

Tourism crisis management under occurrence of natural disasters

自然災害時の観光危機管理に関する研究

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1. Background 研究の背景と目的

- (1) Tourism crises 観光における危機の影響
- (2) Development of tourism crisis management in Japan 日本における観光危機管理の展開
- (3) Why is tourism crises management important? なぜ観光危機管理が重要なのか？
- (4) Research objective 本研究の目的

2. Concept and framework

コンセプトとフレームワーク

3. Tourism crisis management of demand side

需要サイドにおける観光危機管理

4. Tourism crisis management of supply side

供給サイドにおける観光危機管理

5. Implication for crisis management in future

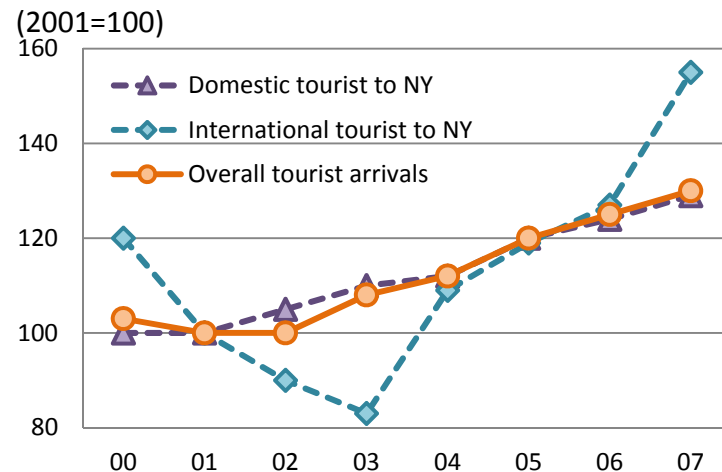
今後の観光危機管理のための提言

Background -- Tourism crisis

背景：観光における危機

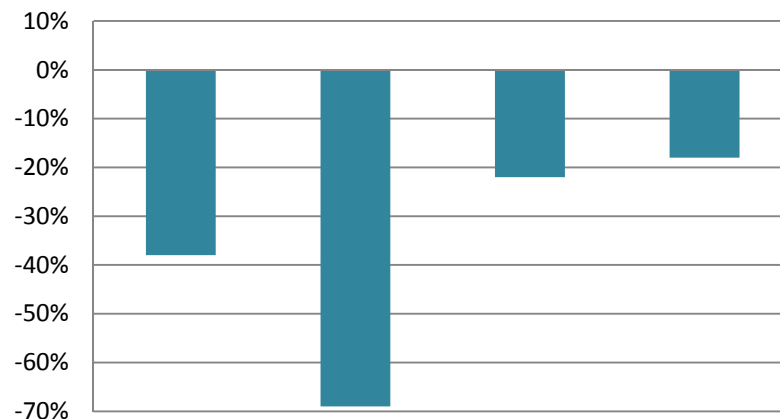
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911 terrorism attack (2001)



Indian Ocean tsunami (2004)

Bali Maldives Sri Lanka Thailand



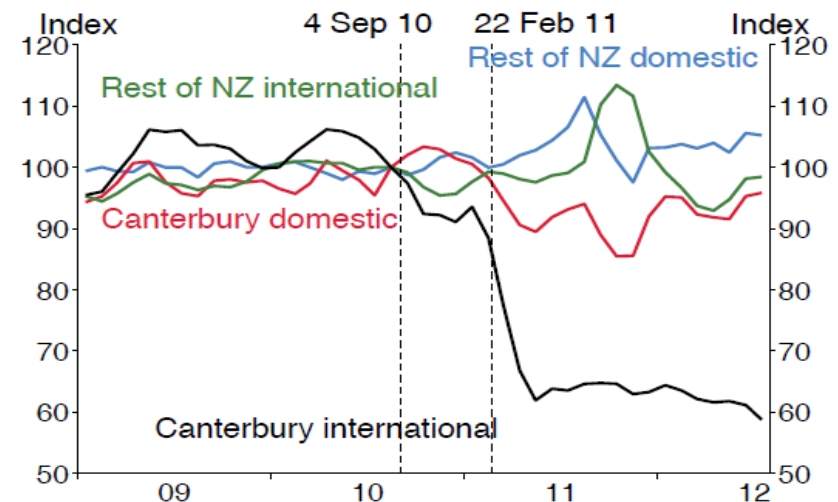
Tourist arrivals in Jan 2005, compared with Jan 2004

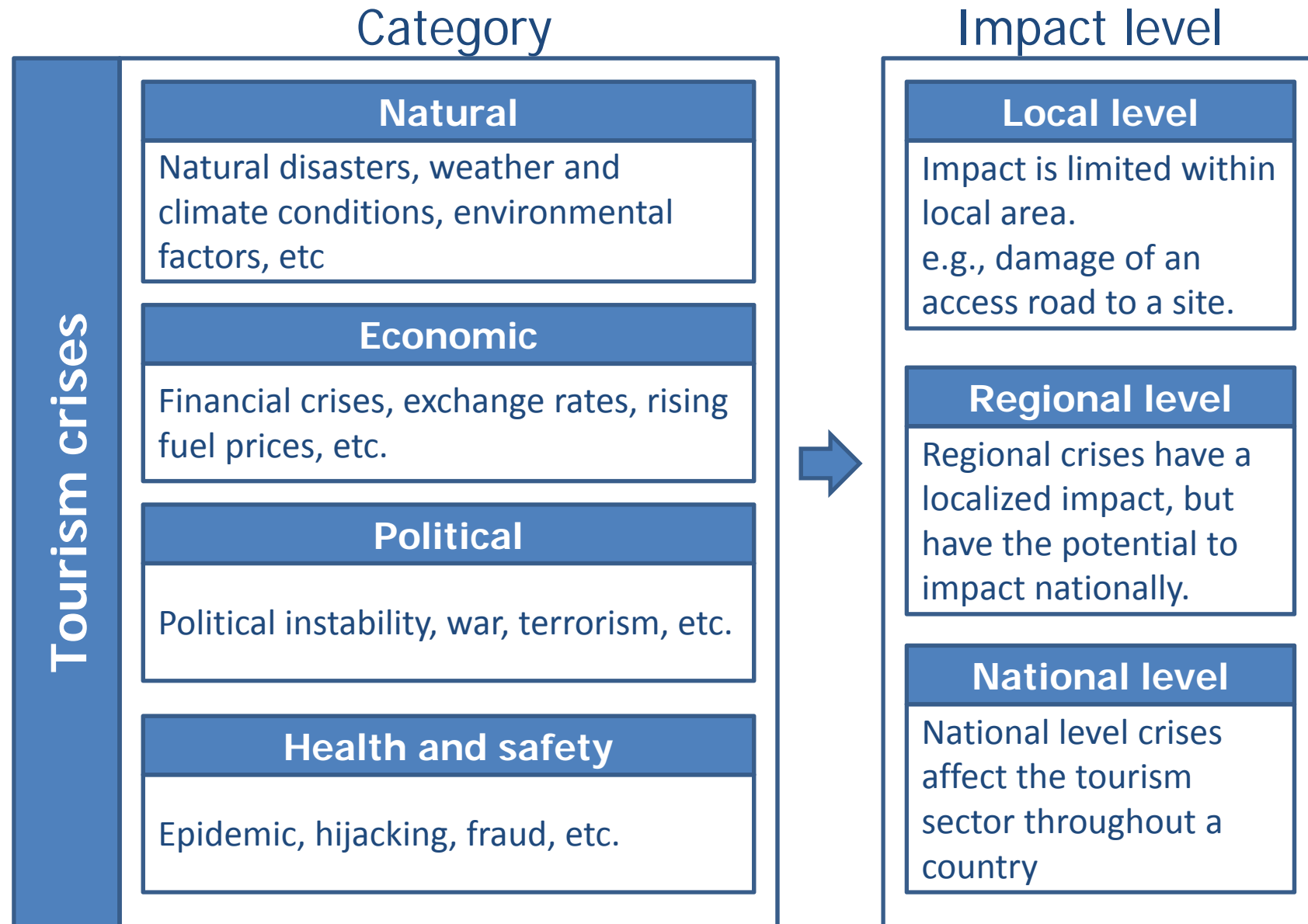
SARS (2003)



Christchurch earthquakes (2011)

Total guest nights (Index: 2010 Q2 = 100)



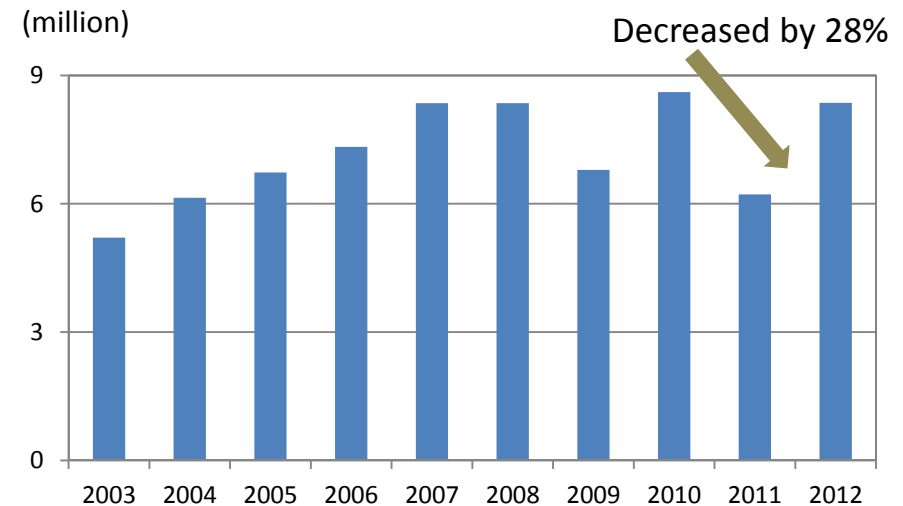


Background -- Tourism crisis 背景：観光における危機

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東日本大震災の影響で、訪日外国人旅行者は減少した

On March 11th 2011, an earthquake happened in the Tohoku area of Japan. The disaster saw a sharp decrease in the number of international tourist arrivals in Japan.



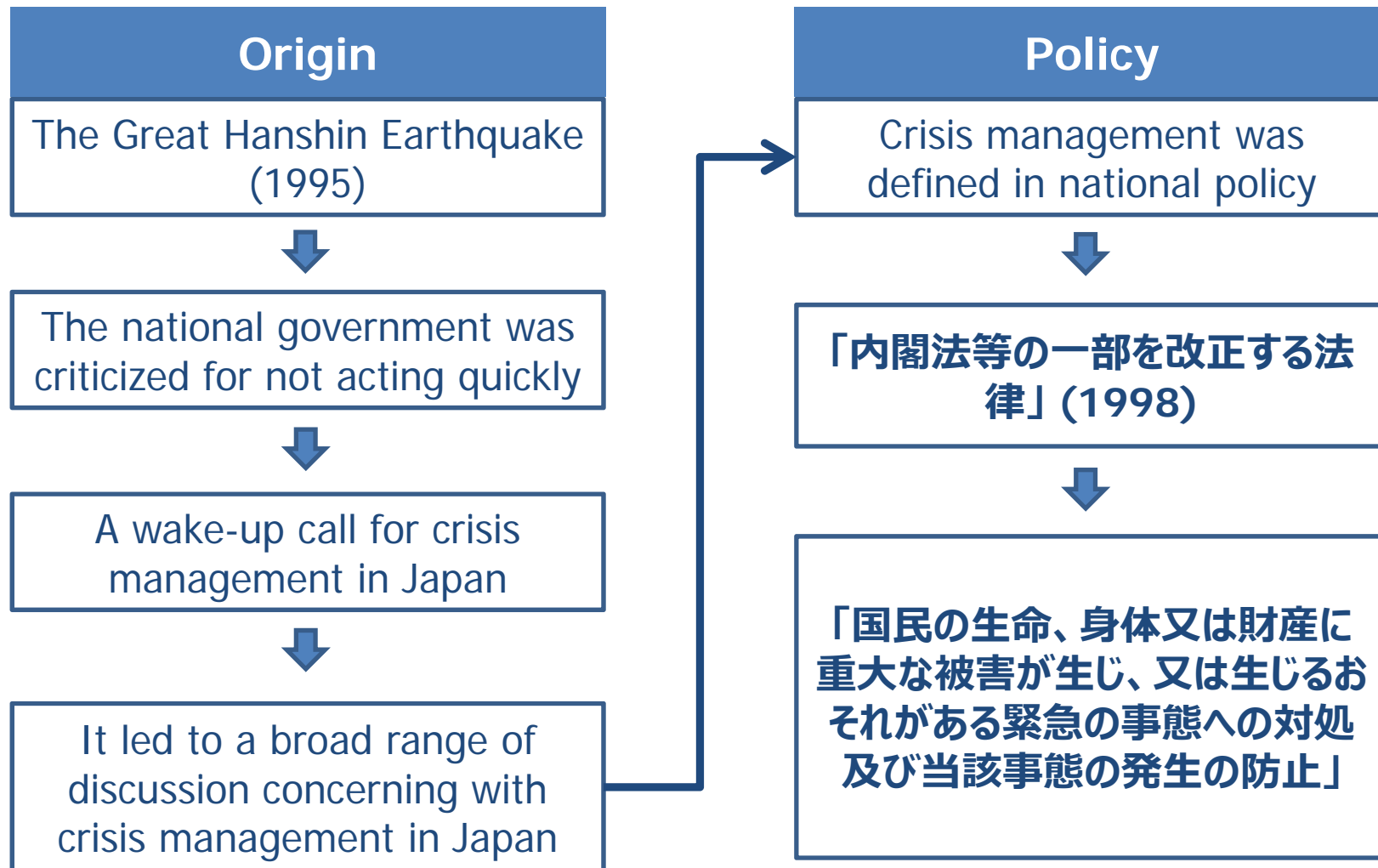
Despite the great impact of crisis events on tourism industry, tourism crisis management is still in an initial stage in Japan.

災害によって、大きな影響を受けてきたにも関わらず、
日本における観光危機管理ははじまったばかりである

Background -- Development of crisis management in Japan

背景 -- 日本における危機管理の展開

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Disaster Countermeasures 災害対策

Typhoon Vera (伊勢湾台風) happened in 1959 caused unprecedented destruction in Japan. In order to response to future disasters more effectively, the Disaster Countermeasures Basic Act (災害対策基本法) was passed by Japanese parliament in 1961. The purpose of Basic Act is 「国民の生命、身体及び財産を災害から保護する」.

More recently, after the Great East Japan Earthquake, there are many discussion about disaster countermeasures in Japan, such as 「避難勧告」「避難指示」「警戒区域の設定」.

However, the current legislation does not include countermeasures to protect tourist under occurrence of disasters. In addition, most of crisis management plan at regional level contain little reference to tourism. 現在の法律では、災害発生時に観光客を保護するための対策が含まれていない。地域レベルでの危機管理計画においても、観光は対象になっていない。

Background -- Why is tourism crisis management important?

背景

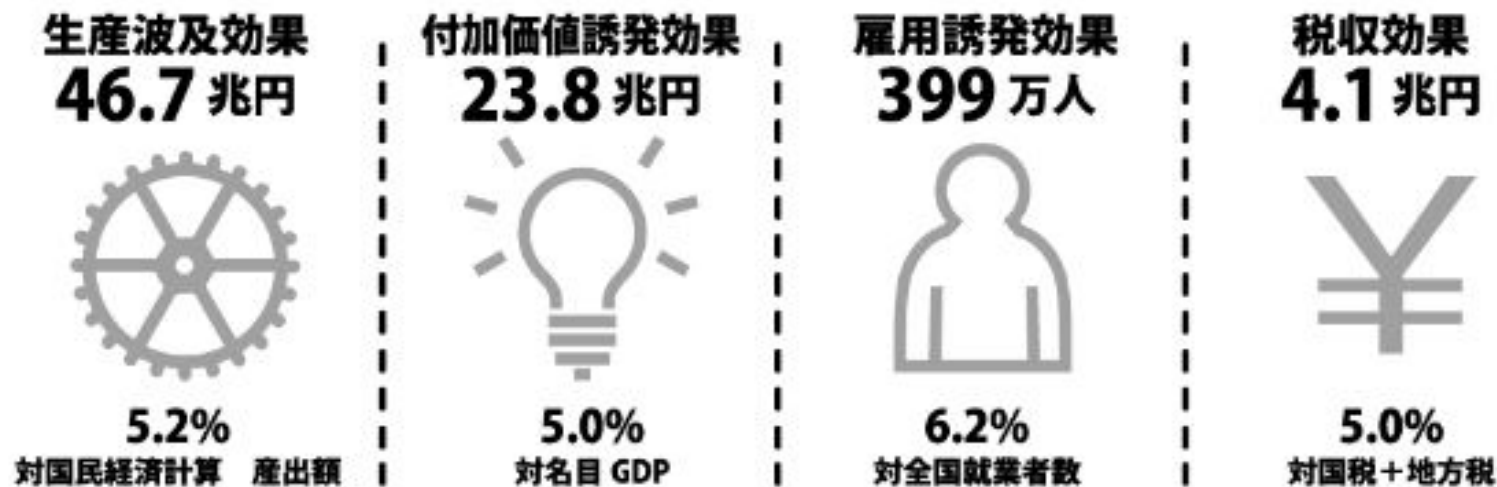
--なぜ観光危機管理は重要なのか？

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The importance of tourism industry

観光産業の重要性

- Tourism has been recognized as one of sectors enhancing economic growth;
- Tourism can also contribute to regional revitalization, especially in the rural areas which have been suffering from depopulation these days.



Background -- Why is tourism crisis management important?

背景 --なぜ観光危機管理は重要なのか？

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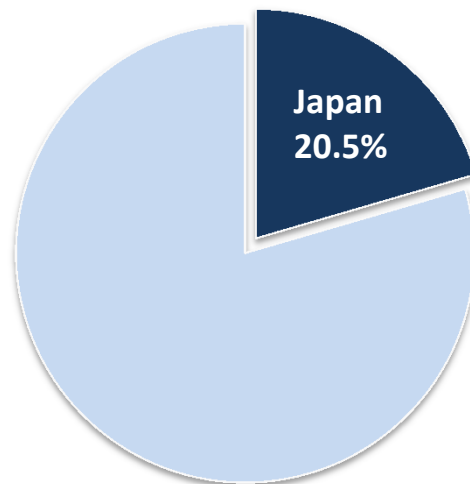
High frequency of natural disasters 頻繁に発生する自然災害

By comparing with other countries, occurrence of natural disasters (e.g., tsunami, flood, typhoon, earthquake, volcano, etc) in Japan is more frequent.

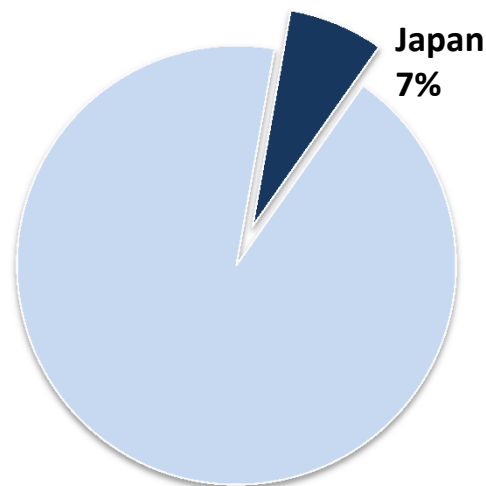
日本は他国と比較して、頻繁に自然災害が発生している。

(例: 津波、洪水、台風、地震、噴火など)

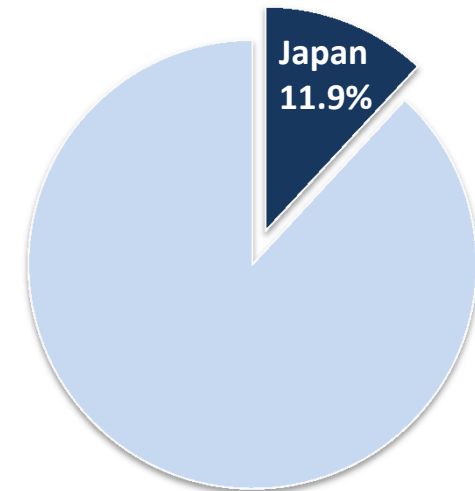
Earthquake over M6.0
(2000 ~ 2009)



Active volcano



Economic loss (billion USD)
(1979 ~ 2008)



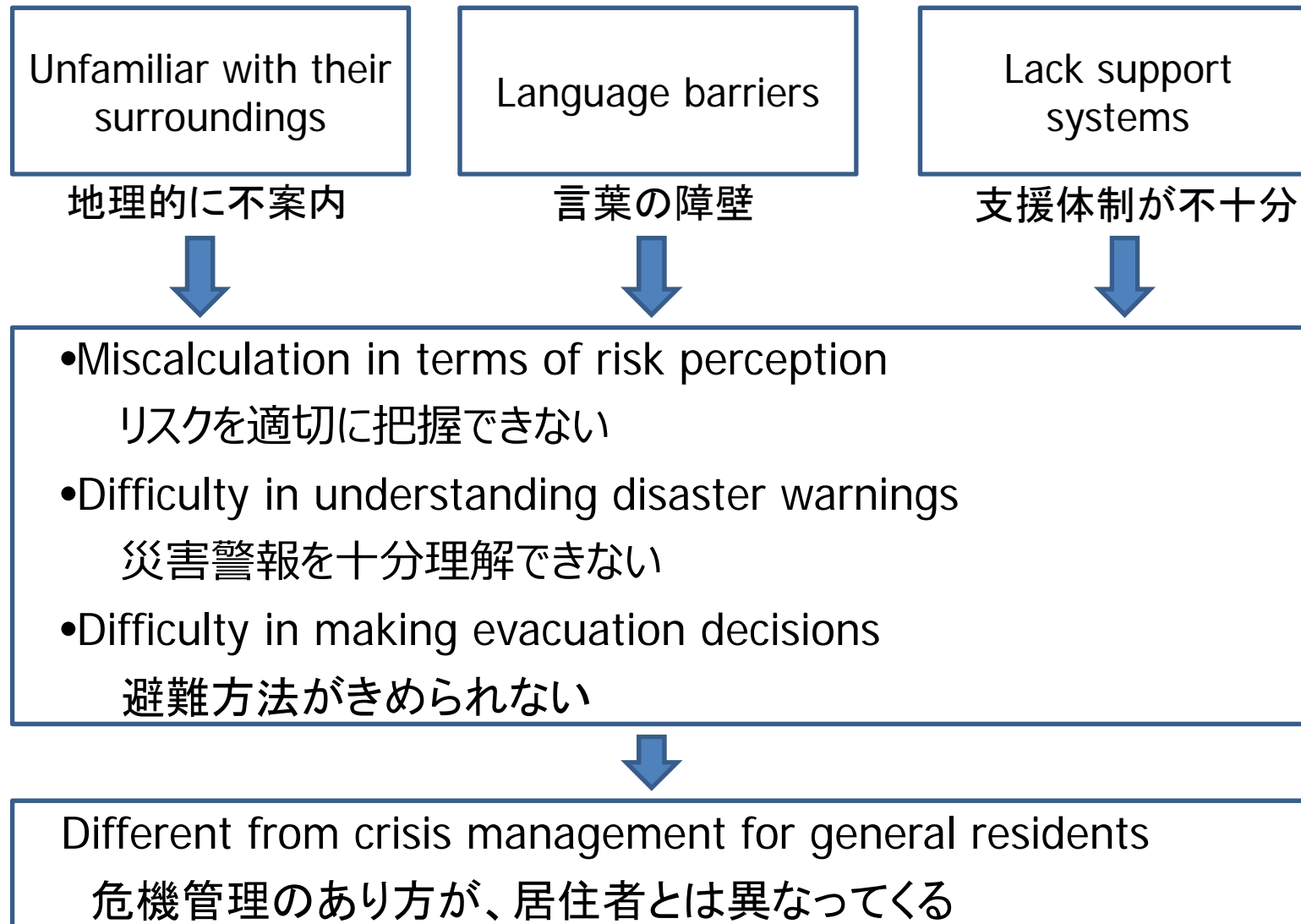
Background -- Why is tourism crisis management important?

背景

--なぜ観光危機管理は重要なのか？

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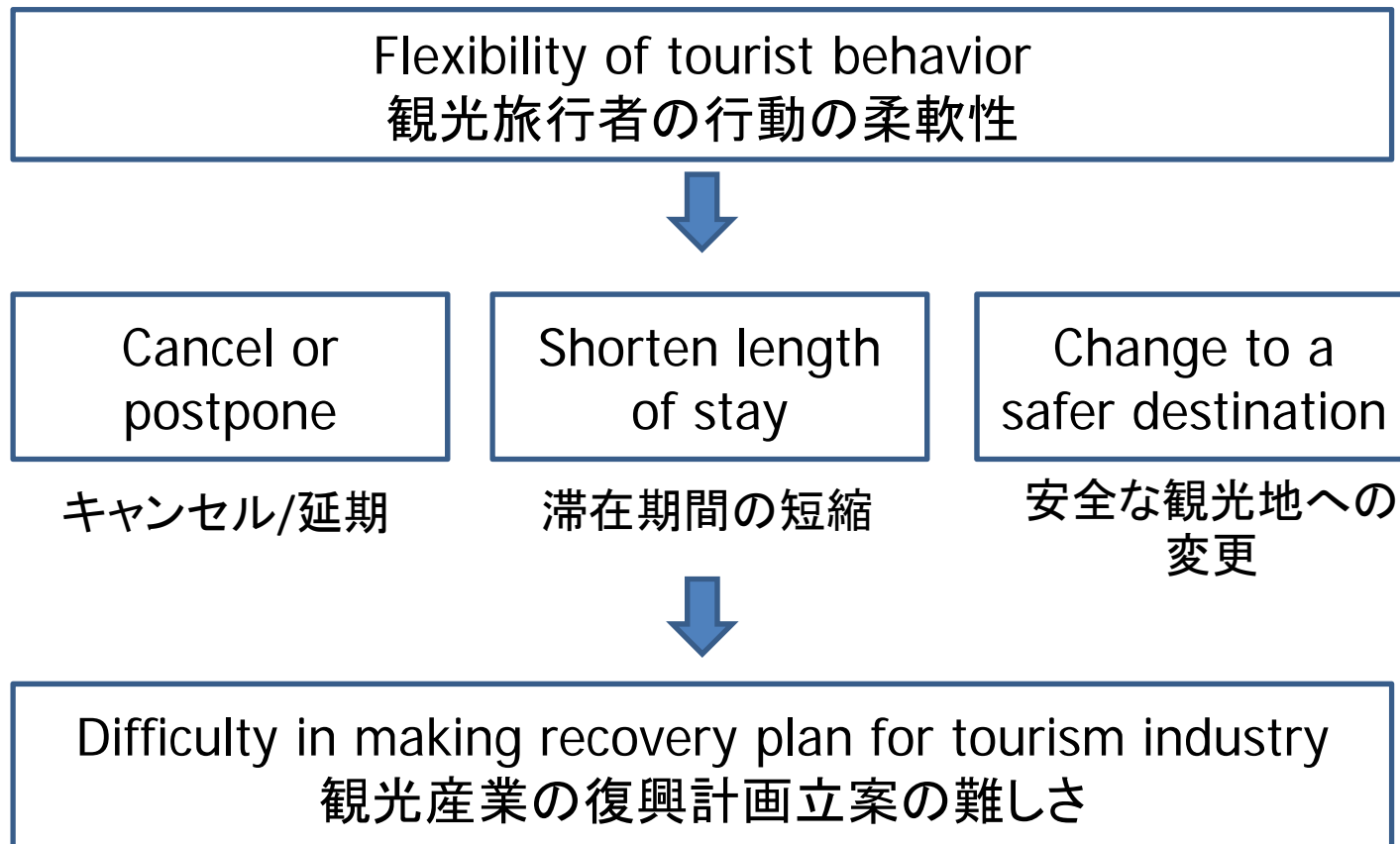
Difference between tourist and resident -- Vulnerability of tourist



Background -- Why is tourism crisis management important?

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Difference between tourist and resident -- Flexibility of tourist

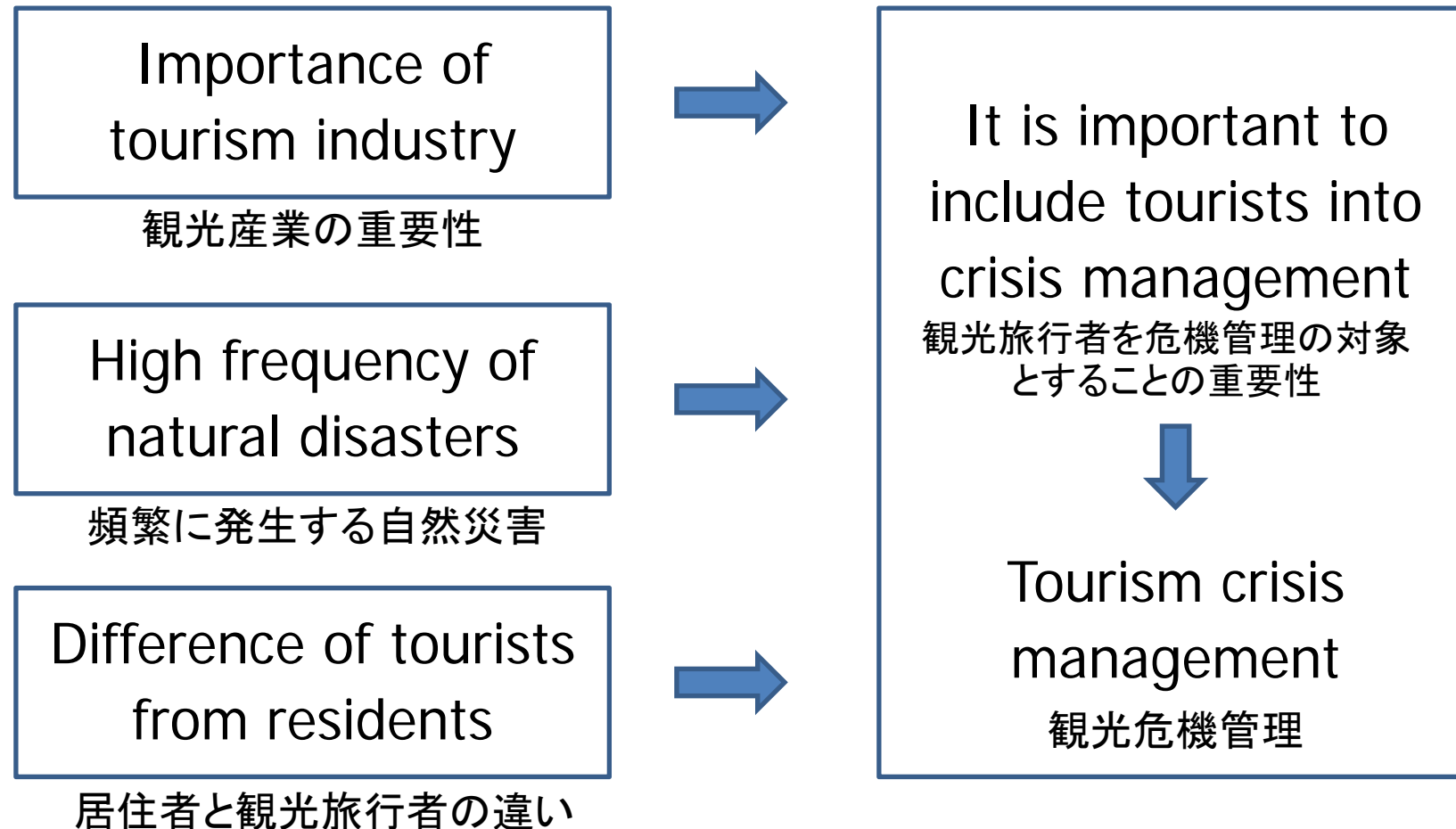


Background -- Why is tourism crisis management important?

背景

--なぜ観光危機管理は重要なのか？

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This research will focus on tourism crisis management under occurrence of natural disasters that have impact on regional and national level.

本研究は、地域・国レベルにおよぶ自然災害発生時における観光危機管理に焦点をあてる

❑ To review the current situation of tourism crisis management in Japan;

日本における観光危機管理の現状を整理すること

❑ To get a better understanding of tourist behavior under occurrence of natural disasters;

自然災害発生時における観光旅行者の行動を理解すること

❑ To derive implication for future tourism crisis management.

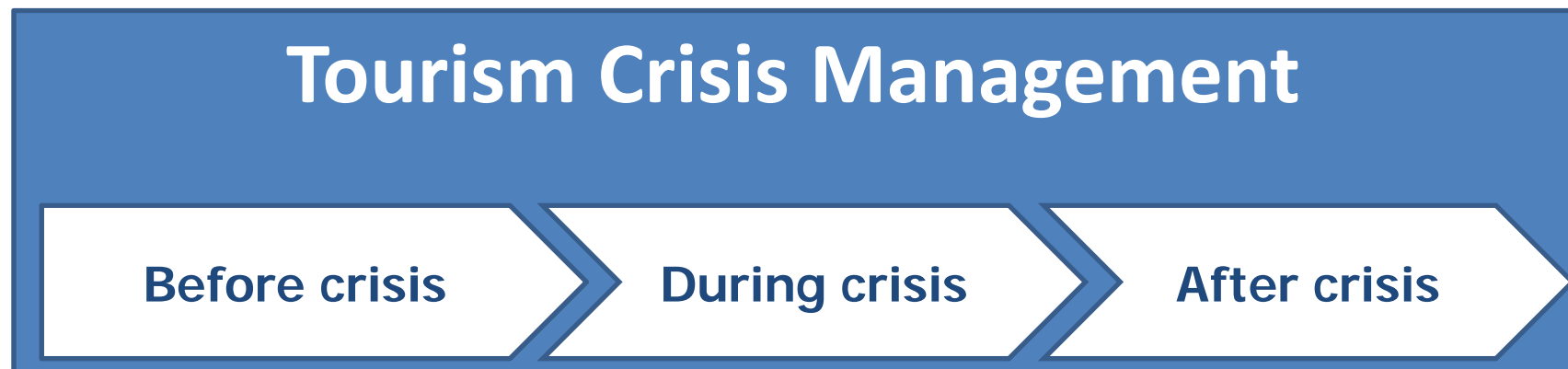
今後の観光危機管理への提言をおこなうこと

1. Background
2. Concept and framework
3. Tourism crisis management of demand side
4. Tourism crisis management of supply side
5. Implication for crisis management in future

Crisis management has been defined as a process of planning for, responding to and recovering from a crisis.

危機管理は、危機後の対応と復旧のための計画プロセスと定義されてきた

Being different from tourism risk management, tourism crisis management has as a core function the recovery and rebuilding of a destination following a crisis (Peters & Pikkemaat 2005).



Concept -- Tourism crisis management

コンセプト -観光危機管理

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The target of tourism crisis management is tourists and tourism sectors.

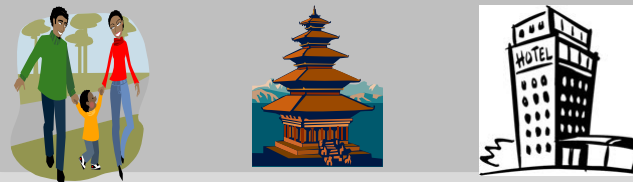
観光危機管理は、観光旅行者と観光部門を対象とする

Crisis management



Tourism crisis management

Tourist + Tourism Sectors



Concept and framework – Existing framework

コンセプトとフレームワーク: 既存のフレームワーク

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Framework of tourism crisis management (4R) has been proposed in the existing studies.

観光危機管理のフレームワーク(4R)が提案されている

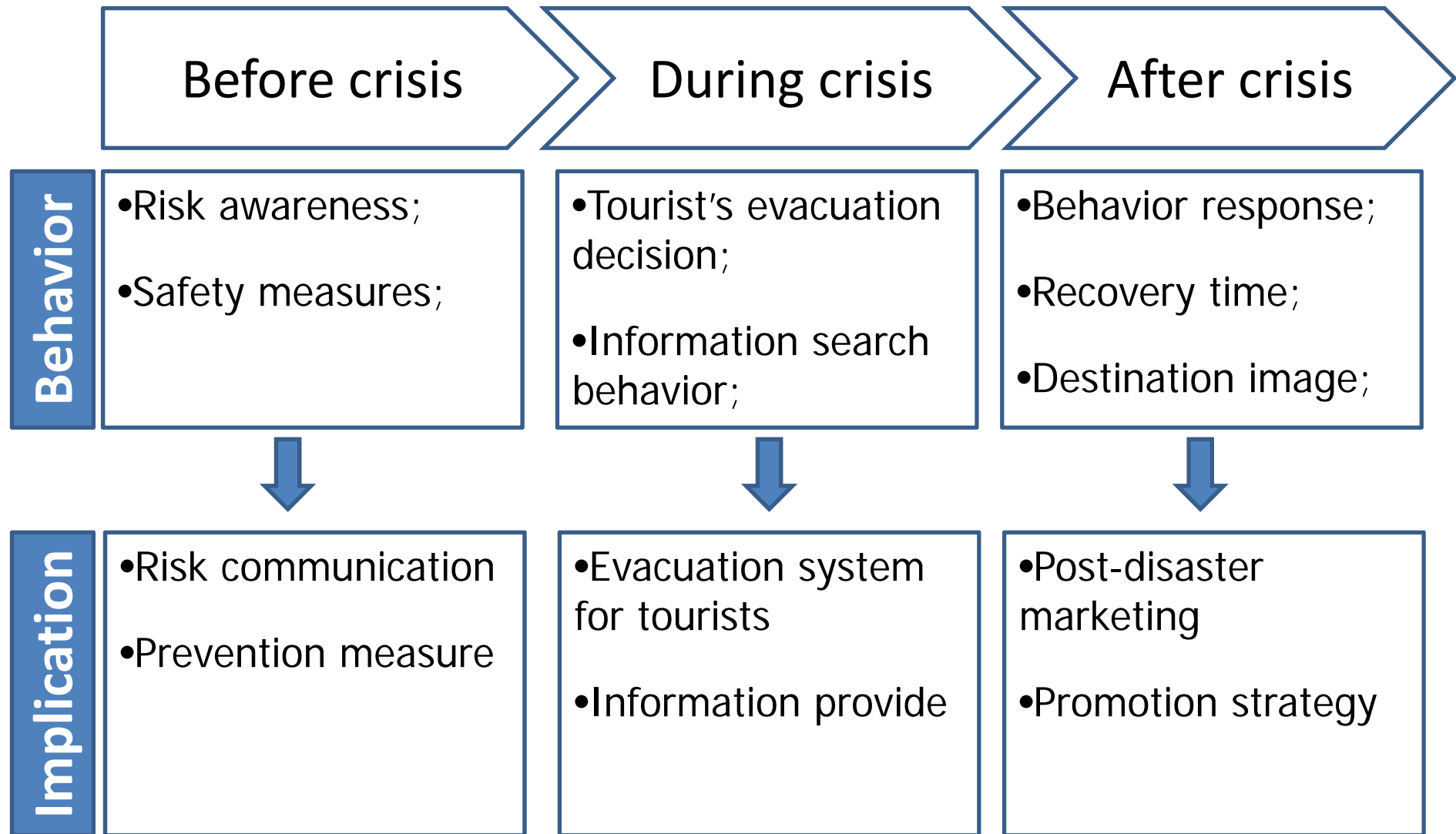
Reduction	Readiness	Response	Recovery
<u>Identify</u> Identify risk and take step to eliminate risk or reduce the impact	<u>Warning systems</u> Communication of potential disaster	<u>Rescue</u> Ensure safety of tourists	<u>Rebuild</u> Restore infrastructure; Clean-up after the disaster
<u>Consultation and education</u> Make all operators aware of steps to take	<u>Planning</u> Develop operational systems before disaster happen	<u>Service</u> Services offered to tourists after disasters	<u>Communications</u> Promotion; marketing of affected destination
		<u>Communications</u> Provide accurate information	<u>Evaluation</u> Feedback into future prevention and planning strategies

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Tourist behavior under disasters

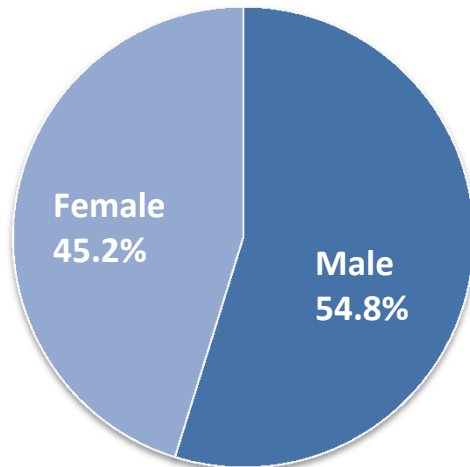
観光旅行者の災害下における行動

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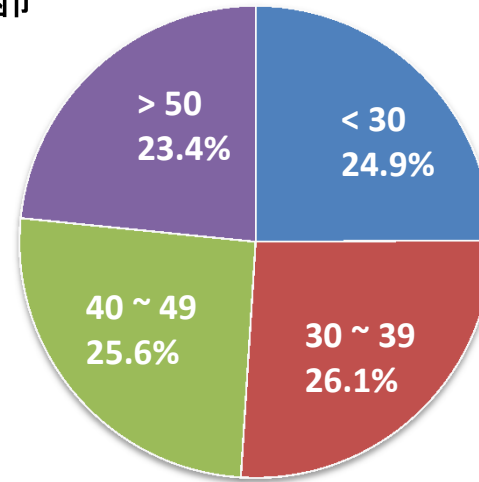


Implementer 実施機関	Institution for Transport Policy Studies
Time period of the survey 調査時期	May 2015
Survey area 対象地域	China US
Target respondent 調査対象者	Residents in the target areas
Survey method 調査方法	Web survey
Sample size サンプル数	China : 858 respondents US : 870 respondents
Survey content 調査項目	Individual characteristics; Attitude towards safety measures; Destination image of Japan; Intention to visit Japan

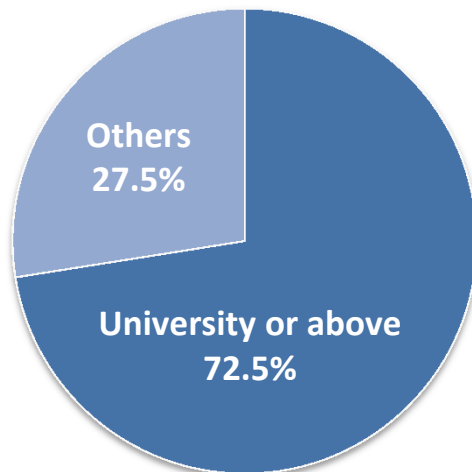
性別



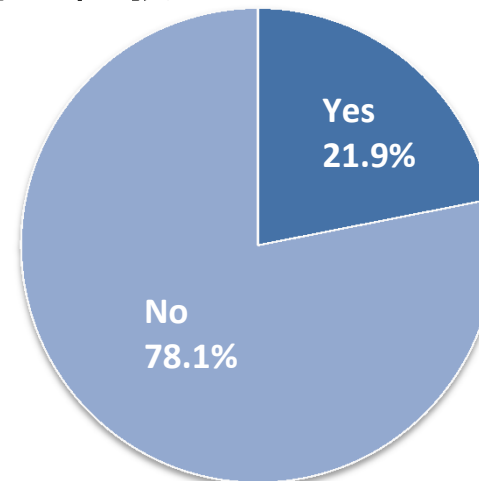
年齡



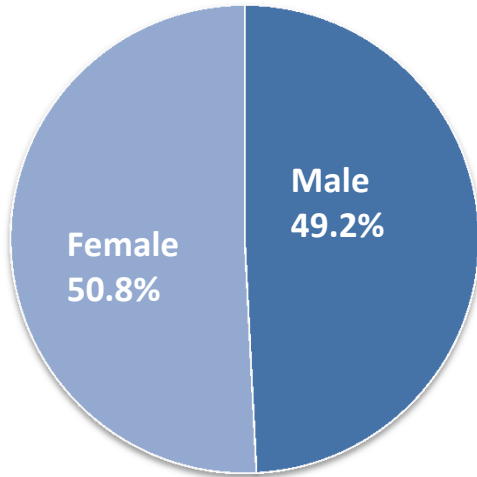
學歷



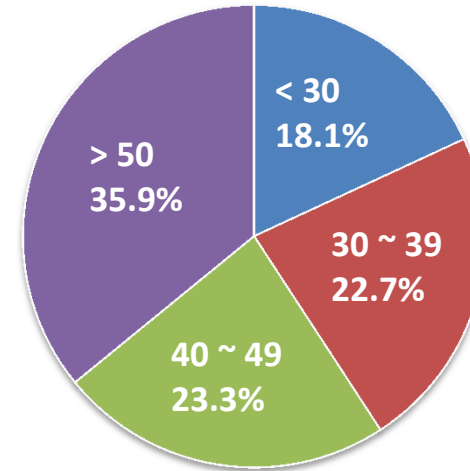
訪日經驗



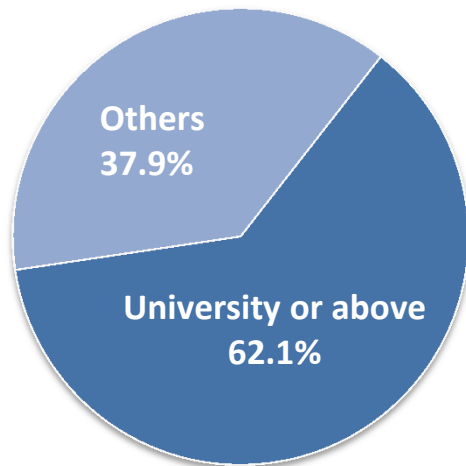
性別



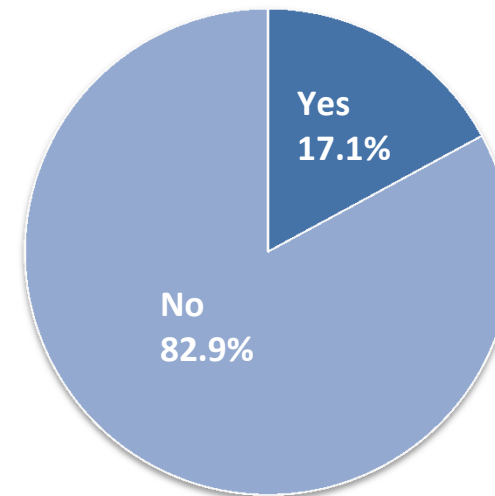
年齢



学歴



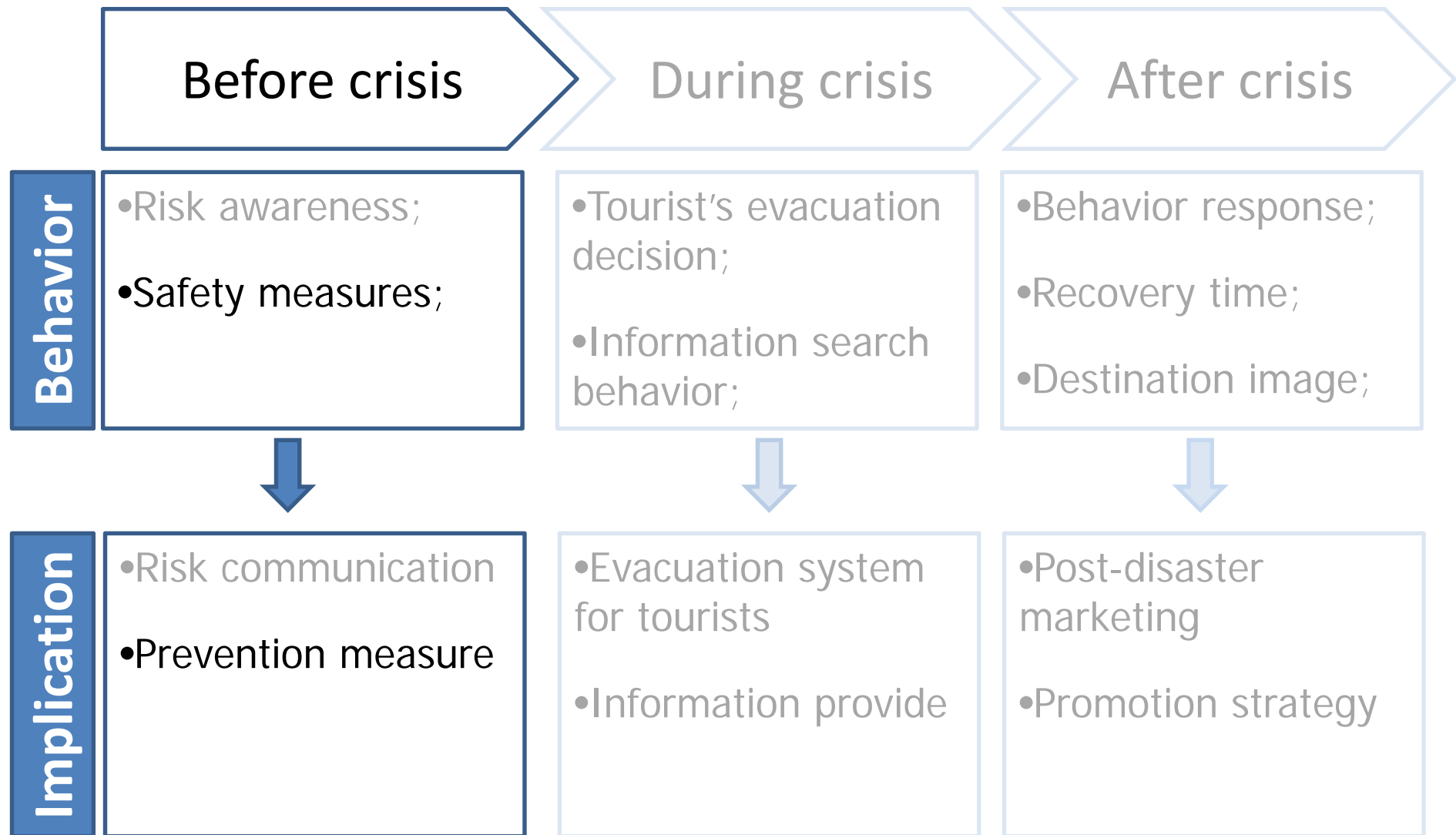
訪日経験

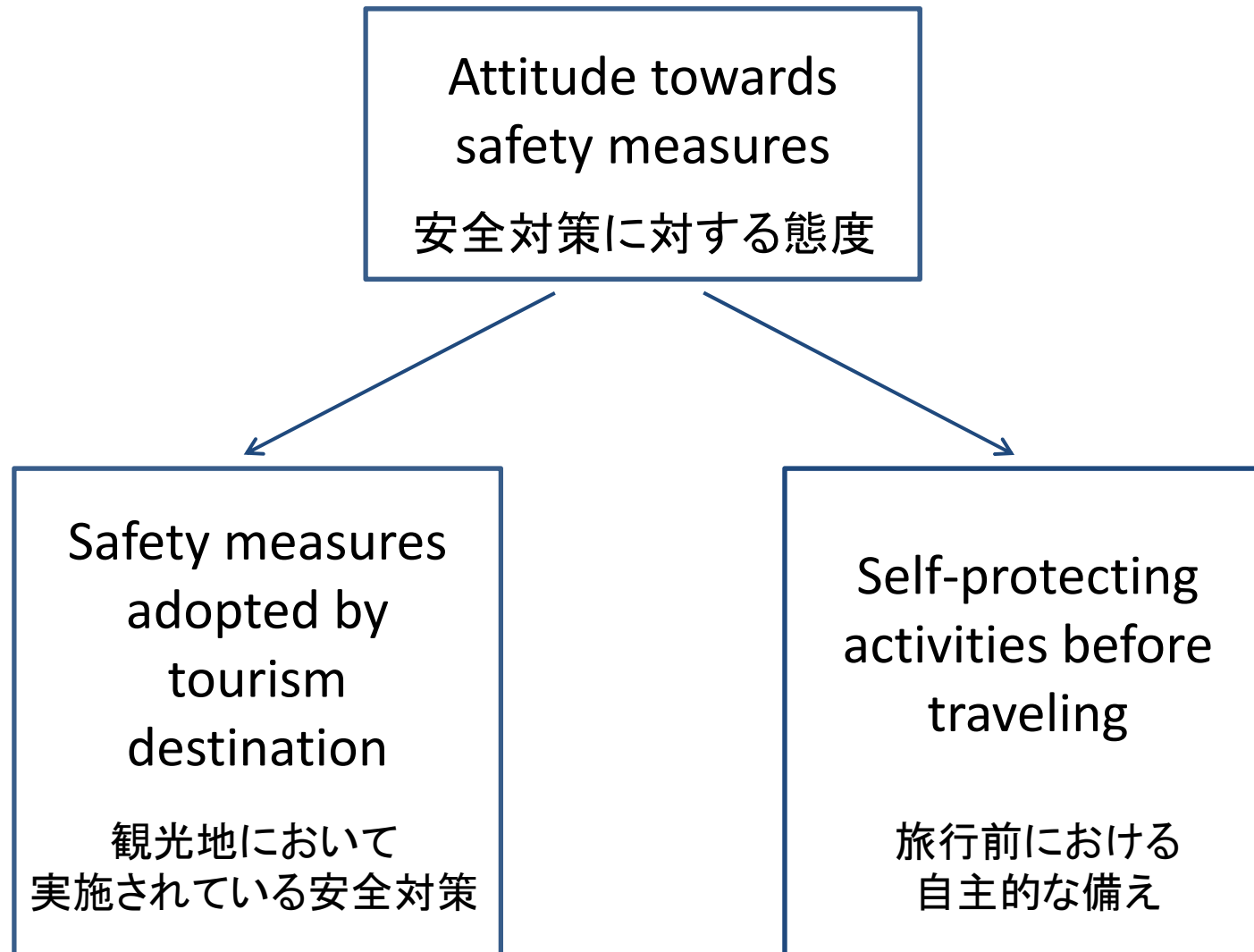


Tourist behavior under disasters

観光旅行者の災害下における行動

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Data analysis -- Attitude towards safety measures

分析結果 -- 安全対策に対する態度

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Effectiveness of **safety measures adopted by tourism destination** on a scale of 1~7 (1: very ineffective; 7: very effective)

観光地において実施されている安全対策の有効性に対する評価（7段階）

-- Tourist from China 中国

	Mean	SD
Announcement of evacuation plan in major languages in case of disasters	5.41	1.30
Evacuation warning system at accommodations	5.35	1.26
A crisis management plan of service providers	5.31	1.23
Disaster warning system at tourism attractions	5.29	1.20
Rehearsal of evacuation plan in case of emergency	5.14	1.33
"How to survive a disaster" manual in guest room	5.01	1.28
Providing safety information in travel guides	4.98	1.29
Providing safety information on HP	4.82	1.28

Data analysis -- Attitude towards safety measures

分析結果 -- 安全対策に対する態度

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観光地において実施されている安全対策の有効性に対する評価（7段階）

-- Tourist from US 米国

	Mean	SD
Announcement of evacuation plan in major languages in case of disasters	5.51	1.08
Evacuation warning system at accommodations	5.50	1.16
Disaster warning system at tourism attractions	5.38	1.08
A crisis management plan of service providers	5.30	1.07
Rehearsal of evacuation plan in case of emergency	5.15	1.15
Providing safety information in travel guides	5.12	1.04
Providing safety information on HP	5.10	1.05
"How to survive a disaster" manual in guest room	5.03	0.98

Some Implications 災害前における対策への示唆

for prevention measures before natural disasters

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More efforts should be made to

- ❑ Promote multi-language for announcement of evacuation plan;
- ❑ Improve evacuation warning system at accommodations;
- ❑ Establish crisis management plan of tourism service providers;
- ❑ Build disaster warning system at tourism attractions

Data analysis -- Attitude towards safety measures

分析結果 -- 安全対策に対する態度

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Effectiveness of **self-protecting activities before traveling** on a scale of 1~7 (1: very ineffective; 7: very effective)

旅行前における自らの備えの有効性に対する評価（7段階）

-- Tourist from China 中国

	Mean	SD
Register with your embassy at Japan in prior to travel	5.25	1.35
Making decisions in cooperation with relatives and friends	4.91	1.26
Searching for information from friends and relatives	4.87	1.30
Searching for information on the Internet	4.84	1.29
Gathering information from travel agents	4.80	1.33
Choosing a popular destination	4.77	1.39
Watching television programs about Japan	4.57	1.37
Planning a short trip	4.50	1.35
Planning an inexpensive trip	4.22	1.44

Data analysis -- Attitude towards safety measures

分析結果 -- 安全対策に対する態度

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Effectiveness of **self-protecting activities before traveling** on a scale of 1~7 (1: very ineffective; 7: very effective)

旅行前における自らの備えの有効性に対する評価（7段階）

-- Tourist from US 米国

	Mean	SD
Searching for information on the Internet	5.31	1.09
Register with your embassy at Japan in prior to travel	5.20	1.15
Gathering information from travel agents	4.88	1.17
Choosing a popular destination	4.80	1.14
Watching television programs about Japan	4.62	1.12
Planning a short trip	4.59	1.14
Making decisions in cooperation with relatives and friends	4.51	1.31
Planning an inexpensive trip	4.36	1.17
Searching for information from friends and relatives	4.33	1.50

Some Implications 災害前における対策への示唆

for prevention measures before natural disasters

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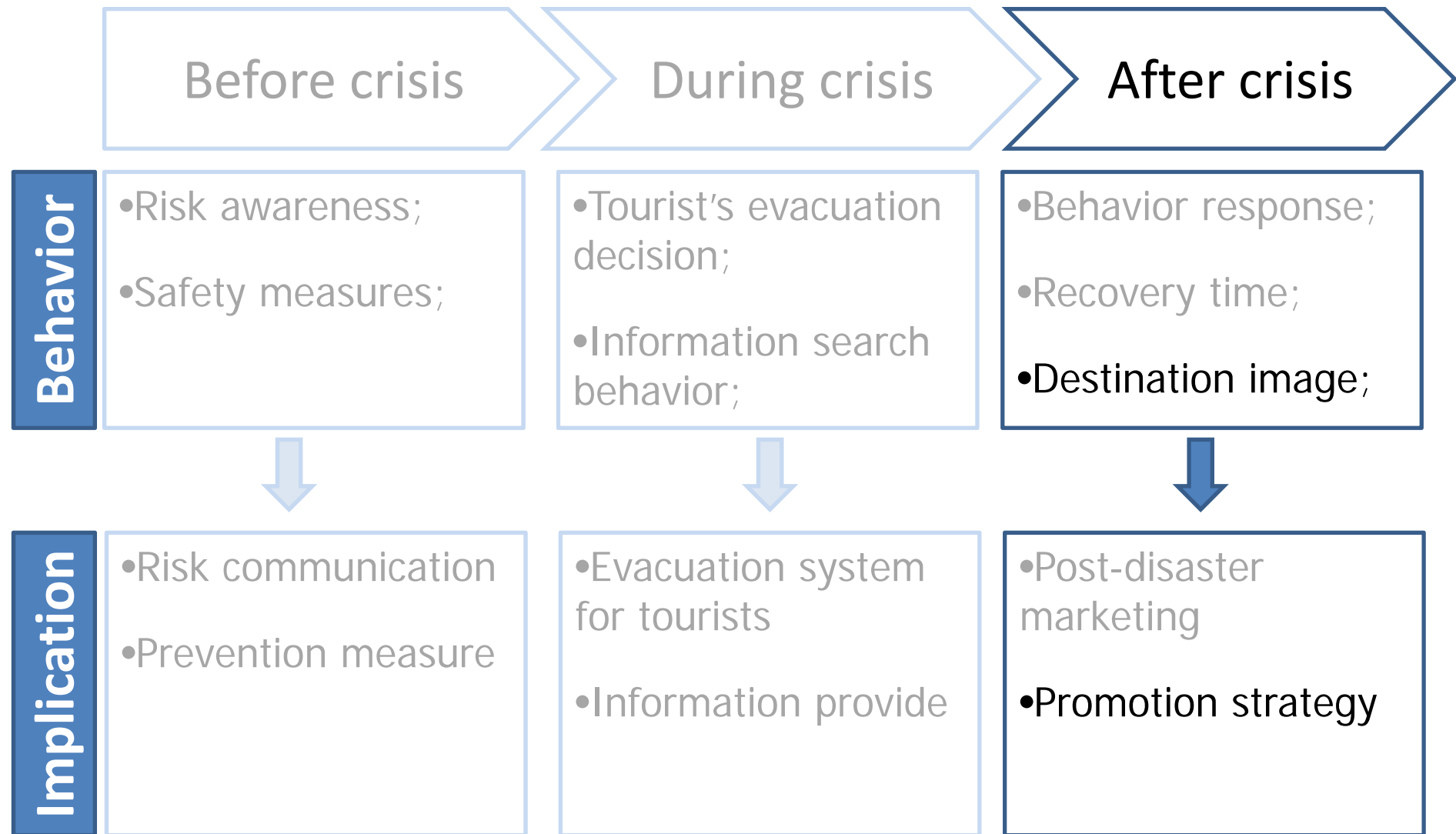
The strategy to promote self-protecting measure should be different among different markets

For China	For US
<ul style="list-style-type: none">❑ Collaborate with embassy in Japan;❑ Provide safety information on social media;❑ Provide safety information on website	<ul style="list-style-type: none">❑ Provide safety information on website;❑ Collaborate with embassy in Japan;❑ Provide safety information through travel agent

Tourist behavior under disasters

観光旅行者の災害下における行動

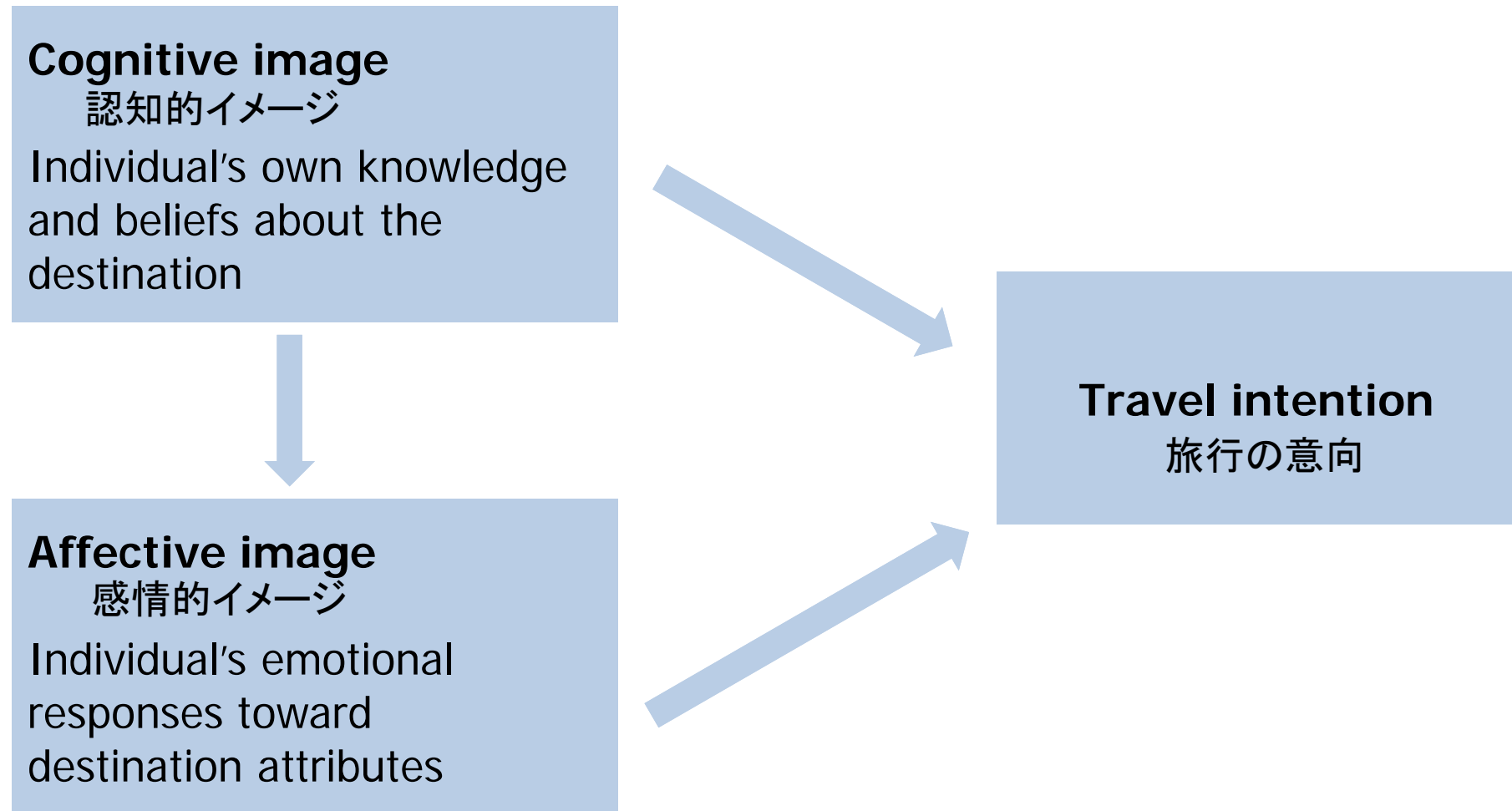
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Definition of destination image

Destination image is defined as an individual's mental representation of knowledge, feelings and overall perception of a particular destination (Crompton, 1979).

Components of destination image



Existing evidence 先行研究における知見

□The literature has shown that external events may change the image of a country positively (e.g., Olympic Games) or negatively (political conflicts).

□Affective image has been proved to have larger influence on travel intention in the existing studies.

□The change of destination image is different among different markets.

Research questions

- (1) What is the impact of natural disasters on the image of Japan as a tourism destination? How will the impact change over time?
自然災害の発生によって、観光地としての日本のイメージはどのような影響を受けるか？
その影響はどのくらいの期間にわたって持続するか？
- (2) How will the image change influence tourist's travel intention?
自然災害の発生によるイメージの変化によって、観光旅行者の旅行意図はどのように変化するか？
- (3) Whether the image change is different for different segments (e.g., tourist from different countries) in tourism demand?
イメージの変化の仕方は、セグメント（例：国籍など）によって異なるのか？

Destination image

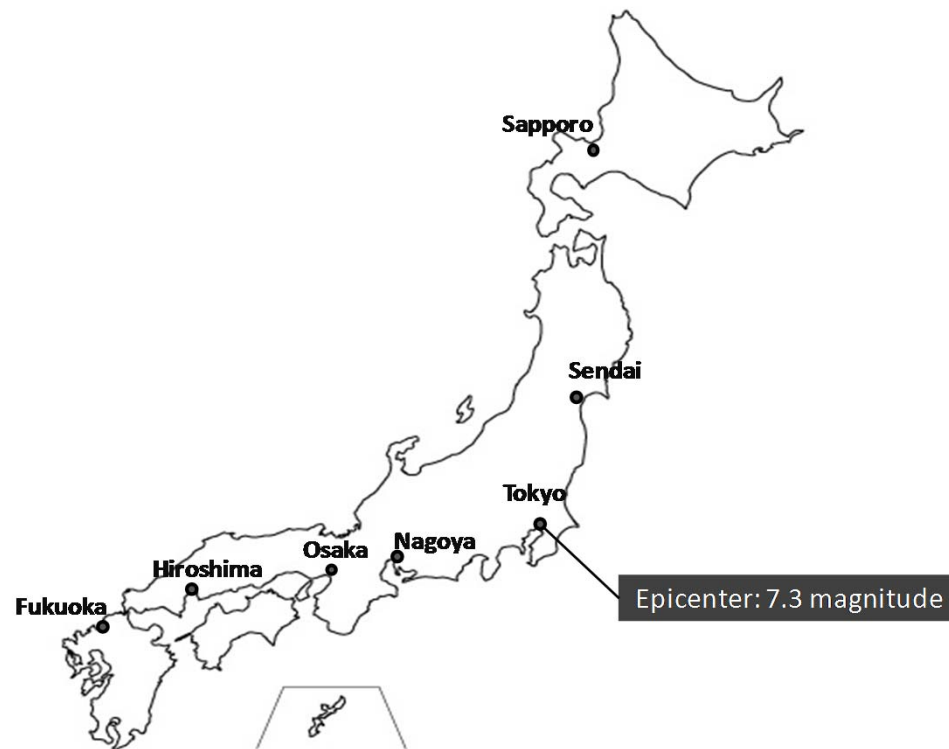
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Questionnaire design -- Earthquake scenario 調査の設計 震災シナリオ

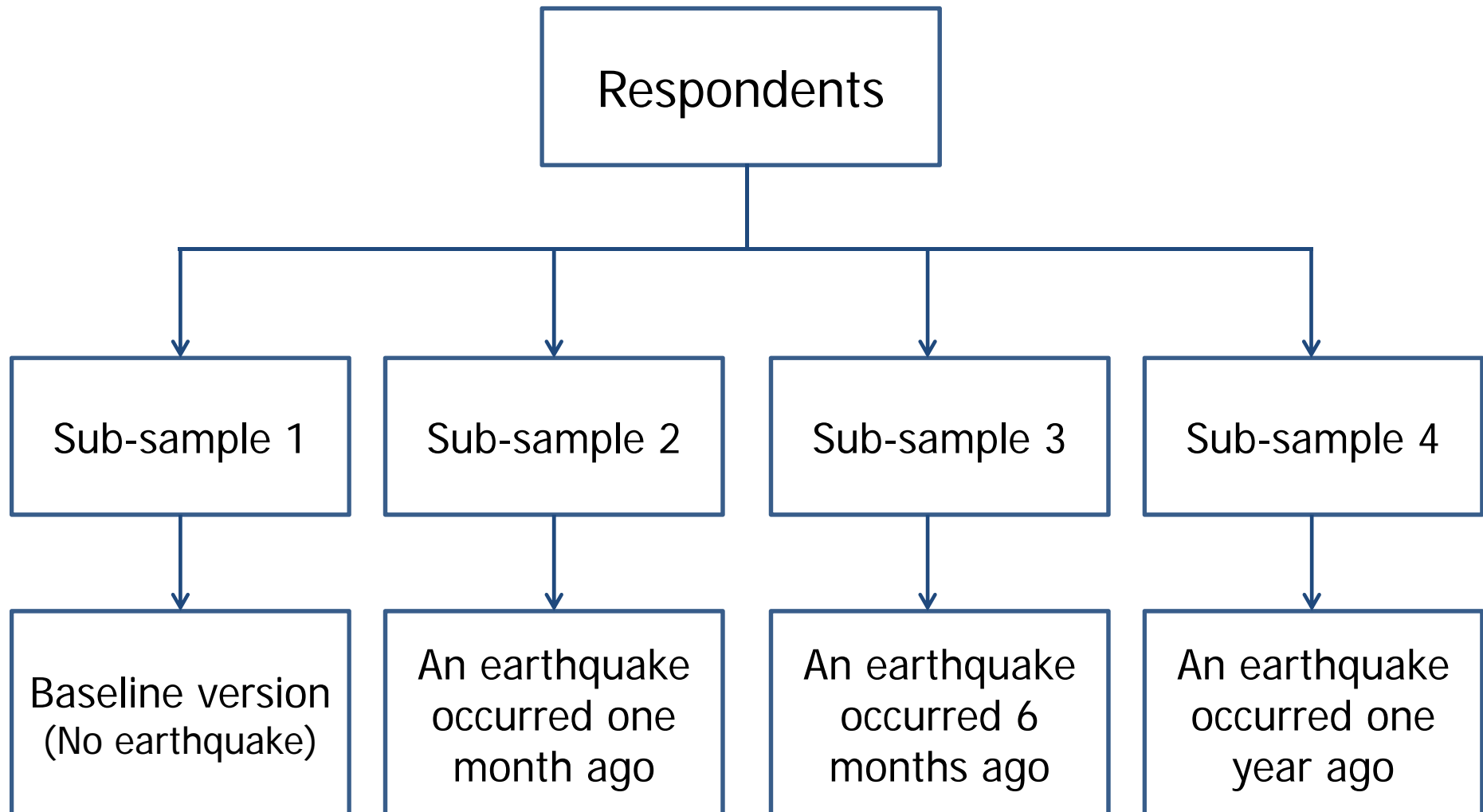
Please imagine an earthquake occurred in Japan.

日本において、地震が発生したと想像してください。

A magnitude 7.3 earthquake occurred in Tokyo Metropolitan area in Japan. The earthquake has caused extensive structural damage to about 850,000 buildings in Metropolitan area. A Japanese National Police Agency has confirmed 11,000 deaths and 210,000 injured as a result of the disaster.



Survey design -- Between subject design



Destination image -- Cognitive image 認知的イメージ

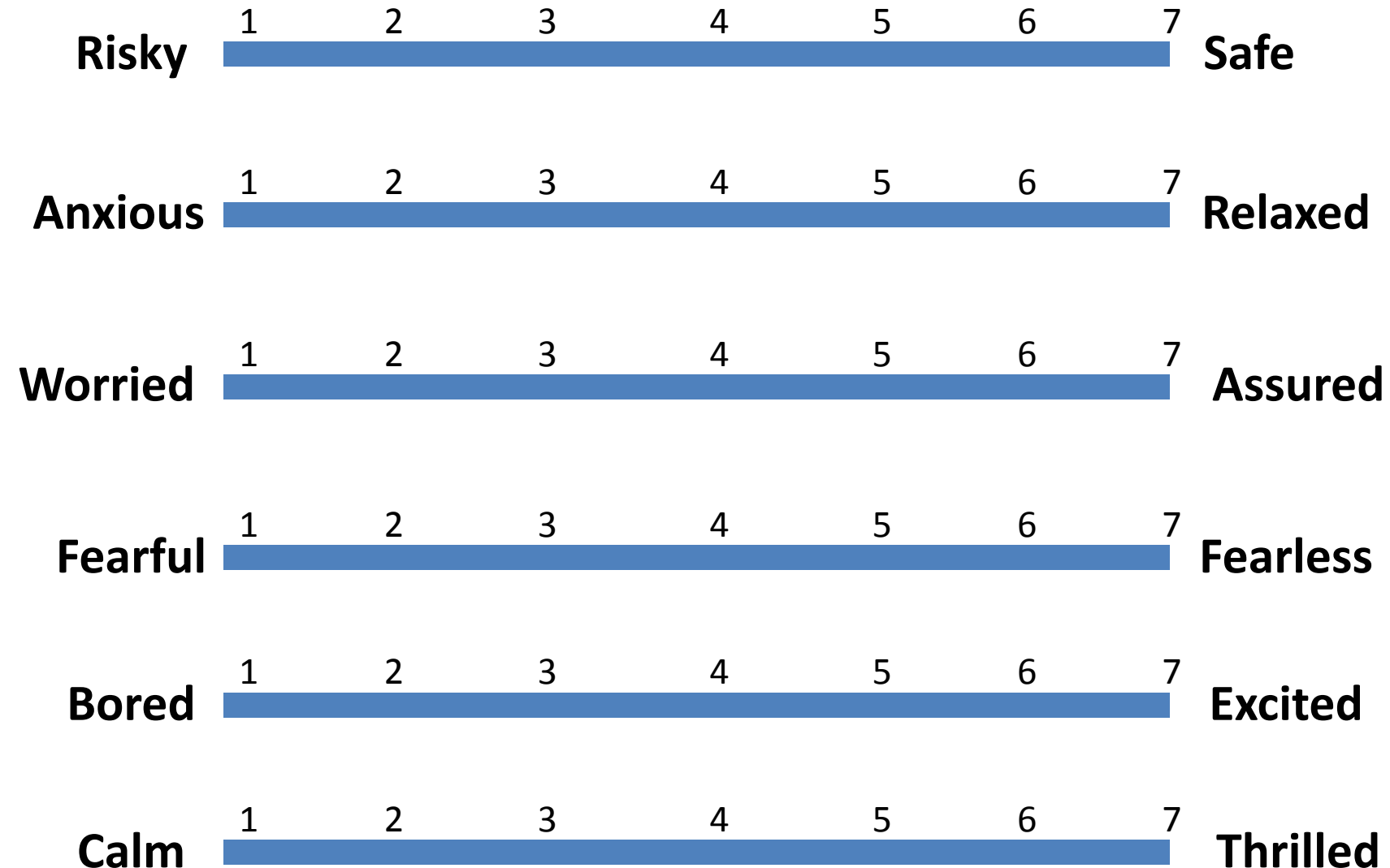
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Infrastructure インフラストラクチャー	Price and value 価格と価値
<ul style="list-style-type: none"> Well-developed general infrastructures Good transport infrastructures Wide selection of restaurants/cuisine Good shopping facilities Suitable accommodations Easy access to everywhere within the country Well communicated traffic information 	<ul style="list-style-type: none"> Reasonable price for food and accommodation Reasonable price for attractions and activities Good value for money
Natural resource 自然資源	Travel environment 旅行環境
<ul style="list-style-type: none"> Beautiful scenery and natural attractions Unpolluted/unspoiled environment Scenic mountain and valleys Picturesque parks/lakes/rivers 	<ul style="list-style-type: none"> Safe and secure environment Socially and politically stable Clean and tidy environment Friendly and helpful local people Good climate
Cultural resource 文化資源	Outdoor activity アウトドア活動
<ul style="list-style-type: none"> Interesting cultural attractions Rich in historic and heritage tourism resources Wide arrays of shows/exhibitions Tempting cultural events and festivals Good nightlife 	<ul style="list-style-type: none"> Enormous opportunities for outdoor recreation A lot of sports activities Good place for hiking/ picnicking/ camping/ hunting

Destination image -- Affective image 感情的イメージ

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Thinking about traveling in Japan makes me feel:



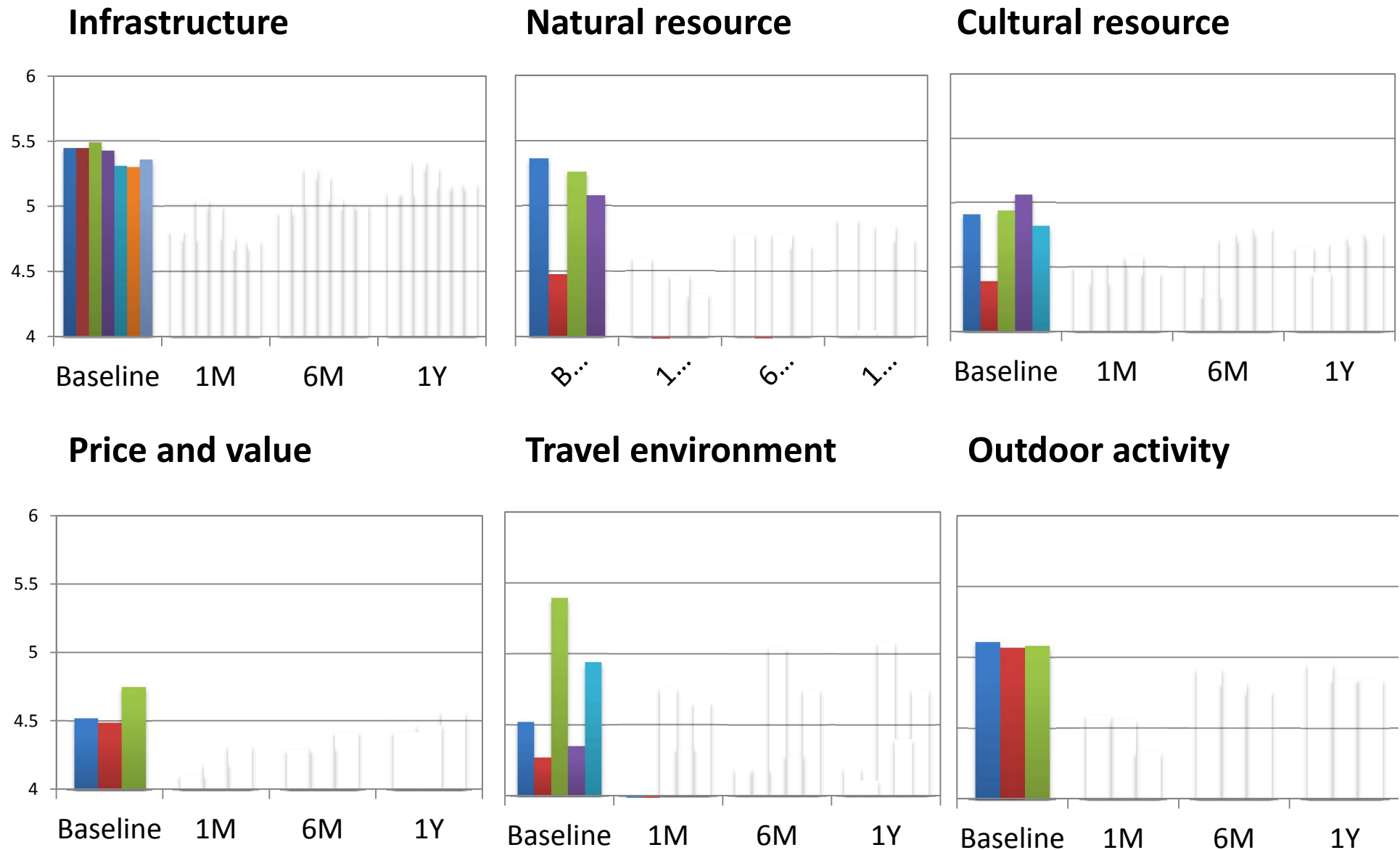
RQ: What is the impact of natural disasters on the image of Japan as a tourism destination? How will the impact change over time?

Method: t-test analysis is conducted to examine whether respondent's image of Japan would change when they are exposed to an earthquake scenario.

Change of cognitive image -- result from China

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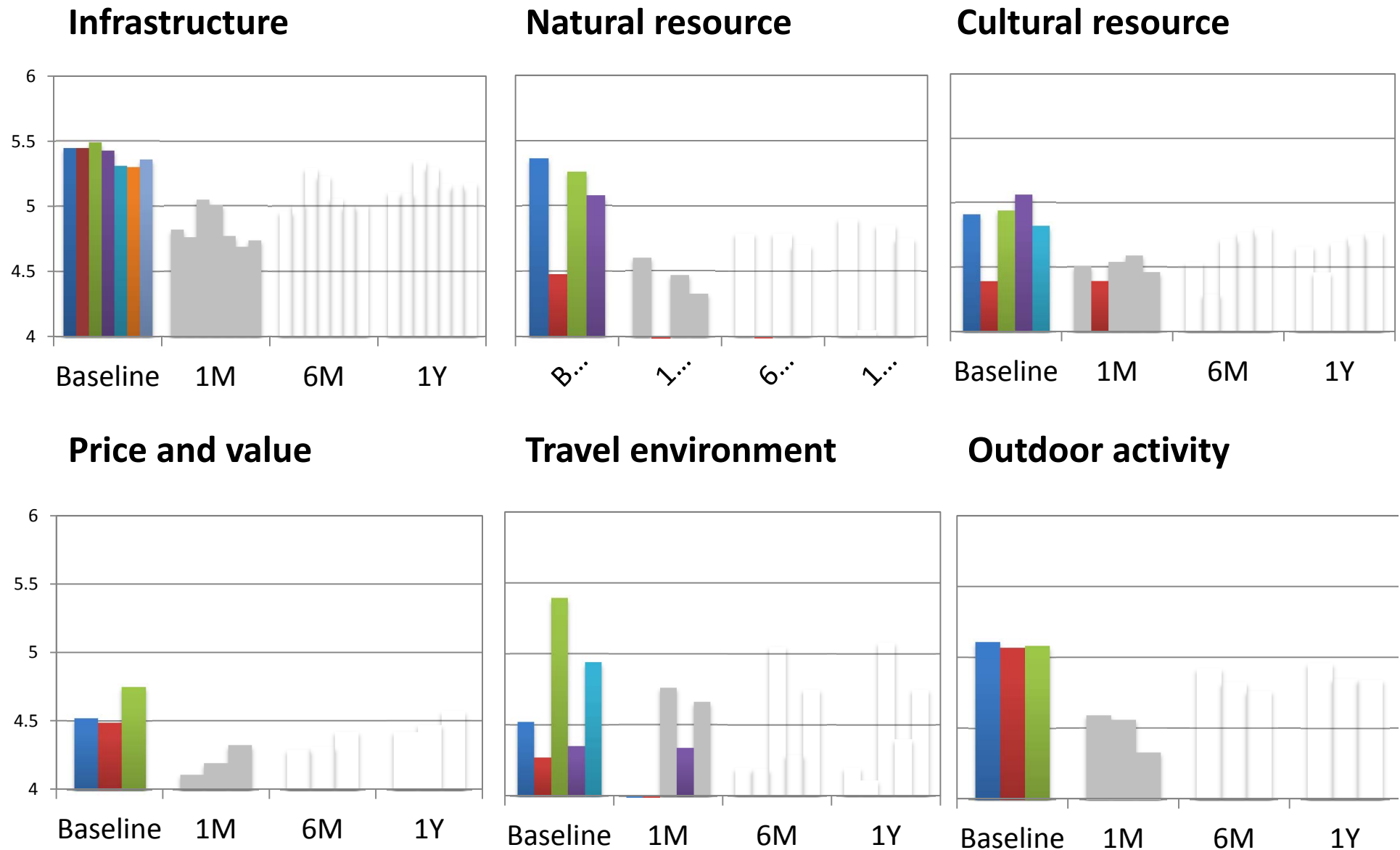
The impact of a disaster on their cognitive image of Japan will last for a longer time



Change of cognitive image -- result from China

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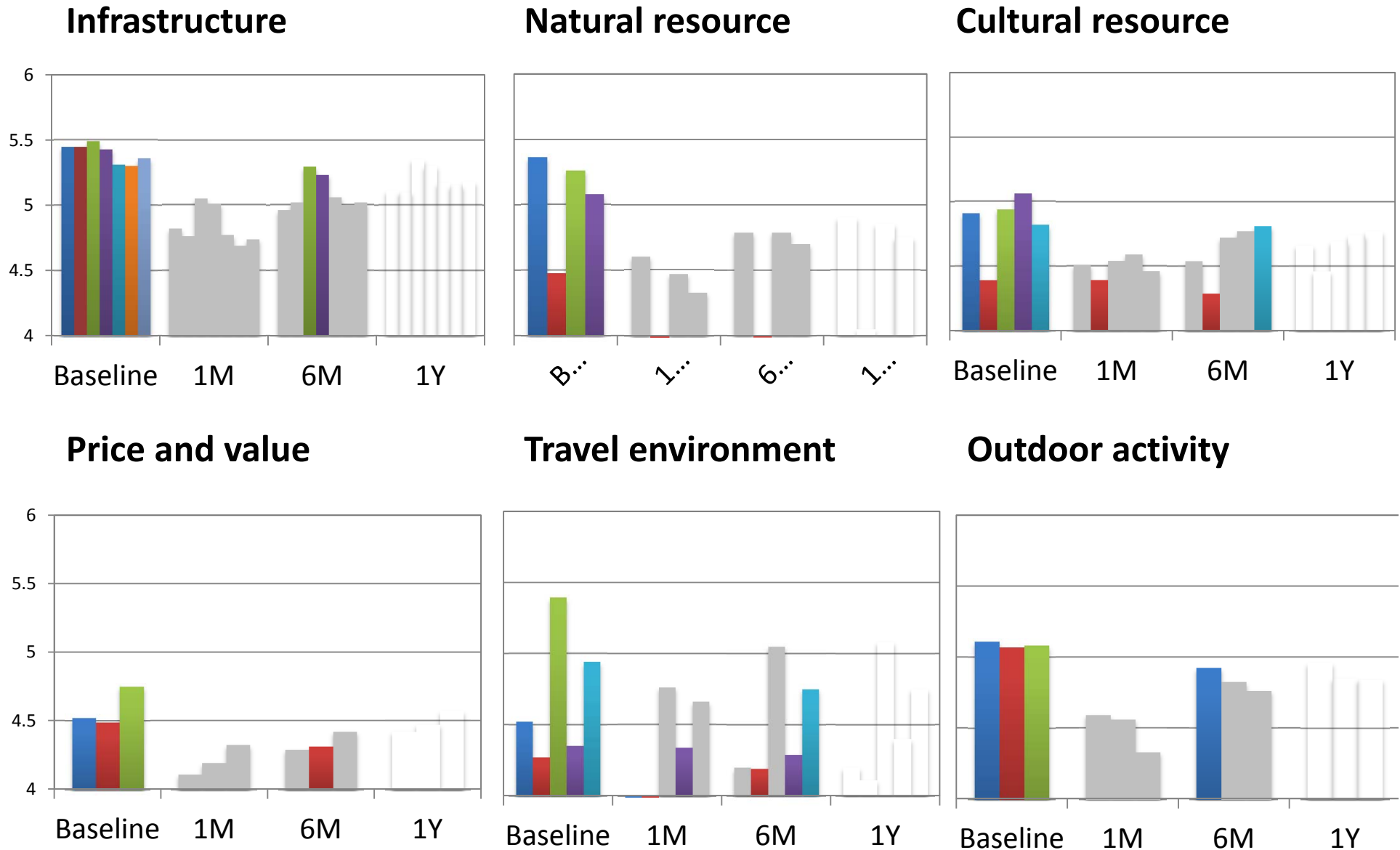
The impact of a disaster on their cognitive image of Japan will last for a longer time



Change of cognitive image -- result from China

44

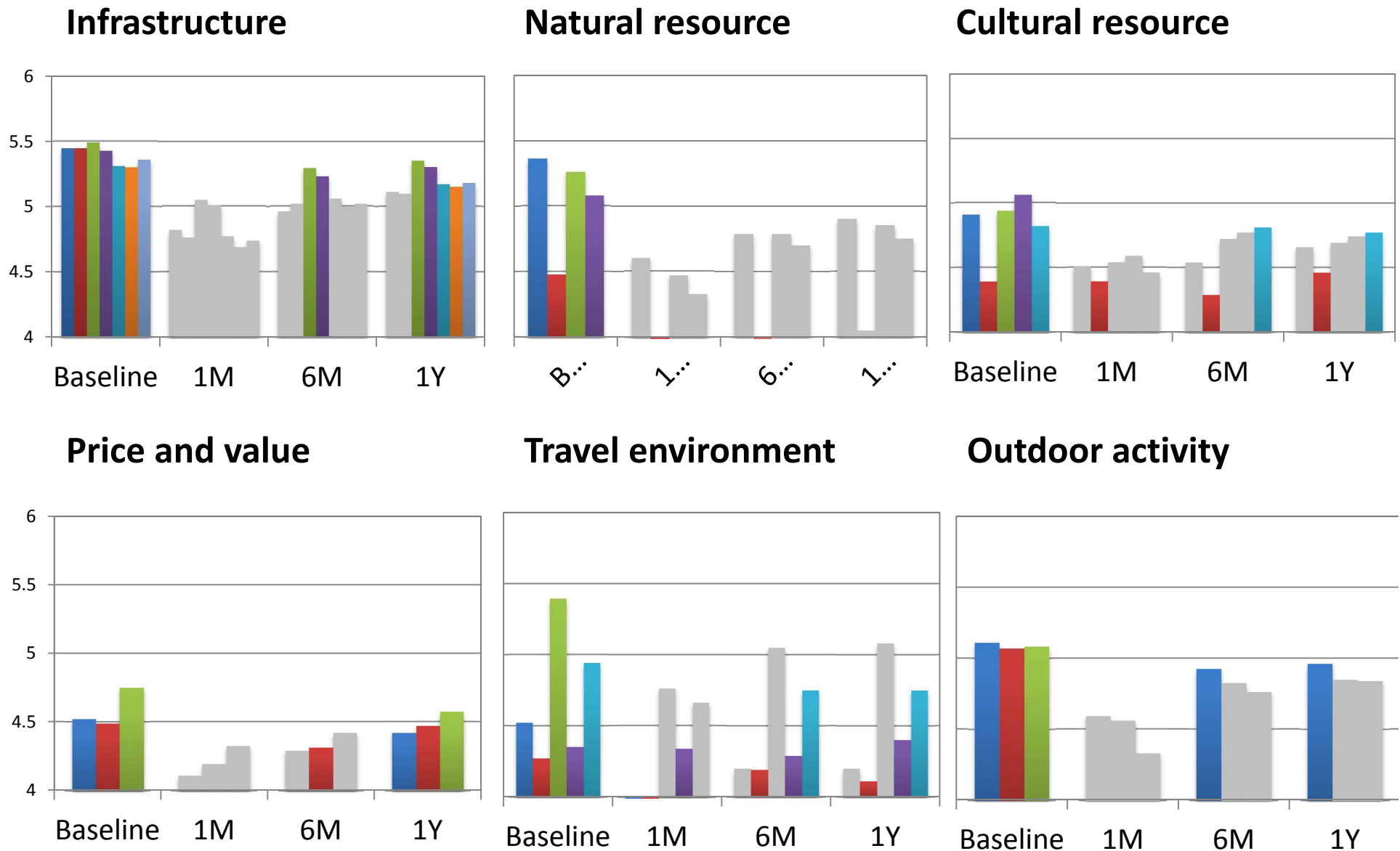
The impact of a disaster on their cognitive image of Japan will last for a longer time



Change of cognitive image -- result from China

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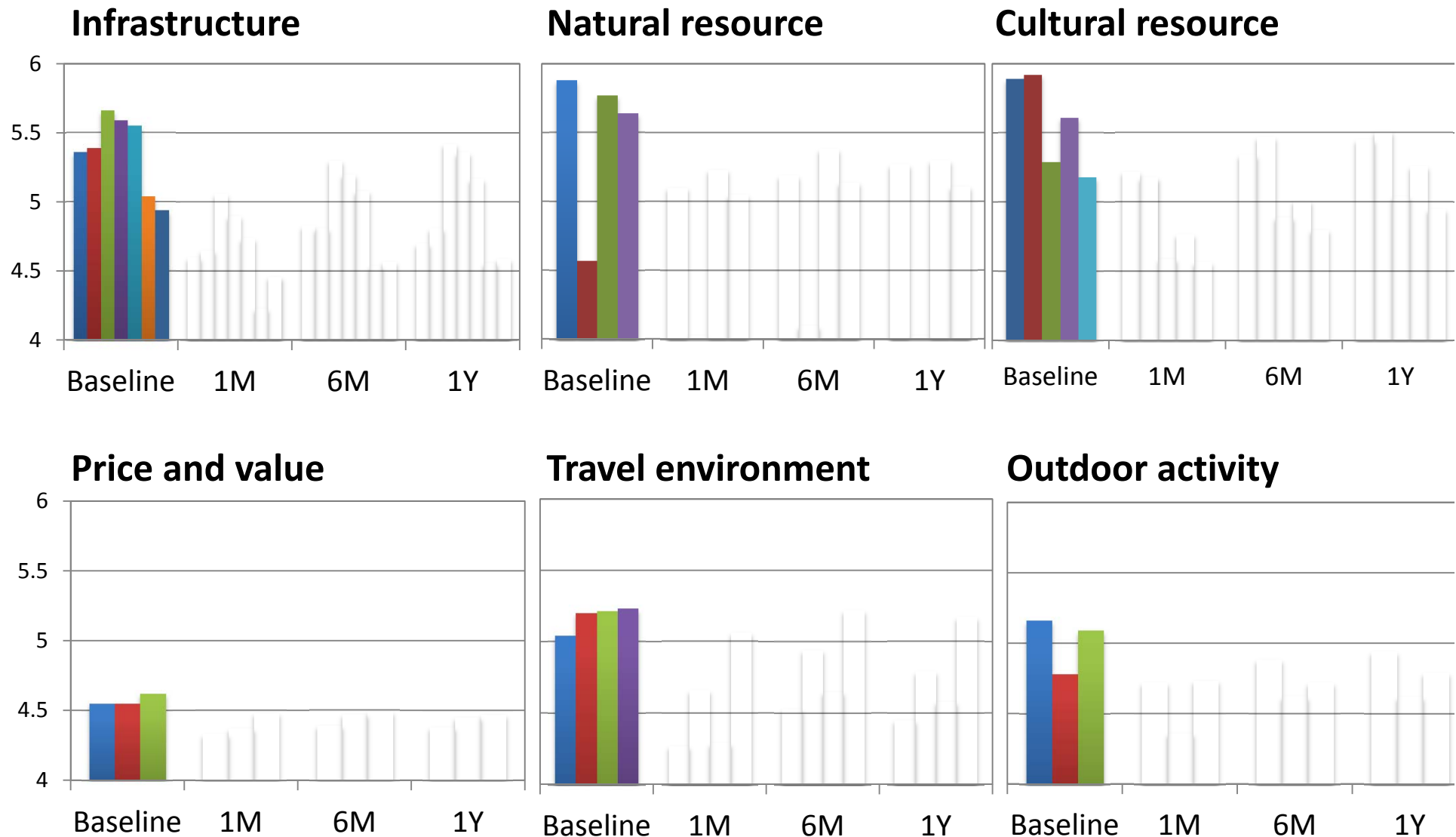
The impact of a disaster on their cognitive image of Japan will last for a longer time



Change of cognitive image -- result from US

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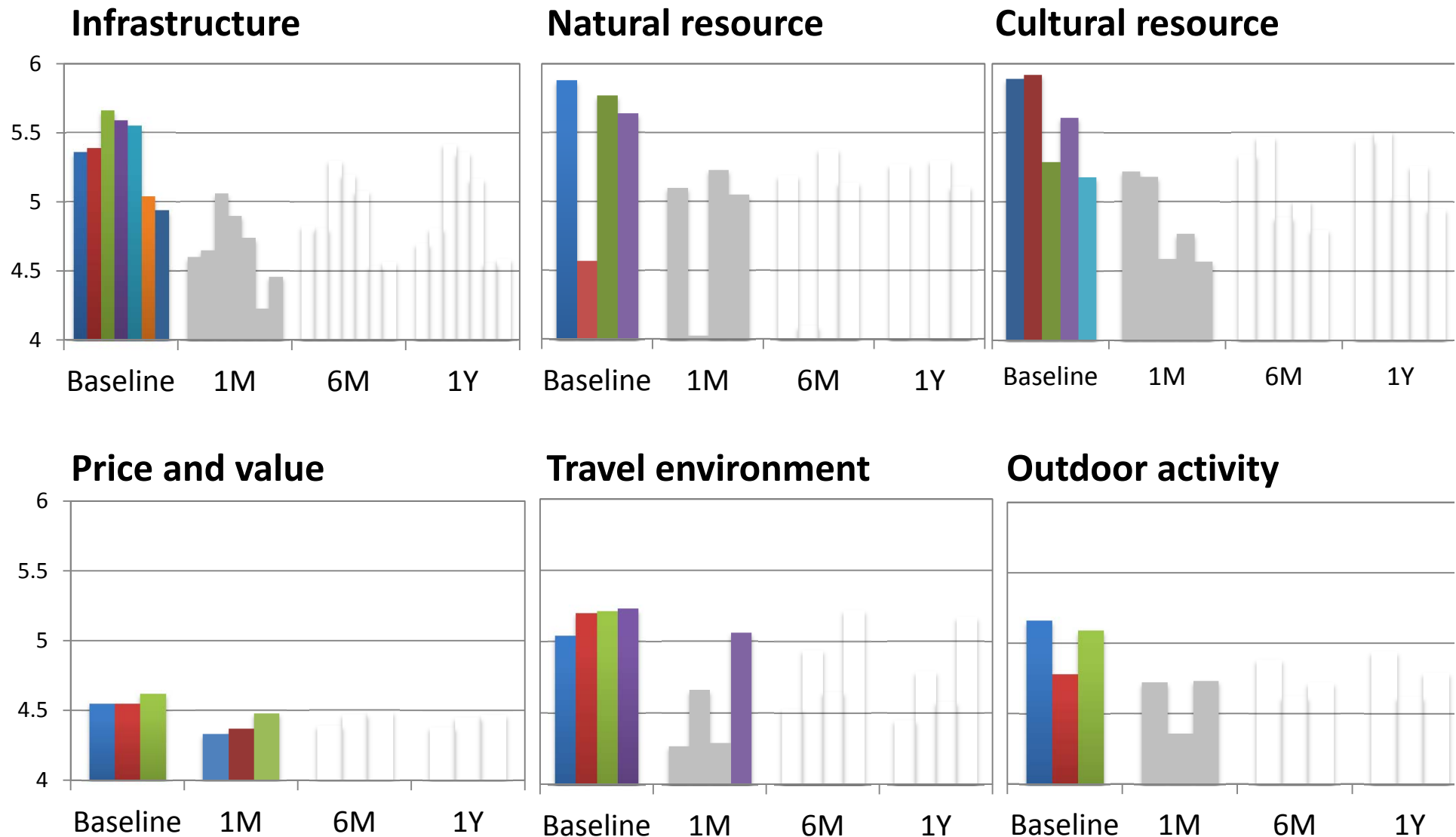
The impact of a disaster on their cognitive image of Japan will last for a longer time



Change of cognitive image -- result from US

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The impact of a disaster on their cognitive image of Japan will last for a longer time



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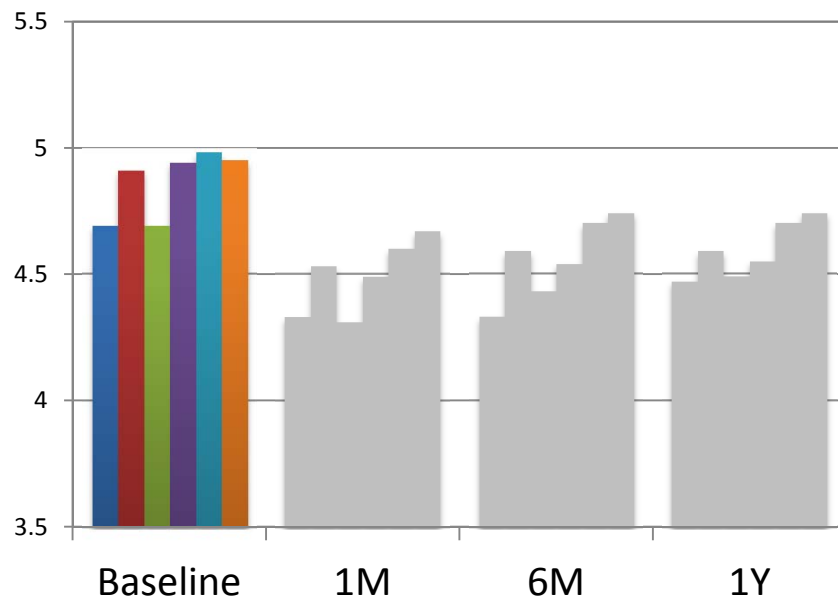
Figure 10 displays six bar charts showing the distribution of the number of nodes in the network for different categories: Infrastructure, Natural resource, Cultural resource, Price and value, Travel environment, and Outdoor activity. Each chart compares the Baseline, 1M, 6M, and 1Y models. The y-axis represents the number of nodes, ranging from 4 to 6. The x-axis shows the four models. The charts illustrate how the distribution of nodes changes across different categories and models.

Change of affective image

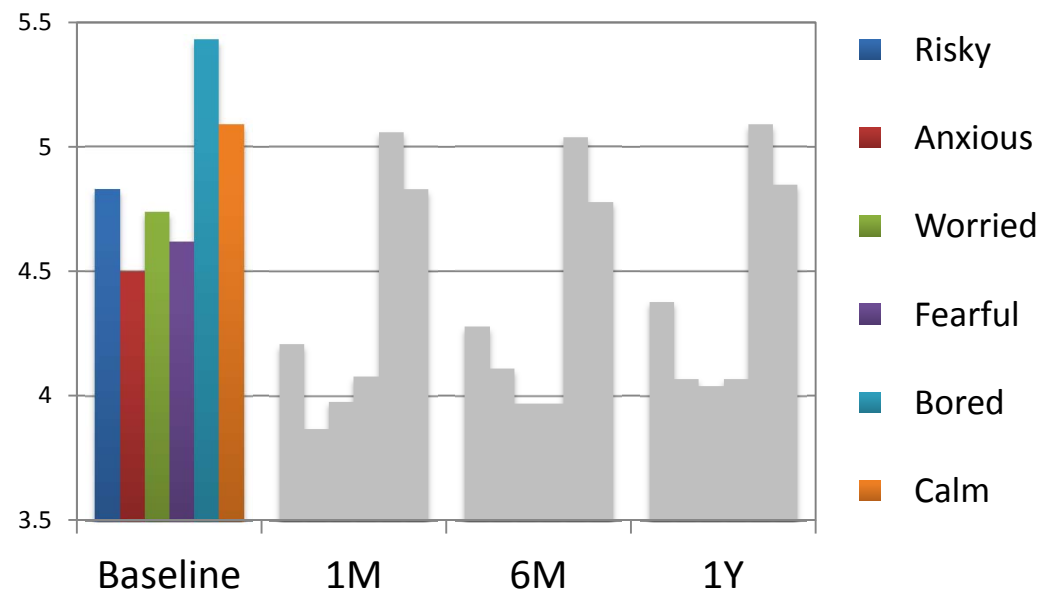
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The affective image will not recover within one year for tourist from China and US.

Tourist from China



Tourist from US



Some Implications 災害後における観光客誘致の戦略への示唆 50

for promotion strategy after the disaster

For tourist from China:

More effort is necessary to improve some aspect of their cognitive image of “nature”, “travel environment”, and “outdoor activity”.

For tourist from US:

Effort should be put on every aspect except “price”.

It is not necessary to reduce travel price to encourage tourist from US.

The impact on affective image is a more “severe” damage.

More efforts of communication and marketing actions should be adopted to recover the affective image.

RQ: How will the image change influence tourist's travel intention?

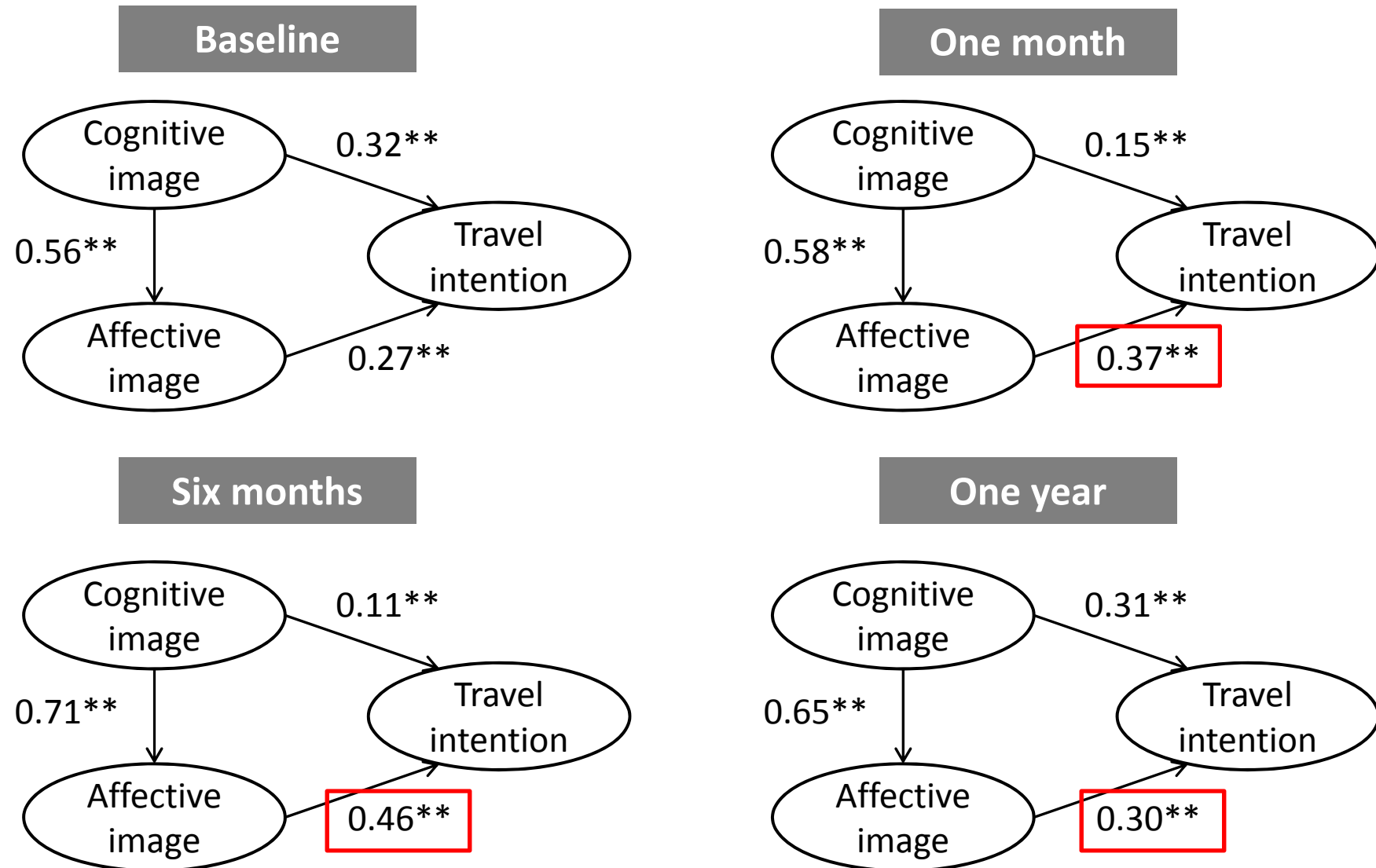
Method: Structural equation modeling (SEM) is used to analyze the relationships between cognitive image, affective image, and travel intention.

Influence on travel intention -- result from China

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分析結果:旅行意向への影響 (中国)

For tourists from China, the influence of affective image on travel intention will become larger after occurrence of a natural disaster.



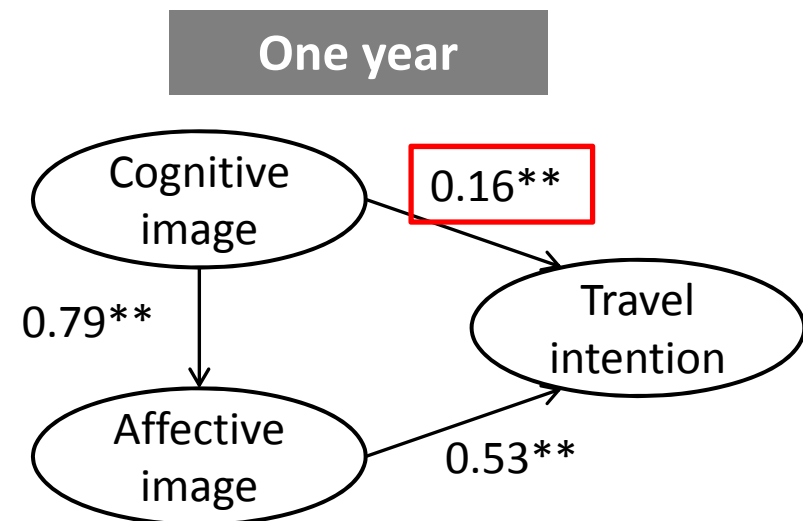
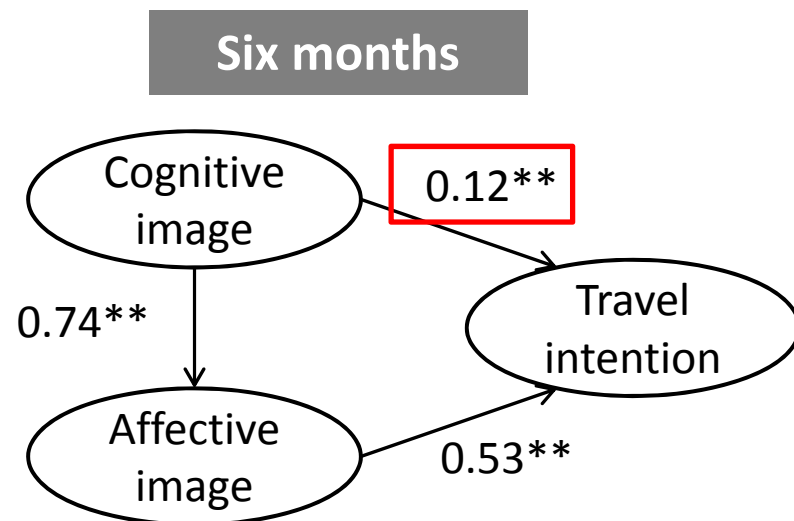
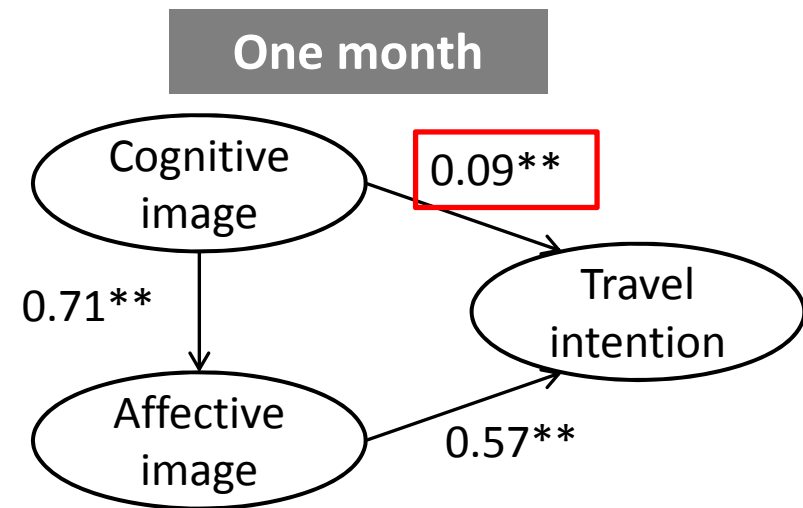
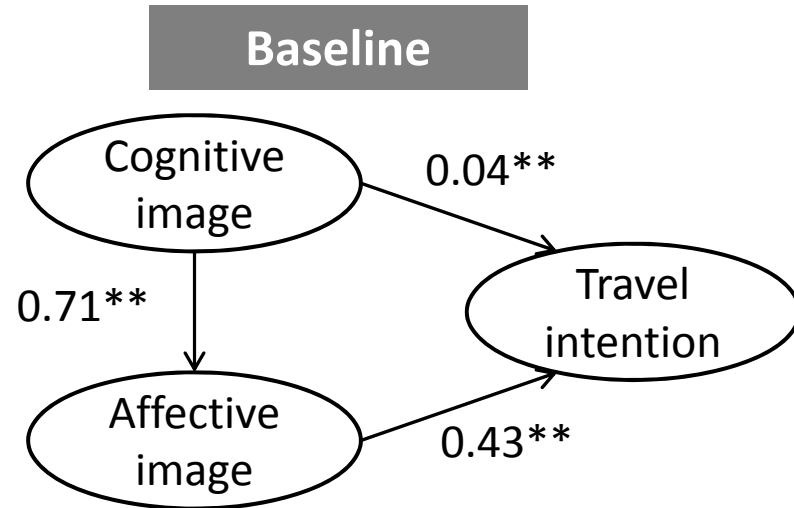
Influence on travel intention -- result from US

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分析結果:旅行意向への影響 (米国)

For tourists from US, affective image has larger influence on travel intention.

But the influence of cognitive image will increase after occurrence of a natural disaster.



Some Implications 災害後における観光客誘致の戦略への示唆 for promotion strategy after the disaster

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Different promotion strategy should be adopted in different market to encourage international tourists to visit Japan after a disaster:

セグメントごとに誘致の戦略を変えていく必要がある

For Chinese market, it is more effective to improve their affective image.

中国人旅行者に対しては感情的イメージを改善することが有効
-- Measures should be taken to relieve their fear to visit Japan (e.g., invite famous people to visit Japan, etc)

For US market, the improvement of their cognitive image will become more effective after a disaster.

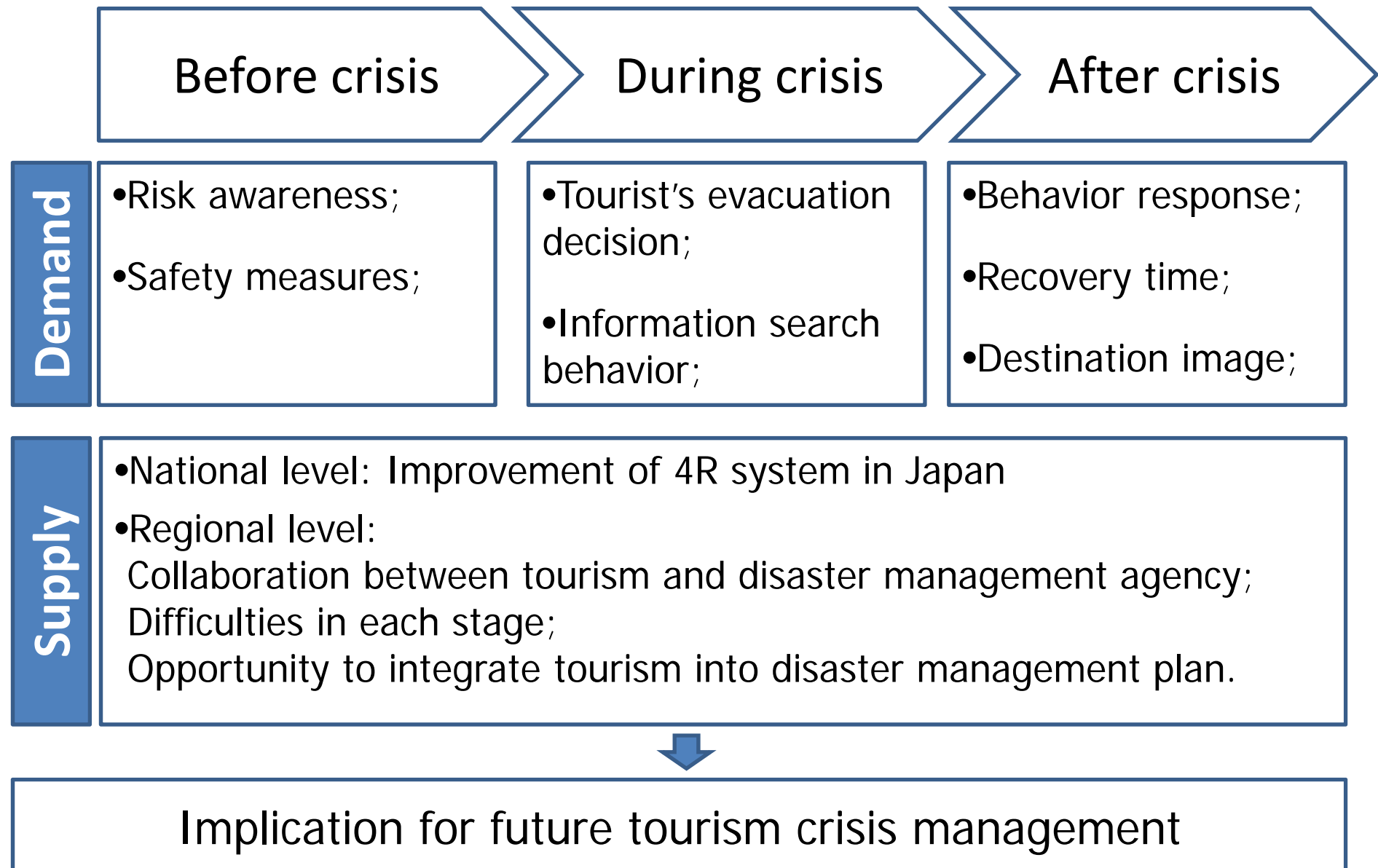
米国人旅行者に対しては認知イメージを改善することが有効
-- Measure should be taken to improve their understanding of situation in Japan (e.g., provide the accurate information about recovery after the disaster).

This study analyzed two aspects of tourist behavior before and after occurrence of a natural disaster: attitude towards safety measures (before crisis), destination image (after crisis).

The analysis reveals the different attitude towards the effectiveness of self-protecting activities of tourists from China and US.

The result of destination image show the recovery time of cognitive image is different between tourists from China and US.

Based on analysis of tourist behavior, implication has been derived for prevention measures before natural disasters and promotion strategy after disasters.



Thank you for your attention!