

University of Puerto Rico - Mayagüez Campus
College of Engineering - Department of Civil Engineering

Marketing of the Security in the Tren Urbano

OMAR I. MOLINA BAS

DR. ANTONIO A. GONZÁLEZ (ADVISOR)

University of Puerto Rico
Massachusetts Institute of Technology
Tren Urbano Professional Development Program

Outline

- **Introduction**
- **Objectives**
- **Methodology**
- **Data Analysis**
- **Results**
- **Conclusions**

Introduction

- One of the main concerns in Puerto Rico is the high crime rate.
- One of the biggest challenges for the Tren Urbano is to attract users that come from a society that lacks an efficient mass transportation system. These users are accustomed to the use of private vehicles.

“Worse the Public Perception of the Crime”

“The country thinks that the situation is worse than in other years”



“Perception of the Crime rate”

The situation... Nov. (1997)	May		Percepción de la criminalidad
– It has improved a lot	2%	3%	La situación: Ha mejorado mucho: 2% 3%
– It has improved something	15%	12%	Ha mejorado algo: 15% 12%
– It has worsened something	19%	25%	Ha empeorado algo: 19% 25%
– It has worsened a lot	63%	60%	Ha empeorado mucho: 63% 60%

Objectives

Investigate what the people expect about their security in the facilities of the Tren Urbano, and compare it with current plans from the office of the Tren Urbano regarding this aspect.

"Greater the Number of Deaths in the Highway"

44 EL NUEVO DÍA-MIERCOLES 3 DE DICIEMBRE DE 1997

primer plano

Mayor el número de muertes en la carretera

Por LAURIE KELLMAN
DE THE ASSOCIATED PRESS

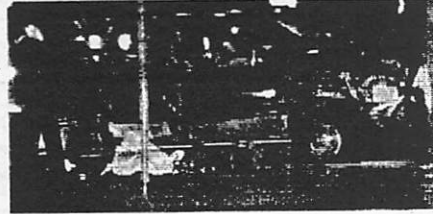
WASHINGTON - Para el año 2020 las muertes por accidentes de tránsito estarán a

la par de los males cardíacos y la depresión en la lista de causas mortales que pesan sobre la humanidad.

El secretario de Transportes Rodney Slater, tras pronunciar un discurso ante

una audiencia de peritos en transportes y salud pública, señaló a periodistas que "la gente está viviendo más, y esto es un reflejo de prosperidad y del desarrollo de las economías, pero ese progreso viene con un precio".

'El progreso viene con un precio'



Desenlace fatal

Un hombre que conducía temerariamente en Los Angeles sacó luego de que se le avisó de un accidente de tránsito por una vía congestionada. El conductor, José Luis Martínez, quien estaba en presencia por una sanción por drogas, arrolló a un policía con su camioneta, tras lo cual otro agente se mató de un disparo en la cabeza.

Según un estudio de la Organización Mundial de la Salud (OMS) y la Escuela de Salud Pública de la Universidad de Harvard, emprendido a pedido del Banco Mundial en 1992, las repercusiones físicas y las muertes por accidentes de tránsito avanzarán de noveno lugar en 1990 a tercero en 2020. El estudio sostiene que los males cardíacos estarán al top de la lista y la depresión se sitúa en segundo lugar.

Estos dos males ocupaban el quinto lugar en 1990.

EL AFRICA subsahariana registra actualmente el mayor número de heridos y muertos por accidentes de tránsito, porque

su población consume mayormente en hombres jóvenes, poco educados y malos volantes. "La edad y la educación son los factores claves", dice Hoon von Holt del Real Instituto de Tecnología de Suecia, uno de los peritos que encabezó la investigación.

Con medio millón de personas muere anualmente en todo el mundo víctima de accidentes de tránsito, 42,000 en los Estados Unidos solamente.

La primera y segunda causa de enfermedad y muerte —infecciones respiratorias y enfermedades diarreicas— en el año 1990 caídas a noveno y undécimo lugar, respectivamente.

En 1990, 4.3 millones de personas murieron de enfermedades respiratorias y 2.9 millones de enfermedades diarreicas, en contraste con 300,000 en accidentes de tránsito.

EL VIRUS de inmunodeficiencia humana (VIH) que ocupaba el noveno puesto en 1990, para el año 2020 estará en décimo lugar.

El estudio pronostica asimismo que para el 2020 el tabaco "matará a más personas que cualquier otra enfermedad considerada individualmente, sobrepasando incluso la epidemia de VIH".

Objectives (continued)

- To investigate the security that private vehicles offer, and the perception the people have about it.
- Compare the security offered by the private vehicle versus that offered by train systems, similar to the type that will be established in the Metropolitan Area.

Methodology

- Literature Review
- Interviews and Consultations
 - Offices of Siemens
 - Offices of the Tren Urbano
 - Professors and professionals
- Data Collection
 - Questionnaires
 - Government statistics

Methodology (continued)

- Data Analysis
- Conclusions
- Future Work

Questionnaires

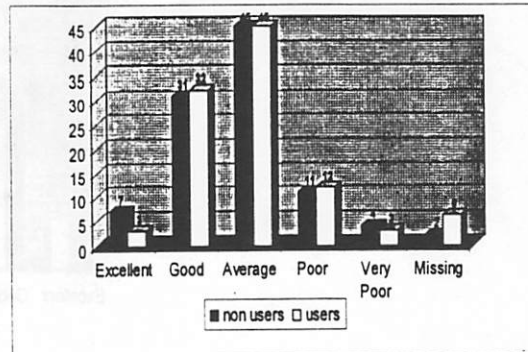
- Directed for the public
 - Over 10 years of age
 - Male and female
 - All social status
- Geographic Area (Bayamón Centro and Complejo Deportivo)
 - Near train stations
 - High criminal incidence
- Preliminary data of 203 cases of an approximate total of 1,000 cases

People questionnaires Data Analysis

- Percent of cases
- Two Groups
 - Users of public transportation.
 - Non users of public transportation.
- Samples
 - Sub groups that are classified by gender and age.
 - Evaluated 20% of the total number of cases for each sub group.

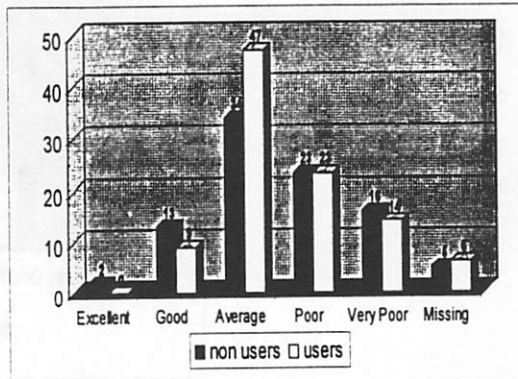
How do You Perceive Security at Complejo Deportivo During Day Hours?

Over 75% in both groups think that the security is average or above.



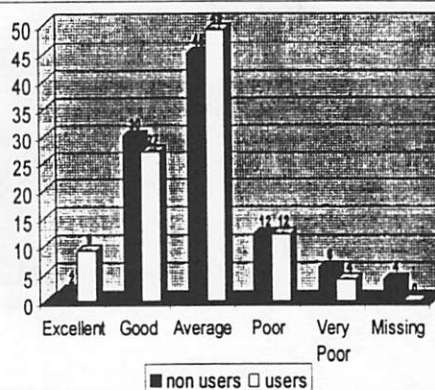
How do You Perceive Security at Complejo Deportivo during Nights Hours?

Over 70% in both groups think that the security is average or below.



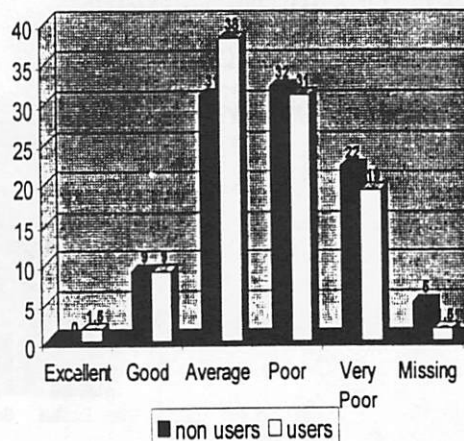
How do You Perceive Security at Bayamón Centro During Day Hours?

Over 70% in both groups think that the security is average or above.



How do You Perceive Security at Bayamón Centro during Nights Hours?

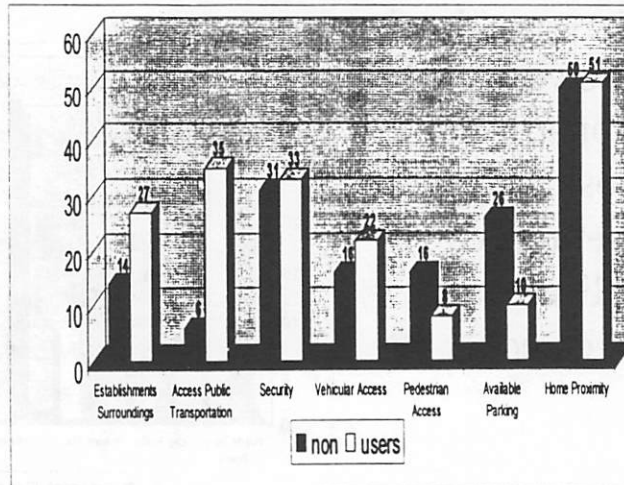
Over 80% in both groups think that the security is average or below.



Why do You Prefer a Specific Station?

The variables in which the two groups coincide with a high percentage are:

- Home Proximity
- Security

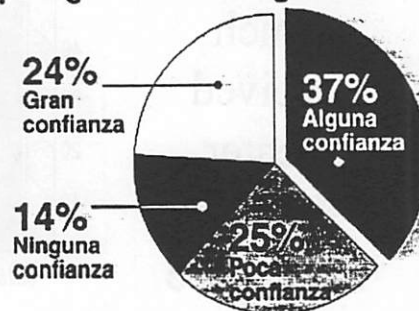


“Trust in the Police to guarantee the security”

- Great trust 24%
- Some trust 37%
- Little trust 25%
- Any trust 14%

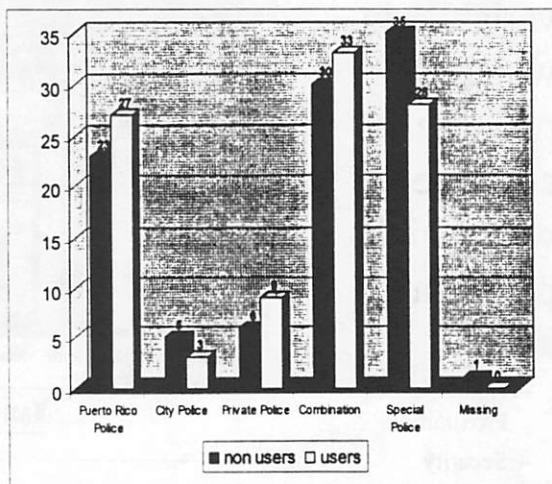
(El Nuevo Día)

Confianza en la Policía para garantizar la seguridad



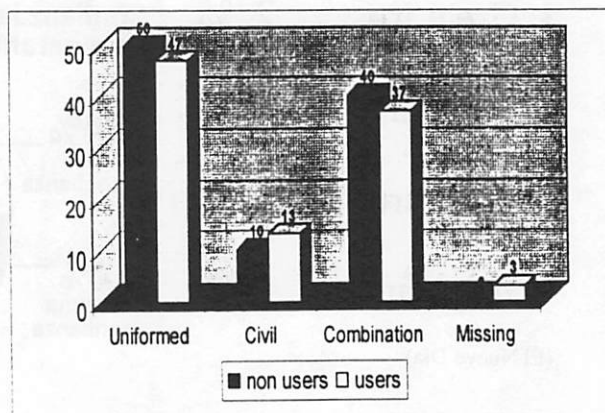
Preference for Type of Security Personnel

The variables that received greater support were those where the Puerto Rico Police was involved.



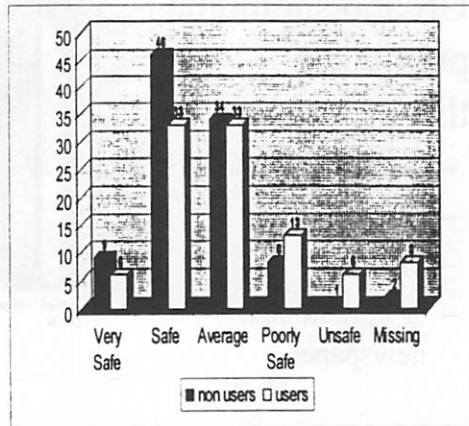
Uniform of the Tren Urbano Security Personnel

The variables which received greater support were those related to uniforms.



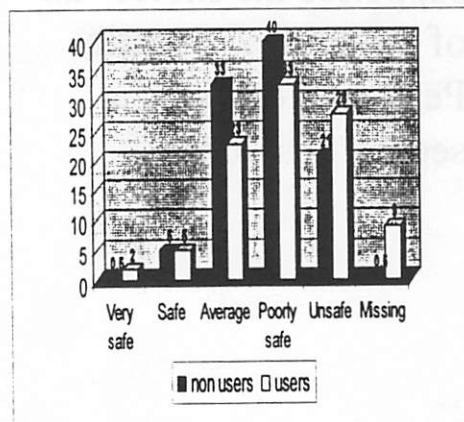
How Secure do You Feel Leaving Your Vehicle in a Parking Area where you must pay?

Over 70% in both groups think that the security is average or above



How Secure do You Feel Leaving Your Vehicle in a Free Parking Area?

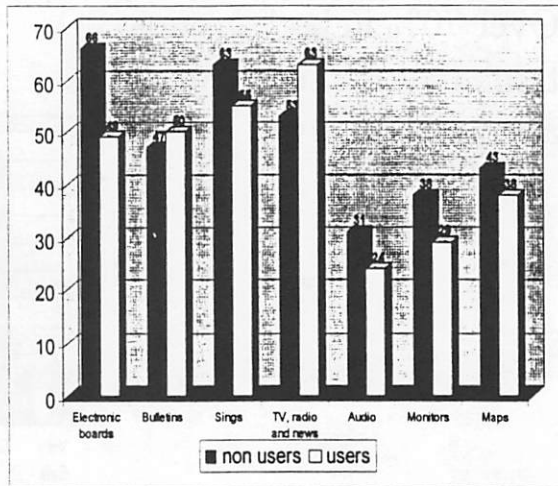
Over 75% in both groups think that the security is average or below.



How do You Expect to be Informed Regarding Security Issues?

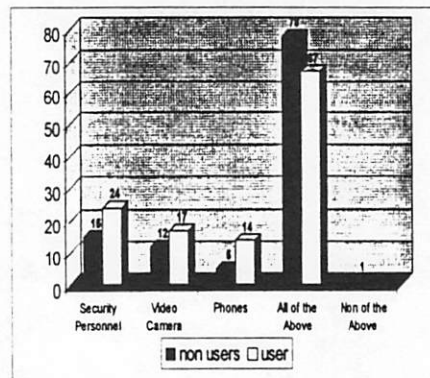
Security issues regarding Tren Urbano should be publicized through:

- Electronic Boards
- Bulletins
- Signs
- TV, radio and newspaper



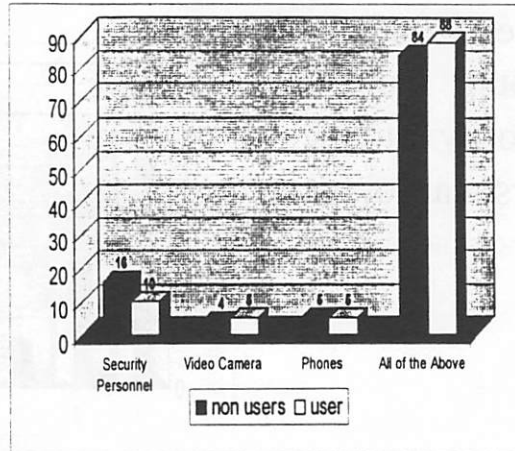
What Type of Security Should be Provided in the Railway Cars?

The great majority supported the choice "all of the above." Security Personnel obtained a second position.



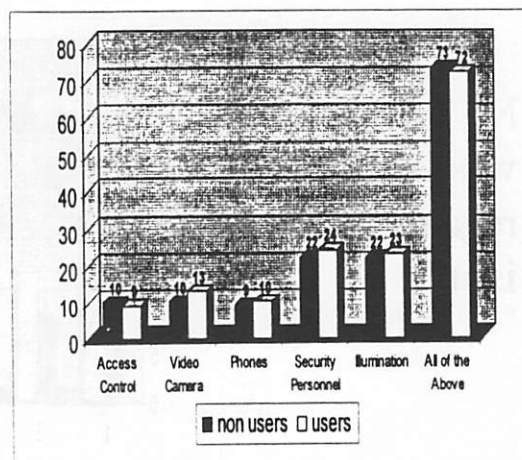
What Type of Security Should be Provided in the Stations?

The great majority supported the choice "all of the above." Security Personnel obtained a second position.



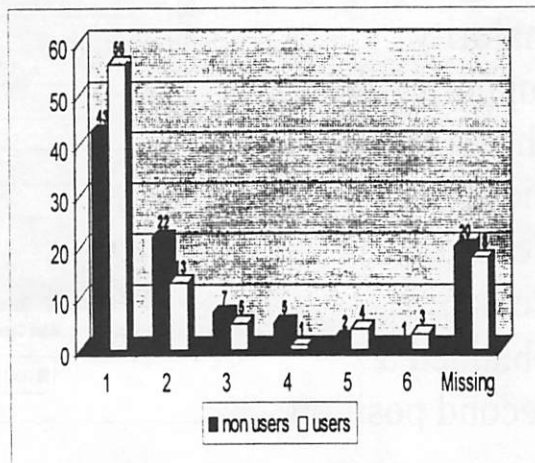
What Type of Security Should be Provided in the Parking?

The great majority supported the choice "all of the above". Security Personnel and illumination obtained a second position.



Possible Security Problems Concerns About Personal Robbery

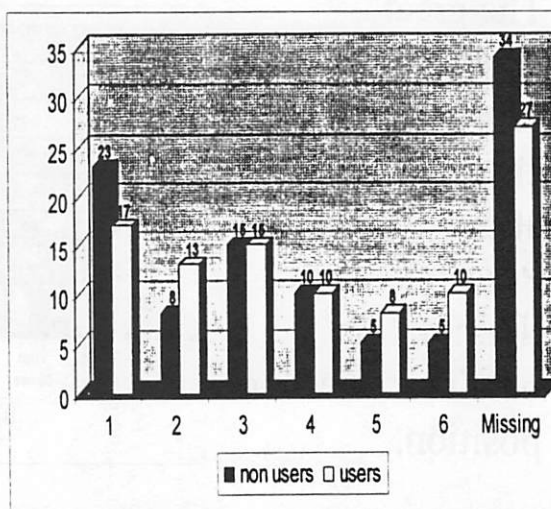
Over 40% in both groups gave priority 1 to the personal robbery.



Priority
1 high 6 low

Private vehicle Theft

No great concern was shown regarding this issue.

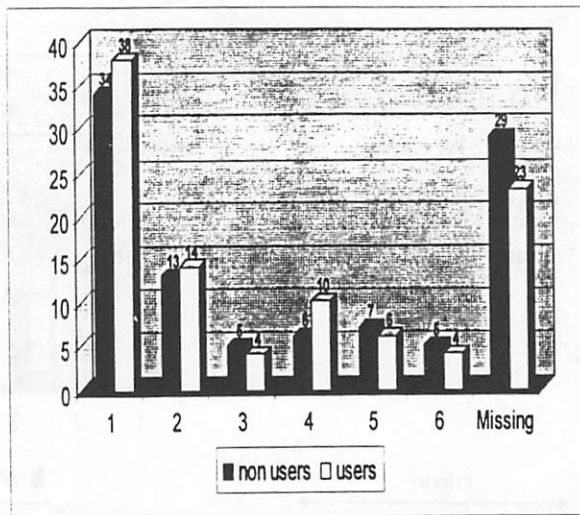


Priority
1 high 6 low

Sexual Attack

Over 34% in both groups gave priority 1 to the sexual attack.

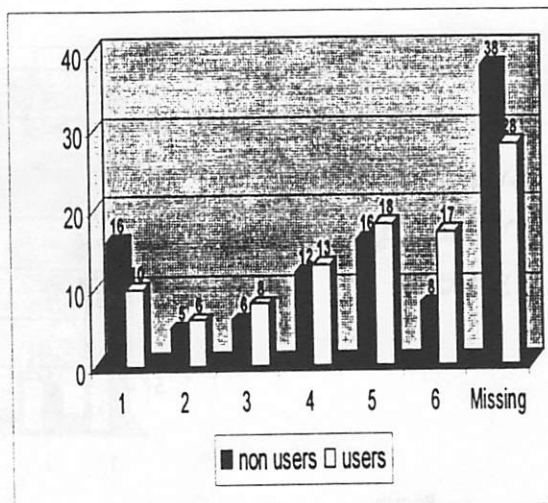
Priority
1 high 6 low



Vandalism

No great concern was shown regarding this issue.

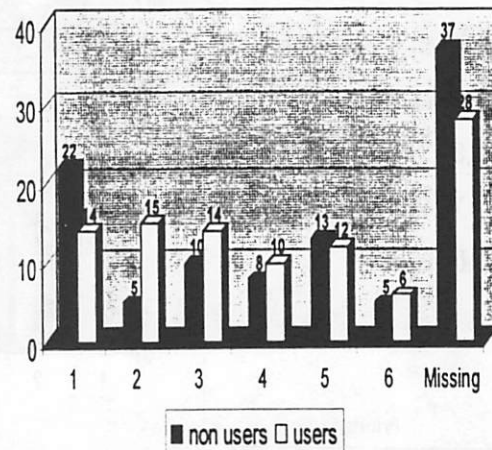
Priority
1 high 6 low



Drug Pushers

No great concern was shown regarding this issue.

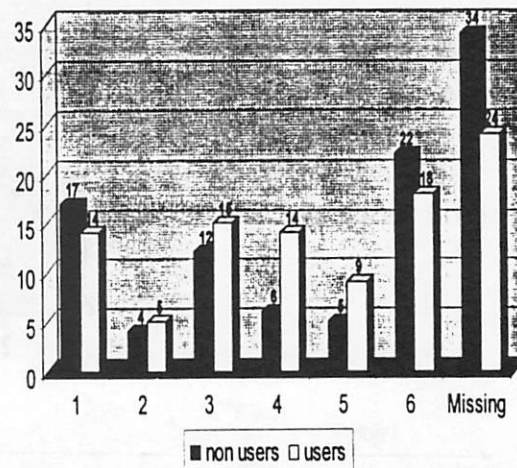
Priority
1 high 6 low



Gangs

No great concern was shown regarding this issue.

Priority
1 high 6 low



Road Safety

“In Puerto Rico every 63 minutes a traffic accident takes place and every 14.7 hours somebody dies in a collision.”
(Toledo, Police Superintendent)

Toledo: More islanders die on roads than in crimes

by ROMANA COLON DIAZ
3 PM SAT SEP

In Puerto Rico it's easier to die in a car accident than as a result of crime, Police Superintendent Pedro Toledo said. Statistics show 361 people have died in traffic accidents this year, representing 38 more than last year within the same time period.

“In Puerto Rico every 63 minutes a traffic accident takes place and every 14.7 hours somebody dies in a collision,” said Toledo during a public hearing for the new traffic law proposed by New Progressive Party Sen. Ricardo Luis Rivera Cruz.

Police outrage against drunken driving has come to the fore more since after the death a week ago of Lady Diana, Princess of Wales, and of tennis player Ricardo Jordan in August. Diana, 36, and Jordan, 30, both died in alcohol-related accidents.

Police have set up road blocks on a weekly basis at the island's high risk areas. Areas are selected based on the estimated number of visitors who will flock to particular locations during the weekend.

Over the July 4 and the Constitution weekends police estimated more than 250,000 people traveled to the western part of the island. Road blocks were erected in Mayaguez and Caguas. Officials said.

The main target of the road blocks are drunken drivers, yet Toledo explained police sometimes lack resources to be effective.

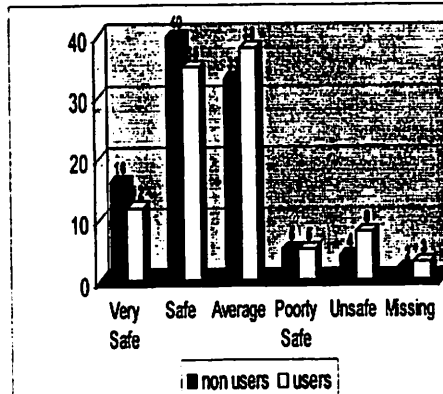
To address that issue, Toledo appointed a new head of the Traffic Division, Cmdr. Jorge Lopez Peña.

His first task was to conduct a study of all the equipment available for the highway patrol.

From the UPMAS Page 4

How Secure do You Feel Traveling in a Private Vehicle Regarding Traffic Accidents?

The majority feels secure when they travel in their private vehicle.



Government Statistics: Deaths in Vehicle Collisions

Bayamón in a second
position,
from January to
September of 1997

Position	Area	Frequency	Percent
1	Rio Piedras	33	7.7
2	Bayamón	21	4.9
6	Carolina	16	3.7
9	Santurce	11	2.6
10	Hato Rey	10	2.3
18	Guaynabo	8	1.9
21	San Juan	8	1.9
32	Cataño	4	0.9
44	Puerto Nuevo	3	0.7

Conclusions

- Personal security is an important factor.
- If the perception of lack of security does not change, the use of the Tren Urbano facilities will be very limited during the evening.
- The presence of the Puerto Rico Police is essential for the public to feel safe at the Tren Urbano facilities.
- Security Personnel should be uniformed.

Conclusions (continued)

- The public feels that paying for parking decreases the probability of crime occurrence.
- Electronic Boards, bulletins, signs, TV, radio and newspaper are the media that people prefer.
- People have a wrong perception about security in private vehicles.
- Personal robbery and sexual attacks are the crimes that represent a major

Future Work

- Statistical Analysis of questionnaire data.
- Compare the security offered by the private vehicle versus that offered by train systems, similar to the type that will be established in the island.
- Compare the questionnaires results with the Tren Urbano Office plans for this aspect.

Acknowledgement

Ms. Daisy Morales
Ms. Lizzette De La Cruz
Ms. Janellis Valle
Ms. Lydia Mercado
Ms. Lorraine Lerman
Mr. Joe Ferratti
Dr. Antonio A. González