

論文内容の要旨

Sustainability is crucial in protecting our planet and future generations and growing concerns for globalism, capitalism and environmental problems. Sustainable development goals (SDGs) have become common missions for humanity all over the world. Thus, it is crucial to understand what factors facilitate SDGs to suggest the proper mechanism to improve and maintain sustainability. This doctoral thesis attempts to find the paths for materializing SDGs from both aspects of peripersonal (whatever is in your arm's reach directly, such as human relations) and extrapersonal (whatever is beyond your arm's reach directly, such as global climate change) sides of human nature, for example, wellbeing (happiness), generativity, social preferences, perceptions and scientific knowledge). To this purpose, the thesis applies a questionnaire and survey experiments and collects primary data to examine determinants of wellbeing (happiness) at the individual levels, empirically explores the potential factors concerning inquisitive and autonomous people to influence wellbeing (happiness) and generativity in place with different cultures, addresses the relationships between the perception and people's cooperative attitude toward global issues (i.e., climate change).

As Max Weber expects, modernization has been promoted by making everything, including humans, countable and creating a computable world. Many countries have adopted democracy and capitalism as their social and economic institutions, providing individuals with freedom of choice and voice in various products and services, pursuing further economic growth and prosperity. Consequently, democracy and capitalism bring consumerism, individualism and self-maximization behaviors to be a primary source of satisfaction with life, leading to various intergenerational problems for sustainability. Nowadays, sustainability is crucial in protecting our planet and future generations and growing concerns for globalism, capitalism and environmental problems. Therefore, sustainable development goals (SDGs) are established and advocated as the missions for humanity, now a slogan for sustainability worldwide. However, little is known about what types of people or societies are likely to follow the paths for SDGs steadily and what kinds of indicators people in societies must enhance to achieve these goals. Thus, it is crucial to understand what factors facilitate SDGs to suggest the proper mechanism to improve and maintain sustainability.

Several studies have reported that people's brain manages the external world by dividing it into separate spaces, such as the peripersonal (whatever is in your arm's reach) and extrapersonal (whatever is beyond your arm's reach). Any interaction in the extrapersonal space will occur in the future because distance is linked to time. Having experiences in the peripersonal space, such as touching, tasting and holding, will bring people happiness, sadness and joy. By contrast, acquiring something out of your reach may require effort, time and planning. Both peripersonal and extrapersonal spaces are essential for people's collective (or personal) survival strategies or sustainability. As for the peripersonal space, wellbeing (happiness) correlates positively with achieving SDGs. Generativity (a concern regarding the establishment and guiding of future generations) is also known to contribute to SDGs because it facilitates intergenerational cultural and resource transfers between current and future generations. As for the extrapersonal space, perception, concept and scientific knowledge are essential for tackling global issues, such as international politics, economy and climate change. This thesis attempts to find the paths for materializing SDGs from peripersonal and extrapersonal sides of human nature, for example, wellbeing (happiness), generativity, social

preferences, perceptions and scientific knowledge.

Previous studies have examined several potential determinants of happiness or wellbeing in the last decades. Other researchers have found positive relationships between generativity and happiness, often along with social preferences (i.e., prosocial behaviors, such as monetary donation, buying some gifts for friends or volunteering). Aknin et al. (2012) conduct survey experiments with Canadian University students, claiming that social preferences are positively associated with happiness and that a positive feedback loop exists between the two. Timilsina et al. (2019) compare prosociality and generativity between rural and urban people by conducting survey experiments in Nepal. They find that rural people are more prosocial and generative than urban ones, and claim that prosocial orientation shall contribute to generativity. Building upon Timilsina et al. (2019), Shahen et al. (2019) conduct similar types of survey experiments in rural and urban areas of Bangladesh, collecting data on happiness and generativity along with prosociality and other variables. They establish that generativity is a robust and consistent predictor of happiness, controlling for prosociality and other key sociodemographic factors in the analyses. These studies suggest that generativity and prosociality can influence happiness.

Past studies have examined that autonomy (being independent & resisting social pressure) and inquisitiveness (adaptability to new social and/or environmental changes) are fundamental personal elements to characterize people's wellbeing and sustainability. Other researchers claim that people in tradition-oriented societies are usually reluctant to accept something and someone different or new (low inquisitiveness) and tend to follow indigenous rules without expressing their opinions (low autonomy) for maintaining sustainability in their communities. Other studies have empirically examined the relationship between wellbeing, generativity and social preferences, attracting attention to the emergence of sustainability problems and finding mixed results for associations among these factors. Other studies argue that generativity (a concern and commitment for the next generations) and wellbeing are highly associated with one another, being essential predictors for sustainability or SDGs. That is, people shall be sustainable when they are generative and happy in their daily life. These studies suggest that generativity and wellbeing will be essential elements of SDGs.

Climate change is a serious problem that requires people's cooperation to reach sustainable development goals (SDGs). There have been several types of research to analyze how people become cooperative against climate change. These studies establish that correct perception and knowledge of climate change are positively associated with cooperative attitudes, whereas a wide variety of gaps in such perceptions exist. Past studies have examined people's perceptions of the cause of climate change. Some researchers report that climate-change-specific beliefs, particularly whether people believe in the human-induced causes of climate change and/or whether they connect the locally observed impacts to climate change, are the most prominent determinants of risk perception. Other researchers implement surveys on people's perceptions and cooperative attitudes toward climate problems proxied by their willingness to pay (WTP). O'Connor et al. (1999) examine the relationship between people's risk perceptions and their WTP for climate problems, reporting that an environmental belief is a strong predictor of behavioral intentions for voluntary actions. These studies have demonstrated that people's perceptions generally influence their cooperative attitudes toward climate change.

No previous works have explored the primary paths for sustainable development goals (SDGs) concerning the peripersonal and extrapersonal factors, such as wellbeing (happiness), generativity and people's perception of global issues. Therefore, in the first stage, this research analyzes determinants of people's wellbeing (happiness) and generativity along with inquisitiveness, social value orientation

(SVO) and sociodemographic factors in Japan. In the second stage, this research analyzes determinants of people's wellbeing (happiness) and generativity along with autonomy, inquisitiveness, SVO and sociodemographic factors in matrilineal Island Palau. The author chooses Palau as the field, because rapid social and environmental changes are ongoing from traditional to modern societies, and a wide variation of people is expected to be observed, as compared to any other nation, even with a small sample size. In the third stage, this research addresses the relationships between the perception and people's cooperative attitude toward global issues (i.e., climate change) through survey experiments with actual payment. The later parts of this thesis are organized as follows: chapter 2, entitled "How does inquisitiveness matter for generativity and happiness?" presents the details of the survey conducted in the urban and nonurban areas in Japan and the main results. Chapter 3 entitled "How do autonomy and inquisitiveness play roles in sustainable development? Implications from matrilineal Island Palau" has approached the essential factors for people to facilitate SDGs (i.e., wellbeing and generativity) in relation to autonomy and inquisitiveness by considering different societies and providing insight into the age, gender and cultural differences are presented in chapter 4, entitled "Is climate change induced by humans? The impact of the gap in perceptions on cooperation." examines the factors that affect people's cooperation against climate change, concerning prosociality, scientific literacy and perceptions.

The first study in this thesis examines relationships between happiness, the concern for inquisitiveness (curiosity & acceptance to something and someone different), generativity, social preferences, along with sociodemographic factors, within a single analytical framework. This study hypothesizes that inquisitiveness is a fundamental determinant of generativity and happiness, posing two research questions (1) Does inquisitiveness play a role in generativity? (2) How does inquisitiveness, along with generativity, affect people's happiness? This study conducts questionnaire surveys with 400 Japanese subjects, applying quantile regression and structural equation modeling to the data. This study empirically characterizes determinants of wellbeing (happiness) with the data, focusing on generativity and inquisitiveness, controlling for sociodemographic factors. First, the analysis identifies the importance of inquisitiveness in characterizing generativity in that people with high inquisitiveness tend to be generative. Second, people are identified to be happy as they have high generativity and inquisitiveness, demonstrating two influential roles of inquisitiveness as direct and indirect determinants through a mediator of generativity. Overall, the results suggest that inquisitiveness shall be an essential element of people's happiness through intergenerational and intragenerational communication.

In the second study, the thesis considers that generativity and wellbeing shall be necessary and salient indicators people in societies must enhance to achieve SDGs, hypothesizing that people with high autonomy (being independent & resisting social pressure) and inquisitiveness (adaptability to new social and/or environmental changes) tend to be generative and happy. To empirically examine the hypothesis, we take people's generativity and wellbeing as essential elements of SDGs and statistically characterize them in relation to autonomy and inquisitiveness with the data from survey experiments of 413 residents in matrilineal Island Palau. We choose Palau as the field, because rapid social and environmental changes are ongoing from traditional to modern societies and a wide variation of people is expected to be observed compared to any field in other nations, even with a small sample size. We find two main results in this research. First, the analysis identifies the importance of inquisitiveness in that people with high inquisitiveness tend to be generative. Second, people's wellbeing is high as they are generative, autonomous and inquisitive, demonstrating two influential roles of inquisitiveness on happiness as direct and indirect determinants through a mediator of generativity. Overall, the results suggest that autonomy and inquisitiveness contribute to people's generativity and wellbeing even in

tradition-oriented societies, such as Palau, and their improvements are considered specific paths for materializing SDGs.

In the third study, the thesis analyzes the determinants of human-induced perception and the impact of the gap in perceptions on cooperative behaviors toward climate change by conducting a survey experiment with a climate donation game with 400 Japanese subjects. This study empirically characterizes determinants of people's cooperative behaviors through the climate donation game with the data, focusing on social value orientation (SVO), scientific literacy and the perception of the cause of climate change, controlling for sociodemographic factors. First, the analysis identifies the importance of people's scientific literacy in explaining the perception gaps in that those with high scientific literacy tend to have the perception of human-induced climate change. Second, people are identified as being cooperative toward climate change, as they have a prosocial value orientation, high scientific literacy and the perception of human-induced climate change, demonstrating two critical roles of scientific literacy as not only a direct determinant but also an indirect one, through a mediator of people's perceptions. Overall, the results suggest that scientific literacy shall be a key to enhancing cooperation toward climate change by promoting the perception of human-induced climate change.