PUBLIC IMAGE:
Determining the effects of users' image of public transit on loyalty

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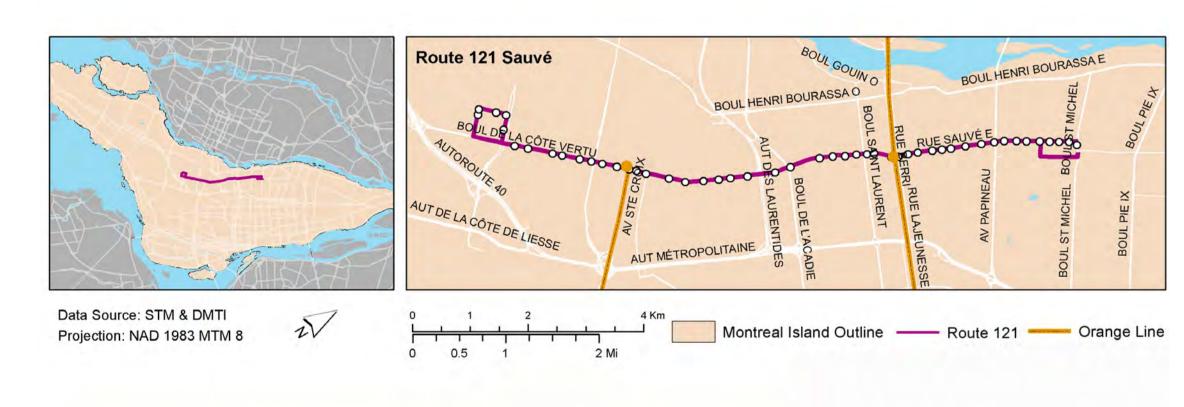**TRAM** Transportation Research at McGill

ABSTRACT

In many cities, transit agencies are focusing on increasing passenger satisfaction and loyalty in response to regional policies aimed at decreasing auto-usage and increasing the use of more sustainable modes. This analysis uses survey data collected along a bus route in Montreal, Canada.

The puspose is: to assesses whether users' image of public transit influences their satisfaction and intention to continue using public transit in the future.

The results of this study reveal that having a positive image of transit increases users' odds of being satisfied and of intending to continue using transit in the future.

DATA

Context map of Route 121 Sauvé

Data Source: STM & DMTI
Projection: NAD 1983 MTM 8

Montreal Island Outline — Route 121 — Orange Line

Data Collection:

In-person customer satisfaction surveys:

- Administered between 6:30 AM and 6:30 PM on a Tuesday, Wednesday, and Thursday early in the summer of 2016.

- Weather conditions were warm and dry and no events impeded ordinary operations of the bus route.

- 395 usable surveys collected

SUMMARY STATISTICS

Gender:
Female 58%
Male 42%

Age categories:
16-35 years old 56%
36-55 years old 33%
56-76 years old 11%

Car access:
Yes 44%

Direction:
East 48%

Language:
English 36%
French 64%

For how long have you been using this route?
Less than a year 26%
1-5 years 45%
More than 5 years 29%

What is the purpose of this trip?
Going to work 68%
Going to school 29%
Going to for shopping 13%

In one year from now, do you plan to be using public transit:
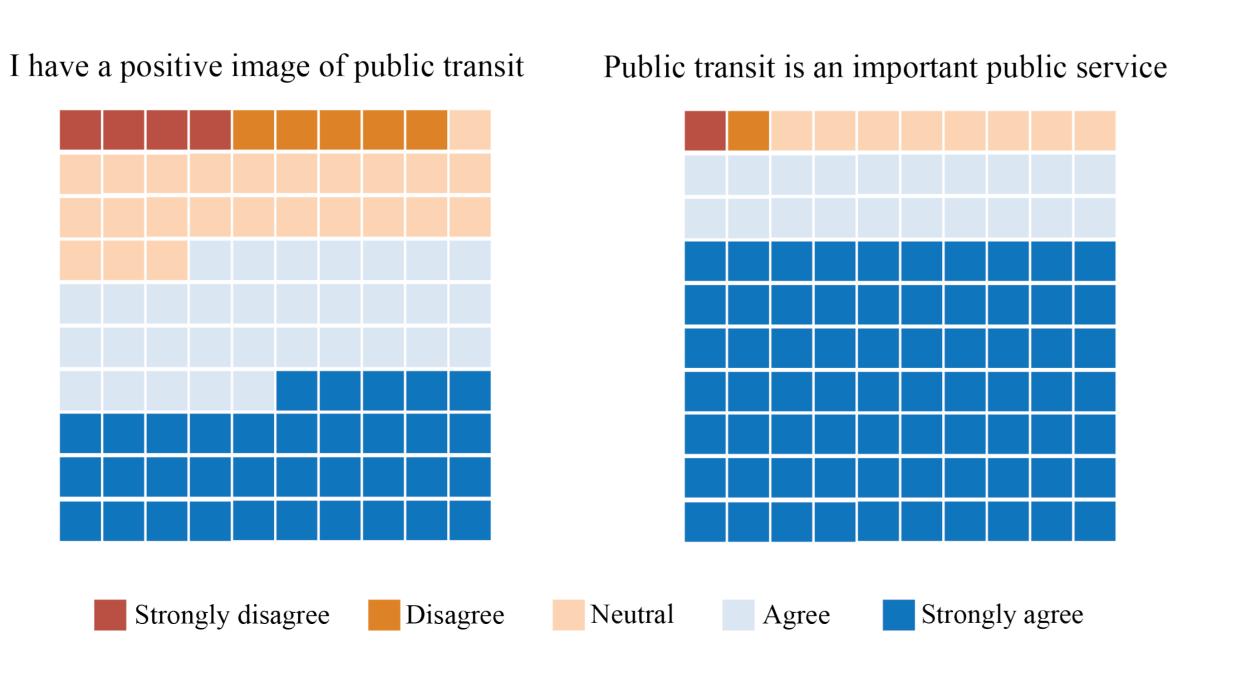Less than you do now 14%
The same 76%
More than you do now 10%

On a scale from 1-5, indicate how satisfied you currently are with the 121:

- Average overall satisfaction 3.93
- Average satisfaction with on-time arrival 3.74
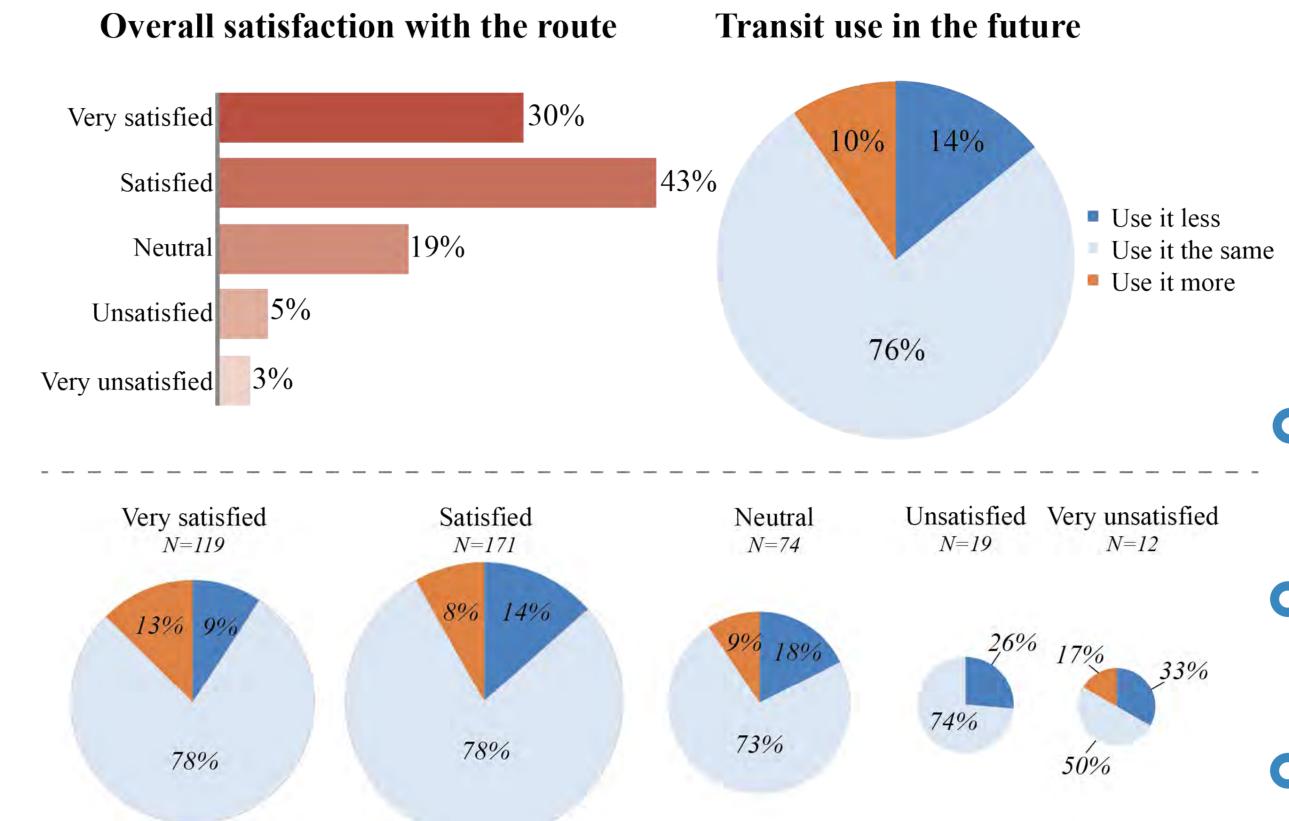- Average satisfaction with travel time 3.88

Satisfaction and future usage:

Agreement with the statements "*I have a positive image of transit*", and "*public transit is an important public service*".

I have a positive image of public transit   Public transit is an important public service

■ Strongly disagree ■ Disagree ■ Neutral ■ Agree ■ Strongly agree

ANALYSIS

Satisfaction and future usage:

Overall satisfaction with the route

Very satisfied 30%
Satisfied 43%
Neutral 19%
Unsatisfied 5%
Very unsatisfied 3%

Transit use in the future

10% 14% 76%

■ Use it less ■ Use it the same ■ Use it more

Very satisfied N=119 — 13% 9% 78%
Satisfied N=171 — 8% 14% 78%
Neutral N=74 — 9% 18% 73%
Unsatisfied N=19 — 26% 74%
Very unsatisfied N=12 — 17% 33% 50%

- Among users of all levels of satisfaction, most intend to continue using the service the same amount as they currently do.

- In nearly every category of satisfaction there are users who both want to use transit more and less than they currently do.

- The percentage of users who intend to use transit less than they currently do increases as overall satisfaction decreases.
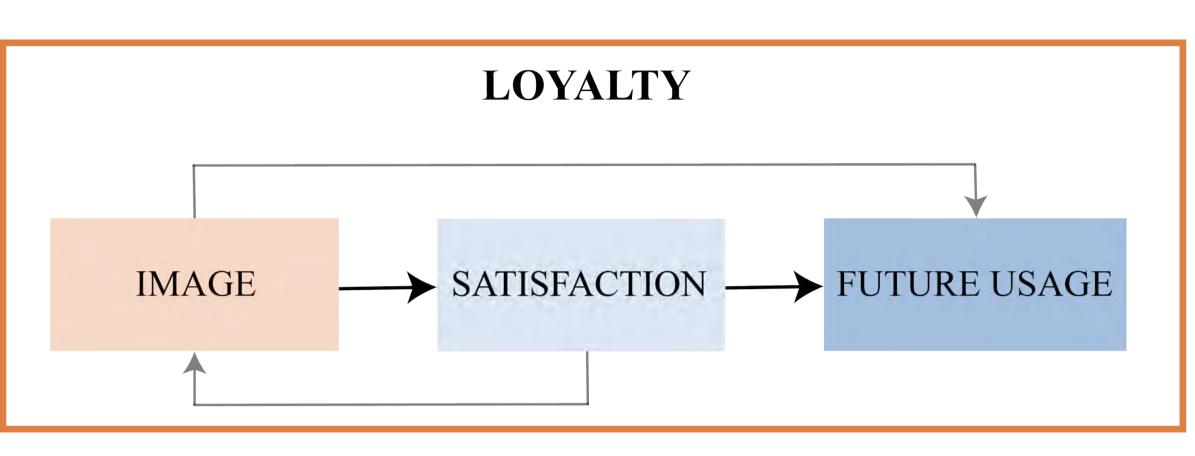
LOGISTIC MODELS

OVERALL SATISFACTION: Level of satisfaction with the bus service	MODEL 1		
	OR	2.5 %	97.5 %
(Intercept)	6.689 ***	2.037	23.888
Personal Characteristics			
Age group: 16-35	0.429 *	0.157	1.027
Age group: 36-55	0.374 **	0.134	0.926
Age group: 56-76	NA	NA	NA
I have a positive image of public transit:			
Low agreement (1-2/5)	0.138 ***	0.057	0.325
Medium agreement (3-4/5)	0.461 ***	0.255	0.810
High agreement (5/5)	NA	NA	NA
Public transit is an important public service:			
Agreement (4-5/5)	2.003 *	0.969	4.125

Signif. codes: 0.001 '***' 0.01 '**' 0.05 '*'
--- = Not in model, NA = Reference Category
†Thresholds for error rates are based on maximizing sensitivity and specificity as indicated by ROC curves.

N=395
AIC: 433
BIC: 457
Error rate: 0.058†
AUC: 0.673

FUTURE USAGE: Intention to continue to use	MODEL 2		
	OR	2.5 %	97.5 %
(Intercept)	11.409***	2.620	56.752
Personal Characteristics			
Have used transit for less than a year	0.432 *	0.181	0.991
Have used transit for 1-5 years	0.443 **	0.196	0.937
Have used transit for more than 5 years	NA	NA	NA
I have a positive image of public transit:			
Low agreement (1-2/5)	0.152 ***	0.048	0.464
Medium agreement (3-4/5)	0.266 ***	0.105	0.584
High agreement (5/5)	NA	NA	NA
Satisfaction			
Overall level of satisfaction with public transit (1-5)	1.325 *	0.976	1.789

Signif. codes: 0.001 '***' 0.01 '**' 0.05 '*'
--- = Not in model, NA = Reference Category
†Thresholds for error rates are based on maximizing sensitivity and specificity as indicated by ROC curves.

N=395
AIC: 308
BIC: 332
Error rate: 0.035†
AUC: 0.843

Satisfaction

- Having a positive image increases users' odds of being satisfied.

- The odds for users who agree that public transit is an important public service is two times higher compared to users who do not agree with this statement.

- The odds of being satisfied are lower for middle aged users and young users compared to older users.

Future usage

- Having a positive image of transit increases users' odds of continuing to use transit in the future.

- For every increase in satisfaction on a scale from 1-5 the odds of intending to use transit in the future increase by 33%.

- The longer that a user has taken transit, the greater their odds of continuing to use transit in the future.

CONCLUSION

LOYALTY

IMAGE → SATISFACTION → FUTURE USAGE

Loyalty constructs in public transit research should be composed of passengers':

- **Image** of public transit
- Overall **satisfaction** with a particular service
- Intentions to **continue using** the service in the future.

Future studies should:

- be conducted in **regions** that are more **auto-centric** than Montreal, Canada, such as the in the United States of America where there is often a stigma associated with transit usage.

- assess which **factors** influence users to have a **positive image** of public transit.

- further study the **relationships** between transit users **image**, **satisfaction**, and **future usage**.

Transit agencies would benefit from:

- including **image questions** in their large-scale customer satisfaction surveys – especially if individuals' image about transit can be compared to other modes.

ACKNOWLEDGEMENTS

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