

Chapter 2

Structure of Well-Being: An Exploratory Study of the Distinction Between Individual Well-Being and Community Well-Being and the Importance of Intersubjective Community Well-Being

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Abstract Despite the popularity of well-being in public policy discourses, the meaning of well-being and how to use it in a public policy context is still unclear. In this chapter, we present a comprehensive framework of well-being that clarifies its meaning by distinguishing different types and aspects of well-being. First, we distinguish individual well-being and community well-being. Since public policy concerns public resources, we further explore the aspects of community well-being. Previous works only identified objective and subjective aspects of community well-being, leading to confusion in the measurement process regarding aggregation from individuals to the community. To address this issue, we identify a third aspect called intersubjective community well-being measured by evaluative questions. Using survey data from six districts in Seoul, South Korea, we show that individual well-being and community well-being can be distinguished empirically and that the relationship between intersubjective and objective community well-being is stronger than the relationship between subjective and objective community well-being. This suggests that policymakers can gain better insight for policymaking by paying more attention to intersubjective community well-being, which effectively bridges relevant objective measures to collective evaluation of citizens.

Keywords Community well-being · Intersubjective community well-being · Community resources · Public policy

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Introduction

In recent years, ideas of well-being, quality of life, and happiness have become popular in the public policy world. Australia, Canada, France, Germany, Italy, South Korea, and the UK are some countries that have either already incorporated or plan to incorporate these ideas into public policy. These concepts are often placed in juxtaposition to gross domestic product (GDP), inequitable economic growth, and narrow definitions of progress (i.e. accumulation of wealth) to describe alternative visions of society. However, their meanings are still ambiguous and it is unclear how these concepts relate to broader public policies since they have mostly been studied in a select few fields in academia, such as economics, health, and psychology. This confusion has led to voices of criticism and caution against using these words in public policy (see Booth 2012; Scott 2012). Nevertheless, the GDP framework that narrowly focuses on economics has limitations as a vision of social progress. The recent interest in well-being can be seen as evidence of a demand for a more comprehensive framework. However, in order for well-being to serve as a viable alternative, scholars must clarify the concept with both theory and empirical data.

Well-being has been used interchangeably with quality of life and happiness in the past, but we exclusively focus on well-being as it is a more comprehensive term that can serve as an umbrella concept (Lee and Kim 2015). However, well-being is still misconstrued and thus fails to provide helpful directions for public policy decisions. We present a well-being framework that clarifies its structure to address this limitation. In particular, we focus on two limitations in previous works. First, previous attempts to use well-being in public policy have not adequately distinguished individual well-being (IWB) from community well-being (CWB). This has led to a mismatch of using measurements of an individualistic concept (i.e. IWB) in a discussion about the use and distribution of public resources. Second, the measurement of CWB has been limited to objective and subjective aspects, failing to capture the collective characteristic of CWB. This limitation arises when we try to measure something about the collective (i.e. CWB) but we need to resort to gathering information from the individual members of the collective. The objective aspect does not reflect any input from the actual community members, while the subjective aspect can become too individualistic. We introduce intersubjective CWB as a third aspect that can resolve these issues.

In exploring the structure of well-being, we first explain why CWB measurement is necessary given the long history of quality of life (QOL) indicators and community indicators. We discuss the limitations of previous indicators and how CWB indicators can address them. Next, we address more specific concerns with using well-being and its indicators in public policy discourses and present a new framework of well-being. Our framework distinguishes IWB from CWB and identifies three aspects of CWB. Previous understandings of CWB have mainly focused on its objective and subjective aspects (McCrea et al. 2006; Schneider 1975; Veenhoven 2002), neglecting the intersubjective CWB. This third aspect is

important for creating measures of a community level concept with data collected from individuals without letting the individualistic characteristic overshadow the collective characteristic.

Finally, we test our framework using survey data from Seoul, South Korea. We find that CWB and IWB can be empirically distinguished. As such, CWB is a concept that should be studied as distinct from IWB and one that is more appropriate for discussions of public policy. We also find that while previous works have focused on measuring subjective CWB through satisfaction questions, the relationship between intersubjective CWB (measured by evaluative questions) and objective CWB (i.e. community resources) is stronger than that between subjective CWB and objective CWB. We argue that intersubjective CWB is an area that needs more future study.

Limits of Previous Indicators

In this section, we review the limitations of QOL indicators and community indicators. This is to set the stage for Part III where we propose a new well-being framework to address these limitations. While QOL indicators and community indicators may not use the exact term “community well-being,” they share the general purpose of assessing how well a group is doing and to improve conditions for a larger group. In fact, many have treated these terms synonymously in the past (Bunge 1975; McMahon 2002; Swain and Hollar 2003). While we agree that there are overlapping parts among these terms, we also show that there are differences among them and argue that CWB measures can give a more complete picture than QOL measures or community indicators.

Scholars identify the early 1960s with the birth of the social indicators movement when NASA and the American Academy of Arts tried to measure the impact of the space race on American society. This was an effort spearheaded by the government to gather information about society that GDP was unable to capture. QOL indicators grew out of this larger social indicators movement, but with a more explicit focus on quality, rather than quantity. Many QOL indicator projects have been launched by national governments and public policy institutes since the 1970s, but they have mostly been limited to western countries as can be seen in the literature. For example, the *Handbook of Social Indicators and Quality of Life Research* edited by Land et al. (2012) is comprised of chapters on North American and European cases with a few chapters that explicitly deal with select countries in East Asia and Latin America. While this may be indicative of a western bias, it also accurately reflects the strong roots of the QOL movement in the western world.

An implication of the QOL movement’s roots in the western world is the lack of a collective conception. In other words, the QOL concept is strongly individualistic with its ultimate focus on the well-being of individuals, and largely belongs to the realm of psychologists (Sawicki 2002). In addition to psychology,

the QOL concept has been extensively studied in the health and medicine disciplines. The use of QOL concept in public health dates back to the 1940s when the World Health Organization embraced this concept in its constitution (WHO 1948). During the 1990s and 2000s, scholars developed measures of QOL related to various medical conditions (Patrick and Chiang 2000; Stewart and Ware 1992).

Accordingly, we see serious limitations to using QOL in a public policy context. First, an individualistic approach like QOL can conflict with public values that should heavily influence decisions about the use and allocation of public resources. Not only can individual preferences conflict with each other, but also what is beneficial to each individual can lead to negative outcomes for the entire group. For example, automobiles increase mobility for individuals, reducing travel time and increasing comfort. However, if too many individuals opt for this travel mode, roads can quickly become congested and decrease benefits for the entire group. An individualistic concept has serious limitations for guiding public policy.

Second, since much of the research on QOL comes from the field of psychology, health, and medicine there may be limitations of generalizability for a general public policy framework. Works that relate to certain diseases or disabilities tend to focus on a problem or deficiency that can be identified. Public policy also tries to diagnose social problems and cure them, but it goes beyond simply solving problems to making things better. The findings from the field of medicine and health are unable to take us beyond solving issues. Another limitation is the lack of a public policy framework from the research on QOL in these fields. The solutions that are proposed in these studies rarely require a collective group's approval, but tend to be a private discussion between patients, their families, and doctors that ultimately lead to a private decision. In contrast, public policy decisions usually go through a complex process that involves many actors. Few QOL indexes distinguish input, throughput, and output (Hagerty et al. 2001), offering little direction for public policy.

Community indicators can solve some of these limitations. First, community indicators take the community as its unit of analysis, rather than individuals. There is some variation in the definition of community indicators. For example, some define it as "measurements of local trends that include all three dimensions of what it takes to build a healthy community—economic, environmental, and social" (Smolko 2006, p. 1) while others have defined it as "sets of data used to measure the progress of an area over time" (Philips and Bridges 2005, p. 115). Nevertheless, most community indicators focus on the collective group.

Despite this improvement from QOL indicators, community indicators still paint an incomplete picture because they are heavily focused on objective measures. For example, Kim and Lee (2013) reviewed fifty three community measurement projects and found that despite efforts to include both objective and subjective measurements, there are still more objective indicators than subjective. This focus on objective data is not surprising, given the community indicators movement's connection to community development theories that emphasize community capitals (Flora and Flora 2013) and assets (Green and Haines 2007). However, objective indicators provide an incomplete picture as they lack any input

from the community, such as preferences (Veenhoven 2002). Cobb and Rixford (2005) pointed out that community indicators have successfully described the status of communities, but have offered little in terms of prescription. We argue that even as a descriptive tool, community indicators are limited because an assessment of the amount of community capital and assets does not necessarily give an accurate measurement of the level of CWB, or whether the needs of the community are being adequately addressed. For example, a community might be rich in capitals and assets, but if they are only accessible to a select few, we can hardly say that this community has high levels of CWB.

In sum, QOL and community indicators have mainly two limitations. First, QOL indicators are mainly focused on the individual and are unable to provide an accurate assessment of CWB. While a community is certainly a collection of individuals, it is also more than the simple sum of individuals. IWB can give some indication of the level of CWB, but they are not identical. On a practical level, local governments can take note of subjective well-being, happiness, or life satisfaction levels of individuals to assess the presence of problems, but these indicators do not give direction to what areas the local government can or should focus on improving. Second, community indicators mostly offer objective information and lack subjective information. We acknowledge that objective conditions and resources are important ingredients of CWB, but equally important is the community's assessment of these resources and how they are being used. Therefore, we call for the adoption of a framework that gives adequate attention to the community level and contains both objective and subjective measurements.

A New Framework of Well-Being

Few scholars are against measuring well-being altogether, but there have been disagreement about whether this information should be used for policy decisions and especially about the danger of ignoring power dynamics and politics involved in this process. In other words, critics are concerned with the cooptation of the term "well-being" to advance a select group's agenda or interest at the cost of others'. White (2010) identifies four hazards of well-being, and while her work is focused on developing countries in particular, these hazards have also been cause for concern in the broader well-being literature. The four hazards are as follows: (1) well-being might be conceived as something that is important only after the basic human needs are met (2) a focus on well-being as a strictly emotional assessment might lead to the conclusion that state aid or welfare is not important since people in places with weak social safety nets can also have a high life satisfaction score (3) well-being is an inherently liberal and individualistic concept that emphasizes self-help and can lead to blaming individuals for their conditions or the way they feel (4) well-being as a holistic concept can be too broad and be of little use in policy analysis.

In this section, we present a well-being framework that addresses these major concerns. We are certainly not the first or only scholars to address these concerns. Sirgy et al. (2010) proposed a CWB measure based on the bottom-up spillover theory of life satisfaction. They recognized the limitations of previous indicators that only ask broad questions about satisfaction with community, which fail to provide detailed diagnostic and prescriptive information. Their measure of CWB covers the following fourteen life domains: safety, social, leisure, family and home, political, spiritual, neighborhood, environmental, transportation, education, health, work, financial, and consumer. However, these measures are still focused on satisfaction levels only and do not address the concern that a well-being focus might ignore objective needs.

We explicitly address the four hazards of well-being summarized by White (2010). First, our framework includes both objective and subjective aspects, addressing the first hazard. Second, we introduce the intersubjective CWB component to give CWB a richer meaning than mere emotions. Third, we argue that public policy should give more weight to CWB rather than IWB. And lastly, we tried to define CWB and identify the types of CWB to make this concept clearer.

Figure 1 is a visual illustration of our proposed well-being framework. The horizontal and vertical axes were chosen to highlight the limitations in previous indicators. The vertical axis shows the unit of analysis—individual or community—while the horizontal axis shows the objective or subjective aspect of the concepts. We argue here that IWB and CWB are distinct concepts. The former focuses on an individual's resources that can be treated as private property and an individual's perception of his or her life. The latter is about public or communal resources and how well the community needs are met. In the lower half of the figure that deals with IWB, we identify an objective IWB and subjective IWB; the former refers to the individual resources while the latter is an individual's perception of them. Another way to understand the objective and subjective distinction is to see objective aspects as inputs in a policy process and subjective aspects as outputs. In the upper half of the figure that deals with CWB, we also identify an objective CWB and subjective CWB, but unlike IWB we identify a third type of CWB called intersubjective CWB. We use the concept of intersubjective CWB due to complexities in collective well-being that we discuss in detail below.

Previously, we defined CWB as a concept about meeting the needs and desires of a community (Lee and Kim 2015). This definition was derived from previous definitions of CWB and IWB. While both concepts share at its core the idea of well-being, the point of departure can be found in the process of aggregation. We begin with a discussion of IWB as it is relatively less complex, compared to CWB.

Objective IWB has been measured with indicators such as income, education, life expectancy, depression, and presence of chronic illness. We note that these indicators have also been referred to as social indicators, but we call them objective IWB indicators because they are ultimately about the individual; aspects of life that an individual has substantial levels of control over and for which society assumes significant levels of individual responsibility. Subjective IWB has been measured by happiness and life satisfaction (also known as subjective well-being

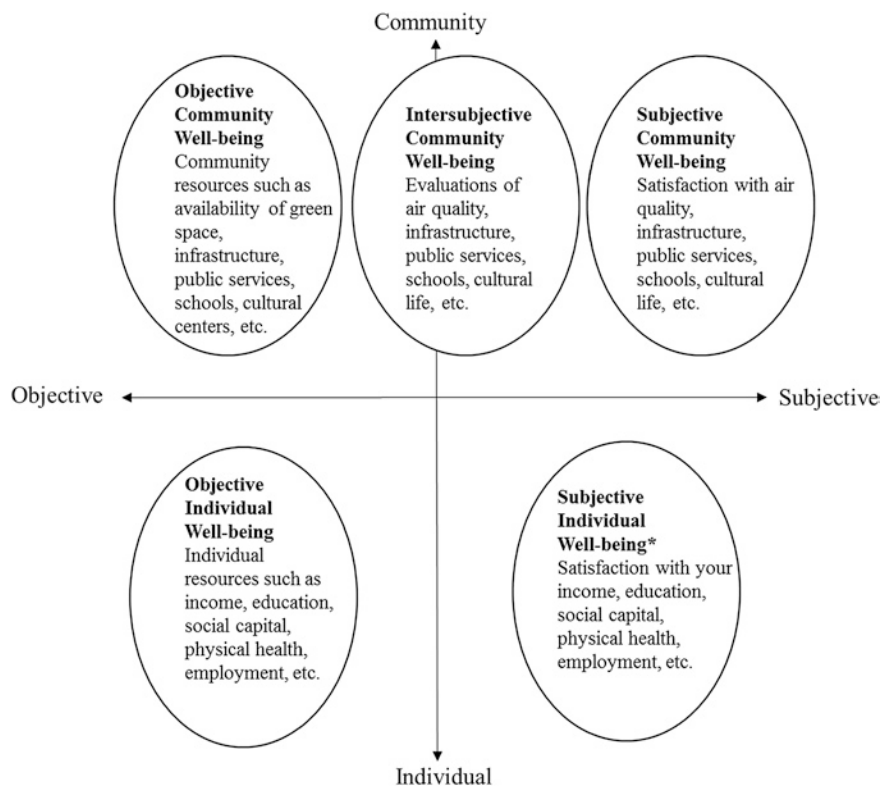


Fig. 2.1 Proposed Framework of Well-being (also known as subjective well-being (SWB) in previous literature)

or SWB in the happiness and psychology literature). Regarding the relationship between objective IWB and subjective IWB (i.e. the lower half of Fig. 2.1) while there is some evidence to the contrary (e.g. Easterlin Paradox, Hedonic Treadmill Theory), empirical research largely suggests a significant and positive relationship between the two domains (Blanchflower and Oswald 2004; Di Tella et al. 2003; Inglehart 1990).

We now return to the problem of aggregation in CWB. Objective CWB is fairly straightforward; these could be measured by levels of community resources, such as public space or public services. However, when we consider theories of community that argue a collective is more than the sum of its individuals (Durkheim and Lukes 2014; Gherardi and Nicolini 2000), there is no omniscient collective being whom we can ask about the level of subjective CWB. An extension of this confusion arises in the relationship between objective and subjective CWB. While there is a relatively more direct relationship between objective IWB elements and subjective IWB elements, this is not true for CWB elements. The relationship between community resources and collective satisfaction is difficult to test

and even after testing it, the exact process of how community resources (e.g. local government services or public expenditure) affect communal satisfaction is elusive. This is our reasoning for proposing a third type of CWB called intersubjective CWB.

Intersubjectivity was first defined by philosopher Edmund Husserl at the beginning of the 20th century. The term has been used in European and American social science fields since the 1960s and is commonly defined as the knowledge that is shared between two or more conscious minds or shared understanding. However, scholars have pointed out that this common definition is one that is detached from Husserl's original writings and is much narrower than the original concept (Duranti 2010; Quincey 1999; Rogoff 1990; Tomasello and Carpenter 2007; Trevarthen and Hubley 1978). Based on a close reading of Husserl's work, Duranti (2010) argues that intersubjectivity is more than shared or mutual understanding, but rather about the possibility of "trading places." He explains that the narrow definition of intersubjectivity fails to explain empathy. When we feel empathy for another person we do not necessarily read another person's mind or come to the same understanding about the world, but instead think about the possibility of seeing the world from someone else's perspective. The concept is fundamentally about relationships between and among individuals. Thus this idea is useful when discussing collective levels of well-being. The concept allows us to move away from the previously individualistic nature of well-being measures.

We use an example to illustrate the three different types of CWB. For example, I may be dissatisfied with the level of traffic in my district, but at the same time I can be aware that the reason there is congestion in my district is because it is a desirable place to live. This is a relatively more objective way of thinking, because I can recognize the congestion as a given community parameter. At the same time, I can recognize that in comparison to other districts, my district is making adequate efforts for dealing with traffic congestion by placing police officers to direct traffic during rush hour. My satisfaction with the traffic situation can be different from my evaluation of it. We call the former (i.e. satisfaction) subjective CWB and the latter (i.e. evaluation) intersubjective CWB.

Intersubjective CWB is particularly useful for discussions about public resources. We want public resources to both efficiently and adequately meet community needs and demands. For example, the number of public libraries in a district can be high, which would show up as high objective CWB scores, but what we really want is for the resources to adequately match the need of communities. If there is relatively less need for public libraries, then this means there may be waste of public resources and while people might be satisfied with the services, it is not the most efficient use of public resources.

Another advantage of measuring intersubjective CWB is it allows for a more collective mindset and thus a more accurate reflection of CWB, rather than the simple aggregation of IWB. In a district with low levels of public services for the elderly, someone can be very satisfied with these levels of public services because he or she has enough personal resources to access these services through private means (e.g. private nursing homes), but he or she can still think with a more

communal framework that the level of public service for the elderly in this district is inadequate. This mental exercise of “trading places” with another person is in line with the more robust definition of intersubjectivity that Duranti (2010) emphasized.

In summary, previous works on well-being measurement have focused on the IWB quadrants (i.e. lower two quadrants of Fig. 2.1). In comparison, there has been less effort to look at the upper half of Fig. 2.1 and especially the area between objective CWB and subjective CWB. All areas in Fig. 2.1 are important and necessary in their own right, but scholars of public policy and planning should at least pay equal attention, if not more, to the collective part of the well-being framework. In detail, we argue there needs to be clarification of the CWB concept as distinct from IWB and the relationships among objective, subjective, and intersubjective CWB. We use survey data to address these needs.

Methodology

The purpose of our study is to test empirically whether IWB and CWB can be distinguished and discover the relationship between objective CWB (i.e. community resources), subjective CWB (i.e. satisfaction), and intersubjective CWB (i.e. evaluation). While there have been extensive research on IWB, there has been relatively little work on CWB and our work is largely exploratory. We use structural equation modeling to test our proposed well-being framework and one-way ANOVA and correlation analysis to examine the relationships among objective, subjective, and intersubjective CWB.

The Community Well-Being Survey

Our research questions require information on various types of well-being: objective CWB, subjective CWB, intersubjective CWB, subjective IWB, and objective IWB. While objective community indicators (e.g. number of libraries, number of schools, etc.) are available through the Korean Statistical Information Service website (KOSIS; www.kosis.kr), there is little information on intersubjective CWB and subjective CWB; mostly limited to one item surveys that ask about happiness or overall satisfaction with the community. Thus, we designed and administered the Community Well-being Survey with the Community Well-being Institute in the following six local districts in Seoul, South Korea: Dongdaemun gu (population 363,258), Gangnam gu (population 564,197), Guro gu (population 427,520), Jongno gu (population 165,207), Jung gu (population 133,360), and Mapo gu (population 384,644). These six districts were chosen to increase the representativeness of our sample with small districts and large districts within Seoul. Local governments in Korea are organized in a two tier system: metropolitan level

and local level. As of 2013, Korea had 17 metropolitan governments that are further divided into 227 local si (74), gun (84), gu (69) units. In 2012, the total non-foreigner population of Seoul Metropolitan City was approximately 10.2 million with the average local government district (gu) population of approximately 408,000.¹ The Seoul metropolitan city is divided into 25 gu districts. The Survey used convenience sampling of adults age 20 or older who reside in these districts. All data were collected from January 2013 to February 2013 via self-administered questionnaires.

The questionnaire was broadly divided into four parts that ask questions about both IWB and CWB in the following format: close-ended questions on community and individual satisfaction, close-ended questions on community evaluation, open-ended questions on CWB, and demographic information (e.g. household income, education level, employment status, marital status). This study mainly uses responses from the first two parts on IWB and CWB. Questions in the first part asked for personal satisfaction levels that pertain to individual life and community life on a 10 point Likert scale (subjective IWB and subjective CWB), while questions in the second part asked respondents to evaluate the level of various aspects of community life on a 10 point Likert scale (intersubjective CWB). Demographic variables, which were used as indicators of objective IWB, were also close-ended questions. Household income and education questions asked respondents to choose among 13 categories and 5 categories, respectively (see Table 2.1). Employment and marital status were re-coded as dummy variables to have value of one for currently employed and currently married status, and then summed to create an employment and marital status parcel.

Analysis

This paper has two main goals: (1) to determine the measurement model of well-being (2) to describe the relationship between objective CWB, subjective CWB, and intersubjective CWB. We use a structural equation modeling for the first goal as we wish to build a theory of CWB structure—a topic that has relatively little previous findings—and a one-way ANOVA and correlation analysis for the second goal.

We first checked for missing data in raw file (3.6 %), which showed that household income and questions on evaluation of community economic items were most often missing. Household income, in particular, shows a strong left skew with most of the responses clustered around the higher income ranges. Little's MCAR test showed that data were not missing completely at random; therefore, we used the expectation maximization (EM) method for imputation. Our final sample size after EM imputation was 900 with more female respondents (59 %) than males (41 %). In terms of age, our sample has most respondents in their 30s (25 %), 40s (22 %), and 20s (20 %).

¹All population figures are based on the national resident registry data.

Table 2.1 Sample characteristics

Variable	Category	Frequency (%)
Gender	Female	59
	Male	41
Age	20–29	20
	30–39	25
	40–49	22
	50–59	17
	60–69	10
	70–79	5
	80 and above	0.3
Household income ^a	Less than 500 thousand KRW	3
	500 thousand–990 thousand KRW	3
	1.00 million–1.49 million KRW	6
	1.50 million–1.99 million KRW	7
	2.00 million–2.49 million KRW	9
	2.50 million–2.99 million KRW	9
	3.00 million–3.49 million KRW	13
	3.50 million–3.99 million KRW	8
	4.00 million–4.49 million KRW	9
	4.50 million–4.99 million KRW	7
	5.00 million–5.49 million KRW	8
	5.50 million–5.99 million KRW	4
	6.00 million KRW and more	16
Education ^a	Less than elementary school	2
	Middle school	4
	High school	23
	University	58
	Graduate school or higher	13
Employment ^a	Dummy, 1 = Currently employed	63
Marital status ^a	Dummy, 1 = Currently married	66

Source 2013 Community Well-being Survey

Note: N = 900. 1019 KRW is approximately equal to 1 USD. Percentages may not add to 100 due to rounding

^aUsed as indicator of objective IWB

Since the survey was focused on CWB we had far more variables pertaining to subjective CWB (27) and intersubjective CWB (29) than subjective IWB (5) and objective IWB (4). For model convergence purposes and reliability, we created composite average indexes (or parcels) for subjective and intersubjective CWB variables. Appendix 1 shows the questionnaire items that were used to create the composite variables of CWB.

We hypothesized four possible measurement models using our survey data on subjective CWB, intersubjective CWB, subjective IWB, and objective CWB.

First, a two factor model that only distinguishes IWB related items from CWB related items. Second, a three factor model that further differentiates IWB into subjective and objective, but still considers the CWB related items to load on one factor. Third, another three factor model that differentiates intersubjective CWB from subjective CWB, but sees IWB items as loading on one general IWB factor. Fourth, a four factor model that differentiates intersubjective CWB, subjective CWB, subjective IWB, and objective IWB. We also tested an alternative two factor model that only differentiates data into subjective and objective factors to include all empirically possible measurement models. Following Kline's (2011) advice on testing measurement models in areas with little theory on the number of factors, we first evaluated a single factor model wherein all items load on a general well-being factor. The parsimony principle would suggest that given similar fit to the same data a simpler model is preferred. Thus if we cannot reject the simple one factor model, there is weak support to model more complex ones.

According to Kline (2011), a rule of thumb for extreme skewness or kurtosis is absolute values of skew index (SI) above 3 and absolute values of kurtosis index (KI) above 10. Most variables in our structural equation modeling analysis show approximate univariate normal distribution. However, a test of multivariate normality suggested severe skewness (41.38 SI = 49.25) and kurtosis (633.54 KI: 35.815), and thus we used a robust maximum likelihood method of estimation. All latent variables were scaled using unit loading identification for disturbances of endogenous variables. All analyses were performed with LISREL 8.80. Table 2.2 shows descriptive statistics for all model variables.

We report the following model fit statistics: model chi-square, Steiger-Lind root mean square error of approximation (RMSEA; Steiger 1990) with its 90 % confidence interval, Bentler Comparative Fit Index (CFI; Bentler 1990), and adjusted goodness of fit index (AGFI). The model chi-square tests the exact fit hypothesis and thus a significant p-value leads us to reject our hypothesized model. A limitation of the model chi-square statistic is its sensitivity to sample size; in large samples even small discrepancies between the hypothesized model and data can result in a statistically significant model chi-square. Kline (2011) reports that for typical sample sizes in structural equation modeling (between $N = 200$ and 300) this is less likely. Our sample size ($N = 900$) is much larger than this and it is highly likely that we will see significant model chi-square values that would ordinarily lead us to reject the hypothesized model. However, we report these numbers because they will be the basic statistic for comparing alternative measurement models. For RMSEA, we follow Browne and Cudeck's (1993) suggestion of values less than or equal to 0.05 as indicating "close fit" and values between 0.05 and 0.08 as "adequate fit." Accordingly, the lower boundary of the 90 % confidence interval should be less than 0.05 while the upper boundary should be less than 0.10. For CFI and AGFI, higher values indicate better fit with CFI values greater than 0.97 indicating "good fit" and values above 0.90 for AGFI (Schermerle-Engel et al. 2003).

It is important to keep in mind that our purpose in this study is slightly different from the usual goal of structural equation modeling. We do not wish to

Table 2.2 Descriptive statistics of continuous variables (N = 900)

Latent variable	Manifest variable	Mean	SD	Min	Max	Skew-ness (SD)	Kurtosis (KI)	Cronbach's alpha
Subjective (satisfaction) CWB	Public works/ infrastructure	6.34	1.50	1.2	10	-0.03 (-0.39)	-0.21 (-0.71)	0.85
	Environment	5.48	1.86	1.0	10	0.10 (1.28)	-0.14 (-1.38)	0.75
	Social	5.75	1.52	1.3	10	0.19 (2.29)	-0.15 (-0.89)	0.94
	Local public administration	5.81	1.72	1.0	10	0.03 (0.38)	-0.11 (-0.66)	0.93
	Safety	5.81	1.65	1.0	10	0.00 (0.02)	0.07 (0.52)	0.88
Intersubjective (evaluation) CWB	Economy	5.44	1.47	1.0	10	0.13 (1.59)	0.18 (1.08)	0.90
	Public works/ infrastructure	6.11	1.54	1.0	10	0.01 (0.13)	-0.15 (-0.95)	0.91
	Environment	5.46	1.85	1.0	10	0.11 (1.35)	-0.21 (-1.34)	0.79
	Social	5.68	1.52	1.0	10	0.22 (2.72)	0.04 (0.31)	0.96
	Local public administration	5.76	1.72	1.0	10	0.03 (0.38)	0.09 (0.62)	0.95
	Safety	5.75	1.68	1.0	10	0.09 (1.13)	-0.08 (-0.45)	0.91
	Economy	5.55	1.50	1.0	10	0.13 (2.55)	0.18 (1.00)	0.93

(continued)

Table 2.2 (continued)

Latent variable	Manifest variable	Mean	SD	Min	Max	Skew-ness (SI)	Kurtosis (KI)	Cronbach's alpha
Subjective IWB	Health	6.38	1.76	1.0	10	-0.19 (-2.27)	0.06 (0.45)	N/A ^a
	Culture and arts activity	6.10	2.00	1.0	10	-0.12 (-1.51)	-0.36 (-2.61)	
	Social/community life	5.69	1.72	1.0	10	0.16 (1.96)	0.35 (1.94)	
	Volunteer	5.54	1.79	1.0	10	0.28 (3.33)	0.19 (1.16)	
	Job	5.77	1.89	1.0	10	-0.03 (-0.35)	0.03 (0.26)	
Objective IWB	Household income	7.88	3.47	1	13	-0.04 (-0.48)	-1.01 (-14.29)	
	Education	3.77	0.79	1	5	-0.90 (-9.61)	1.61 (5.90)	
	Employment and marital status	1.29	0.66	0	2	-0.39 (-4.65)	-0.76 (-7.78)	

Source 2013 Community Well-being Survey

^aN/A = not applicable

model causal relationships among latent variables, but rather to see how many latent variables can be measured in our data. Thus we evaluate several hypothetical measurement models and compare them using the model chi-square statistic.

Based on the results of our measurement models, we then move on to our second task of examining relationships between objective CWB, subjective CWB, and intersubjective CWB. Since the CWB Survey does not have objective CWB measures, we used the Seoul Survey data available through the KOSIS website. Our objective CWB scores were calculated as follows. We gathered various community indicators of the six districts from the Seoul Survey available through the KOSIS website that roughly correspond to the CWB variables in our survey. Some examples are the number of hospitals, area of green space, number of childcare centers, local government budget on education, number of 911 fire/emergency centers, local financial autonomy, etc. (see Appendix 2 for complete list of indicators). We converted all indicators to a z-score and then created a summative score for each district. We examined Pearson correlations among objective CWB, subjective CWB, and intersubjective CWB. Lastly, because we wanted know more about intersubjective CWB—an aspect of CWB that has previously been ignored—a one-way ANOVA analysis was used to test the null hypothesis that all districts have equal mean scores of intersubjective CWB. Next, we used a post hoc analysis of mean differences to compare the differences in intersubjective CWB scores across districts.

Results

Types of Well-Being

Since the parsimony principle dictates that given a similar model fit, a simpler model is better, we first tested a one factor model wherein all items load on a general well-being factor. The one factor model fit indexes generally did not indicate good fit with chi-square value of 2024.581 ($df = 170$, $p = 0.0$), RMSEA = 0.110 (0.106; 0.114), AGFI = 0.686, except CFI = 0.958.

Therefore, we proceeded with the more complex two factor model of CWB and IWB. The model fit indices for this model showed little change from the one factor model with RMSEA = 0.110 (0.105; 0.114), AGFI = 0.687, and CFI = 0.958. Still, the model chi-square value decreased to 1999.068 ($df = 169$), and a chi-square difference test ($\Delta\text{chi-square} = 23.787$, $\Delta df = 1$) indicated that this is a statistically significant improvement to the original one factor model (see Table 2.3). Thus, our results show that CWB can be measured as a distinct concept from IWB and raise questions on previous community indicator systems that treated IWB and CWB to be identical or regarded CWB as simply the sum of IWB.

We also evaluated an alternate two factor model that distinguishes all subjective well-being items from objective well-being items. However, we did not find evidence that this model is statistically better than the original one factor model.

Table 2.3 Model Fit Statistics

Model	RMSEA	RMSEA 90 % C.I.	CFI	AGFI	χ^2 (df)	<i>p</i>	χ^2 difference test ^b (Δ df)	Model Comparisons
One factor measurement model	0.110	0.106; 0.114	0.958	0.686	2024.581 (170)	0.0		
Two factor measurement model 1 (subjective CWB and IWB)	0.110	0.105; 0.114	0.958	0.687	1999.068 (169)	0.0	23.787*** (1)	Two factor measurement model 1 compared to one factor measurement model
Two factor measurement model 1 (subjective well-being and objective well-being)	0.111	0.106; 0.115	0.958	0.684	2024.361 (169)	0.0	0.200 (1)	Two factor measurement model 2 compared to one factor measurement model
Three factor measurement model 1 (subjective CWB, subjective IWB, objective IWB)	0.110	0.105; 0.114	0.959	0.686	1968.722 (167)	0.0	30.354*** (2)	Three factor measurement model 1 compared to two factor measurement model 1
Four factor measurement model (evaluation subjective CWB, satisfaction subjective CWB, objective IWB subjective IWB) ^c	0.108	0.103; 0.112	0.961	0.696	1870.593 (164)	0.0	58.426*** (3)	Four factor measurement model compared to three factor measurement model 1

****P* < 0.01

Note We evaluated the three factor measurement model 2 (subjective CWB, intersubjective CWB, IWB) but the solution was not admissible after 50 iterations

^aSatorra Bentler Scaled chi square

^bThe chi square difference statistic can be used to compare the overall model fit of two hierarchical or nested models by examining the simple difference in chi square statistic and degrees of freedom. However, we cannot use corrected model chi squares, such as the Satorra Bentler Scaled chi square, to perform such chi square difference tests as the difference between corrected model chi squares do not follow a chi square distribution. Instead, we use the following Satorra-Bentler corrected chi-square difference test (TRd) as defined in Satorra and Bentler (2001)

$$TRd = T0 - T1 / Cd, Cd = (r0c0 - r1c1) / (r0 - r1)$$

where

T0: chi-square value of nested model M0

r0: degrees of freedom of nested model M0

c0: scaling correction factor for model M0, calculated as T0/Satorra Bentler corrected T0

T1: chi-square value of nested model M1

r1: degrees of freedom of nested model M1

c1: scaling correction factor for model M1, calculated as T1/Satorra Bentler corrected T1

^cThe covariance matrix of independent variables were not positive definite in this four factor model. We report the fit indices for reference only

This may be seen as further support for our argument that mixing IWB with CWB is inappropriate. The model fit indices of RMSEA (0.111), CFI (0.958), and AGFI (0.684) were nearly identical to the one factor model, and the model chi-square difference test ($\Delta\text{chi-square} = 0.200$, $\Delta\text{df} = 1$) failed to show that this is a statistically significant change.

Although the two factor measurement model of CWB and IWB was an improvement from the one factor measurement model, the model fit indices still suggested poor fit. As such, we proceeded to test the more complex three factor models. We hypothesized two possible three factor models: one in which only IWB is further separated into subjective and objective and an alternative in which only CWB is further separated into subjective (measured by satisfaction questions) and intersubjective (measured by evaluation questions). The first model with CWB, subjective IWB, and objective IWB shows little change in fit indices compared to the two factor model (CWB and IWB), which is our best model so far. The model fit indices are as follows: model chi-square = 1968.722 ($\text{df} = 167$), RMSEA = 0.110 (0.105; 0.114), CFI = 0.959; AGFI = 0.686, indicating poor fit with the exception of CFI. The model chi-square difference test ($\Delta\text{chi-square} = 30.354$, $\Delta\text{df} = 2$) shows that this three factor model has better fit than the two factor model.

The alternate three factor model with CWB further divided to subjective CWB (i.e. satisfaction) and intersubjective CWB (i.e. evaluation) did not lead to an admissible solution after 50 iterations. An inspection of the covariance matrix of factors suggests that subjective CWB and intersubjective CWB may have high collinearity and thus it does not seem likely that we will find better fit with more complicated models.

We tested our last hypothetical measurement model of four factors and while the software LISREL did not issue a message for inadmissible solution, the covariance matrix of independent variables were not positive definite. We report the fit indices for this model in Table 2.3 for reference only. This indicates that intersubjective and subjective CWB have low discriminant validity in our data. However, we keep intersubjective CWB and subjective CWB as separate variables since our second goal is to examine how these are related to objective CWB.

Three Aspects of Community Well-Being: Objective, Subjective, and Intersubjective

Our ultimate goal is to connect the aspects of CWB measured through a survey—subjective CWB and intersubjective CWB—to objective CWB for public policy decisions. Objective CWB, which is what community indicator projects have mostly focused on, is an important element for this goal because governments can have substantive control over these public resources. The composite z-score of objective CWB varied among the six districts even though they are within the same metropolitan city of Seoul and they were ranked as follows: Gangnam gu (9.79), Jung gu (6.73), Jongno gu (6.67), Mapo gu (−2.23), Guro gu (−11.10), Dongdaemun gu (−11.61).

Table 2.4 Pearson correlations for CWB variables

	Objective CWB	Intersubjective (evaluation) CWB
Intersubjective (Evaluation) CWB	0.777* <i>p</i> = 0.069	
Subjective (Satisfaction) CWB	0.716 <i>p</i> = 0.109	0.987*** <i>p</i> = 0.000

p* < 0.1, *p* < 0.05, ****p* < 0.01

First, we used a Pearson’s product-moment correlation to assess the relationship between objective CWB scores and the following variables: intersubjective (evaluation) CWB and subjective (satisfaction) CWB. We used scatter plots to check linear relationships and all variables were approximately normally distributed, and there were no extreme outliers. There was a strong positive correlation between objective CWB and intersubjective and subjective CWB (see Table 2.4). The correlation between intersubjective CWB and objective CWB (0.777, *p* = 0.069) was stronger than that between subjective CWB and objective CWB (0.716, *p* = 0.109). Our results from the structural equation modeling analysis indicated that subjective and intersubjective CWB are difficult to distinguish. However, our correlation analysis shows that subjective and intersubjective CWB have a different relationship with objective CWB; the relationship between intersubjective CWB and objective CWB is slightly stronger and statistically significant (*p* = 0.010) while the relationship between subjective CWB and objective CWB is not.

Intersubjective CWB scores were distributed the following way, from highest to lowest: Gangnam gu (M = 37.77, SD = 8.72), Mapo gu (M = 35.80, SD = 8.17), Jongno gu (M = 35.68, SD = 7.71), Jung gu (M = 33.20, SD = 7.21), Dongdaemun gu (M = 32.19, SD = 9.29), Guro gu (M = 30.19, SD = 6.92). Figure 2.2 is a visual representation of the mean intersubjective CWB score for each district, with the numbers below the district name showing its ranking in objective CWB scores for comparison. For example, Gangnam gu had the highest score of intersubjective CWB score, and also objective CWB score, while Mapo gu had the second highest intersubjective CWB score, but ranked fourth on the objective CWB score. Levene’s Test of Homogeneity of Variance (*p* = 0.001) indicated that the assumption of homogeneity of variances was violated and we report appropriate modified statistics. We found that intersubjective CWB scores were statistically significantly different between different districts, Welch’s *F* (5, 353.04) = 20.28, *p* = 0.000.

While places with high objective CWB scores tend to have higher intersubjective CWB scores, their rankings were not identical. For example, Mapo gu ranked fourth on objective CWB scores, but second on intersubjective CWB scores. In other words, Mapo gu may not have a lot of community resources as compared to the other five districts, but their evaluation of the Mapo district was higher in comparison to other districts with higher objective CWB. This may indicate that

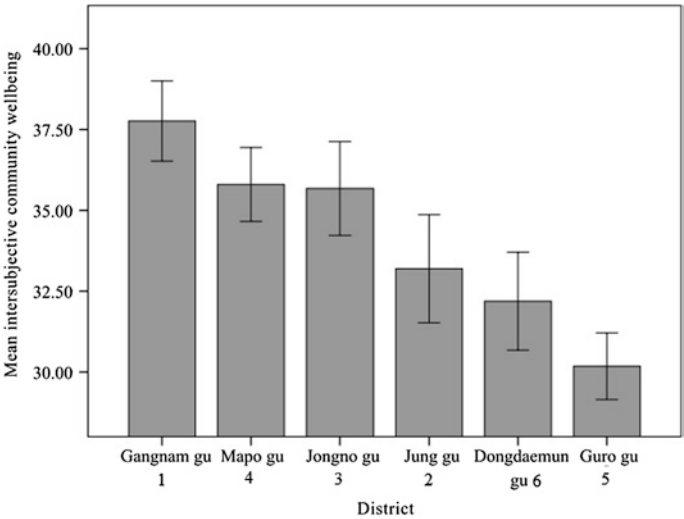


Fig. 2.2 Mean Intersubjective CWB Scores by District. *Source* Authors’ calculations. *Note* Numbers under the district name represent ranking of objective CWB scores. For example, “1” represents highest objective CWB score. Error bar shows 95 % confidence interval

increasing intersubjective CWB may require a more careful assessment of community needs and demands than simply increasing community resources.

We also conducted a Games-Howell post hoc analysis to further examine which districts differ on intersubjective CWB and by how much. Table 2.5 shows the comprehensive results with the base district in the order of objective CWB ranking, from highest to lowest. In other words, we look at Gangnam gu as the first base district for comparison since it has the highest objective CWB score, and then Jung gu (second highest), Jongno gu and so on. The largest mean differences are between Gangnam gu and Guro gu, Mapo gu and Guro gu, Gangnam gu and Dongdaemun gu, and Jongno gu and Guro gu, in order of decreasing mean difference. There was a statistically significant decrease in intersubjective CWB score from Gangnam gu, the district with highest objective CWB score to Guro gu, Dongdaemun gu, and Jung gu. The largest mean decrease was between Gangnam gu and Guro gu, a mean decrease of 7.58, 95 % CI [5.10, 10.07], which was statistically significant ($p = 0.000$). Comparison between the second highest ranking objective CWB district, Jung gu, and other districts with lower objective CWB scores are less pronounced and none of them were statistically significant. The mean difference between Jongno gu and Guro gu were significant with mean decrease of 5.50, 95 % CI [2.62, 8.37]. Jongno gu and Dongdaemu gu also showed a statistically significant difference in mean score of 3.49, 95 % CI [0.49, 6.48]. Mapo gu showed a statistically significant difference in mean scores with both Guro gu and Dongdaemun gu, with values of 5.62, 95 % CI [3.15, 8.09] and 3.61, 95 % CI [1.02, 6.20], respectively.

Table 2.5 Games-Howell Post Hoc Analysis Results of District Mean Differences in Intersubjective CWB

District with higher objective CWB score (I)	District with lower objective CWB score (J)	Mean difference (I – J)	Std. error	Sig.	95 % confidence Interval	
					Lower bound	Upper bound
Gangnam gu	Guro gu	7.58*	0.85	0.000	5.10	10.07
	Dongdaemun gu	5.57*	0.89	0.000	2.97	8.18
	Mapo gu	1.96	0.82	0.228	−0.45	4.37
	Jongno gu	2.09	0.97	0.366	−0.73	4.90
	Jung gu	4.57*	1.11	0.000	1.39	7.74
Jung gu	Guro gu	3.016	1.13	0.091	−0.22	6.25
	Dongdaemun gu	1.01	1.16	0.999	−2.35	4.36
	Mapo gu	−2.61	1.11	0.211	−5.76	0.55
	Jongno gu	−2.48	1.22	0.468	−6.05	1.08
Jongno gu	Guro gu	5.50*	0.99	0.000	2.62	8.37
	Dongdaemun gu	3.49*	1.02	0.010	0.49	6.48
	Mapo gu	−0.12	0.96	1.000	−2.92	2.67
Mapo gu	Guro gu	5.62*	0.84	0.000	3.15	8.09
	Dongdaemun gu	3.61*	0.88	0.001	1.02	6.20
Guro gu	Dongdaemun gu	−2.01	0.91	0.336	−4.67	0.65

* $p < 0.05$

Conclusion

Previous attempts to include well-being in public policy discussions have been less than successful because of the ambiguity and confusion around the concept. In this chapter, we presented a framework of well-being to clarify its structure and used empirical data to test this framework. In detail, previous works have failed to appreciate the distinction between CWB and IWB, and ignored the intersubjective aspect of CWB. Our framework distinguishes CWB from IWB and identifies three aspects of CWB: subjective, objective, and intersubjective. Based on survey data from Seoul, South Korea we found that CWB and IWB can be empirically distinguished and that intersubjective CWB, rather than subjective CWB, is closely related to objective CWB. We summarize our key findings below.

Previous approaches that fail to distinguish IWB and CWB lead to confusion when we try to use the well-being concept in public policy decisions. IWB is largely within the private realm that governments have little control over. Thus mistaking IWB scores for CWB scores can lead to frustration when governments see that there is little improvement. Confusing IWB with CWB can also lead citizens to blame governments when they do not see a clear improvement in IWB levels when in fact, governments have little control over the elements of IWB. A proper measure of CWB is important for connecting well-being to government.

The hypothesized distinction between subjective CWB scores and intersubjective CWB scores was not supported by our data. Even so, we argue that intersubjectivity is an important type of CWB to measure based on our correlation analysis results. Objective CWB is a measure of community resources that the local government has considerable control over. We found that the relationship between intersubjective CWB and objective CWB is distinct from and stronger than that between subjective CWB and objective CWB. Theoretically, the use of intersubjective scores as a measure of how well community resources are meeting community needs and desires may be more appropriate than subjective scores because they allow a more objective and public-minded assessment of community conditions. Practically, this suggests a possibility for using intersubjective CWB scores when there is little or no information on objective CWB.

The relationship between intersubjective CWB and objective CWB is an area that needs more future research. This is the link that can effectively connect well-being and public policy decisions, and our results show that the relationship may not be straightforward. For example, Mapo gu district ranked fourth on objective CWB scores but ranked second on intersubjective CWB scores. Without further research we can only speculate the reason. One possibility is the role of sense of community and social capital. The Mapo gu district is home to an artist community called the Sungmisan neighborhood that is well-known for the strong social ties among its residents (Kee et al. 2013).

This is the first attempt to empirically distinguish IWB and CWB and to examine how intersubjective CWB and objective CWB are related. Our data is limited to a sample of six districts in Seoul, South Korea and thus we need to be cautious about generalizing our results to other communities. Nevertheless, our generic framework of well-being could be tested in other countries. Most importantly, our framework provides a structure of well-being that can be used in a public policy context. If governments’ recent interest in well-being is to bring real, positive changes to communities, CWB should be studied in depth as a distinct concept and more information on intersubjective CWB should be collected.

Appendix 1

Questionnaire Items Used for CWB Indicators

	Intersubjective CWB (question format: how would you evaluate...)	Subjective CWB (question format: how satisfied are you with...)
Public works/ infrastructure	Medical service Waste collection Public transportation Internet service Roads	Medical service Waste collection Public transportation Internet service Roads
Environment	Air quality Green space	Air quality Green space

	Intersubjective CWB (question format: how would you evaluate...)	Subjective CWB (question format: how satisfied are you with...)
Social	Culture and art activity level Culture and art activity support Public library Lifelong education Learning environment Services for elderly Services for disabled Childcare services General social services Community activity Volunteer	Culture and art activity level Culture and art activity support Public library Lifelong education Learning environment Services for elderly Services for disabled Childcare services General social services
Local public administration	Local government employee fairness Local government employee attitude/ service Overall local government services	Local government employee fairness Local government employee attitude/service Overall local government services
Safety	Natural disaster preparedness Public safety Police	Natural disaster preparedness Public safety Police
Economy	Local government budget size Local government budget management Local taxes Overall economic environment Cost of living	Local government budget size Local government budget management Local taxes Overall economic environment Cost of living

Appendix 2

Indicators Used for Objective Community Well-being Score

Number of medical buildings per capita; number of waste collection trucks per ton of daily waste; number of sanitation worker per ton of daily waste; fine dust ($\mu\text{g}/\text{m}^3$); nitrogen dioxide, carbon monoxide, sulfurous acid gas emission total (ppm); green space availability per capita; percent household with personal computer; percent households with high-speed internet connection; number of arts and cultural center per capita; number of library per capita; number of lifelong education facilities per capita; lifelong education programs per capita; number of *hagwon* (private tutoring centers) per capita; college entrance rate; education budget per school age population; number of centers for the elderly per population over 65; number of centers for disabled persons, number of childcare centers, index of public employee honest; number of civil petitions processed; population per 911 fire/emergency center²; percent of population with training experience in fire situations; percent of population with CPR/First Aid training; percent population registered as community volunteer; local revenue per capita; local financial autonomy rate.

²Subtracted from total objective CWB score.

Appendix 3

Covariance Matrix Used for Structural Equation Modeling Analysis

[illegible]

Note: S/WB = subjective IWB, $SCWB$ = subjective CWB, $ISCWB$ = intersubjective CWB

Acknowledgments This chapter was presented at the 3rd International Forum on Community Well-being on June 23rd, 2015 at Hoam Faculty House, Seoul, South Korea and was supported by the National Research Foundation of Korea Grant funded by the Korean Government (NRF-2013S1A3A2054622).

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<http://www.springer.com/978-3-319-29940-2>

Social Factors and Community Well-Being

Kee, Y.; Lee, S.J.; Phillips, R. (Eds.)

2016, XV, 99 p. 9 illus., Softcover

ISBN: 978-3-319-29940-2