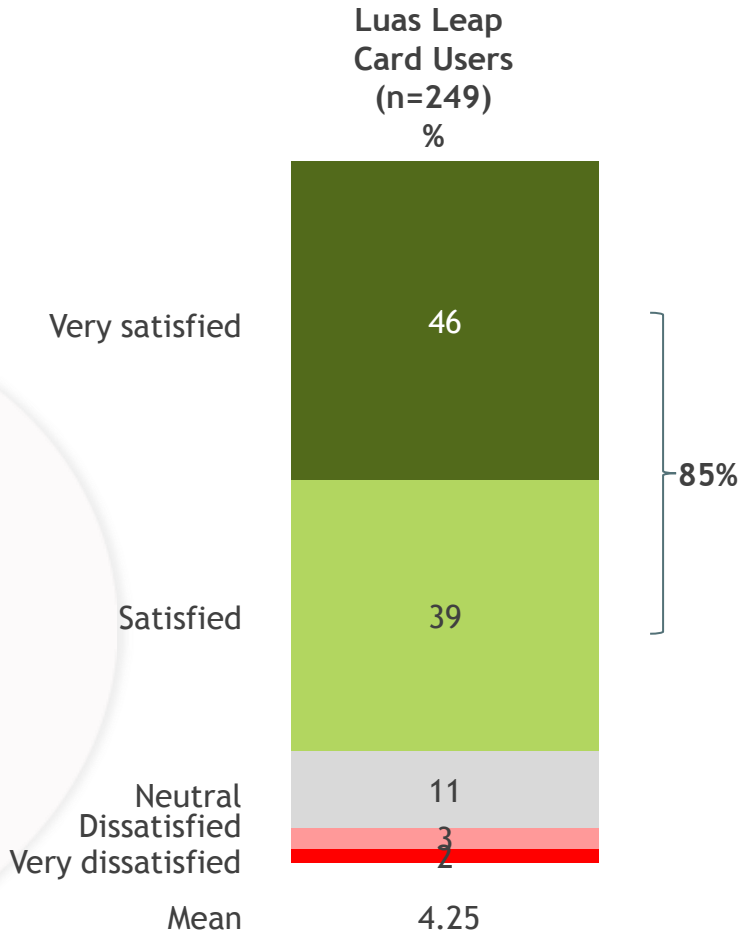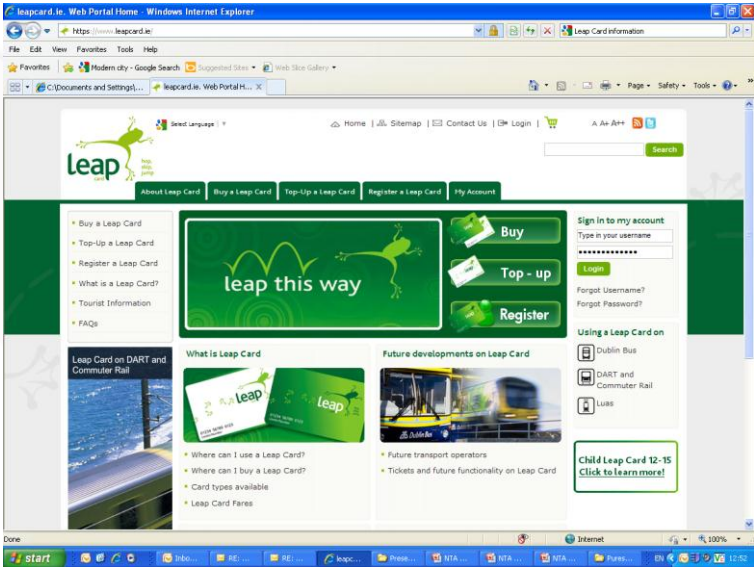
Luas Leap Card Users (n=249) %

Very satisfied	46
Satisfied	39
Neutral	11
Dissatisfied	3
Very dissatisfied	2
Mean	4.25

85%

Q12 How satisfied have you been with the information that has been provided about Leap Cards? We are referring to the leaflets, website, advertising, and the customer care line. Please indicate your satisfaction on a scale of 1 to 5 where 1 is very dissatisfied and 5 is very satisfied?

MillwardBrown
Lansdowne

Information Provided – satisfaction levels are consistent across Leap Card users on all modes of transport

(Base: All who have a Leap Card)

	Luas Users (n=167) %	Dublin Bus (n=173) %	DART/Commuter Rail Users (n=104) %
Very satisfied	46	49	49
Satisfied	37	39	38
Neutral	12	10	10
Dissatisfied	3	2	2
Very dissatisfied	2	1	2
Mean	4.21	4.32	4.3
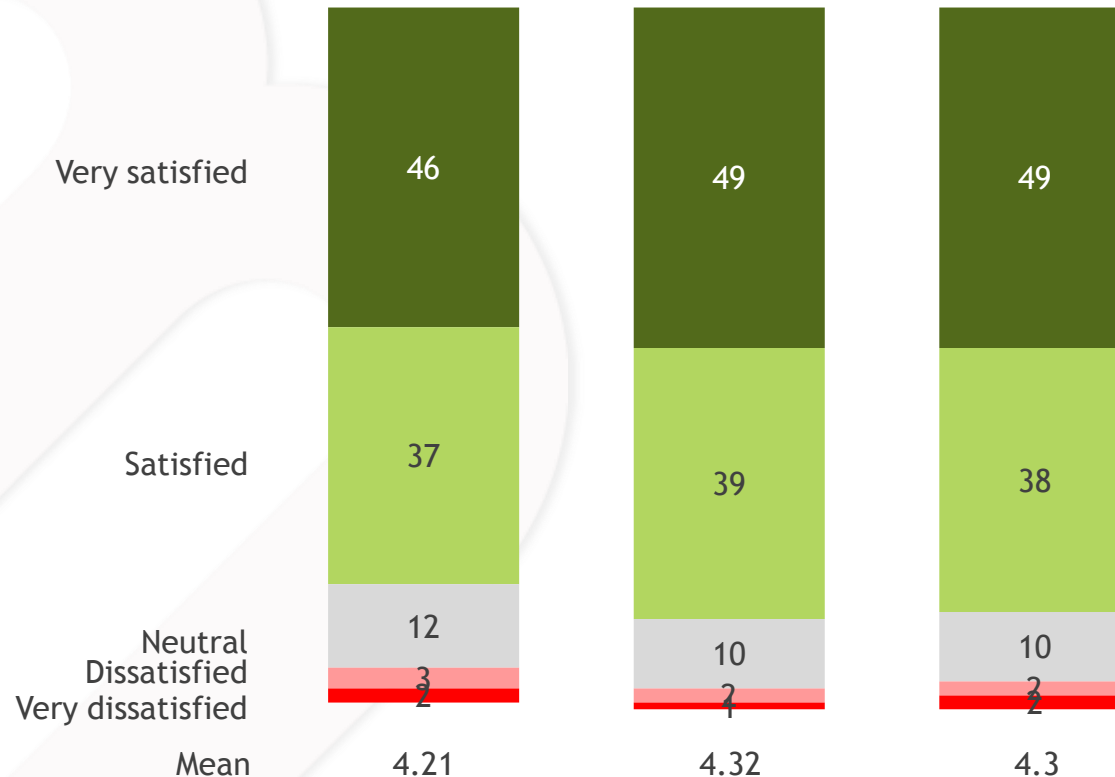
Q12 How satisfied have you been with the information that has been provided about Leap Cards? We are referring to the leaflets, website, advertising, and the customer care line. Please indicate your satisfaction on a scale of 1 to 5 where 1 is very dissatisfied and 5 is very satisfied?

MillwardBrown
Lansdowne

Advertising Evaluation – Ads Tested

(Base: Total Sample)
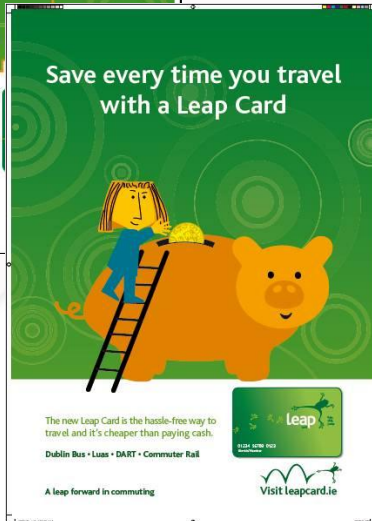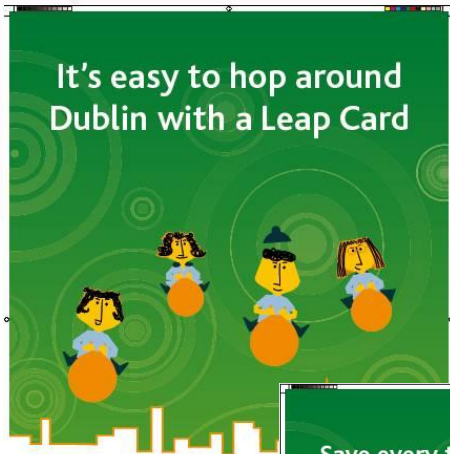
Poster	Print	Radio

Q16. And now just a few questions about Leap Card advertising, have you seen either of these poster adverts?
Q17. Have you seen either of these newspaper adverts?
Q18. Have you heard either of these radio adverts?

Advertising Evaluation – Three quarters of all respondents have seen one or other of the adverts that we tested (individual recall is above Millward Brown norms)

(Base: Total Sample)

Seen any of these Adverts = 75%

**Poster
(n=613)
%**
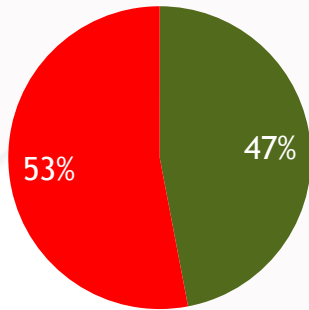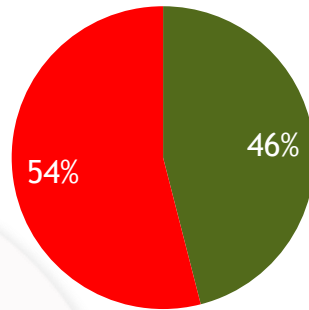
53% 47%

**Print
(n=613)
%**

54% 46%

**Radio
(n=613)
%**

58% 42%

**User
(n=252)
%**

56%

**Non User
(n=361)
%**

41%

**User
(n=252)
%**

53%

**Non User
(n=361)
%**

40%

**User
(n=252)
%**

51%

**Non User
(n=361)
%**

35%
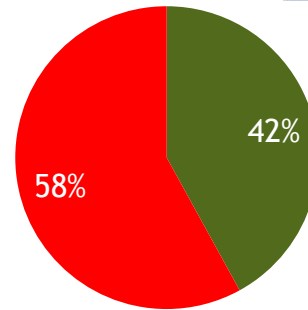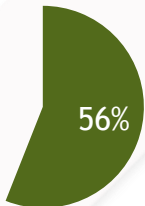
Recall is higher among Leap Card users

Q16.   And now just a few questions about Leap Card advertising, have you seen either of these poster adverts?
Q17.   Have you seen either of these newspaper adverts?
Q18.   Have you heard either of these radio adverts?

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Advertising Appeal – Half of the total sample like the advertising that they were shown and just over 4 in 10 thought that the ads would prompt them to purchase

(Base: Total Sample)

	Total (n=613) %	Leap Card Users (n=252) %	Non Leap Card Users (n=361) %
Like very much	18	19	17
Like	32	37	29
Neutral	35	32	38
Don't like	6	5	6
Do not like at all	2	2	2
Mean	3.62	3.71	3.56

50%

Bus	3.64
Luas	3.62
Train/DART	3.64
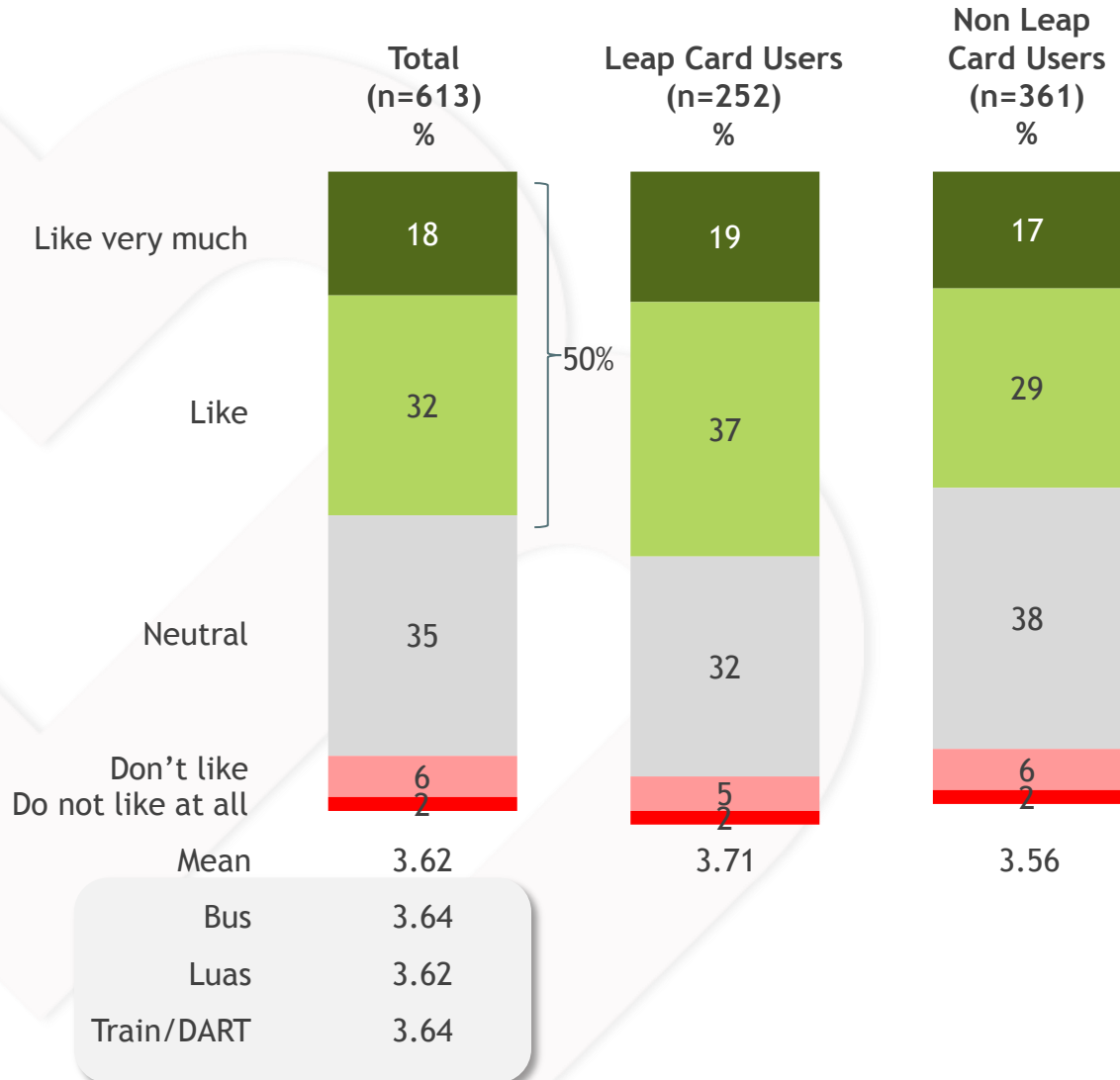
Non-Leap Card Users

Would these Ads prompt you to purchase?
(n=361)
%

Yes 44%

No 56%
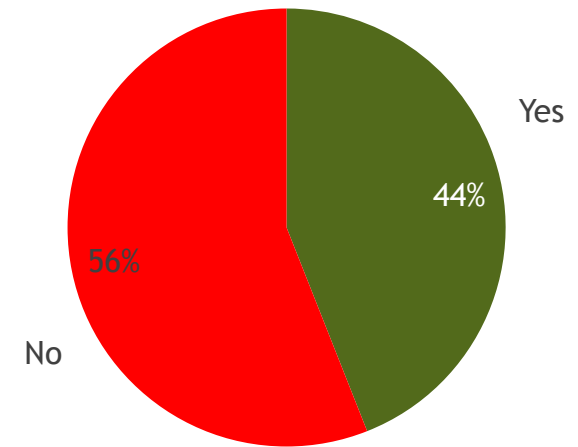
Q19. Do you like these adverts overall, using a scale of 1 to 5 where 1 do not like at all and 5 is like very much?
Q21. Would these ads prompt you to get a Leap Card?

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Perceived Benefits of the Leap Card – Having seen the ads the main messages picked up by respondents was that the Leap Card would save you carrying coins, save you money and be a quicker way to pay. It also promotes multimode use

(Base: Total Sample)

	Total (n=613) %	Leap Card Users (n=252) %	Non-Leap Card Users (n=361) %
Not having to carry coins	45	54	39
It saves me money	39	42	37
It's a quicker way of paying for transport	30	35	27
Hop-on, hop-off system / using one card on multiple modes of transport	26	29	23
Not having to queue at the Luas / DART/Commuter Rail	13	17	10
It's safer than a paper ticket because if I lose it it's registered	11	13	9
Convenience	1	1	1
Don't know	2	-	3
Other	1	1	1

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Lansdowne

NTA Leap Card Research

Prepared by Millward Brown Lansdowne

Leap Card reviews and audits

Since the launch of the Leap Card in December 2011, the scheme has been subject to the following audits and reviews:

Annual Statutory Audit – Comptroller & Auditor General (C&AG)

As the Leap Card Scheme falls within the remit of the National Transport Authority (NTA), it is subject to an annual statutory audit by the C&AG. Accordingly, the scheme fell within the scope of the 2011 annual statutory audit of the NTA.

While the final audit report and related management letter has not yet been issued, the C&AG audit work has been substantially completed. The Authority has discussed the preliminary findings with the C&AG and no issues were noted in relation to the on-going operation of the scheme.

Internal Audit Review - March 2012

The NTA Internal Audit function has an on-going programme of internal audits/reviews in place covering the various NTA activities including the Leap Card Scheme. In March 2012, a review was completed that focussed specifically on the Scheme and covered the following areas:

- Clearing House Settlement with participants, i.e. Transport Operators and related businesses
- Reconciliation of some of the Scheme Liabilities
- Reconciliation of position between the Scheme and Participants
- Bank Account Reconciliations

The findings and related recommendations were as follows:

- Implementation of the integrated ticketing scheme is a complex process and that the system established to automate transactions has delivered, however as the system evolves the financial aspects of the system must also evolve.
- Documentation of Financial Policies and Financial Processes – the review found that some of this documentation was incomplete or out of date in certain areas. It was recommended and agreed by management that this documentation would be reviewed for completeness and to ensure all aspects are up-to-date. It was noted that these are "living" documents that will be subject to on-going updates and amendments.
- Bank Account Reconciliations – it was found that the bank reconciliations were not always formally signed off in a timely basis. It was recommended and agreed with management that with immediate effect, all bank account reconciliations would be formally signed off in a timely basis.
- Scheme Liabilities – it was found that there were issues to be addressed in a system report used to monitor the daily movements of a scheme generated report that summaries usage transactions that the scheme becomes aware of, but are not yet received. It was recommended and agreed by management, that steps would be taken to enhance the relevant report. It was noted that alternative reports and analysis were being used in the short-term to track these movements on a daily basis.
- Clearing House Settlement with participants – it was found that there was a minor difference on the sign-off sheet for one of the daily clearing house settlements with participants . It was

recommended and agreed with management, that with immediate effect, the daily sign-off sheet would be enhanced to include a control check that highlighted any differences of this nature.

- Exception Management/Resolution – it was found that comprehensive documentation was not always maintained around the identification and resolution of exceptions arising. It was recommended and agreed by management, that comprehensive documentation be maintained, that provided a clear audit trail in relation to the resolution of the various exceptions arising. It was accepted by management that the maintenance of a comprehensive issues log, could contribute to more timely identification of recurring issues.

Internal Audit Review - June 2012

The NTA Internal Audit function is undertaking a further review of the Leap card scheme as part of their regular schedule of reviews which has not yet been completed.

Dublin Bus Realtime reviews and audits

The National Transport Authority is committed to providing the most accurate real time information service possible. The NTA monitor the service via independent surveys and are grateful for the public feedback on the Transport for Ireland website, in order to inform continual refinement of the system.

Most Recent Reviews

The NTA commission independent surveyors to conduct regular surveys at 15 specific sites around Dublin. The surveys (attached) record

- Time The Bus First Appeared On Sign
- RTPI Due Time When The Bus First Appeared On Sign
- First Estimated Due Time
- Time RTPI Due Goes Off Screen
- Actual Arrival Time
- Time The Bus First Appeared On Sign - Arrival Time
- Difference in First Estimated Time and Actual Wait Time
- Difference In Time RTPI Due Goes Off Screen
- Actual Arrival Time
- Evidence of untoward Due / Time Jumping
- Additional Comments

Of the 940 buses surveyed in April, 93% arrived within 3mins, 90% within 1 min.

In testing of the RTPI system NTA looked to international benchmarks. We requested 2 of the leading experts in the field[i] to provide benchmarking material. Published data on the accuracy of other RTPI systems is hard to come by, the NTA were cited 67% system adherence 2007 report for Aberdeen (report attached) and 77% system adherence 2009 report for Surrey County Council (report attached). Mark Cartwright the chairperson of RTIG inform - an UK association established to support and promulgate good practice in the use of information and communications technology in public transport, stated that a "90% level of matching is historically pretty rare, and London manages it but that's about it". Transport for London shared technical audits with the NTA in November which showed recent technical audits consistently show 92% within + one minute. Another expert John Austin relayed that that "90% system adherence (ie the proportion of vehicles at any one time for which an RTI projection is available, rather than the accuracy of prediction) was regarded as pretty good, and that 95% may be achievable in specific contexts". The factors that affect the accuracy are many, though, and include geographical (hilly areas), radio noise, "canyoning"), human (especially drivers not logging in correctly) and technical (connector failure, system configuration errors, etc).

However as state the National Transport Authority is committed to providing the most accurate real time information service possible.

Accuracy record

The results for the same 15 sites surveyed at the end of November and start of December 2011 showed an average accuracy of 90% of buses arriving within 3mins.

The surveys are passed to Dublin Bus to investigate any issues such as .

2. Wrong duty input or Late sign on by driver

3. Discrepancies between time on schedule and actual travel time on links in the buses journey

4. Timely Control and regulation

5. Software issues

Public Feedback

Spreadsheet attached

The NTA collect and collate the Public Feedback via the website on a regular basis. This feedback is sent to Dublin Bus to investigate and make improvements.

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[i] John Austin of Austin Analytics and Mark Cartwright the chairperson of RTIG inform - an UK association established to support and promulgate good practice in the use of information and communications technology in public transport

REAL TIME PUBLIC FEEDBACK - FREQUENCY OF COMMENTS

01 October - 01 November — Total 82

Route Number	Frequency of comment
145	7
130	6
83	5
128	5
16	4
39A	4
77A	4
84X	4
7	3
11	3
27	3
122	3
9	2
33X	2
46A	2
61	2
140	2
13	1
14	1
15	1
15A	1
17	1
17A	1
25A	1
25B	1
38	1
39	1
40A	1
41X	1
43	1
44	1
67	1
69	1
75	1
78	1
84	1
120	1
123	1

1st - 21st November 2011 — Total 72

Bus Number	Frequency of Complaints
4	5
7	4
14	4
38	4
51D	3
66A	3
128	3
130	3
9	2
11	2
25A	2
31	2
32B	2
37	2
39A	2
75	2
77A	2
84X	2
145	2
13	1
16	1
16A	1
17	1
25	1
27	1
29A	1
40	1
41	1
41C	1
42	1
45	1
45A	1
46A	1
49	1
66	1
66X	1
68	1
79	1
140	1
161	1

21 Nov - 12 December — Total 55

Bus Number	Frequency of Complaints
130	7
17	4
13	3
40	3
140	3
14A	2
38	2
39A	2
47	2
66A	2
67	2
84X	2
122	2
4	1
15B	1
16	1
16A	1
23	1
27	1
29A	1
39	1
41	1
41C	1
45	1
46A	1
61	1
65	1
66	1
69	1
120	1
128	1
151	1

12 -Dec - 09 Jan — Total 29

Bus Number	Frequency of Complaints
61	3
11	2
16A	2
18	2
33	2
79	2
122	2
151	2
9	1
15B	1
25A	1
27	1
39A	1
40	1
42	1
46A	1
66A	1
128	1
140	1
142	1

09 Jan-12 Feb — Total 20

Bus Number	Frequency of Complaints
15B	2
16A	2
77A	2
4	1
7	1
13	1
16	1
25A	1
27	1
33	1
39A	1
41	1
41A	1
45	1
46A	1
61	1
75	1
84	1
207	1
236	1

12 Feb - 26 March — Total 25

Bus Number	Frequency
15B	4
130	4
37	3
4	1
5	1
11	1
14	1
15A	1
16A	1
27	1
33	1
39A	1
40	1
66	1
77A	1
150	1
151	1

11 Apr - 21Jun — Total 36

Bus Number	Frequency of Complaints
130	6
17	5
18	4
4	3
77A	2
84X	2
9	1
13	1
15B	1
17A	1
31	1
33	1
37	1
39	1
41	1
42	1
46A	1
66A	1
76	1
205	1

Surveys to be repeated			Survey 1	%	Survey 2	Numbers of Bus	% accuracy	% system accuracy (i.e of the buses that tracked correctly how many were within 3mins)	20/12/2011	Feb	Numbers of Bus	% accuracy	within +/- 1 min	within +/- 2mins	Survey 3	Numbers of Buses	% accuracy within +/- 3min	within +/- 1 min	system accuracy +/- 1 min
1	491	Lower Mount Street	05/07/11	96%	05/12/11	46	93%	100%		2/14/12	53	92%	96%	98%	18/04/12	39	84%	72%	86%
2	1070	Lower Rathmines Road	05/07/11	96%	25/11/11	134	98%	100%					93%	98%	02/05/12	111	98%	96%	100%
3	17	Lower Drumcondra Road	06/07/11	96%	07/12/11	98	92%	99%							18/04/12	109	99%	95%	98%
4	760	Stillorgan Road	06/07/11	81%	06/12/11	89	85%	91%	82%						26/04/12	73	95%	88%	95%
5	2040	Royal Marine Road	07/07/11	80%	05/12/11	68	81%	89%								76	79%	72%	82%
6	4571	Stillorgan Road	07/07/11	93%	02/12/11	64	91%	98%							23/04/12	88	94%	91%	92%
7	2848	Broadford Road	08/07/11	100%	24/11/11	25	90%	92%							26/04/12	25	88%	84%	96%
8	112	Ballymun Road	05/09/11	86%	01/12/11	44	82%	87%		2/14/12	47	94%	99%	99%	24/04/12	42	100%	100%	100%
9	664	Malahide Road	05/09/11	91%	01/12/11	104	91%	99%		2/15/12	103	95%	100%		25/04/12	28	93%	82%	85%
10	1443	Essex Quay	08/06/11	86%	25/11/11	135	91%	98%	89%	2/15/12	124	92%	95%	97%	23/04/12	123	88%	82%	92%
11	7043	Drimnagh Road	07/02/11	77%	28/11/11	56	96%	98%							24/04/12	55	98%	98%	100%
12	1287	Harrington Street	07/02/11	84%	28/11/11	29	81%	96%							27/04/12	30	95%	93%	96%
13	2095	Crumlin Road	07/02/11	85%	30/11/01	57	92%	96%							25/04/12	56	99%	98%	98%
14	182	Glasnevin Hill			30/11/11	19	92%	94%							27/04/12	16	94%	94%	94%
15	187	Phibsborough Road			30/11/11	76	89%	97%							30/04/12	69	97%	97%	100%
							Weighted % accuracy	Weighted % system accuracy				Weighted % accuracy					Weighted % accuracy		
			AVERAGE	88%		1057	90%	96%			327	93%				940	94%	90%	

Real Time, Dublin Bus Survey Results

		Numbers of Bus	% accuracy		% system accuracy					Numbers of Bus	% accuracy		% within 1 min	
491	Lower Mount Street	46	0.93	42.78	1	46	53	0.92	48.76	39	0.84	32.76	72%	28.08
1070	Lower Rathmines Road	134	0.98	131.32	1	134			0	111	0.98	108.78	96%	106.56
17	Lower Drumcondra Road	98	0.92	90.16	0.99	97.02			0	109	0.99	107.91	95%	103.55
760	Stillorgan Road	89	0.85	75.65	0.91	80.99			0	73	0.95	69.35	88%	64.24
2040	Royal Marine Road	68	0.81	55.08	0.89	60.52			0	76	0.79	60.04	72%	54.72
4571	Stillorgan Road	64	0.91	58.24	0.98	62.72			0	88	0.94	82.72	91%	80.08
2848	Broadford Road	25	0.9	22.5	0.92	23			0	25	0.88	22	84%	21
112	Ballymun Road	44	0.82	36.08	0.87	38.28	47	0.94	44.18	42	1.00	42	100%	42
664	Malahide Road	104	0.91	94.64	0.99	102.96	103	0.95	97.85	28	0.93	26.04	82%	22.96
1443	Essex Quay	135	0.91	122.85	0.98	132.3	124	0.92	114.08	123	0.88	108.24	82%	100.86
7043	Drimnagh Road	56	0.96	53.76	0.98	54.88	327		304.87	55	0.98	53.9	98%	53.9
1287	Harrington Street	29	0.81	23.49	0.96	27.84			93%	30	0.95	28.5	93%	27.9
2095	Crumlin Road	57	0.92	52.44	0.96	54.72				56	0.99	55.44	98%	54.88
1287	Harrington Street	13	0.81	10.53	0.91	11.83				0	0.00	0	0%	0
182	Glasnevin Hill	19	0.92	17.48	0.94	17.86				16	0.94	15.04	94%	15.04
187	Phibsborough Road	76	0.89	67.64	0.97	73.72				69	0.97	66.93	97%	66.93
		1057		954.64		1018.64				940.00		879.65		842.7
	Weighted Average		90%			96%				Weighted Average		94%		90%

Real Time, Dublin Bus Survey Results

Survey 3	Numbers of Buses	% accuracy	within +/- 1 min	within +/- 2mins	Comments
18/04/12	39	84%	72		4's were big problems
19/04/12	116	85%	93	65	140's(44%) and 15b's (67%) problem
18/04/12	109	99%	100		
23/04/12	88	94%	92		
24/04/12	42	100%	100		
23/04/12	123	88%	76		90's taken out and 39 (70%) and 39a(75%) problem
24/04/12	55	98%	100		