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Active Safety Systems A Contribution to Safety on Roads

25th November, 2010

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Chassis Systems Control

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Active Safety Systems - A Contribution to Safety on Roads

1

Trends in road safety

2

Active Safety Systems

3

End Consumer View









4

Conclusion



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Road Safety in 2008 – A public Health Issue

	Registered motor vehicles [Mio]	Road accidents involving injuries [Mio]	Fatalities (fatalities within 30 days after accident)	Fatality risk per vehicle (fatalities within 30 days after accident)
	91.2	0.77	6,023	1 : 15,100
	294.0* <small>* 2007</small>	1.23	38,875	1 : 7,600
	257.5	1.66	37,261	1 : 6,900
	18.6	0.22	5,870	1 : 3,200
	169.9	0.27	73,484	1 : 2,300
	54.5	0.42	33,996	1 : 1,600
	38.3	0.22	39,936**	1 : 1,000
	89.6	0.48	119,860	1 : 748

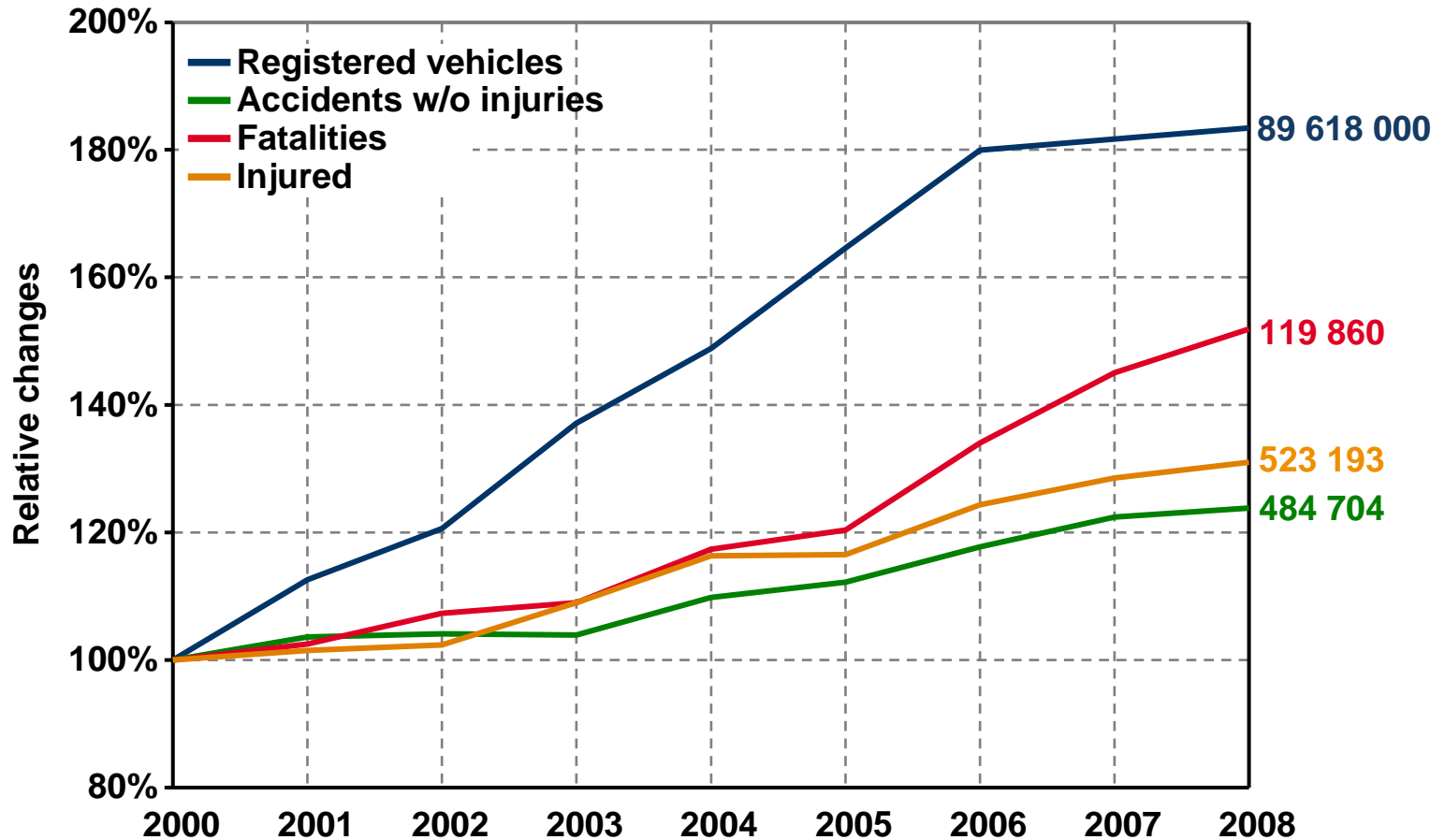
** fatalities within 7 days after accident



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Road Traffic Accidents in India



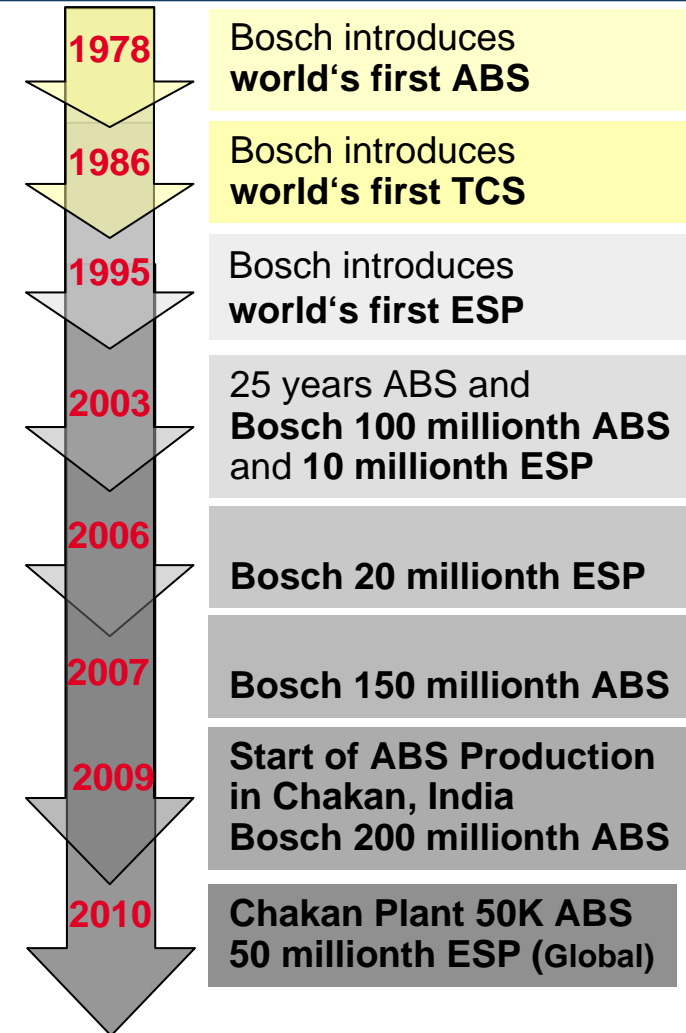
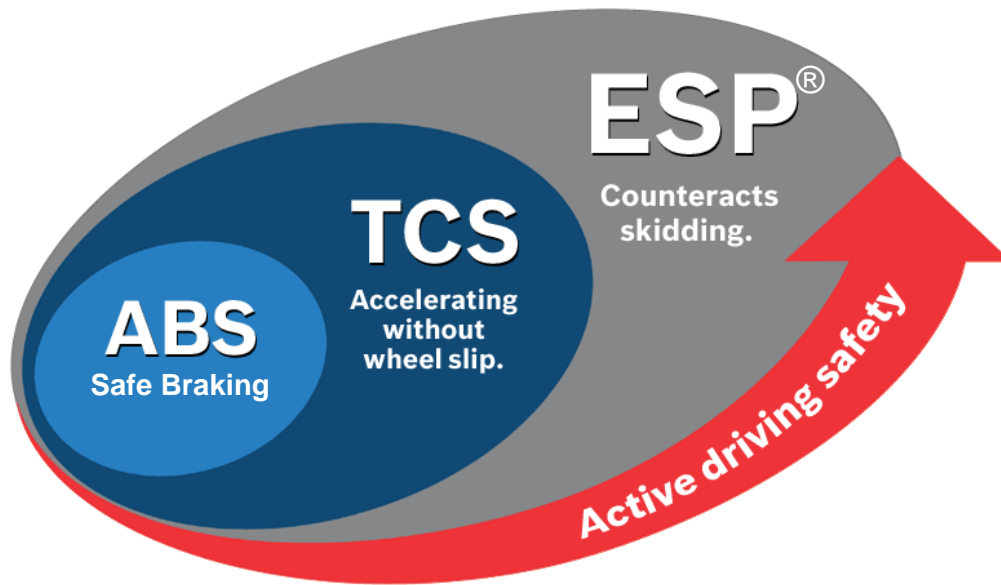
Source: Ministry of Road Transport & Highway, Govt. of India 2008



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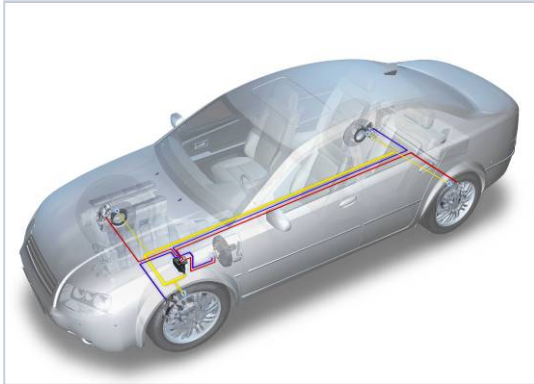
Milestones in Active Safety



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ABS Features and Benefits

[Video](#)



Features & Function

If a wheel is about to lock under heavy braking pressure, the system reduces the braking pressure on this wheel alone until the threat of locking is past. Once the wheel turns freely again, brake pressure is again increased.



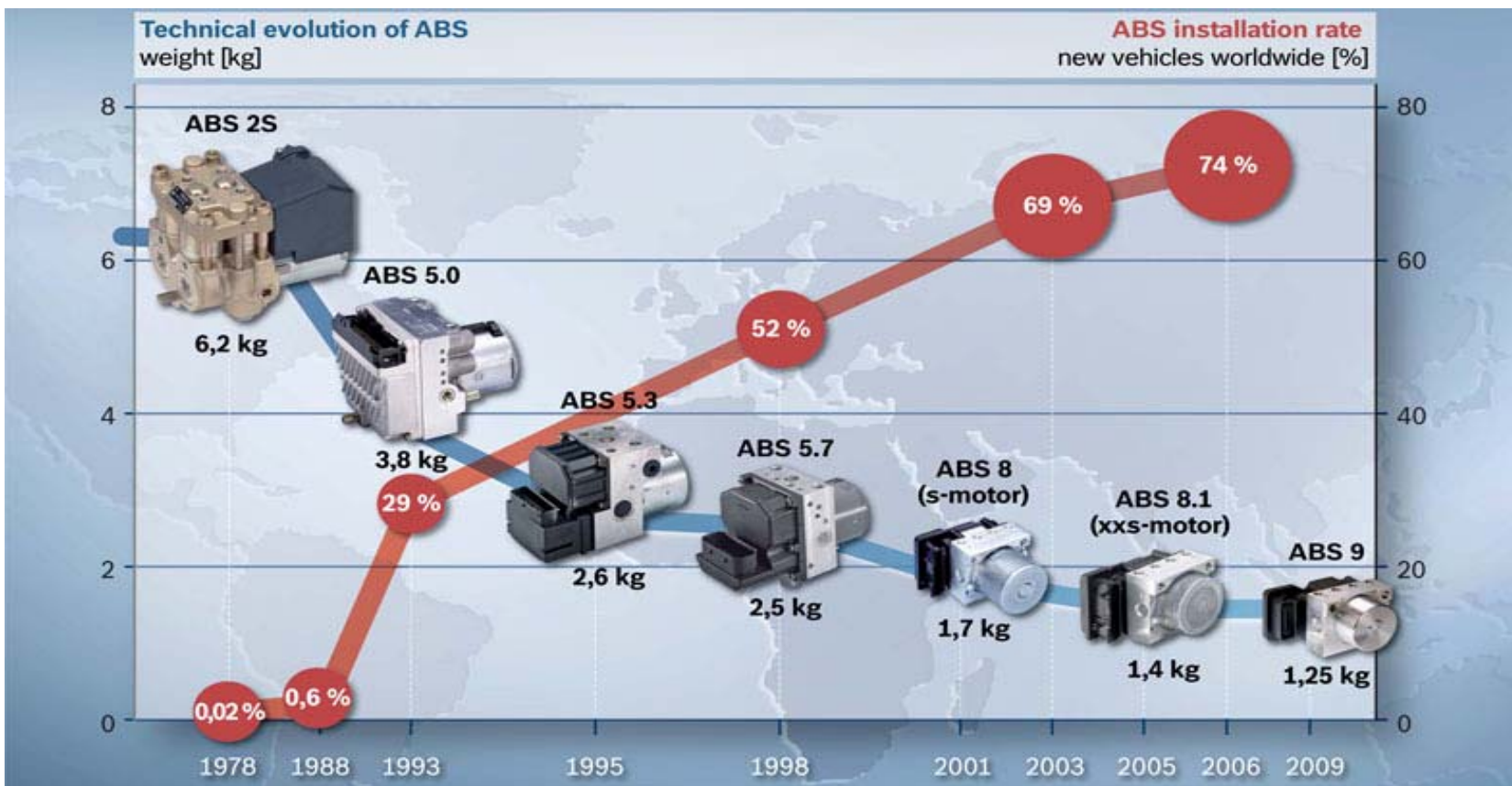
Driving Situations

- Emergency Braking
- Braking in a Curve
- Steering while Braking
- Split- μ Braking

→ Designed to always maintain steerability and vehicle stability @ braking

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ABS-Technical Evolution & Installation Rate ww



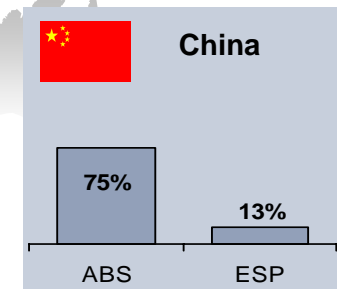
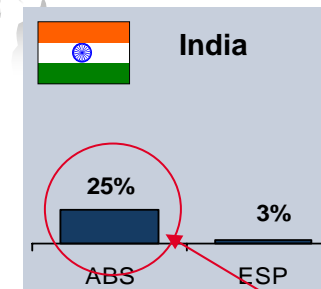
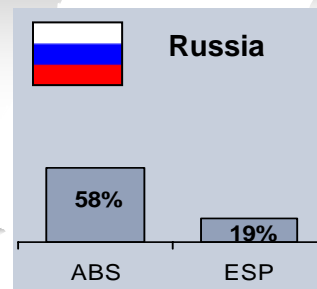
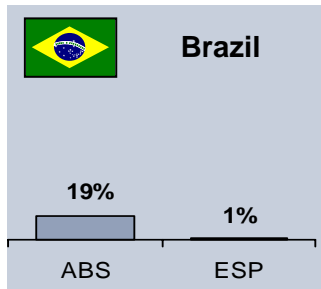
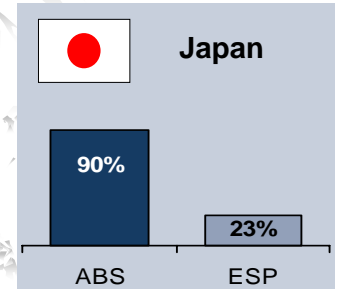
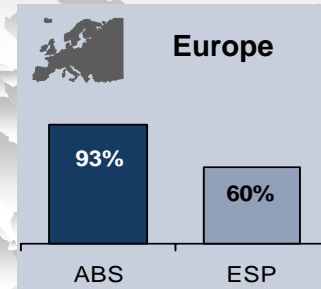
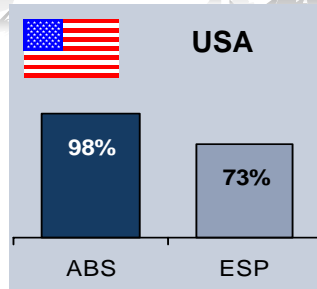
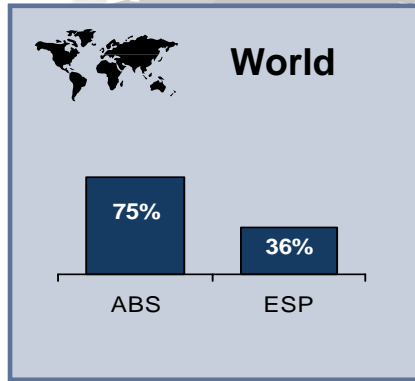
→ Less weight and increased functionality with every generation



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Worldwide ABS and ESP Installation Rates -2009



- Installation rates based on **production** (passenger cars & LCV < 6t)
- Installation rates based on **new passenger car registrations**

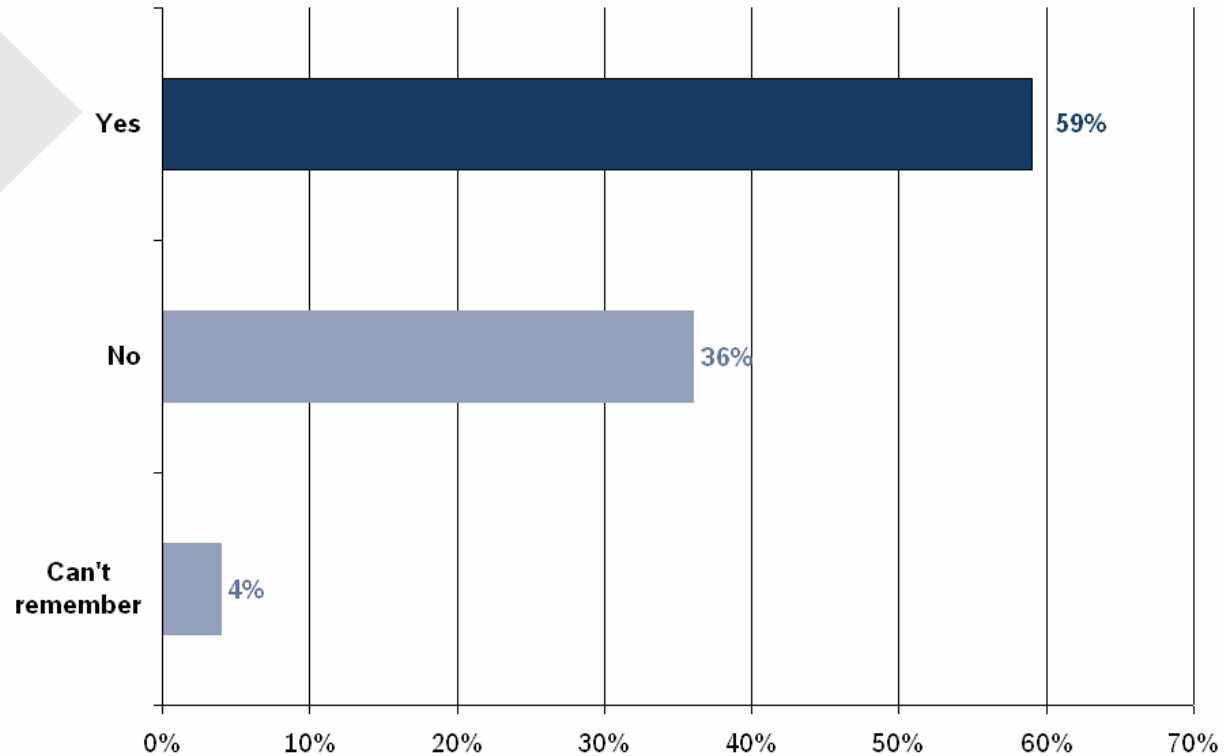
Domestic Installation rate in new passenger car registrations is **Approx 9.5%**

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Emergency braking is not an exception

Have you ever made an emergency braking?

n=594



In a survey representative of households owning a car in India, 594 drivers were interviewed in July 2009.

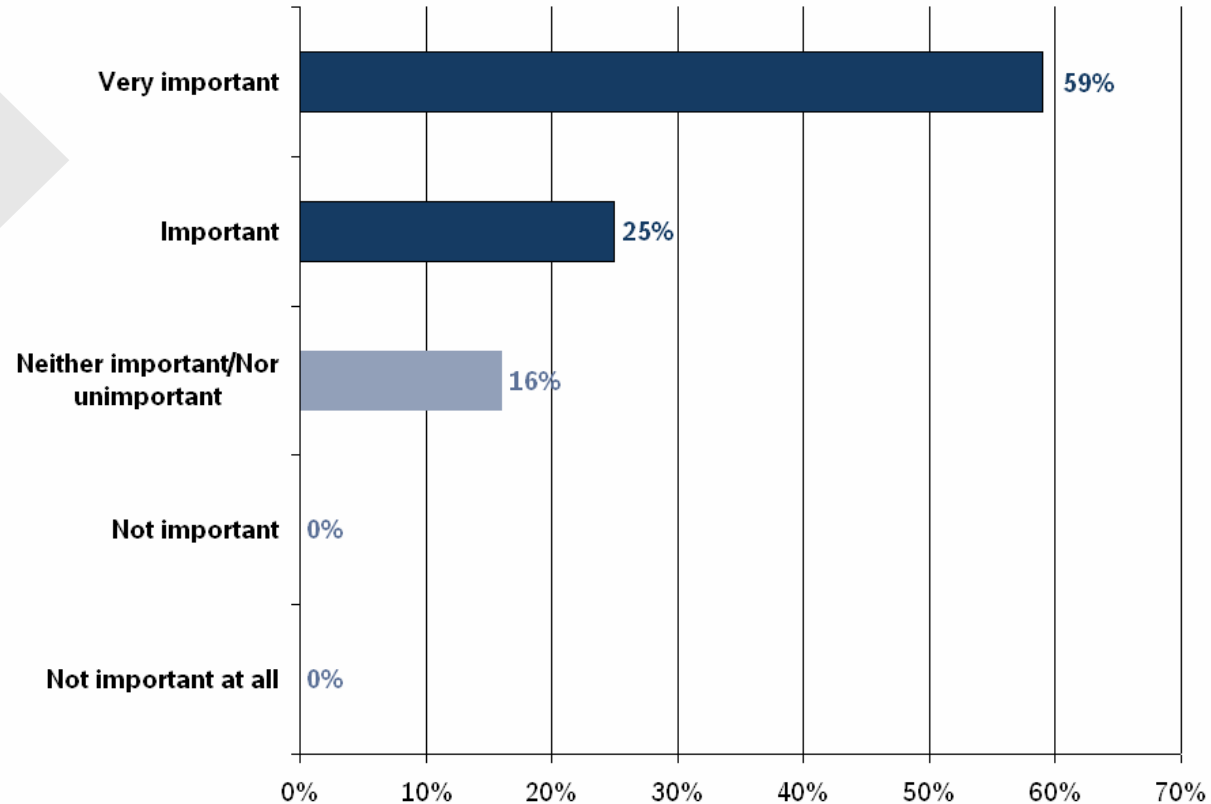
Methodology: Face-to-Face Interviews
Geographical coverage: Delhi, Mumbai, Bangalore, Chennai, Hyderabad, Kolkata

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Safety is the one of the important purchasing criterion

How important was safety to you when you bought your last car?

Prompted question
n=594

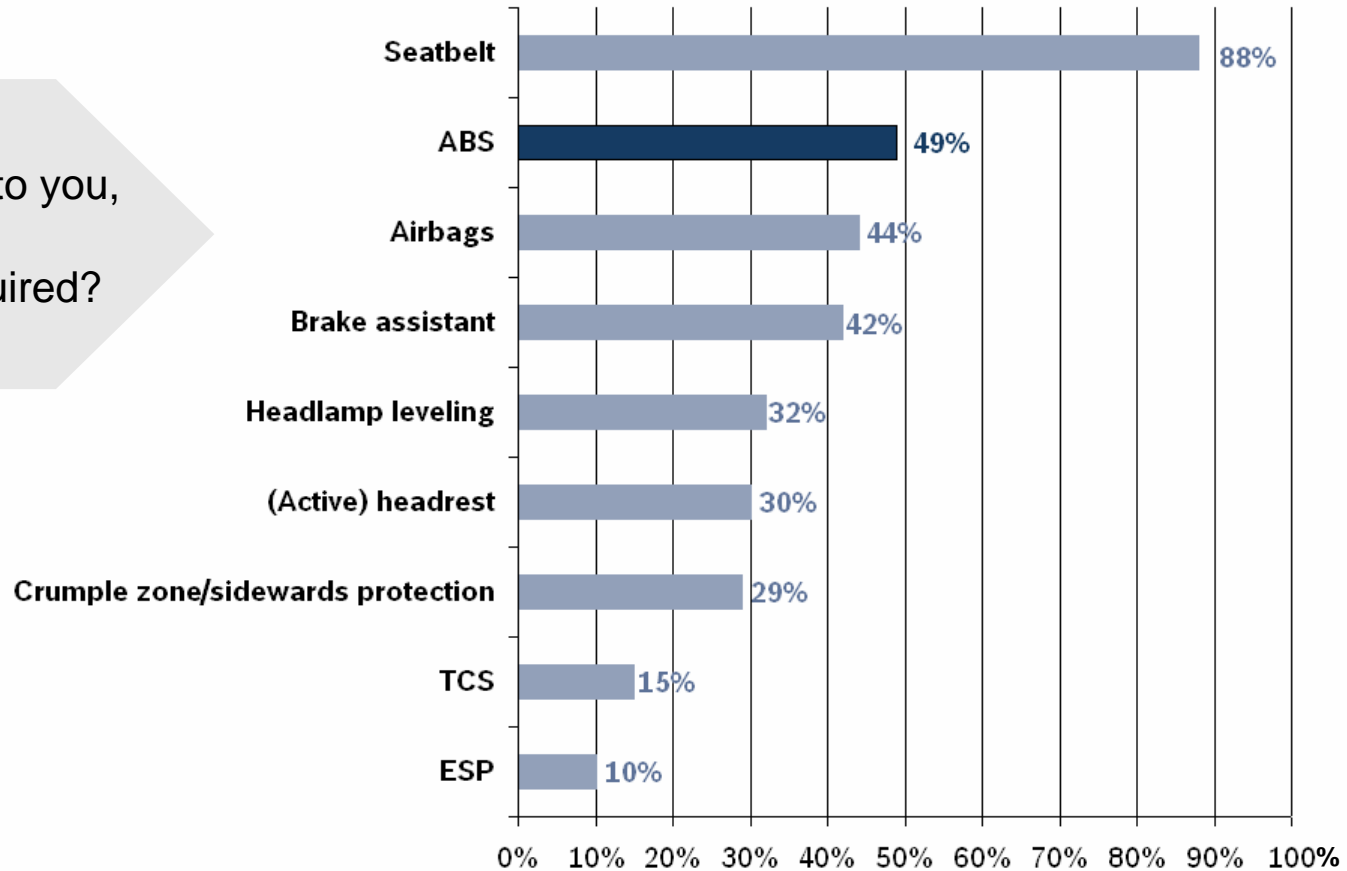


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Safe cars need ABS

What is a safe car to you,
Which features or
equipment are required?

Unprompted question
Multiple answers possible
n=594



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Legislations

Active Safety and NCAP

Regulation TSD 126 (Dec 2009)

All vehicles under 4.54 tons built for sale in Canada must be equipped with ESC after Sep 2011

FMVSS126 (June 2007)

All vehicles under 4.54 tons built for sale in U.S. must be equipped with ESC after Sep 2011

Introduction plan: 55% by 09/2009, 75% by 09/2010, 95% by 09/2011, 100% after 09/2011

Resolution 312 (April 2009)

All vehicles for sale in Brazil must be equipped with ABS after Jan 2014

Introduction plan for M1/N1: 8% by 01/2010, 15% by 01/2011, 30% by 01/2012, 60% after 01/2013.

Regulation 1716 (Nov 2009)

All vehicles for sale in Argentina must be equipped with ABS after Jan 2014

Introduction plan for M1/N1: 10% by 01/2010, 15% by 01/2011, 30% by 01/2012, 60% after 01/2013.

Israel

ESP in all vehicle categories as per 01/2010, longer transition periods for M2, M3, N2, N3 but not later than 01/2012

ADR 31/02 following ECE R 13H (June 2009)

- ESC for new vehicles types M1 as per 11/2011
 - ESC for all models M1 as per 11/2013
- ANCAP 5 Stars only with ESC since 2008**

Regulation 2009/661/EC

ESP in all vehicle categories¹

- for new vehicle types as per 11/2011
- for all new vehicles as per 11/2014

Advanced Emergency Braking and LDW

- for new vehicle types M2, M3, N2, N3 from 11/2013
- for all new vehicles types M2, M3, N2, N3 11/2015

EuroNCAP 5 Stars only with ESP latest 2012

RTR² - ECE R 13H/R 13 (Sep 2010)

ESP in all categories

- for new vehicles types M1, N1 as per 01/2014
- for new vehicles N2, N3, M2, M3 as per 01/2016

ECE R13H in public consultation

- ESC for all new vehicles types M1 from 10/2012, for all new vehicles M1 from 10/2014
- ESC for all new vehicles types Midget cars from 10/2014, for all new vehicles Midget cars from 2/2018

Vehicle Safety Standard Rule – proposal

All vehicles under 4.5 t built for sale in Korea must be equipped with ESP

- all new vehicle types as per 01/2012
- all new vehicles as per 07/2014

¹ Longer transition periods for some vehicles in M2, M3, N2, N3

² Russian Technical Regulation about safety of wheeled vehicles



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Situation in India - Conclusion

Indian car buyers consider safety as very important

Indian car buyers know about ABS(but not complete benefits)

Bosch brought ABS to India

ABS size, weight and cost is continuously reducing

ABS not available for every one (in every vehicle)

Installation in India is low and not showing significant growth

Contribution to Safety on Roads very limited



Thank you very much

