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Original Paper

Factors on Community Livability and Local Government Policy in the Rural Area in Japan

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Abstract

This study examines how Akita citizens view their local government policy on 1) Industry and Production, 2) Medical/Welfare, 3) Education, 4) Agriculture, Forestry and Fisheries, 5) Regional activation, 6) Transportation/Conveniences, and their relationships with community livability by using data from "Citizens Awareness Survey" conducted by Akita local government in 2016. Results show that Akita citizens feel that policy on "Depopulation", "Medical/Welfare", "Education" and "Industry/Production" have influence on community livability. However, policies on Agriculture, Forestry, Fisheries, Regional activation, and Transportation/Convenience are negative influence on community livability.

Keywords

community livability, local government policies, structure equation model

1. Introduction

Livability is critical to the establishment of a sustainable community. Community livability is the concept of sustainability and livability help us to consider the quality of life for all members of a community or residents of a place (National Research Council, 2002). "Livability" is a broad term includes many complex characteristics and states such as sustainability, quality of life, character of place and communities, but "livability" as a term has no precise definition (National Research Council, 2002; National Confederation of Trade Unions and Japan Research Institute of Labor Movement, 2010). The concept of livable cities became popular in the 1980s and 1990s in the urban planning and design professions and related movements (Blanco, 2018). The idea called "city promotion" is suggested by Kawai (2009) to develop the region sustainably, effectively appealing the attractiveness of the region is

necessary, thereby making it possible to utilize resources such as human resources, goods, money, information, etc. within the region. In relation to city promotion, Nakajima et al. (2014) considers "livability" as living environment resources, and compared regional resources as well as regional advantages, by creating indices using macro data to measure Population growth rate, Density of inhabitant area, Convenience, Productivity, Medical enhancement, Support for the elderly, Environment, Safety, Child rearing support, and Regional activity level. As for rural communities, rural access has a close synergy with rural livelihood outcomes such as increased income, increased social well-being, reduced vulnerability, improved food security and more sustainable use of natural resources (Scoones, 1998). In order to raise the affirmation to the region, positive evaluation for the environment, including the local government's administration, is important, and for the evaluation awareness such as ease of living and regional image, the evaluation of the regional environment and policy that are directly involved (Watanabe, 2006).

Akita prefectural government has been conducting the "Citizens Awareness Survey" since 2011, in order to understand the feelings and needs of the citizens against the prefectural policy. The survey results have been used for the policy evaluation and the development of the management guidelines of the prefectural government's "the second phase hometown Akita well-being creation plan (tentative)" (Akita Prefecture, 2018). "Livability" related questionnaires are included in this survey which enable us to analyze people in Akita's point of view on livability in this area. Therefore, in this study, the authors explore the factors influencing the livability of people in Akita prefecture.

This paper is structured as follows: in the next section the authors give a brief overview on community liability. Subsequently, a research model, hypotheses, data and variables are detailed. In the sixth section, the results are discussed as well as their implications.

2. Literature Review

It is known that livability initiatives contribute to improved economic performance and a more vibrant, desirable, and competitive environment for housing and commercial investment and the bottom lines of local governments (AARP 2019). The responsiveness of government policies to citizens' preferences is a central concern of various normative and empirical theories of democracy (Page & Shapiro, 1983). The Ministry of Land, Infrastructure and Transport (1995) in Japan stipulated "Employment Opportunities", "Convenience of Transportation", "Living Environment", "Bustle of the City", "Education and Culture Environment", "Welfare and Medical System", "Natural Environment", "Preparation for Disaster Preparedness", and "Information" as factors for the heads of local governments to clarify in community development.

The survey in Tosu city, Saga prefecture located southern island in Japan shows that the local infrastructure and living environment are greatly related to providing more comfortable livability in the area, although personal circumstances are greatly involved in livability (Notomi, 2011).

On the other hand, “difficulty in living” is expanding, as regional restructuring and regional disparity expanded, which lead to increased burden on education, housing and social security costs. Elimination of such factors for “difficulties in living”, and securing “livability” have a significant meaning in considering security and stability of individuals (National Confederation of Trade Unions 2010).

Takahashi (2016) conducted the questionnaire survey for young women of child-rearing generation between twenty to thirty-nine-year-old, who experienced social mobilities. He analyzed the reasons for social mobilities, the orientation of housing selection, the degree of satisfaction with living environment of the residence. For questions regarding “the city that you want to continue living in”, “the things you want in the town as a childcare environment,” etc., the choices such as “regional safety”, “convenience”, “child-rearing environment”, “educational environment”, etc. are commonly selected at the top. Although differences are seen by different demographic groups, even unmarried people and those without children, their needs to consider parenting in near future are seen. “A child rearing environment”, for example, is related not only the presence or absence of a child but also the state of everyday life. It is also affected more on those who is doing housework than those who is working full-time, and those who have spouses are more influenced by the child rearing environment.

Saito (2000) analyzed factors related to “livability” based on data obtained by a survey research in Nagai City, Yamagata prefecture, located northern part of Japan. His results show that while a certain age group and older are satisfied with their lives there, young people are not satisfied with the current situation and trying to seek more sophisticated living conditions. It implies that there is a causal relationship between livability and population decline in rural areas.

Population shrinkage is one of main concerns in rural areas, such as Yamagata and Akita. In order to increase the number of new residents and youth settlement, it is expected that a local government’s policy to understand “livability” for the citizens and further improve it. Howe (2012) points out that the community livability in aging society in the US faces a challenge as “if community livability is defined as a safe, engaging and healthy environment that allows us to carry out our daily activities, then senior citizens are shortchanged in most American communities”. Japan has the similar situation as those senior citizens in the U.S., since Japan has the highest aging rate in the world. Within Japan, the population aging rate of Akita Prefecture is 36.3% as of July 2018, which is the highest by prefecture (Akita Prefecture, 2018).

3. Research Model and Hypotheses

Questionnaires concerning the administrative strategy which Akita local government is conducting are summarized in the first chapter of "Citizens Awareness Survey 2016". Based on prior literature and Akita local government policies, the authors would like to propose the following research model as Figure 1.

Hypotheses which measure Akita people's feeling toward their prefectural government's administrative policies, and how they are related to community livability are as follows.

H1. Local government policy on Depopulation/Parenting is closely related to community livability

H2. Local government policy on Medical/Welfare is closely related to community livability

H3. Local government policy on Education is closely related to community livability

H4. Local government policy on Agriculture, Forestry and Fisheries, Regional activation and Transportation/Convenience is closely related to community livability

H5. Local government policy on Industry and Production is closely related to community livability

4. Data

The data used for this study was provided by Akita Prefectural Government, General Policy Division, which has conducted a questionnaire survey to their citizens every year since 2010. The survey for this study was sent by mail, by Akita local government, from June 16, 2016 to July 12, 2016. Questionnaires were mailed to 4,000 male and female over twenty-year old that live in Akita.

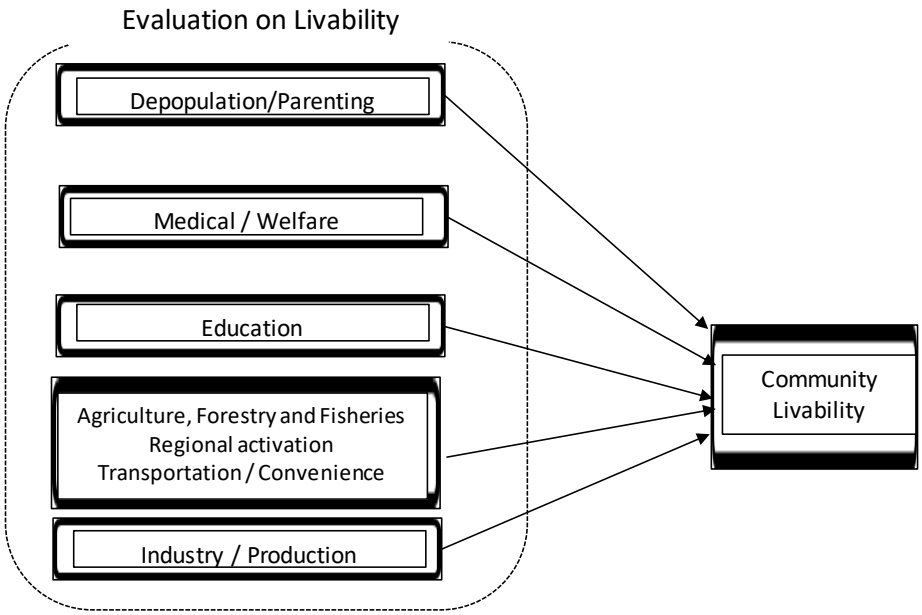

Figure 1. A Research Model

A two-stage random sampling method stratified based on the Basic Resident Register was used. There are 2,002 questionnaires were returned for a 50.05% response rate. Most of the questionnaires are asked by a five-point scale. A list of description of the samples is shown in Table 1, and a list of variables used in this study is shown in Table 2. Certain respondent characteristics were compared with the 2016 census data of Akita. Age comparisons indicates that the survey sample and the 2016 census data have different distributions, especially in the groups of age 20 to 29-year-old, age 50 to 59 -year-old, and older than 70-year-old. The sample may be overrepresented younger residents, as well as those in 50 to 59-year-old, while the septuagenarian and older residents are under-represented. Table 3 contains the Pearson correlation coefficient between all pairs of twenty-one variables with the two-tailed significance of these coefficients. All variables correlate well and statistically significant, and none of the correlation coefficients are particularly large; therefore, multicollinearity is not a problem for these data.

5. Results

5.1 The Structural Equation Model Analysis

Based on a survey of 2,002 respondents from people who live in Akita prefecture in 2016, the study employs a Structural Equation Modeling (SEM) approach.

The efficacy of the structural equation model was conducted by AMOS 24, and the major result of analysis is shown in Figure 2. The path diagram highlights the structural relationships. In this diagram, the measured variables are enclosed in boxes, latent variables are circled, and arrows connecting two variables represent relations, and open arrows represent errors. When SEM is used to verify a theoretical model, a greater goodness of fit is required for SEM analysis (Bentler, 1990), the better the fit, the closer the model matrix and the sample matrix.

Table 1. Descriptive Statistics

Attributes		Valid Responses		Estimated Population (as of Oct 1, 2016)	
		Number	(%)	Over 18 yr-old	(%)
	Total	2,002	100%	879,592	100%
Gender	Male	936	46.8%	407,857	46.4%
	Female	1,035	51.7%	471,735	53.6%
	No answer	31	1.5%	-	-
Age (years old)	18～19	35	1.7%	15,808	1.8%
	20～29	177	8.8%	66,168	7.5%
	30～39	233	11.6%	100,854	11.5%
	40～49	268	13.4%	123,929	14.1%
	50～59	347	17.3%	133,226	15.1%
	60～69	408	20.4%	179,154	20.4%
	70～	5,002	25.1%	251,913	28.6%
	No answer	32	1.6%	8,540	1.0%
Family Structure	Single	119	5.9%		
	Husband and wife only	398	19.9%		
	Parent-child two generations	883	44.1%		
	Parent-child-grandchaid three generations	467	23.3%		
	Others	82	4.1%		
	No answer	53	2.6%		
Length of Residence (years)	～5	16	0.8%		
	5～9	16	0.8%		
	10～19	101	5.0%		
	20～29	257	12.8%		
	30～	1,561	78.0%		
	No answer	51	2.5%		

By means of various goodness-of-fit indexes, including the comparative fit index (CFI) (Bollen, 1989), Incremental Fit Index (IFI) (Browne & Cudeck, 1993), and the root mean squared error of approximation (RMSEA) (Browne & Cudeck, 1993), the estimated matrix can be evaluated against the observed sample covariance matrix to determine whether the hypothesized model is an acceptable representation of the data. In general, fit indexes (*i.e.*, CFI, IFI) above 0.90 signify good model fit. RMSEA values lower than 0.05 indicative of good model fit. Since all of indexes satisfy the cut-off values, these results are regarded as acceptable. Indicators of goodness of fits for this model are CFI=0.951, IFI=0.951, and RMSEA=0.042. Path Coefficient for the structural model suggested that the regression coefficient for all constructs show significance (see Table 5). See a list of reliability tests on Table 4. Since all indexes satisfy the cut-off values, these results are regarded as acceptable.

5.2 Results of Hypotheses

The followings are results of hypotheses.

H1. There is a weak but significant, positive relationship between local government policy on Depopulation and community livability

H2. There is a weak but significant, positive relationship between local government policy on Medical and Welfare and community livability

H3. There is a weak but significant, positive relationship between local government policy on Education and community livability

H4. There are weak but significant, negative relationships between local government policy on Agriculture, Forestry, Fisheries, Regional activation, and Transportation/Convenience and community livability

H5. There is a weak but significant, positive relationship between local government policy on Industry and Production and community livability

Results of all hypotheses, except H4, are statistically positive and significant, standardized path coefficients. All standardized path coefficients are between 0.10 and 0.20 may indicate "small" or "weak" effects. Small or weak effects indicate that there is minimal relationship between each of local government policy and community livability. Planners and policymakers of the local government concerned with creating or maintaining livable cities have long invoked "livability" as a guiding principle for the investment and decision-making that shape the rural social, economic, physical and biological environment (Benzeval, Judge, & Whitehead, 1995; Hills, 1995; Pacione, 1982, 2003). This survey data offers important insights into how people in Akita perceive their local area, what they value in a community, what they think the local area offers, and what it's missing, helping to shape policy and planning responses in areas ranging from health and economic development to housing and infrastructure. This survey respondents seem to report their local governments took fewer actions to advance livable communities.

6. Conclusions

In this study, authors clarified the relationships between policies of Akita local government and community livability using data from "Citizens Awareness Survey 2016". The official Akita government's homepage states that the survey results will be appropriately used for policy evaluation and for the progress management of policies and measures (Akita prefecture, 2016). Based on "Livability" related questionnaires in this survey, the authors explore the factors influencing the livability of people in Akita prefecture. The results in this study show that Akita citizens feel that policies on "Depopulation", "Medical/Welfare", "Education" and "Industry/Production" have influence on community livability in some extent. However, Agriculture, Forestry, Fisheries, Regional activation, and Transportation/Convenience are negative influence on community livability. Akita prefecture, located in the northern part of Japan, has a serious problem on decreasing population. The population

decline due to the outflow of young generation negatively affects the regional economy, which also affect the labor market structure. Akita's economy remains dominated by traditional industries, such as agriculture, fishing, and forestry, and many young people continue migrating to larger cities. It seems that Akita citizens would like to ask their local government to act more positively in these areas, and the local government need to propose innovative solutions for making these traditional industries more attractive to younger generations, for example.

Table 2. A List of Variables

Industry / Production	Q1_1_1	Strengthening the management foundation of companies and efforts to promote regional industries
	Q1_1_2	Education of companies leading Akita and efforts to develop new business
	Q1_1_3	Efforts to establish new energy, environment and recycling industry base
	Q1_1_4	Expanding overseas transactions and efforts to form industrial bases
	Q1_1_5	Efforts to foster human resources supporting Akita's industry
Agriculture, Forestry and Fisheries	Q1_2_1	Efforts to expand brand agriculture to tackle with "All Akita"
	Q1_2_2	Promotion of full utilization of paddy field centering on Akita rice
	Q1_2_3	Promotion of sixth industrialization that creates added value and employment
	Q1_2_4	Fostering highly competitive management entities leading regional agriculture
	Q1_2_5	Promotion of the nationwide largest lumber comprehensive processing area
	Q1_2_6	Establishment of marine product brand and development of new fishery business
Regional activation	Q1_3_1	Promotion of tourism as a comprehensive strategic industry that will continue and grow
	Q1_3_2	The polish of Akita's food attractiveness and efforts to expand sales channels outside the prefecture
	Q1_3_3	Regional energy creation by improving different cultural capabilities of Akita
	Q1_3_4	Promotion of "Atsuta Sports Aichi Prefecture"
Transportation / Convenience	Q1_3_5	Promoting the development of a road network that forms the skeleton of the prefecture
	Q1_3_6	Improvement of convenience of transportation network and securing of regional traffic
Medical / Welfare	Q1_4_1	Promotion of health promotion that can live healthy and long
	Q1_4_2	Enhancing and strengthening the medical provision system that protects life and health
	Q1_4_3	Creating a system to support elderly people and people with disabilities in the community
	Q1_4_4	Efforts for comprehensive suicide prevention measures that civil, scholarly, and government integrated
Education	Q1_5_1	Training personnel who will open up their own future and contribute to society
	Q1_5_2	Establishing certain academic ability and cultivating creativity and expressive power
	Q1_5_3	Fostering a rich heart and a healthy body
	Q1_5_4	A good and attractive place to learn
	Q1_5_5	Creating opportunities for familiarizing with lifelong learning environment for arts and culture
	Q1_5_6	Enhancement of higher education and promotion of regional contribution
	Q1_5_7	Training human resources who can be active in the global society
Depopulation Policy	Q1_6_1	Efforts to settle in Akita, expand migration and settlement
	Q1_6_5	Improvement of regional power by making use of local human resources and resources
	Q1_6_6	Efforts to revitalize the region based on a population declining society
	Q1_6_7	Securing diverse workers and promoting activities of "collaboration"
	Q1_6_8	Promotion of cooperation between prefecture and municipality
Parenting	Q1_6_2	Promotion of countermeasures against declining birthrate that became unified public and private
	Q1_6_3	Enhancement and enhancement of support for the next generation
	Q1_6_4	Improvement of enviroment for children's birth and raising children
Livability	Q3_7	What do you think about the livability in your area?

Table 3. Correlation Matrix

	q1_1_1	q1_1_2	q1_1_3	q1_1_4	q1_1_5	q1_2_1	q1_2_2	q1_2_3	q1_2_4	q1_2_5	q1_2_6	q1_3_1	q1_3_2	q1_3_3	q1_3_4	q1_3_5	q1_3_6	q1_4_1	q1_4_2	q1_4_3	q1_4_4	q1_5_1	q1_5_2	q1_5_3	q1_5_4	q1_5_5	q1_5_6	q1_5_7	q1_6_1	q1_6_2	q1_6_3	q1_6_4	q1_6_5	q1_6_6	q1_6_7	q1_6_8	q3_7
q1_1_1	1	.713**	.438**	.528**	.576**	.393**	.391**	.437**	.482**	.325**	.445**	.397**	.343**	.380**	.295**	.272**	.252**	.262**	.307**	.267**	.253**	.328**	.220**	.215**	.231**	.248**	.271**	.306**	.330**	.325**	.321**	.258**	.350**	.362**	.362**	.322**	.167**
q1_1_2	.713**	1	.426**	.540**	.605**	.402**	.377**	.460**	.523**	.350**	.466**	.424**	.371**	.409**	.292**	.284**	.260**	.253**	.289**	.287**	.250**	.364**	.230**	.196**	.237**	.241**	.278**	.321**	.343**	.361**	.336**	.289**	.377**	.384**	.375**	.326**	.160**
q1_1_3	.438**	.426**	1	.463**	.405**	.337**	.284**	.324**	.315**	.336**	.322**	.316**	.329**	.341**	.303**	.271**	.241**	.300**	.285**	.260**	.264**	.281**	.295**	.304**	.269**	.314**	.272**	.314**	.252**	.256**	.253**	.209**	.314**	.291**	.321**	.311**	.136**
q1_1_4	.528**	.540**	.463**	1	.536**	.368**	.339**	.425**	.451**	.364**	.437**	.345**	.344**	.367**	.319**	.233**	.192**	.262**	.254**	.261**	.271**	.334**	.249**	.233**	.262**	.312**	.282**	.336**	.297**	.299**	.258**	.223**	.302**	.324**	.355**	.322**	.127**
q1_1_5	.576**	.605**	.405**	.536**	1	.414**	.414**	.455**	.514**	.380**	.466**	.412**	.367**	.417**	.297**	.298**	.295**	.253**	.305**	.320**	.251**	.482**	.290**	.271**	.285**	.275**	.321**	.379**	.370**	.383**	.359**	.310**	.365**	.372**	.409**	.367**	.172**
q1_2_1	.393**	.402**	.337**	.368**	.414**	1	.597**	.529**	.541**	.441**	.487**	.392**	.455**	.405**	.373**	.323**	.289**	.300**	.307**	.282**	.252**	.343**	.286**	.291**	.275**	.314**	.319**	.312**	.286**	.294**	.283**	.269**	.321**	.305**	.357**	.323**	.123**
q1_2_2	.391**	.377**	.284**	.339**	.414**	.597**	1	.537**	.547**	.416**	.507**	.397**	.420**	.414**	.359**	.294**	.295**	.287**	.308**	.330**	.242**	.353**	.287**	.309**	.319**	.316**	.340**	.314**	.312**	.333**	.333**	.309**	.380**	.330**	.370**	.333**	.128**
q1_2_3	.437**	.460**	.324**	.425**	.455**	.529**	.537**	1	.647**	.474**	.534**	.385**	.415**	.437**	.336**	.331**	.286**	.270**	.278**	.275**	.254**	.377**	.281**	.269**	.244**	.270**	.323**	.344**	.300**	.305**	.284**	.265**	.356**	.317**	.392**	.347**	.109**
q1_2_4	.482**	.523**	.315**	.451**	.514**	.541**	.547**	.647**	1	.522**	.609**	.441**	.455**	.481**	.362**	.341**	.323**	.283**	.288**	.280**	.266**	.432**	.294**	.283**	.269**	.284**	.350**	.370**	.370**	.356**	.329**	.314**	.399**	.381**	.399**	.396**	.099**
q1_2_5	.325**	.350**	.336**	.364**	.380**	.441**	.416**	.474**	.522**	1	.555**	.355**	.397**	.384**	.322**	.295**	.294**	.282**	.272**	.282**	.234**	.347**	.300**	.301**	.277**	.318**	.338**	.323**	.290**	.314**	.305**	.280**	.331**	.301**	.336**	.329**	.114**
q1_2_6	.445**	.466**	.322**	.437**	.466**	.487**	.507**	.534**	.609**	.555**	1	.445**	.439**	.425**	.329**	.326**	.302**	.258**	.267**	.299**	.250**	.378**	.252**	.270**	.277**	.315**	.324**	.362**	.341**	.352**	.333**	.292**	.363**	.349**	.371**	.351**	.091**
q1_3_1	.397**	.424**	.316**	.345**	.412**	.392**	.397**	.385**	.441**	.355**	.445**	1	.610**	.592**	.426**	.406**	.423**	.305**	.325**	.311**	.275**	.405**	.327**	.296**	.323**	.361**	.389**	.388**	.441**	.434**	.400**	.341**	.432**	.430**	.424**	.399**	.179**
q1_3_2	.343**	.371**	.329**	.344**	.367**	.455**	.420**	.415**	.455**	.397**	.439**	.610**	1	.633**	.466**	.400**	.381**	.367**	.337**	.342**	.285**	.399**	.386**	.353**	.340**	.353**	.372**	.380**	.400**	.358**	.342**	.333**	.413**	.389**	.406**	.379**	.166**
q1_3_3	.380**	.409**	.341**	.367**	.417**	.405**	.414**	.437**	.481**	.384**	.425**	.592**	.633**	1	.511**	.390**	.406**	.344**	.346**	.343**	.293**	.427**	.365**	.353**	.369**	.430**	.425**	.413**	.415**	.406**	.378**	.350**	.477**	.442**	.446**	.398**	.190**
q1_3_4	.295**	.292**	.303**	.319**	.297**	.373**	.359**	.336**	.362**	.322**	.329**	.426**	.466**	.511**	1	.419**	.360**	.324**	.342**	.314**	.300**	.325**	.338**	.352**	.309**	.392**	.390**	.367**	.285**	.300**	.302**	.292**	.365**	.313**	.357**	.388**	.140**
q1_3_5	.272**	.284**	.271**	.233**	.298**	.323**	.294**	.331**	.341**	.295**	.326**	.406**	.400**	.390**	.419**	1	.719**	.302**	.358**	.324**	.263**	.306**	.294**	.318**	.308**	.352**	.355**	.325**	.308**	.320**	.344**	.324**	.383**	.355**	.355**	.363**	.170**
q1_3_6	.252**	.260**	.241**	.192**	.295**	.289**	.295**	.286**	.323**	.294**	.302**	.423**	.381**	.406**	.360**	.719**	1	.314**	.378**	.344**	.238**	.292**	.250**	.273**	.276**	.335**	.356**	.319**	.305**	.331**	.341**	.343**	.353**	.358**	.333**	.329**	.192**
q1_4_1	.262**	.253**	.300**	.262**	.253**	.300**	.287**	.270**	.283**	.282**	.258**	.305**	.367**	.344**	.324**	.302**	.314**	1	.662**	.614**	.422**	.397**	.358**	.405**	.370**	.396**	.402**	.344**	.295**	.349**	.341**	.323**	.350**	.319**	.349**	.374**	.200**
q1_4_2	.307**	.289**	.285**	.254**	.305**	.307**	.308**	.278**	.288**	.272**	.267**	.325**	.337**	.346**	.342**	.358**	.378**	.662**	1	.651**	.453**	.409**	.351**	.377**	.364**	.385**	.404**	.342**	.289**	.369**	.354**	.350**	.376**	.372**	.399**	.374**	.241**
q1_4_3	.267**	.287**	.260**	.261**	.320**	.282**	.330**	.275**	.280**	.282**	.299**	.311**	.342**	.343**	.314**	.324**	.344**	.614**	.651**	1	.500**	.412**	.357**	.407**	.406**	.404**	.399**	.356**	.295**	.368**	.376**	.367**	.382**	.369**	.382**	.389**	.196**
q1_4_4	.253**	.250**	.264**	.271**	.251**	.252**	.242**	.254**	.266**	.234**	.250**	.275**	.285**	.293**	.300**	.263**	.238**	.422**	.453**	.500**	1	.379**	.332**	.402**	.325**	.368**	.323**	.334**	.330**	.384**	.334**	.338**	.322**	.332**	.344**	.328**	.189**
q1_5_1	.328**	.364**	.281**	.334**	.482**	.343**	.353**	.377**	.432**	.347**	.378**	.405**	.399**	.427**	.325**	.306**	.292**	.397**	.409**	.412**	.379**	1	.608**	.557**	.504**	.467**	.517**	.536**	.401**	.403**	.416**	.397**	.455**	.390**	.434**	.418**	.205**
q1_5_2	.220**	.230**	.295**	.249**	.290**	.286**	.287**	.281**	.294**	.300**	.252**	.327**	.386**	.365**	.338**	.294**	.250**	.358**	.351**	.357**	.332**	.608**	1	.697**	.555**	.453**	.490**	.446**	.300**	.303**	.345**	.340**	.400**	.296**	.361**	.336**	.215**
q1_5_3	.215**	.196**	.304**	.233**	.271**	.291**	.309**	.269**	.283**	.301**	.270**	.296**	.353**	.353**	.352**	.318**	.273**	.405**	.377**	.407**	.402**	.557**	.697**	1	.570**	.483**	.466**	.433**	.301**	.308**	.332**	.345**	.399**	.284**	.344**	.360**	.220**
q1_5_4	.231**	.237**	.269**	.262**	.285**	.275**	.319**	.244**	.269**	.277**	.277**	.323**	.340**	.369**	.309**	.308**	.276**	.370**	.364**	.406**	.325**	.504**	.555**	.570**	1	.602**	.560**	.490**	.309**	.355**	.376**	.370**	.417**	.328**	.364**	.342**	.211**
q1_5_5	.248**	.241**	.314**	.312**	.275**	.314**	.316**	.270**	.284**	.318**	.315**	.361**	.353**	.430**	.392**	.352**	.335**	.396**	.385**	.404**	.368**	.467**	.453**	.483**	.602**	1	.578**	.509**	.297**	.356**	.360**	.351**	.411**	.353**	.366**	.360**	.207**
q1_5_6	.271**	.278**	.272**	.282**	.321**	.319**	.340**	.323**	.350**	.338**	.324**	.389**	.372**	.425**	.390**	.355**	.356**	.402**	.404**	.399**	.323**	.517**	.490**	.466**	.560**	.578**	1	.597**	.361**	.380**	.382**	.358**	.417**	.360**	.370**	.376**	.212**
q1_5_7	.306**	.321**	.314**	.336**	.379**	.312**	.314**	.344**	.370**	.323**	.362**	.388**	.380**	.413**	.367**	.325**	.319**	.344**	.342**	.356**	.334**	.536**	.446**	.433**	.490**	.509**	.597**	1	.392**	.416**	.403**	.378**	.436**	.410**	.417**	.413**	.194**
q1_6_1	.330**	.343**	.252**	.297**	.370**	.286**	.312**	.300**	.370**	.290**	.341**	.441**	.400**	.415**	.285**	.308**	.305**	.295**	.289**	.295**	.330**	.401**	.300**	.301**	.309**	.297**	.361**	.392**	1	.670**	.559**	.508**	.541**	.584**	.533**	.489**	.218**
q1_6_2	.325**	.361**	.256**	.299**	.383**	.294**	.333**	.305**	.356**	.314**	.352**	.434**	.358**	.406**	.300**	.320**	.331**	.349**	.369**	.368**	.384**	.403**	.303**	.308**	.355**	.356**	.380**	.416**	.670**	1	.689**	.615**	.556**	.638**	.542**	.508**	.194**
q1_6_3	.321**	.336**	.253**	.258**	.359**	.283**	.333**	.284**	.329**	.305**	.333**	.400**	.342**	.378**	.302**	.344**	.341**	.341**	.354**	.376**	.334**	.416**	.345**	.332**	.376**	.360**	.382**	.403**	.559**	.689**	1	.685**	.568**	.593**	.553**	.529**	.196**
q1_6_4	.258**	.289**	.209**	.223**	.310**	.269**	.309**	.265**	.314**	.280**	.292**	.341**	.333**	.350**	.292**	.324**	.343**	.323**	.350**	.367**	.338**	.397**	.340**	.345**	.370**	.351**	.358**	.378**	.508**	.615**	.685**	1	.571**	.573**	.503**	.484**	.201**
q1_6_5	.350**	.377**	.314**	.302**	.365**	.321**	.380**	.356**	.399**	.331**	.363**	.432**	.413**	.477**	.365**	.383**	.353**	.350**	.376**	.382**	.322**	.455**	.400**	.399**	.417**	.411**	.417**	.436**	.541**	.556**	.568**	.571**	1	.668**	.641**	.575**	.226**
q1_6_6	.362**	.384**	.291**	.324**	.372**	.305**	.330**	.317**	.381**	.301**	.349**	.430**	.389**	.442**	.313**	.355**	.358**	.319**	.372**	.369**	.332**	.390**	.296**	.284**	.328**	.353**	.360**	.410**	.584**	.638**	.593**	.573**	.668**	1	.672**	.570**	.209**
q1_6_7	.362**	.375**	.321**	.355**	.409**	.357**	.370**	.392**	.399**	.336**	.371**	.424**	.406**	.446**	.357**	.355**	.333**	.349**	.399**	.382**	.344**	.434**	.361**	.344**	.364**	.366**	.370**	.417**	.533**	.542**	.553**	.503**	.641**	.672**	1	.691**	.216**
q1_6_8	.322**	.326**	.311**	.322**	.367**	.323**	.333**	.347**	.396**	.329**	.351**	.399**	.379**	.398**	.388**	.363**	.329**	.374**	.374**	.389**	.328**	.418**	.336**	.360**	.342**	.360**	.376**	.413**	.489**	.508**	.529**	.484**	.575**	.570**	.691**	1	.198**
q3_7	.167**	.160**	.136**	.127**	.172**	.123**	.128**	.109**	.099**	.114**	.091**	.179**	.166**	.190**	.140**	.170**	.192**	.200**	.241**	.196**	.189**	.205**	.215**	.220**	.211**	.207**	.212**	.194**	.218**	.194**	.196**	.201**	.226**	.209**	.216**	.198**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4. Reliability Tests

FIT indices	Recommended level	Research model
CMIN/DF	5.0 (Wheaton et al., 1977)~2.0 (Tabachnick and Fidell, 2007)	3.875
CFI	>0.90 (Bentler, 1990)	0.951
IFI	>0.90 (Bollen, 1989)	0.951
RMSEA	<0.08(Browne and Cudeck,1993)	0.042
AIC	Smaller values suggest a good fitting (Akaike, 1974)	2499.072
p-value	>0.05	0.000

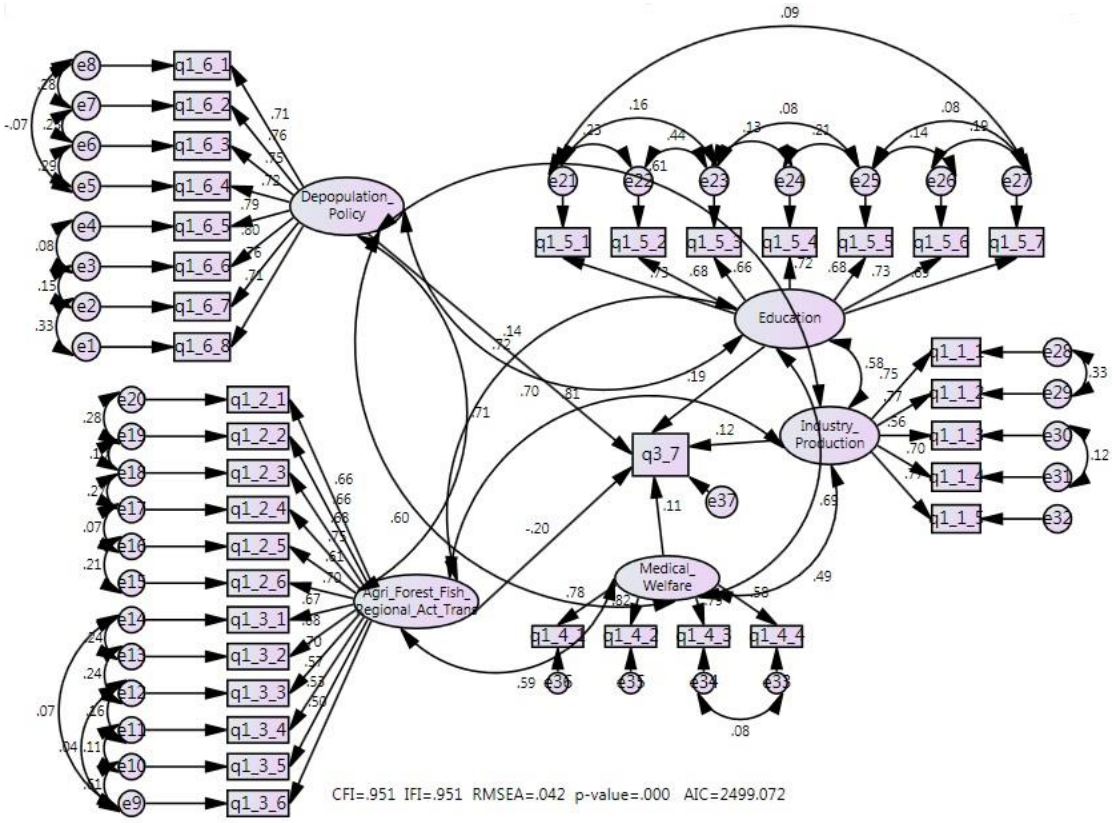

Figure 2. A Research Model for Community Livability

Table 5. The Path Coefficients of the Research Model

construct			Std. Weight	Unstd. weight	S.E.	C.R. (t-value)	P value
q1_6_8	<---	Depopulation__Policy	0.712	1			
q1_6_7	<---	Depopulation__Policy	0.762	1.045	0.029	35.563	***
q1_6_6	<---	Depopulation__Policy	0.8	1.136	0.038	30.279	***
q1_6_5	<---	Depopulation__Policy	0.791	1.113	0.037	30.068	***
q1_6_4	<---	Depopulation__Policy	0.72	1.124	0.041	27.556	***
q1_6_3	<---	Depopulation__Policy	0.75	1.096	0.038	28.67	***
q1_6_2	<---	Depopulation__Policy	0.759	1.147	0.039	29.032	***
q1_6_1	<---	Depopulation__Policy	0.712	1.096	0.04	27.244	***
q1_3_6	<---	Agri_Forest_Fish__Regional_Act_Trans	0.501	1			
q1_3_5	<---	Agri_Forest_Fish__Regional_Act_Trans	0.53	1.049	0.04	25.984	***
q1_3_4	<---	Agri_Forest_Fish__Regional_Act_Trans	0.566	1.156	0.068	16.985	***
q1_3_3	<---	Agri_Forest_Fish__Regional_Act_Trans	0.697	1.273	0.066	19.423	***
q1_3_2	<---	Agri_Forest_Fish__Regional_Act_Trans	0.677	1.341	0.071	18.781	***
q1_3_1	<---	Agri_Forest_Fish__Regional_Act_Trans	0.671	1.289	0.067	19.372	***
q1_2_6	<---	Agri_Forest_Fish__Regional_Act_Trans	0.702	1.178	0.061	19.156	***
q1_2_5	<---	Agri_Forest_Fish__Regional_Act_Trans	0.611	1.078	0.061	17.722	***
q1_2_4	<---	Agri_Forest_Fish__Regional_Act_Trans	0.746	1.28	0.065	19.697	***
q1_2_3	<---	Agri_Forest_Fish__Regional_Act_Trans	0.68	1.168	0.062	18.806	***
q1_2_2	<---	Agri_Forest_Fish__Regional_Act_Trans	0.656	1.244	0.067	18.485	***
q1_2_1	<---	Agri_Forest_Fish__Regional_Act_Trans	0.659	1.202	0.065	18.546	***
q1_5_1	<---	Education	0.727	1			
q1_5_2	<---	Education	0.677	0.983	0.034	29.151	***
q1_5_3	<---	Education	0.663	0.881	0.033	26.659	***
q1_5_4	<---	Education	0.718	0.941	0.036	26.48	***
q1_5_5	<---	Education	0.682	0.891	0.036	24.458	***
q1_5_6	<---	Education	0.734	0.958	0.036	26.836	***
q1_5_7	<---	Education	0.689	0.94	0.036	26.433	***
q1_1_1	<---	Industry__Production	0.745	1			
q1_1_2	<---	Industry__Production	0.772	1.089	0.03	36.68	***
q1_1_3	<---	Industry__Production	0.565	0.811	0.038	21.171	***
q1_1_4	<---	Industry__Production	0.696	0.908	0.035	26.198	***
q1_1_5	<---	Industry__Production	0.773	1.14	0.039	29.024	***
q1_4_4	<---	Medical__Welfare	0.579	1			
q1_4_3	<---	Medical__Welfare	0.791	1.317	0.055	23.864	***
q1_4_2	<---	Medical__Welfare	0.82	1.281	0.056	22.858	***
q1_4_1	<---	Medical__Welfare	0.782	1.179	0.053	22.4	***
q3_7	<---	Depopulation__Policy	0.141	0.203	0.063	3.216	0.001
q3_7	<---	Agri_Forest_Fish__Regional_Act_Trans	-0.196	-0.353	0.123	-2.867	0.004
q3_7	<---	Education	0.19	0.257	0.073	3.515	***
q3_7	<---	Industry__Production	0.122	0.176	0.078	2.258	0.024
q3_7	<---	Medical__Welfare	0.111	0.168	0.062	2.72	0.007

Akita local government have been newly budgeted 37 projects in 2020 (Akita prefecture, 2020), from Youth activity platform construction project, Akita food industry activation measures project, Rice field agricultural comprehensive measures project for the next generation, to IoT implementation practice project for manufacturing industry. In some way, the progresses of these projects are seeable may help their citizen understand their local government efforts on livability.

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