



Factors Affecting Environmental Evaluation on Lake Biwa Basin

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Introduction^{1),2), 3)}

Lake Biwa is valuable from multiple viewpoints: it provides the water supply for approximately 14.5 million residents in the Kinki region, including agricultural and industrial water, but also supports a rich ecosystem, distinct culture, and scenic landscapes. However, Lake Biwa has various issues such as a decrease in catch, invasion of foreign fishes and plants, and hypoxia at the bottom of the lake. As the problems of Lake Biwa and **people's values are diversifying**, it is necessary to take individual values into consideration in the lake conservation policy. **The residents' assessment may differ from the evaluation by environmental measurements or expert evaluations.** Therefore, it is necessary to grasp the factors that influence residents' assessments.

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Objective

This study aimed to clarify the factors affecting environmental evaluation on the Lake Biwa basin.

Methodology

I conducted a questionnaire survey for residents and analyzed responses by covariance structure model.

Contents :

contents	Number of questions
1 Assessment of L.Biwa Basin	34
2 Information Sources of assessment	1
3 Relationship with L.Biwa	11
4 Target vision of L.Biwa Basin	12
5 Acknowledgement of Plan	1
6 Knowledge of L.Biwa	12
7 Personal Value	9
8 Attribute	5

Gray questions were not analyzed in this study

Response number (Rate) : total 1102

Yasu-river basin : 564 (20.1%),
Ado-river basin : 538 (21.7%)

Term : 2018.8.6-8.31(Yasu), 2019.8.7-10.31(Ado)

Results

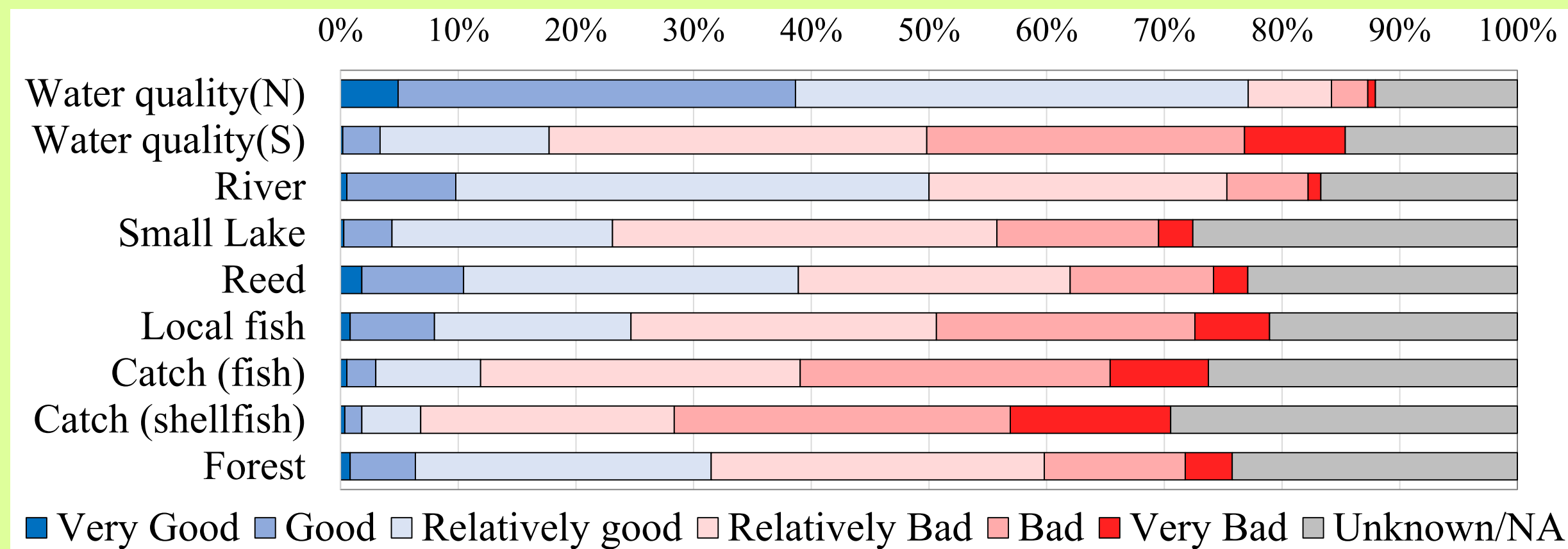


Figure 1. Evaluation of Lake Biwa Basin by Residents

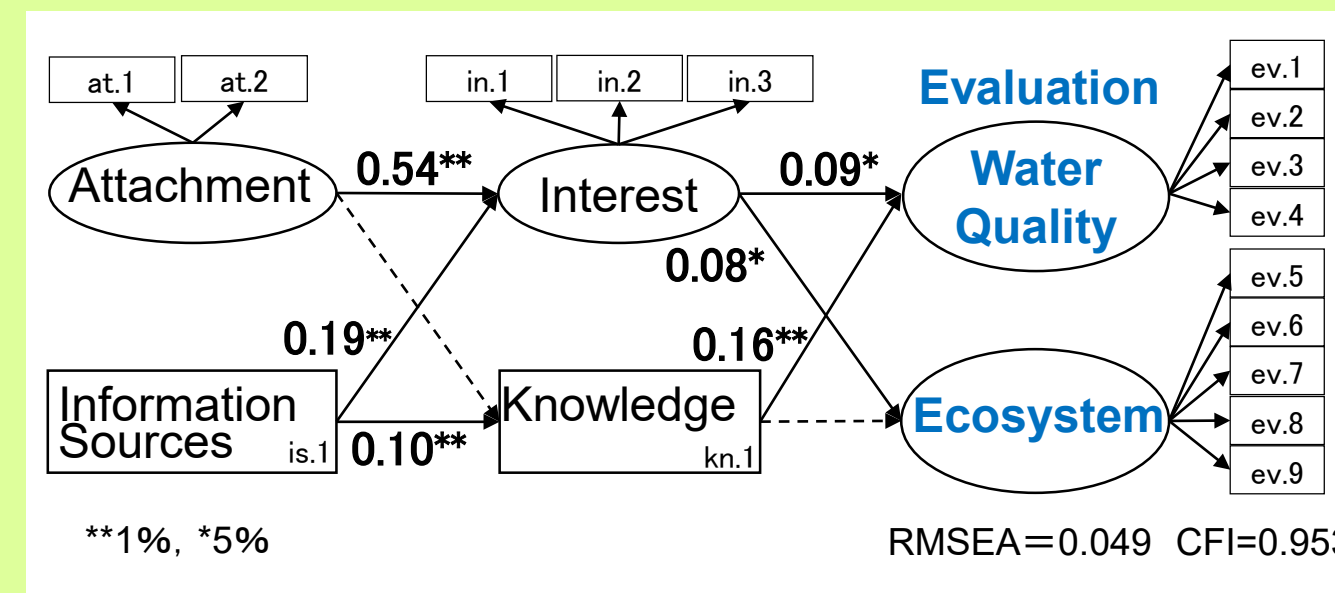


Figure 2. Factors Affecting Evaluation

This paper has been accepted by Journal of Environmental Information Science.
Naoko Hirayama (2021) Factors Affecting Environmental Evaluation on Lake Biwa Basin (in Japanese).

Conclusions

- (i) Residents who have **a strong attachment** to Lake Biwa or **a lot of information sources** about lake are more interested in lake
⇒ **higher evaluation of water quality and ecosystem**
- (ii) Residents with **a lots information sources** about lake have **a high level of knowledge**
⇒ **evaluated the water quality as good.**
- (iii) In only the **Ado-River basin**, residents with **higher interest** evaluated ecosystems and water quality as good.

Acknowledgments

I thank all respondents for their cooperation in the questionnaire survey.

References

- 1) Shiga Pref. (2017) Lake Biwa-Lake Biwa and the past and present of life as seen by indicators-2017.
- 2) Shiga Pref. (2018) Environmental White Paper 2017.
- 3) Shiga Pref. (2021) Lake Biwa Comprehensive Conservation and Maintenance Plan Retrospective Report, 126-129.

Table 1. Differences of Factors by Area

	Yasu	Ado
Attachment → Interest	0.568 **	0.510 **
	0.055	0.013
Information Sources → Interest	0.223 **	0.129 **
	0.075	0.114 *
Interest → Water Quality	0.000	0.198 **
	0.017	0.158 **
Knowledge → Water Quality	0.190 **	0.152 **
	0.050	0.012

RMSEA=0.034 CFI=0.954