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A Proposed Approach To
Support Safe Driving Training

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A Proposed Approach To Support Safe Driving Training

Research Center for Transport and Logistics (CTL)

- Based in **Rome**
- **20 Researchers** involved in the field of: Logistics, ITS, Autonomous vehicles, Sustainable mobility and **Road Safety**
- **Partner/Coordinator** of national and international projects



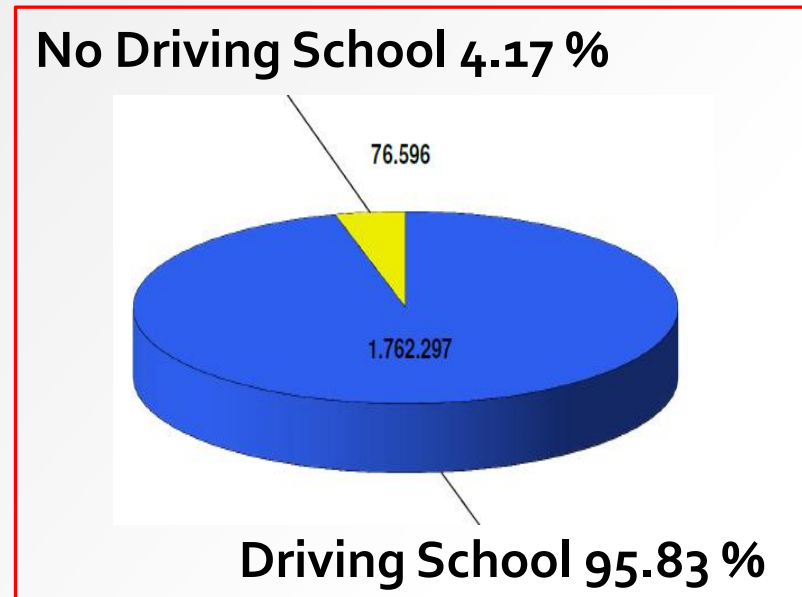
The screenshot shows the website for the Centro di Ricerca per il Trasporto e la Logistica (CTL) at Sapienza University of Rome. The header includes the Sapienza University logo and the center's name. The navigation menu includes: HOME, CHI SIAMO, RICERCA, PROGETTI STRATEGICI, DIVULGAZIONE, TRASPARENZA, and RASS. The main content area is titled "CHI SIAMO" and lists the following sections:

- GOVERNO
 - ▶ Direttore
 - ▶ Comitato direttivo
 - ▶ Consiglio tecnico-scientifico
- STAFF DI RICERCA
- AMMINISTRAZIONE

The CTL logo, featuring a stylized 'CTL' in green and grey, is displayed next to the center's name: CENTRO DI RICERCA PER IL TRASPORTO E LA LOGISTICA.

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It's not compulsory to go to a Driving School to get a Driving Licence in Italy
Around **95%** of the future drivers go to these structures to obtain it



The education level is grown in the last years, but it is not enough

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In **Italy** there are two different driving training figures: **Teachers** and **Instructors**

From 2011 to become a **Driving Teacher** you have to:

- Own a **B Driving License** and **High School Diploma**;
- Attend a **145 hours theory course** splitted in Pedagogy, Law, Behaviour, Phisic, Vehicles and First Aid;
- Pass different **exams**: B Driving Test, Written Test, Simulation of Theory Lesson and Interview

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In **Italy** there are two different driving training figures: **Teachers** and **Instructors**

From 2011 to become **Driving Instructor** you must:

- Have A to DE Driving Licenses and High School Diploma;
- Attend a **80 hours of theory course** splitted in Pedagogy, Law, Behaviour, Phisic, Vehicles and First Aid;
- Do **40 compulsory hours of practical training** with different vehicles;
- Pass different **exams**: B Driving Test, Simulation of Driving Lesson for different Vehicles and a final Interview

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Teachers and Instructors must attend a **periodical theory course of 8 hours every 2 years**

The courses have to deal with topics such as:

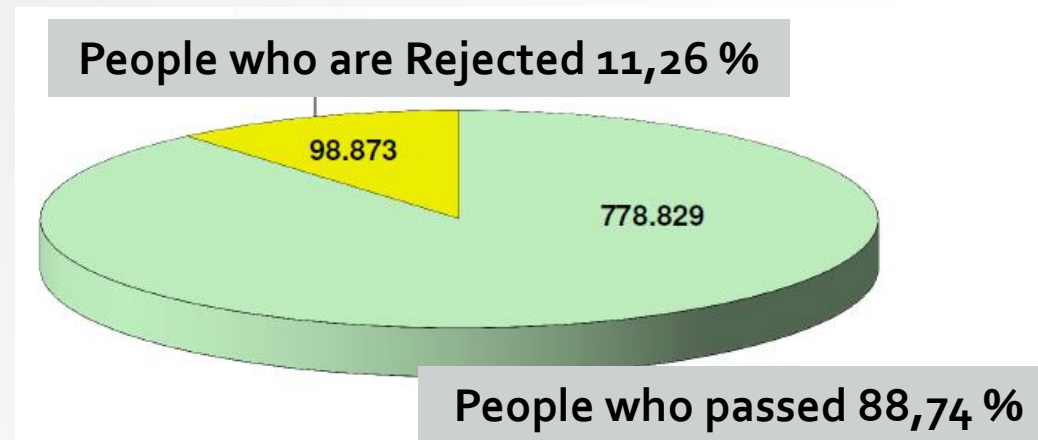
- **Regulatory changes** in road safety
- Maintaining and **improving** general **skills**
- **New developments** in **teaching** and learning methods
- New road safety **research**, in particular the **behavior** of **young drivers** and the evolution of **trends in accidents**

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In Italy we have about **2,200 Examiners** employed by the Ministry of Transport, which in **2015** carried out about **877,702 driving exams**

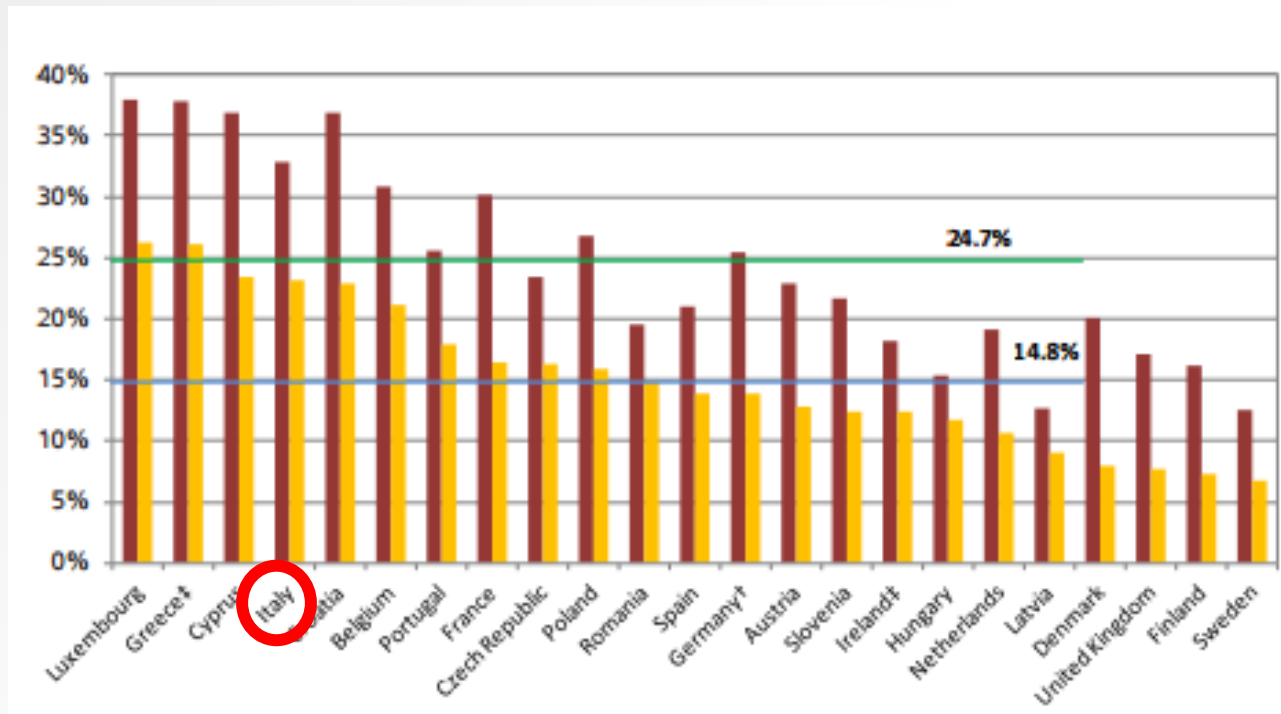
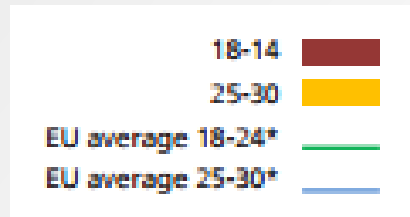
Examiners, as envisaged by the 2006/126 EC Directive, must undergo a **periodical training of 12 hours per year**

Until now **no periodical training course** has been provided for examiners



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Share of young people's road deaths out of the total number of youth deaths in the respective age category (2013)



Our research proposes a personalized training model, **tailored** to the **driving profile of drivers**. In order to gain a more effective education that develops a risk awareness of driving, instructors should better understand the student profile they are addressing

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A on-line questionnaire of **140 questions** was given to **200 drivers** from 18 to 50 years old, balanced for gender

Quali tra le seguenti caratteristiche rappresentano un suo punto di forza in relazione alla guida? *

	Per niente	Poco	Medio	Abbastanza	Molto
Pianifico e scelgo percorsi sicuri	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rispetto le regole di circolazione	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guido con attenzione	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Evito rischi inutili	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Presto attenzione agli altri utenti della strada	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conosco le regole di circolazione	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Mantengo sufficienti distanze di sicurezza	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Adatto la velocità alle circostanze	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

Usare il telefonino durante la guida, oltre a essere vietato, allunga i tempi di reazione. Ad esempio, se si impiegano 2 secondi per percepire un pericolo ...



- a 50 km/h si percorrono 10 metri, prima di toccare il freno
- a 50 km/h si percorrono 30 metri, prima di toccare il freno

In condizioni atmosferiche ideali, con un conducente attento, ad una velocità di 50 km/h, un autoveicolo si ferma in circa ...

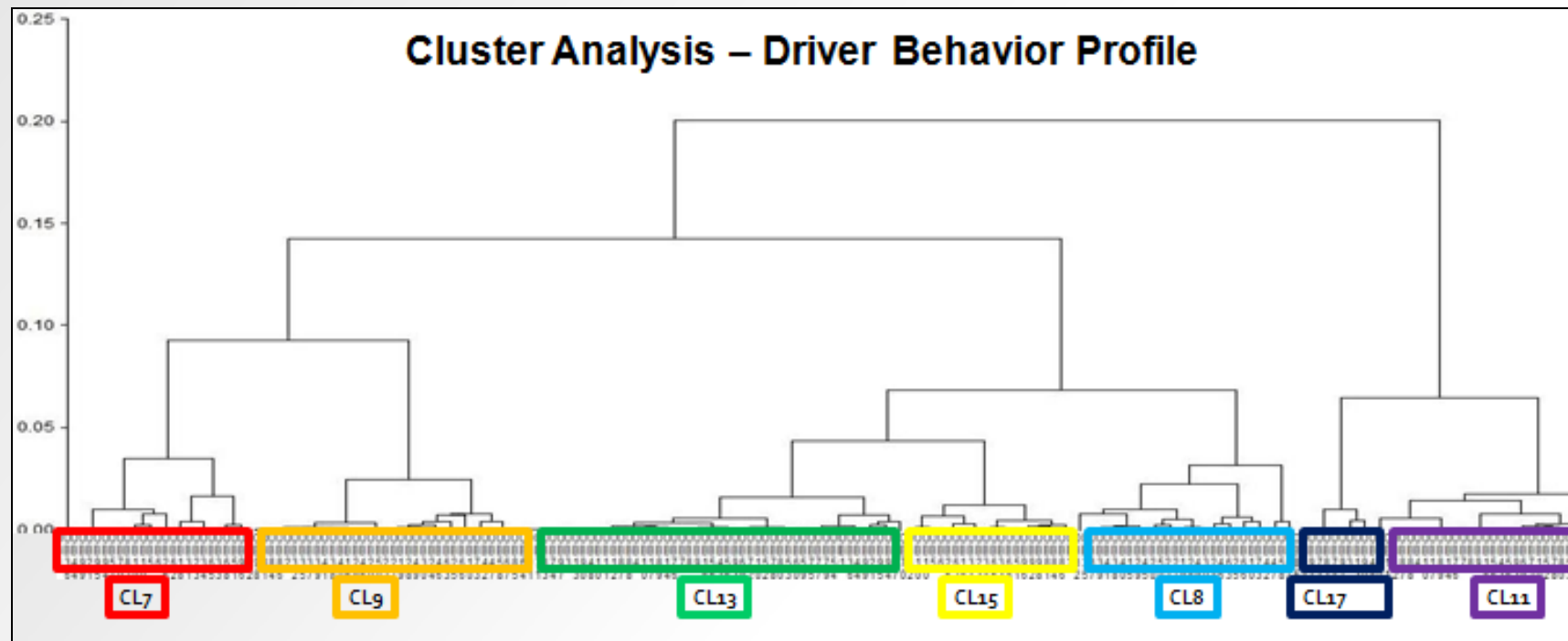


- 14 metri
- 25 metri

Questions about **risk perception, behavior, attitudes and skills**

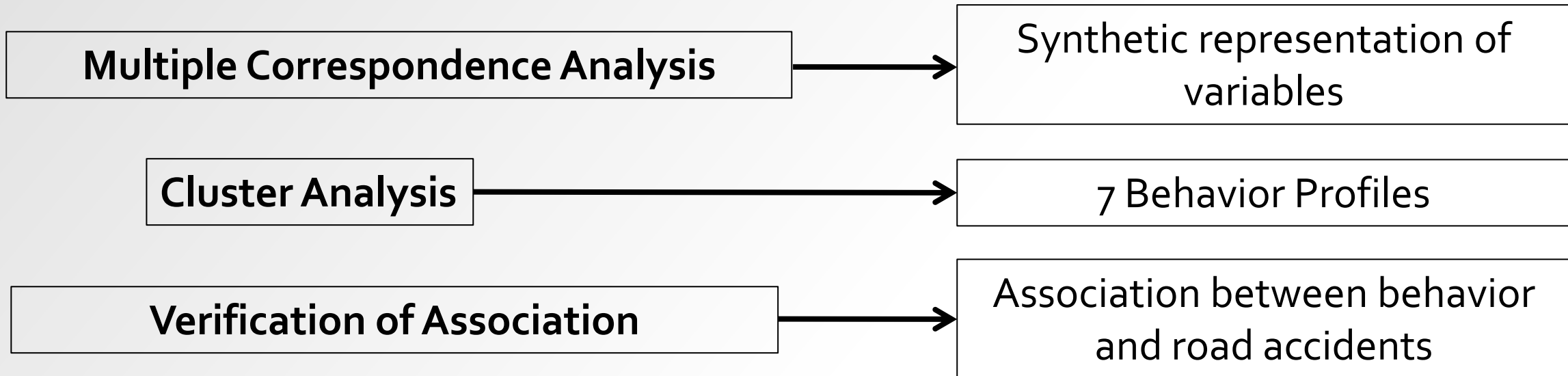
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The study identified **seven** driver profiles by clustering drivers based on four different driving styles: **reckless**, **aggressive**, **anxious** and **careless** driving behavior



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The Object of this part of the Research is verify the **relationship** between the **Driver Behavior** and **Road Accident**



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Analysis and Evaluation of the Results: Profiles of Behavior

	Aggressive	Reckless	Careless	Anxious
CL7	Yellow	Red	Red	Green
CL8	Green	Yellow	Green	Red
CL9	Yellow	Red	Red	Red
CL11	Red	Yellow	Yellow	Green
CL13	Yellow	Green	Yellow	Green
CL15	Yellow	Red	Yellow	Red
CL17	Red	Yellow	Green	Red

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Type of training in relation to the driver profile 1

CL7

Charatteristics	Training Objective	Type of training
AGGRESSIVE	Contain to get responsible driving	Exercises that lead to thinking about the difficulties Control of the vehicle in difficult situations Think on the mistakes and their consequences
RECKLESS	To justify the value of compliance with the rules and their consequences	Dynamic training to increase level of involvement: inviting thinking about choices and behaviors
CARELESS	Try to increase concentration and attention	Exercises focused on maintaining a high level of attention: introducing discussion items about choices (selective attention)
ANXIOUS	Convincing of its capabilities and enhancing personal characteristics	Coaching and environmental recognition: Infrastructure observation, anticipate traffic flow and evaluate difficult situations

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Type of training in relation to the driver profile 2

CL17

Charatteristics	Training Objective	Type of training
AGGRESSIVE	Contain to get responsible driving	Exercises that lead to thinking about the difficulties Control of the vehicle in difficult situations Think on the mistakes and their consequences
RECKLESS	To justify the value of compliance with the rules and their consequences	Dynamic training to increase level of involvement: inviting thinking about choices and behaviors
CARELESS	Try to increase concentration and attention	Exercises focused on maintaining a high level of attention: introducing discussion items about choices (selective attention)
ANXIOUS	Convincing of its capabilities and enhancing personal characteristics	Coaching and environmental recognition: Infrastructure observation, anticipate traffic flow and evaluate difficult situations

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Conclusions

- *The study identified seven driving profiles by clustering drivers based on four different driving styles: reckless, aggressive, anxious and careless driving behaviours*
- *Three profiles were mostly characterised by a single (risky) driving behaviour (e.g. reckless, aggressive and anxious). While the other four profiles were mostly a combination of two risky driving styles*
- *Careless driving was usually found in combination with other behaviours*

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Conclusions

- *The profiles showed a significant association with accident involvement (i.e. some clusters show a significantly higher level of accident involvement than others)*
- *The proposed evaluation model aims to achieve a higher level of competence and self-evaluation of their own behaviour*

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To the Future

- *Answers to the questionnaire can be used by Driving Instructors to classify **trainees** in one of the above clusters. A non-parametric discriminant analysis can be the statistical tool to attribute drivers to one of the seven individuated profiles, requiring different safe driving trainings*
- *Answers to the questionnaire can be used by Driving Teacher to classify **novice drivers** in one of the above clusters, requiring different safe driving trainings in a voluntary or compulsory **second phase driving licence system** or a **Demerit Point Course***



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Thank you for your attention !

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