## Academic Presentation Skills

National Institute for Environmental Studies

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IEEE GCCE 2014

Makuhari, Japan
2014/Oct/10

#### Contents

#### **About**

- 1. What presentation is, and what it is not
- 2. No message, no value
- 3. Three fundamental rules of slides
- 4. Rehearsal, rehearsal, and rehearsal!

Be Optimistic on the stage

## **About**

□ "Academic" presentation

- Basic principles of presentations
  - Message and story
  - Preparation of slides
  - Speech
- Primary target: Graduate and undergraduate students

## Japanese material in my blog...

「メッセージとストーリーのない発表はカスだ! 卒修論プレゼンテーションの心得」

五味研究室

Keigomi29.hatenablog.com/

Twitter: @keigomi29

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## An academic presentation is...

To show achievement of research

A short speech

Supported by projection of slides

# Who are your audience?

Academic conference Reporting in seminar Public presentation of thesis Invited speech in symposium Speech for general public Speech for students ...etc

# Who are your audience?

Knowledge level Language Work experience Expectation to your presentation Age Gender **Nationality** 

## An academic presentation is not...

- □ To tell how you struggled
- □ A movie
- ☐ A novel, nor a poem
- Comedy

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## 2. No message, no value

- What is your message?
- ☐ Guide the audience by a good storyline

□ What you do not need is...

# What is your message?

□ "So what?"

□ 1<sup>st</sup> Step: Write down your message!

(If the message itself is worthless...)

## Forms of messages

- 1. Finding fact
- 2. Finding problems and solutions
- 3. Developing new products

## Finding fact

# I investigated A by B and found C

- A) Object
- B) Method
- C) Fact

## 2. Finding problems and solutions

I investigated A, found B, and propose C.

- A) Object
- B) Problem found
- C) Proposed solution

## 3. Developing new products

I improved A by B and solved C.

- A) Object
- B) Changes
- C) New utility, solved problems

## Abstract up to 80 words

Longer version of the message

Criteria to judge your presentation

■ NEVER exceed 80 words (200 letters in Japanese)

## Example

#### Message:

You can improve your presentation with only three basic principles.

#### Abstract:

The most important thing during preparation of academic presentation is to clarify the message and story. The next point is careful selection of information, large font size, color with defined roles, and appropriate graph type. For a good oral presentation? Rehearsal, rehearsal, and rehearsal! Then you can give a confident speech.

(51 words)

## Guide the audience by a storyline

■ Select the contents

□ Logically correct storyline

■ Natural order for the audience

## Select the contents

Long research and short speech

"Selling point"

Do not hesitate to cut off branches

## Logically correct storyline

Bad example

Objective: To investigate math of A

Method: Decompose A using B

Result: Velocity was C

## Natural order for the audience

☐ Structuring: "Whole to detail"

□ Show the map

Easy to imagine the next contents

# Structuring whole to detail

#### Bad example

- 1. Prepare scale and flour
- 2. Measure 200g of flour and add 1 cup of water
- 3. Prepare to whip cream
- 4. Prepare cream and sugar
- 5. Cook the dough with a pan
- 6. Whip the cream
- 7. Put whipped cream on cooked dough
- 8. Pour chocolate on

## Structuring whole to detail

#### Improved: [Recipe of cream crape]

- 1. Bake the dough of crape
  - 1. Prepare scale and flour
  - Measure 200g of flour, add 1 cup of water, and knead the dough
  - 3. Bake the dough with a pan

#### 2. Whip cream

- 1. Prepare 200ml of cream and 15g of sugar
- 2. Whip the cream with sugar

#### 3. Serving

- 1. Crack a chocolate
- Put the whipped cream on baked dough
- 3. Put the chocolate on //END

## Tips of structuring

□ Include all

No duplication

Not too many in one level

## Easy to imagine the next contents

Expected contents comes next

End with ending contents

□ Say the hint, show the map

## What you do not need

☐ Surprise the audience

□ Show detailed branches

☐ Tell how hard your work was

# Message and story

- □ Write your message
  - Forms
  - ☐ Abstract in 80 words

- □ Story line
  - □ Logic
  - Whole to detail
  - Expected next contents

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## 3. Three fundamental rules of slides

Every slide has one message

Best slide has least information

Larger fonts, clear colors

## Every slide has one message

Decide the role of the slide

■ Message title vs Topic title

- ☐ How to show the message?
  - Write, Draw, and Say

## How to decide the role?

Structuring: Whole to Detail

Decompose to one-slide level

Message of each slide is naturally decided

## Message title and Topic title

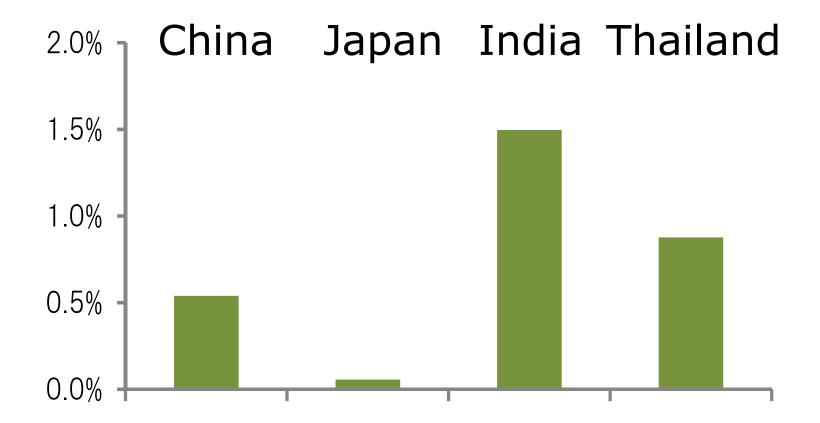
□ "Eye Catcher": Shorter is better

Message title is direct and powerful

Topic tile must be short and simple

# Population growth rate

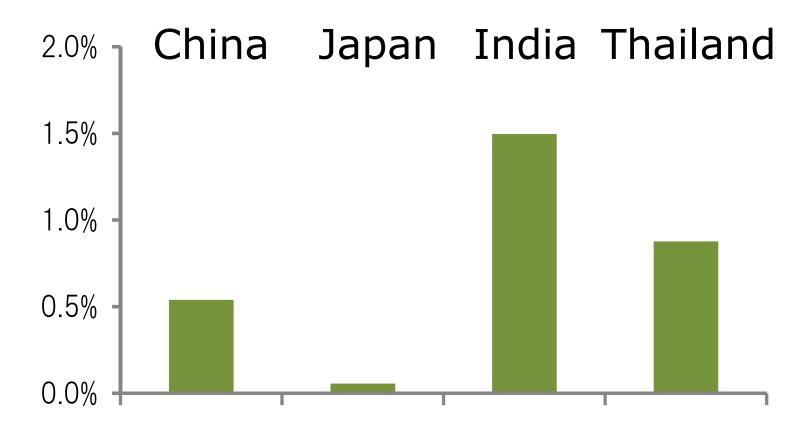
Average annual growth rate between 2001 to 2010



Source: UN Population Division (2010) World Population Prospects 2010

## India has high growth rate

Average annual growth rate between 2001 to 2010



Source: UN Population Division (2010) World Population Prospects 2010

## How to show the message?

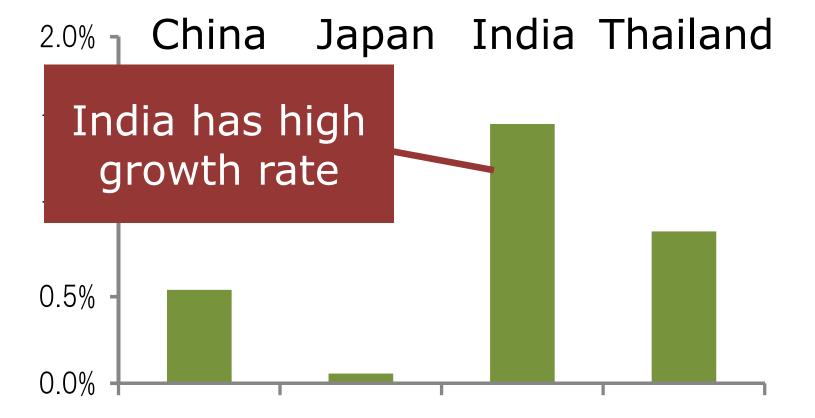
□ Say

□ Writing is easier way

☐ Technique of graphic

# Population growth rate

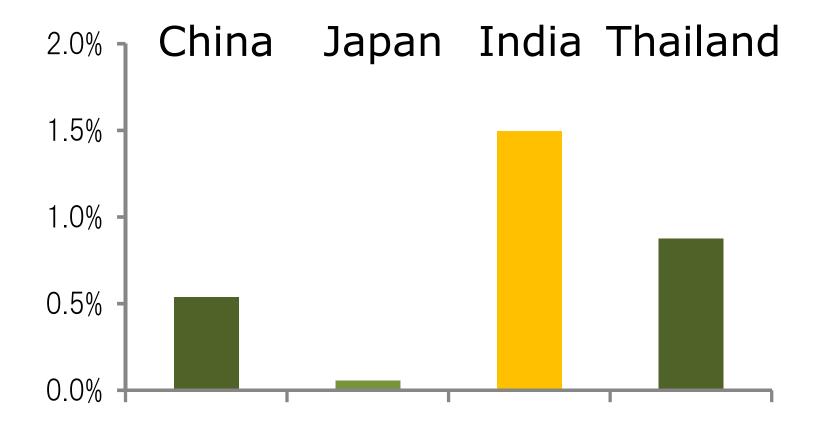
Average annual growth rate between 2001 to 2010



Source: UN Population Division (2010) World Population Prospects 2010

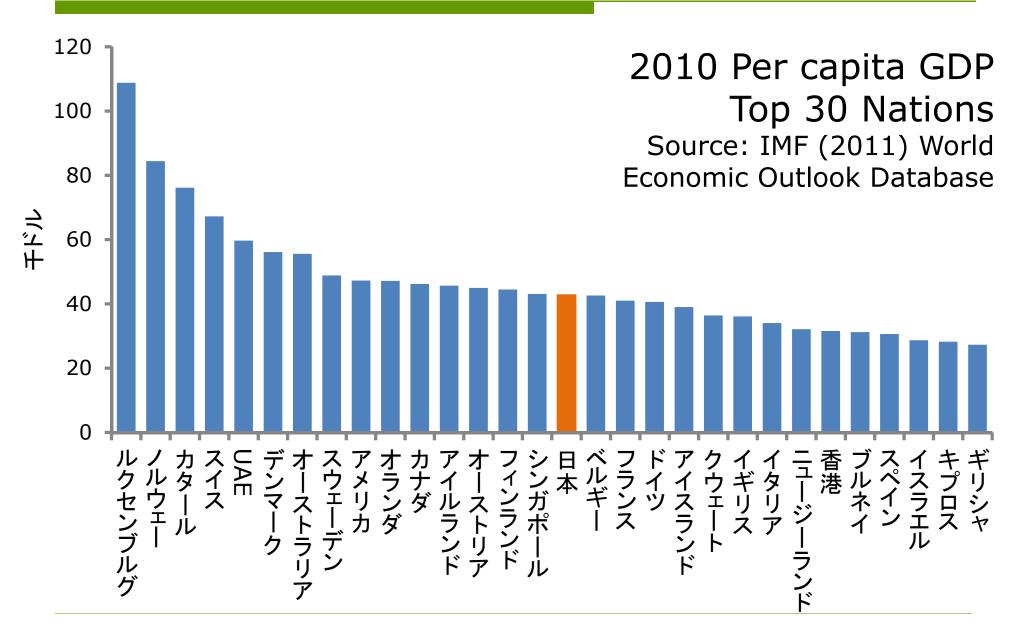
# India has high growth rate

Average annual growth rate between 2001 to 2010

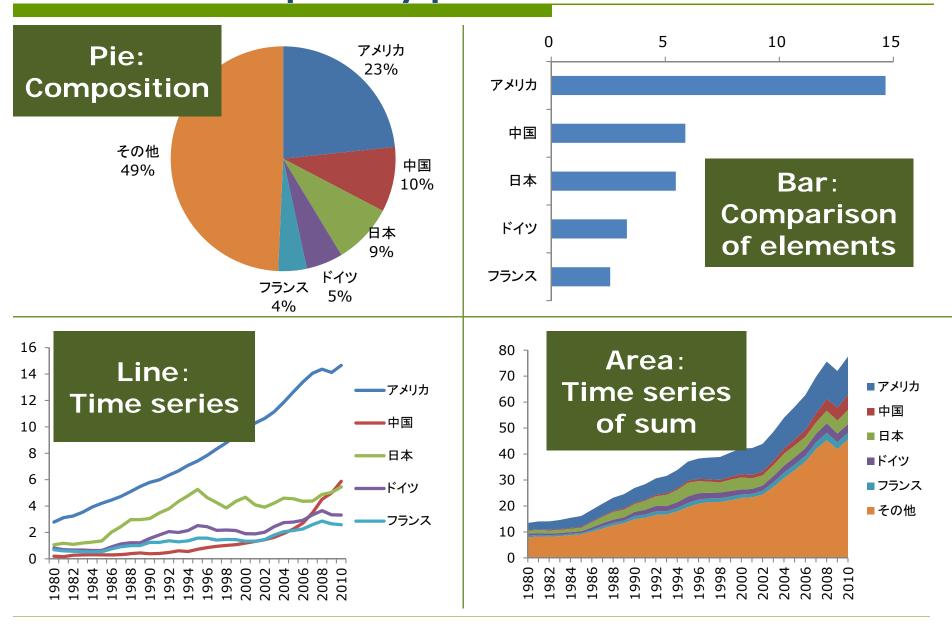


Source: UN Population Division (2010) World Population Prospects 2010

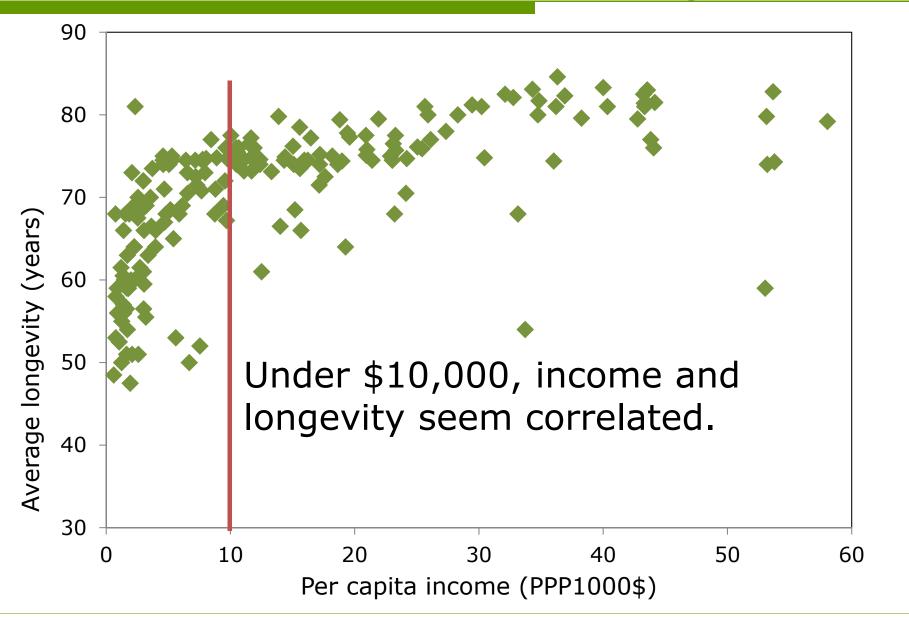
## Per capita GDP: Japan 16th



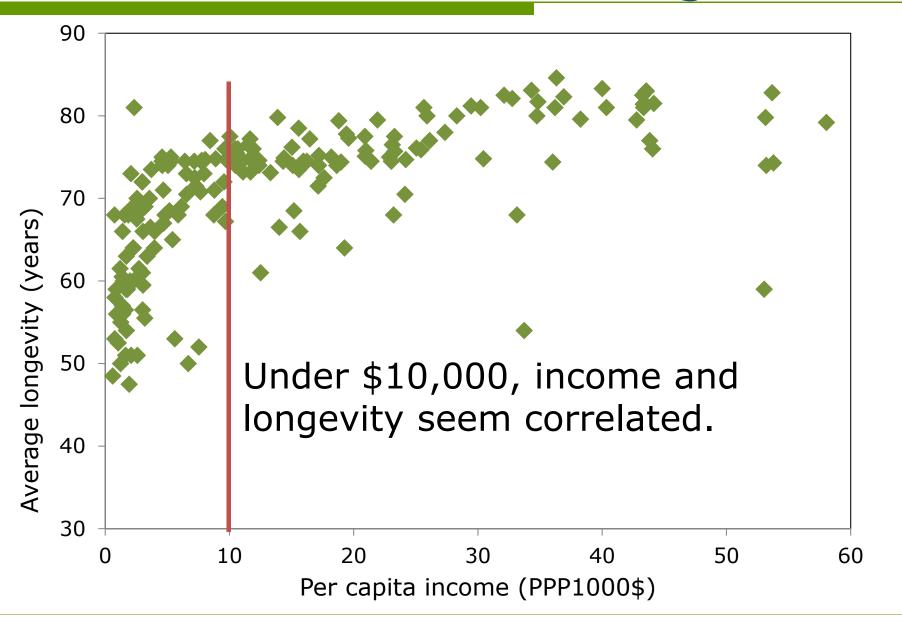
### Graph type selection



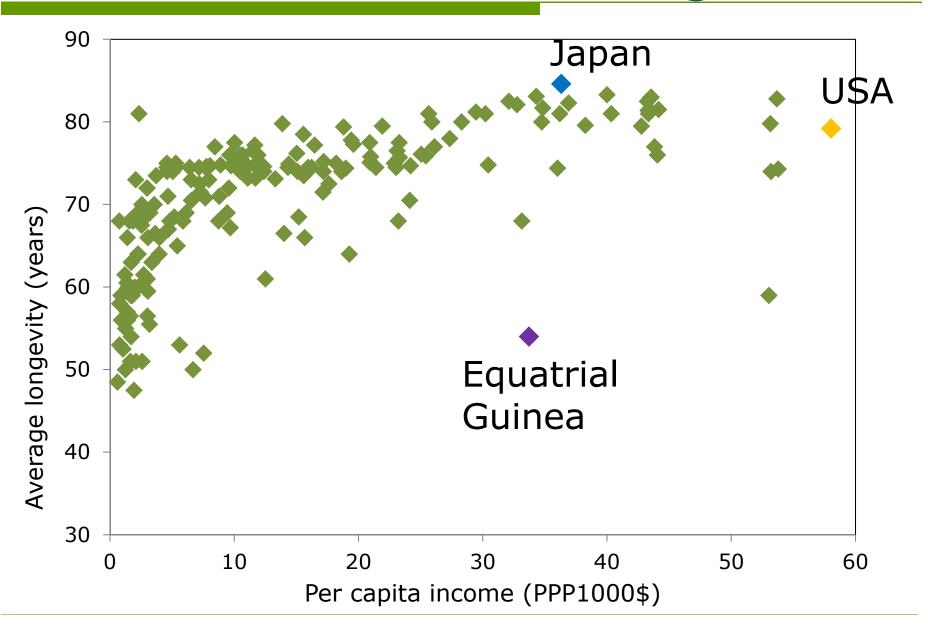
## More income means longer life?



## More income means longer life?



# More income means longer life?



#### Best slide has Least information

One moment, one thing

Add another slide if contents increased

□ Slide is not a book or hand-out

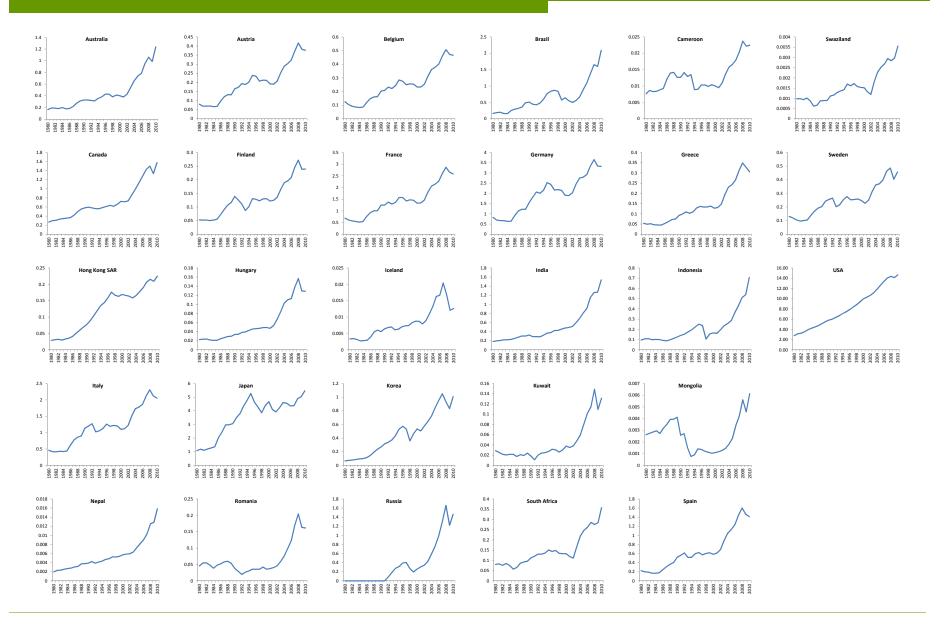
## One moment, one thing

☐ Say one by one

Necessity to see multiple contents at the same time

Only one case when it is allowed...

## What can you see?

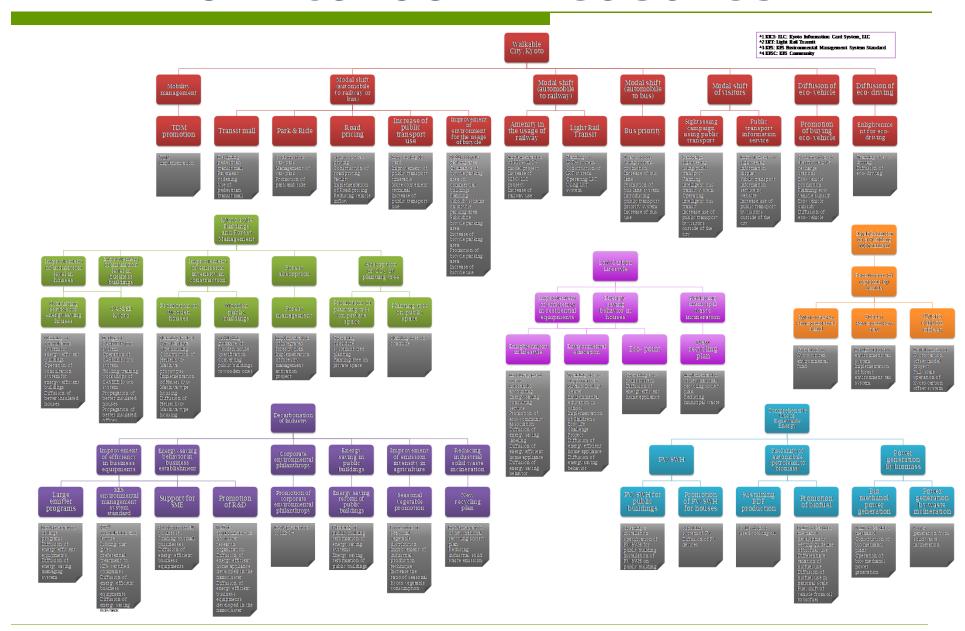


#### Low-carbon measures

- □ More than 70 measures
  - Energy-efficient devices
  - Renewable energy
  - Building
  - Modal shift
  - Carbon sink
  - Behavior change

ector		Data	S	ource	Category (°)	Identified implementation intencity		Emissions reduction (kt- CO <sub>2</sub> )	(°
	Air conditioner Highest energy efficiency air conditioner	COP	6.60	2	E	Diffusion ratio (cooling and heating)	50%	50.1	3(°
	High energy efficiency air conditioner	COP	2.54	1	E	Diffusion ratio (cooling and heating)	50%		
	High energy efficiency kerosene heating	COP	0.88	1	E	Diffusion ratio (heating: kerosene) Diffusion ratio (heating: gas)	80% 80%	12.9 25.8	3
	High energy efficiency gas heating High energy efficiency oil water heater	COP	0.88	1	E E	Diffusion ratio (heating: gas) Diffusion ratio (hot water: oil)	70%	25.8 6.1	3
	Gas water heater							55.0	3
	Latent heat recovery- type water heater High energy efficiency gas water heater	COP COP	0.83	1	E E	Diffusion ratio (hot water: gas) Diffusion ratio (hot water: gas)	50% 50%		
	Heat pump water heater	COP	4.50	3	E	Diffusion ratio (hot water: electricity)	70%	48.9	
	Heat pump water heater High energy efficiency gas cooker	Thermal efficiency (base year= 1)	0.55	1	E	Diffusion ratio (cooking: gas)	70%	12.3	
	High energy efficiency IH cooker Fluorescent light	Thermal efficiency (base year=1)	0.86	1	E	Diffusion ratio (cooking: electricity)	70%	8.0	
×	LED (substitute fluorescent light)	Electricity consumption (conventional type=1)	2.67	1	E	Diffusion ratio	50%	24.1	
900	Hf inverter fluorescent light	Electricity consumption (conventional type=1)	1.33	1	E	Diffusion ratio	50%		
pokl s	Incandescent light LED (substitute incandescent light)	The sector to the sector of th	8.70			Difficulty and	50%	51.5	
		Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	4.35	1	E	Diffusion ratio Diffusion ratio	50%		
louse	Refrigerator Super high energy efficiency refrigerator							72.1	
Ξ.	Super high energy efficiency refrigerator Highest energy efficiency refrigerator	Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	2.92	1	E	Diffusion ratio Diffusion ratio	50% 50%		
	TV			•	-			31.9	
	LCD TV Highest energy efficiency TV	Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	2.27 1.54	1	E E	Diffusion ratio Diffusion ratio	50% 50%		
	House insulation	Electricity consumption (conventional type=1)	1.54	1	E	Diffusion ratio	30%	100.7	
	Next generation level	Thermal loss (base year=1)	0.36	4	E	Diffusion ratio	40%		
	New standard Energy- saving behavior	Thermal loss (base year=1) Energy service demand reduction ratio	0.43	4	E	Diffusion ratio Diffusion ratio	40% 25%	32.4	
	Photovoltaic generation	Energy service demand reduction ratio Potential(ktoe)	295	6	S S	Diffusion ratio	10%	26.9	
	Solar water heating	Potential(ktoe)	1037	6	S	Diffusion ratio (hot water: all)	10%	38.8	
	Other energy efficiency improvement Other fuel shifting				E			0.2 27.3	
					3			625.1	
	Air conditioner (cooling only) Super high energy efficiency air conditioner (cooling only)	COR		-	Е	Political and a series of the	50%	41.3	
	Super high energy efficiency air conditioner (cooling only Highest energy efficiency air conditioner (cooling only)	) COP COP	5.00 4.07	2	E E	Diffusion ratio (cooling: electricity) Diffusion ratio (cooling: electricity)	50%		
	Cooling (gas)							19.1	
	High energy efficiency gas heat pump High energy efficiency absorption tiller (gas)	COP	1.60	8	E	Diffusion ratio (cooling: gas)	40%		
	rugn energy efficiency absorption tiller (gas) High energy efficiency absorption tiller(oil)	COP	1.35	7	E E	Diffusion ratio (cooling: gas) Diffusion ratio (cooling: oil)	40% 70%	3.2	
	High energy efficiency absorption tiller(oil) High energy efficiency boiler (oil)	COP	0.88	1	E	Diffusion ratio (heating: oil)	70%	25.1	
	High energy efficiency boiler (gas) Air conditioner (heating only)	COP	0.88	1	E	Diffusion ratio (heating: gas)	70%	75.4 67.0	
	Super high energy efficiency air conditioner (heating only	) COP	7.40	2	E	Diffusion ratio (heating: electricity)	90%	67.0	
	Super high energy efficiency air conditioner (heating only Highest energy efficiency air conditioner (heating only)	COP	4.44	1	E	Diffusion ratio (heating: electricity)	10%		
		COP	0.87	1	E	Diffusion ratio (hot water: oil)	70%	16.0 64.2	
	Gas water heater High energy efficiency gas waterheater	COP	0.87	1	E	Diffusion ratio (hot water: gas)	50%		
	Latent heat recovery- type water heater	COP	0.85	1	E	Diffusion ratio (hot water: gas) Diffusion ratio (hot water: electricity)	50% 100%		
		COP	3.00	1	E	Diffusion ratio (hot water: electricity)	70%	64.2	
	High energy efficiency gas cooker IH cooking heater	Thermal efficiency (base year= 1) Thermal efficiency (base year= 1)	0.86	1	E	Diffusion ratio (cooking: gas) Diffusion ratio (cooking: electricity)	70%	27.0 11.6	
	Incandescent light							131.6	
Į0	Timer controlled LED (substitute fluorescent light) Illumination controlled LED (substitute fluorescent light)	Electricity consumption (conventional type= 1)  Electricity consumption (conventional type= 1)	3.95	1	E E	Diffusion ratio Diffusion ratio	50% 50%		
SS	Incandescent light			•				20.6	
5	LED (substitute incandescent light)	Electricity consumption (conventional type=1)	4.55	1	E	Diffusion ratio	50%		
Commercial	Bulb- type fluorescent light High- intensity evacuation light	Electricity consumption (conventional type= 1) Electricity consumption (conventional type= 1)	4.55 4.18	1	E	Diffusion ratio Diffusion ratio	50% 70%	0.5	
8	Large scale computer (energy- saving type)	Electricity consumption (conventional type=1)	1.18	i	E	Diffusion ratio	70%	3.1	
0			2.47	1	E	Diffusion ratio	70%	3.3	
	Copier (energy- saving type) Fax machine (energy- saving type)	Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	1.45	1	E	Diffusion ratio	70%	0.6	
	Printer (energy- saving type) Elevator (energy- saving type)	Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	1.45	1	E	Diffusion ratio	70%	1.2	
	Elevator (energy- saving type) Ventilation	Electricity consumption (conventional type=1)	4.01	1	E	Diffusion ratio	70%	5.4 50.1	
	with energy- saying fan	Electricity consumption (conventional type=1)	2.00	1	E	Diffusion ratio	50%	50.1	
	with low- pressure duct Vending machine (energy- saving type)	Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	1.82	1	E	Diffusion ratio	50%		
	Vending machine (energy- saving type) Traffic light (LED type)	Electricity consumption (conventional type=1) Electricity consumption (conventional type=1)	2.17 3.75	1	E E	Diffusion ratio Diffusion ratio	70% 70%	11.5 1.4	
	High energy efficiency transformer	Electricity consumption (conventional type=1)	2.53	1	E	Diffusion ratio	70%	13.3	
	Other electric appliances							61.2	
	30% energy- saving type	Electricity consumption (conventional type=1)	1.43	1	E E	Diffusion ratio Diffusion ratio	50% 50%		
	10% energy- saving type Building insulation	Electricity consumption (conventional type=1) Thermal loss (base year=1)	0.50	1	E E	Diffusion ratio Diffusion ratio	50% 100%	231.1	
	RFMS		10%	10	E	Diffusion ratio	25%	24.4	
	Energy- saving behavior Photovoltaic generation	Energy service demand reduction ratio Potential(ktoe)	10% 295	5 6	B	Diffusion ratio Diffusion ratio	25% 10%	40.3 26.9	
	Solar water heating	Potential(ktoe) Potential(ktoe)	1037	6	S	Diffusion ratio (hot water: all)	10% 5%	49.6	
	Other fuel shifting				S			70.8	
	Total Energy efficient equipments				Е			1161.8 184.7	
io	High energy efficiency boiler	Thermal efficiency(base year=1)	1.09	11	-	Diffusion ratio	80%		
8	High energy efficiency furnace	Thermal efficiency(base year=1)	1.67	12		Diffusion ratio	80%		
	High energy efficiency morter Inverter control	Electricity consumption(base year= 1) Electricity consumption(base year= 1)	1.25	11		Diffusion ratio Diffusion ratio	80% 80%		
Industrial	Fuel shifting				S	Shifting ratio	60%	63.9	
ndi	Increase in the ratio of seasonal vegetable production Increase in the ratio of wooden buildings	Ratio of CO2 emissions against non-seasonal vegitable produc Ratio of CO2 emissions against non-wooden buildings	0.7	17 17	E	Ratio of selling seasonal vegitables Diffusion ratio	36.2% 30%	0.3 9.0	
	Increase in the ratio of wooden buildings Total	Kauo or CO2 emissions against non-wooden buildings	0.6	17	E	Diffusion ratio	30%	9.0 257.9	
_	Vehicle						_	270.7	
xtor	Hybrid vehicle High energy efficiency vehicle	Fuel cost (conventional type=1) Fuel cost (conventional type=1)	0.6	1	E E	Diffusion ratio Diffusion ratio	50% 50%		
ž	Modal shift	From vehicle to;	0.0	•	B			236.7	
ransport	Intra area trip	walking and bicycle train and bas				Shifting ratio Shifting ratio	15% 30%		
d d	Inter area trip	train and bas bicycle				Shifting ratio Shifting ratio	30% 10%		
ager to		train and bas				Shifting ratio	30%		
ē .	Trip to outside of the city	train				Shifting ratio	30%		
Pass	Bio fuel Eco- driving	From oil to bio fuel Fuel efficiency improvement ratio	24%	13	S B	Diffusion ratio Diffusion ratio	20%	231.7 37.8	
_	Total	,						776.9	
Ę.	Vahiolo	Final cost (commentional time-1)	0.6	,	Е	Diffusion ratio	50%	176.9	_
sector	Hybrid vehicle High energy efficiency vehicle	Fuel cost (conventional type=1) Fuel cost (conventional type=1)	0.6	1	E E	Diffusion ratio	50%		
sec		From oil to bio fuel	0.0	•	S	Diffusion ratio	20%	156.2	
-	Total							333.1	
yldy yldy	Bio- methanol power generation  Reducing the amount of waste incineration			17 17		production of electricity (ktoe) Rate of CO <sub>2</sub> emissions reduction	18.8 40%	53.8 228.1	
atk sup	Improvement of CO2 intensity of power generation Fuel shifting					CO2 emission per generation (tC/toe)	0.78	873.9	(*
meration a	Bio-methanol power generation Reducing the amount of waste incineration Improvement of CO2 intensity of power generation Fuel shifting Generation efficiency improvement			14		and the second s			
2 6	Generation efficiency improvement Coal	Generation efficiency	48%	15					

## Low-carbon measures



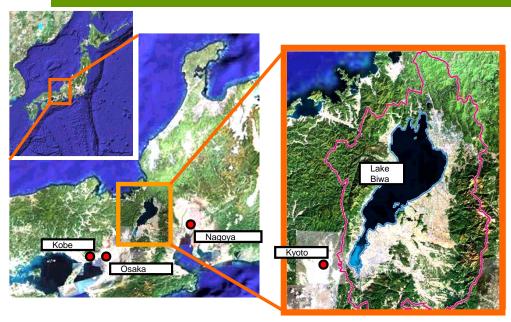
#### Add another slide!

"You did a lot, anyway"

 $\square$  >3 contents  $\rightarrow$  Add another slide

Can not separate? Do structuring again.

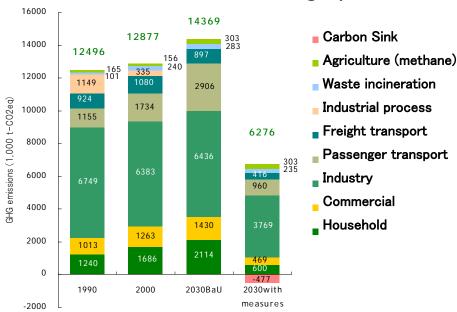
# GHG emission in Shiga pref.



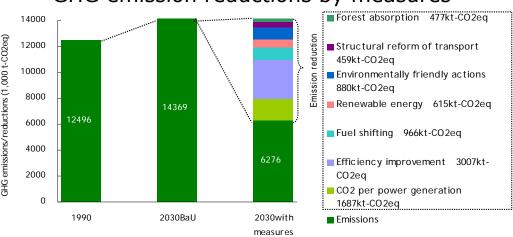
Socio-economic projections

	2005	2030	2030BaU/
	2005	BaU	2005
Population (10 <sup>3</sup> )	1397	1381	0.99
No. of households (10 <sup>3</sup> )	439	521	1.19
GDP (bill yen)	5935	7677	1.29
GDP per capita (mill yen/capita)	4.25	5.56	1.31
Gross output (trill. yen)	12	13	1.16
Primary industry	95	564	5.91
Secondary industry	7220	6470	0.90
Tertiary industry	4269	6401	1.50
Commercial floor area (mill.m²)	20	23	1.13
Passenger transport (mill p-km)	10670	16367	1.53
Freight transport (mill t-km)	3937	3397	0.86

#### GHG emissions in Shiga pref.

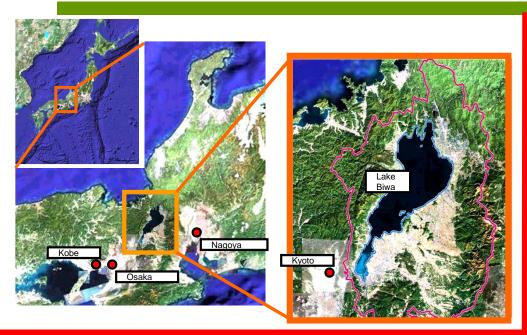


#### GHG emission reductions by measures

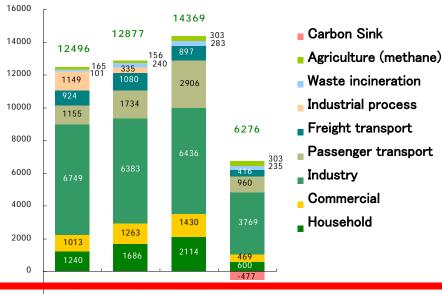


# GHG emission in Shiga pref.

-2000



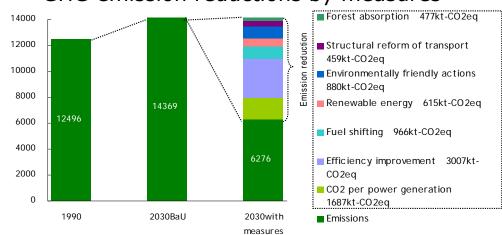
GHG emissions in Shiga pref.



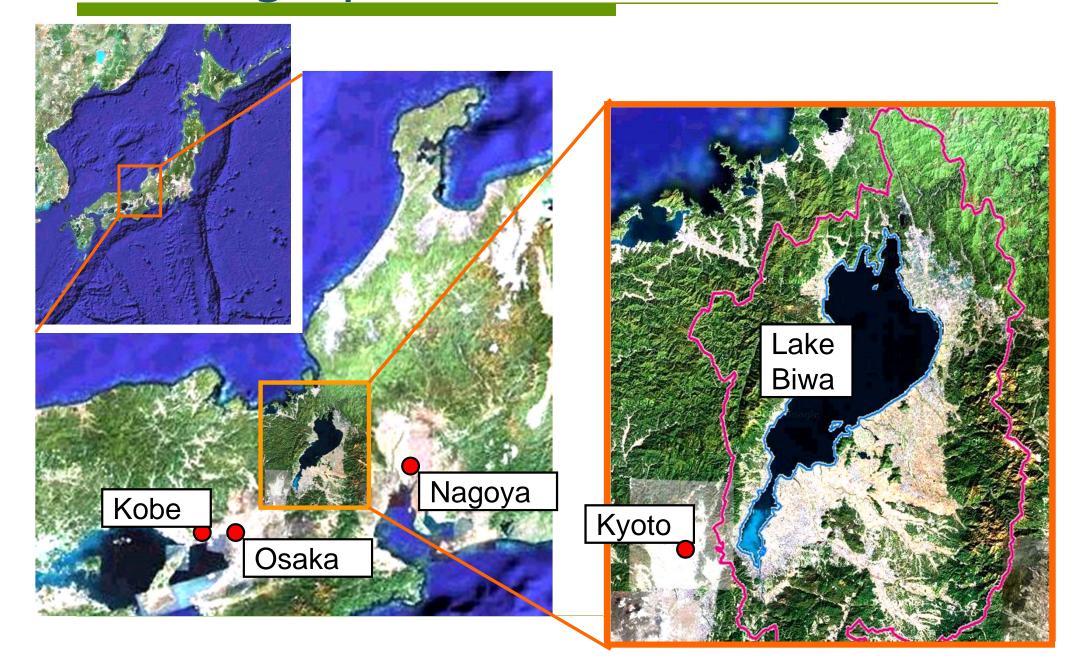
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GHG emission reductions by measures



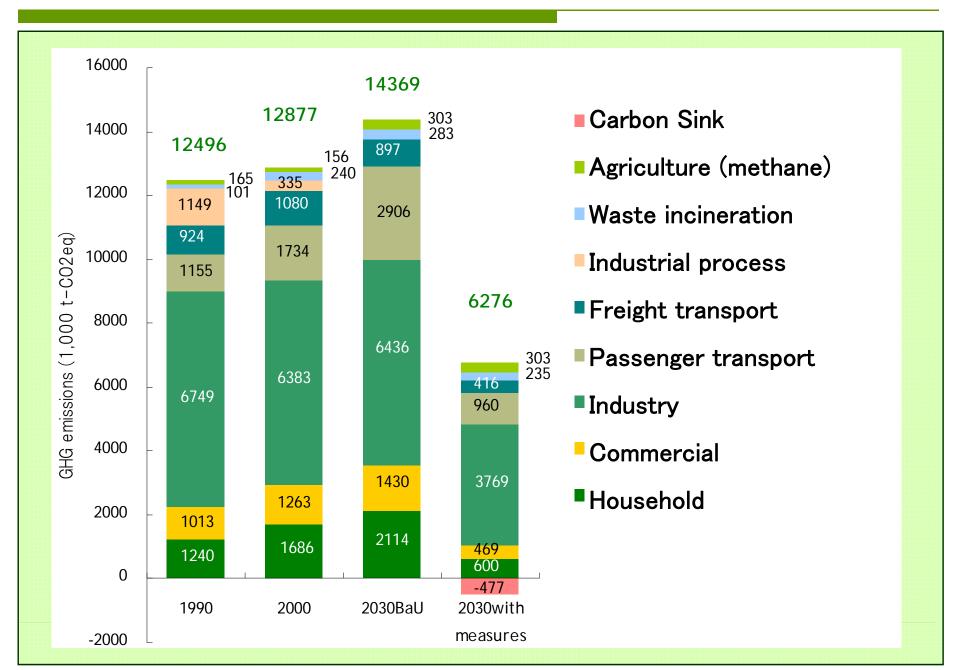
# Shiga prefecture: Location



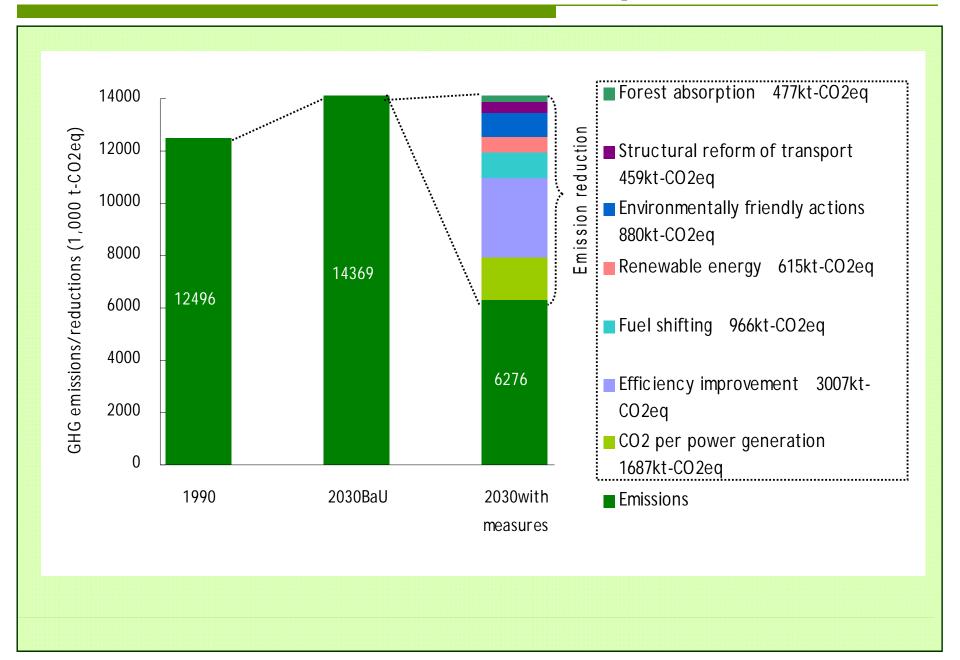
## Socio-Economic Scenario

	2005	2030	2030BaU/
	2003	BaU	2005
Population (10 <sup>3</sup> )	1397	1381	0.99
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Freight transport (mill t-km)	3937	3397	0.86

#### GHG Emissions in 2030



## Emission reduction by measures



#### A slide is not a book

No time to understand complicated contents

■ No time to read long sentence

Do not show data irrelevant to the storyline

## Slide # script!

- □ 非常に頻繁に見かけるスタイルですが、口頭で喋ることとほとんど同じ内容を文章でスライド中に書き込む発表者がいます。これは避けるべきです。書かれたことと同じことを話すのならばそもそも口頭発表を聞く必要がないからです。
- □ 新しいスライドが見せられたとき、聞き手はスライドに書かれたことを読み取ろうとします。そのような場合にこのように細かい字でびっしり書かれていると読むのに時間がかかるので全て理解しながら読むことが出来ません。そしてそればかりではなく、読むことに集中してしまって発表者の話を聞けなくなります。
- □ スライドに長い文を書くことで生じるもう一つの問題は、必然的に文字が小さくなってしまうということです。すぐあとの項目で説明するように、文字は聞き手が苦労せずに読み取れる大きさでなければなりません。特に卒修論発表の会場に奥行きがあり、重要な聞き手である大学教員が会場後方に座っていた場合には小さな字でびっしりと書かれたスライドを読書するために非常に苦労するでしょう。
- □ スライドに小さい字でびっしり文字を書くことがいかに困ったことであるかを示すために本資料のこのページは本来「ノート」欄に書くべきことをスライドに書き、ノート欄にスライドに書くであろう内容を書いています。このような口語調の文章であればまだよいのですが、アカデミック・プレゼンテーションでは漢字や専門用語を多用し常体で書かれた堅苦しい文章になるので読みづらさはなおさらです。
- □ というデメリットが非常に大きいのでスライドに台本を書くことは絶対に避けましょう。当 研究室の発表練習でそれをやった場合には百発百中私に文句を言われます。

## Slide ≠ script!

☐ Silence is better

☐ Audience will read, not hear

□ Fonts will be too small

## Large fonts, clear colors

Unreadable letters are worthless

Color is information, not decollation

"Understandable" >> "Beautiful"

#### Unreadable letters are worthless

☐ They do not read fonts <24pt

Revise to decrease words and letters!

#### Color is information, not decollation.

- Clear contrast
  - Bad

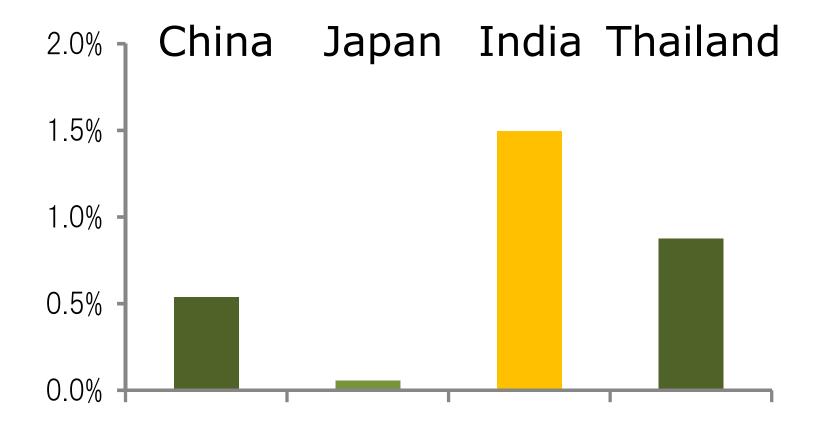
Good

Consistent color choice

Emphasize by color

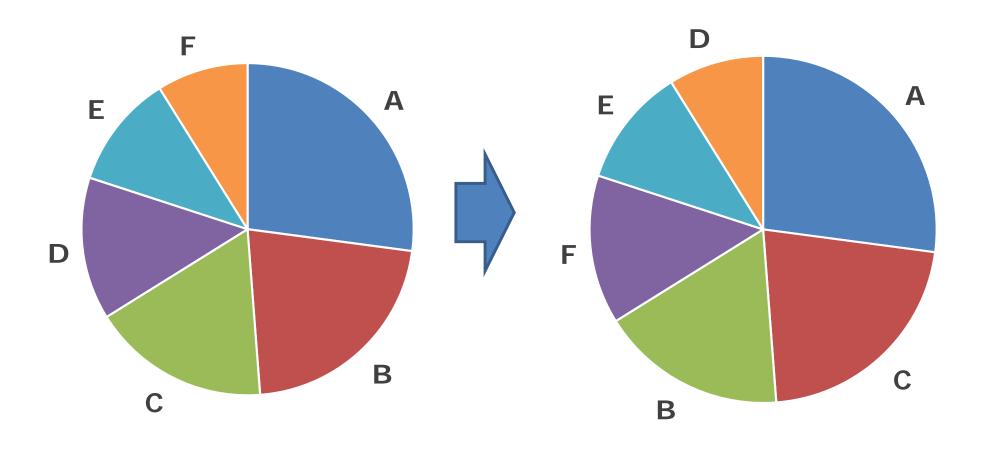
## Emphasis by color

Average annual growth rate between 2001 to 2010



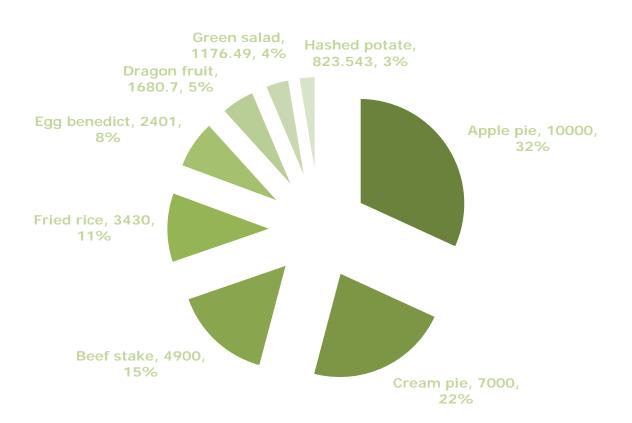
Source: UN Population Division (2010) World Population Prospects 2010

### Consistent color choice



#### "Understandable" >> "Beautiful"

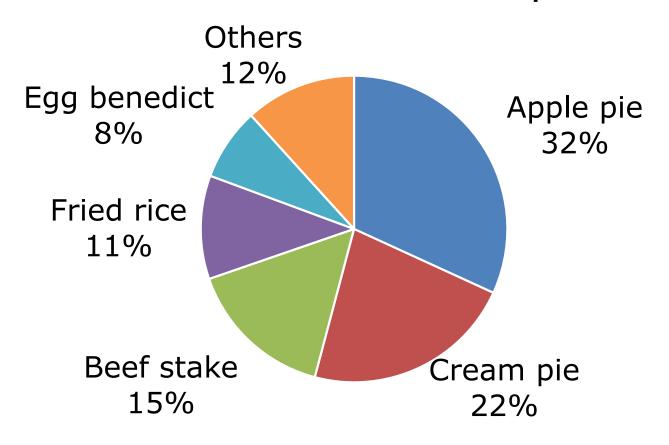
#### Preference of dinner menu : Marunouchi business person





#### "Understandable" >> "Beautiful"

#### Preference of dinner menu Marunouchi business person



### Other points

- Especially for slide preparation...
  - □ Size of the venue
  - □ Can they show whole screen?
  - ☐ Page number, date
  - Version of software
  - "Thank you" slide is no thank you
- General for academic reporting
  - Spelling, Consistent terminology, Unit,
     Source, Axis label, Appendix

#### Contents

#### **About**

- 1. What presentation is, and what it is not
- 2. No message, no value
- 3. Three fundamental rules of slides
- 4. Rehearsal, rehearsal, and rehearsal!

Be Optimistic on the stage

### Rehearsal, rehearsal, and rehearsal!

☐ Show your face!

Speak slowly

Practice as many times as possible

#### Don't watch the screen. Show your face!

☐ Your body tells a lot.

☐ Get feedback from the audience

■ Watch several guests

# Speak slowly

Exceeds the time? Revise your script!

□ As if the audience is XX years old

- Emphasize:
  - Slow down, Pause, (Strong)

# Practice as many times as possible

Keep the time at any costs

Remind all scripts

□ Recording: To be your audience

## Other techniques of speech

- Attention
  - Walking
  - Black/white out the screen

☐ Ice break

☐ Be honest in Q&A

## Be honest in Q&A

Answer what you are asked

□ Answer shortly

☐ Prepare FAQ

#### Contents

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Be Optimistic on the stage

## Be optimistic on the stage

Good preparation gives you confidence

Practice hard, enjoy your stage

Enough sleep

It is no more than one presentation.