Bouncing Back: Unpacking the Influence of Sport Media on Consumer Resilience

Abstract

This study aims to empirically investigate how sport media consumption influences the relationships among the spatially explicit risks of COVID-19, resilience, and positive and negative affect, considering social class. To achieve this, we employed an integrated approach using spatial and aspatial analyses. The findings indicated that the negative effects of the spatially explicit risks of COVID-19 on resilience are mitigated by sport media consumption. In turn, an increased level of resilience enhances positive affect and reduces negative affect. Moreover, consumers in the upper class showed a more pronounced resilience process through sport media consumption than those in the lower class. This study contributes to the knowledge regarding the sport−resilience association by identifying the moderating effect of sport media consumption within social classes and addressing the spatially explicit risks of COVID-19. The present findings provide a basis for sport-based resilience strategies in times of adversity.

Keywords: sport media, consumer resilience, spatial analysis, social class

The COVID-19 pandemic has disrupted daily life worldwide, causing unprecedented upheaval in the context of economic, social, and cultural relations (Davies, 2020). The fear of COVID-19 has led to lockdowns and social distancing to prevent its spread. This sudden social impact has exacerbated public health challenges, such as disorders involving depression, anxiety, and stress (Killgore et al., 2020). Moreover, the disproportionate risk exposure and impact of COVID-19 prevalence have been deepened based on structural inequalities at the intersection of social class and socioeconomic status and are related to local safety nets and resources (Kim & Bostwick, 2020). This implies that the more socially vulnerable individuals are, the greater their COVID-19 risk exposure. In the process of adapting in the face of adversity, the presence of protective factors could enhance resilience, which in turn offsets the negative effect of risk (Bolton et al., 2017). As such, the dynamic process of adaption within risk settings, including the interaction between risk and protective factors at the individual and regional levels, is an aspect of resilience (Olsson et al., 2003).

Sport plays an important role in individual resilience, providing transformative service in sociopsychological dimensions (Inoue, Sato, et al., 2020). Previous sport management work, however, paid little attention to how individuals could be resilient through sport consumption within the resilience framework, which incorporates a series of factors such as timely risk, protective factors, and outcomes. Instead, most studies have focused on either sport organizations (e.g., sport clubs; Filo et al., 2015) or sport performers (e.g., athletes; Galli & Gonzalez, 2015) as resilient actors in a single framework. In addition, researchers have yet to address the spatial features that influence the degree of spatial heterogeneity in risk exposure across regions. Such nonspatial attention in measuring resilience can induce bias related to overestimated or underestimated risks due to nonspatial sampling and unrepresented populations

caused by inaccurate study areas (Wang et al., 2012). Because the prevalence of COVID-19 is spatially heterogeneous, spatial analysis is required to address the spatial features of the pandemic to identify its true risk; this approach can provide spatial information on where residents are significantly exposed to the risk of COVID-19 (Sun et al., 2020). In general, the resilience framework has narrowly been applied in sport-specific contexts without the use of spatially explicit risk estimation. Therefore, it is difficult to provide extended insights related to resilience-based interventions when individuals face adversity in the context of sport consumption.

The benefits of sport consumption experiences have been largely evidenced in relation to significant factors involving psychological (e.g., self-esteem; Trail et al., 2005) and social factors (e.g., social connection; Wann et al., 2011). The sociopsychological benefits individuals obtain by consuming sport could be a transformative source for protective factors in the resilience framework (Inoue, Lock, Gillooly, et al., 2022). Although the COVID-19 pandemic has reduced the number of live sporting events at the regional, national, and international levels, sport media has provided consumption opportunities in socially restrictive situations during the pandemic (Goldman & Hedlund, 2020). Thus, it is important to understand how sport media consumption could act as a protective factor for resilience. However, not all individuals have equal opportunities to access sport media and obtain the associated benefits when facing adverse events due to differences in risk exposure caused by structural inequalities related to social class (Kim & Bostwick, 2020). Thus, risk exposure by social class needs to be integrated into the resilience process in the context of sport media consumption.

Accordingly, we attempt to examine (a) how sport media consumption interacts with the relationship between the spatially explicit risk of the COVID-19 pandemic and resilience in

affecting subsequent positive and negative psychological outcomes and (b) whether the resilience process, as a structural relationship, differs by social class. We address resilience as an interactive concept representing relative adaptability to regional environmental risk exposure rather than psychological mechanism-based mental well-being or health. In this context, as the degree of risk exposure to COVID-19 differs by region, we not only identify the target areas that are exposed to spatially explicit risks but also include the spatially referenced risks as a regional risk variable in the proposed model using an integrated approach with spatial and aspatial analyses. This approach provides a more spatially explicit parameter estimation for the variables in the study area.

The target population of this study is Korean residents living in regions where spatially explicit risks were identified through spatial analysis. Since the first case of COVID-19 in South Korea in January 2020, despite the government's initial successful outbreak response with the 3T strategy (i.e., Test, Trace, and Treat), total confirmed cases increased rapidly to more than 20,000 by September 2020, which revealed cluster infections (e.g., in Daegu and Seoul)−the concentration of infections in the same area at the same time−by superspreaders as well as in regions with a higher population density (Kang et al., 2021). Thus, the South Korean government implemented a social distancing policy to control COVID-19 dissemination, resulting in limited outdoor time and increased indoor activity time. Given the change in daily life, many Koreans have experienced adverse psychological sequelae (Kim, Kwon et al., 2022). To address the psychiatric burden of the population by enhancing resilience, sport media consumption could offer a resource during limited outside activities. Evidence of the role of sport media consumption in building resilience can shed light on the role of sport as a conduit for recovery during a time of uncertainty that goes beyond economic and business issues.

This study extends the literature on resilience in sport management by demonstrating that sport media consumption serves as a source of protective factors in the resilience process by considering the spatial features of regional risks. Additionally, the findings of this study can provide a strategic basis for implementing individual resilience interventions based on sport media consumption within social classes.

Literature Review

Resilience as a Theoretical Framework

Resilience at the individual level can be conceptualized as the capability of an individual to withstand stress, trauma, and adversity or as a dynamic process of positive adaption to significant adversity (Fletcher & Sarkar, 2012). The mechanisms that trigger resilience may vary significantly depending on their context due to the multidimensional umbrella nature of resilience in describing a range of processes (Garcia-Dia et al., 2013). That is, differences in the contextual operation of resilience stem from whether it is viewed as an outcome or a process. There are two contextual approaches in the resilience literature: (a) outcome-based approaches and (b) process-focused approaches. The outcome-based approach defines resilience in terms of outcomes such as functional capacity, mental health, and social competence in the presence of adversity, referring to specific patterns of functional behavior (Olsson et al., 2003). On the other hand, the process-focused approach defines resilience as a "dynamic process of adaption to a risk setting that involves interaction between a range of risk and protective factors from the individual to the social" (Olsson et al., 2003, p. 2). The process-focused approach proposes that the adaptive capacity of an individual could be influenced by interactions between protective factors and risk factors (Kolar, 2011). Such different perspectives in the distinct resilience approaches arise from how resilience is interpreted and accessed (e.g., a person-environment

interaction) within the contextualized normative criteria. In this study, from the process-focused standpoint, resilience can be interpreted with the interactive concept based on protective factor−risk factor associations.

The availability of psychosocial resources could counteract negative outcomes (Garcia-Dia et al., 2013) by promoting positive adaptation (Bolton et al., 2017). Thus, scholars have acknowledged the contribution of protective factors (also called promotive factors) to resilience (Johns et al., 2018). According to Fergus and Zimmerman (2005), protective factors are classified as assets or resources. Assets are positive attributes of individuals, such as self-esteem and self-efficacy, whereas resources are external positive factors, such as mentors, community organizations, and mental health programs. These assets and resources contribute to offsetting negative outcomes in the context of unfavorable life circumstances (Ungar, 2004). Based on this concept, the protective model of resilience has been widely applied in the resilience literature as a theoretical framework for understanding the role of protective factors (Fergus & Zimmerman, 2005). This model suggests that protective resources and assets can moderate the negative effect of exposure to risk (Ungar, 2004). That is, protective factors play a critical role in reducing or moderating the effect of risk exposure in affecting negative outcomes. Drawing upon the aforementioned concepts of resilience, in this study, we define consumer resilience as an intervention within a consumption experience from a strength-based perspective by incorporating the role of protective factors that interact with the association between risk factors and outcomes.

Spatial Features of COVID-19 as a Risk Factor and Spatial Sampling Approach

The resilience literature has highlighted the identification of significant risk factors at the macro level. The critical concept of resilience is “a relative resistance to environmental risk experiences or the overcoming of stress or adversity” (Rutter, 2006, p. 1). This notion focuses

attention on the variation in individual responses to environmental risks. Given that individual resilience in relation to an environmental hazard may vary, it could be determined by true risk exposure rather than by subjective or perceived risks. Although several adverse events may occur simultaneously in any one area as COVID-19 spreads, the magnitude and significance of risk exposure differ phenomenologically and geographically, even in the same location (Hohl et al., 2020). Specifically, the spatial features of the risk of COVID-19 lead to differences in its severity and timing, resulting in a region exhibiting vastly different experiences in relation to risk exposure (Thomas et al., 2020). In addition, there is considerable variation in social exposure to others with serious illness or who have died due to the pandemic across regions (Sun et al., 2020).

Such spatial features are based on two spatial concepts: (a) spatial heterogeneity and (b) spatial dependence. The spatial heterogeneity of the severity and rate of the spread of infectious diseases such as COVID-19 has been recently reported in epidemiology (Srivastava & Chowell, 2020). The spatial heterogeneity of COVID-19 can result from differences in either (a) the inherent population characteristics of a region based on the spatial aggregation of infected persons through their sociophysical interactions or (b) environmental influences across regions (Sun et al., 2020). As such, the responses of individuals to adversity can vary between and within regions. In this regard, spatial heterogeneity implies that individuals' degrees of risk exposure could differ by location, which leads to individual differences in resilience across a region. In addition, spatial dependence (spatial autocorrelation) is the tendency or presence of self-correlation between one object and other nearby objects in an area. Spatial dependence is a noticeable phenomenon of COVID-19 and indicates that COVID-19 cases and hotspots are spatially correlated within local communities (Hohl et al., 2020). Thus, sociophysical exposure to

the risk of COVID-19 is significantly characterized by global spatial autocorrelation (Xiong et al., 2020), which facilitates the identification of high-risk areas that cannot be explored via traditional investigation.

These spatial features are inherently geographical features. Consequently, spatial sampling considering the spatial heterogeneity and spatial dependence of COVID-19 is crucial not only in the context of selecting a subset of individuals from within a population to assess its characteristics but also when identifying the magnitude of true risk exposure across locations. Simple random sampling without considering spatial features could be biased in relation to estimating parameters across regions. By considering spatial heterogeneity and spatial dependence, spatial sampling allows us to obtain an estimation that is more accurate than conventional sampling, as it considers regional interpolation (Wang et al., 2012). In this study, we addressed the spatial features of the pandemic in the context of sample allocation and inferences regarding true risk across regions.

Sport as a Protective Factor for Resilience

Many attempts have been made to clarify the understanding of resilience in the context of sport management. Based on sport-specific contexts, sport management scholars have given attention to the capacity of sport entities to respond to adversity or risk (Inoue, Lock, Gillooly, et al., 2022; Inoue & Havard, 2015). Most such studies are primarily related to contexts within the domain of sport, such as the responses of community sport clubs to natural disasters (Filo et al., 2015; Wicker et al., 2013), the association between team identification and social well-being through the mediating channel of emotional support (Inoue, Lock, Gillooly, et al., 2022), the types of disaster relief activities provided by sport organizations or athletes (Inoue & Havard, 2015), and athletes' or teams' psychological resilience when coping with adversity (e.g., slumps

or losses) from a sport performance perspective (Galli & Gonzalez, 2015; Fletcher & Sarkar, 2012).

Although previous scholarly efforts have contributed to the extant knowledge of resilience in the aftermath of disasters, the existing research overlooks the potential of sport to be a protective factor in the resilience process when individuals face adversity. Sport can serve as not only a resource in a set of community capital that includes assets and resources but also a conduit for transmitting psychosocial benefits to individuals and communities (Kim, Kim, et al., 2021). In this context, sport consumption experiences can play a vital role in the resilience process during unusual times. According to Wann (2006), spectator sport can contribute to sociopsychological health through temporary and enduring social connections. Such sociopsychological benefits tend to depend on team success or team identification (Inoue, Lock, Sato, et al., 2021). However, accumulating evidence suggests that individuals who are highly involved in sport are likely to experience reduced negative emotions during these times (Kim & James, 2019; Wann et al., 2011).

In the context of media consumption, sport media viewers can watch a game in a group or individually (Gantz, 2013). Despite the absence of sociophysical encounters, watching sport alone may provide a sense of connectedness through identification with sport teams (Wann et al., 2011). Hence, sport consumption experiences have the potential to deliver a range of psychosocial benefits, evoking self-esteem, a sense of achievement, and meaningfulness (Doyle 2013; McDonald et al., 2002) within individuals exposed to adverse conditions. These benefits are associated with the core components of resilience, including self-control, emotional regulation (Blair et al., 2005), and hardiness (Johnson & Wood, 2017). That is, psychosocial

resources provided by sport services of sport organizations can act as a protective factor to enhance the individual capacity to deal with adversities (Inoue, Lock, Gillooly, et al., 2022).

Based on the above discussion, we combine conceptual perspectives from emerging research on the spatially explicit risk of COVID-19 and sport media consumption in the context of the resilience process. To investigate the potential of sport media consumption as a protective factor in adverse situations, we developed a conceptual research model (Figure 1).

[Insert Figure 1 here]

In this model, we propose that sport media consumption can serve as a protective factor for resilience due to its buffering effect on subsequent negative outcomes during times of true adversity when the spatially explicit risks of COVID-19 affect a region. The increased level of resilience, in turn, allows individuals to experience a positive state of well-being, as indicated by increased positive affect and reduced negative affect (Watson et al., 1988). Accordingly, we formally hypothesize the following:

Hypothesis 1: Resilience mediates the effect of the spatially explicit risks of COVID-19 on reduced positive affect (H1a) and on increased negative affect (H1b).

Hypothesis 2: Sport media consumption alleviates the negative effect of the spatially explicit risks of COVID-19 on resilience, which in turn increases positive affect and reduces negative affect.

Social Class During the COVID-19 Pandemic

Given the change in the socioeconomic environment, the high-risk conditions created by COVID-19 are significantly correlated with negative outcomes. Moreover, the degrees to which different individuals are exposed to the high-risk situations caused by the pandemic are unequal (Kim & Bostwick, 2020). For instance, individuals at the bottom of social hierarchies (e.g.,

hierarchies of educational attainment, wealth, and occupation) are more likely to be exposed to COVID-19 than those in higher social classes (Lynch, 2020). Thus, socioeconomic standing, which is based on economic, social, and geographic characteristics, can determine not only the degree of an individual's exposure to COVID-19 but also his or her ability to cope with, respond to, and recover from its hazards (Kim & Bostwick, 2020). In the context of sport consumption, a social class can be an important indicator that has a direct relationship with the level of consumer involvement toward spectator sport organizations and events (Andersen & Bakken, 2019; Wilson, 2002). That is, the upper class is more likely to have the opportunity for sport consumption because of their greater economic, social, and cultural resources or capital, resulting in more involvement in sport consumption (Scheeder et al., 2005). Given that COVID-19 exacerbates social inequalities from a social, economic, and health standpoint, the gap between the rich and poor in socioeconomic capital is widening among social classes. Although sport media has provided the opportunity for sport consumption within a socially constrained supply of sport, the consumption and level of access to sport media cannot be equal because of the instrumental and financial challenges caused by the deepening gap of social classes during the pandemic. Thus, we hypothesize the following:

> *Hypothesis 3*: Sport media consumption influences consumer resilience to the negative effects of the spatially explicit risks of COVID-19 more strongly for the upper social class than for the lower social class.

Methods

Data Collection

We obtained a spatially referenced COVID-19 dataset from the Korea Centers for Disease Control and Prevention (KCDC) to assess the spatial validity and dependence of

COVID-19 risks. We chose South Korea as our study context for the following reasons: (a) a relatively small country area that is useful to identify spatially explicit risks of COVID-19 efficiently; (b) the early return of major professional sport leagues (e.g., Korean Baseball Organization, K-League, and Korean Basketball League) compared to that of other countries; and (c) the increase in sport media consumption due to the prolonged social distancing policy (Yoo, 2020; Steven Impey, 2020).

Before we recruited study participants, academic experts specializing in sport management and resilience (two professors and one doctoral student) reviewed the clarity and appropriateness of the initial instruments, using a back-translation method (Brislin, 1986) to prevent comprehension problems (English version to Korean version). In this study, the target population was Korean adult residents living in regions exposed to the spatially explicit risks of COVID-19 as identified through exploratory spatial data analysis (ESDA). We recruited target participants using virtual snowball sampling via social media (Facebook), a mobile group chat app (KakaoTalk groups), online communities in online sites (Naver), and a coworker network (Korean sport industry institution) in July and August 2020. To ensure participants' demographic diversities, the initial set of participants should be varied. Thus, we selected a range of targeted virtual networking sources, considering members of different demographics, generations, and regions, and asked members in the selected virtual platform if they are living in the target regions and could share the online survey link (Qualtrics) with anyone else meeting the criteria. A total of 501 participants accessed the link to the survey questionnaire. Of them, 421 valid responses (84%) were used in this study. This sample size exceeded the preferred sample size of 340 to achieve an item-to-response ratio of 1:10 (Hair et al., 2005). Our sample consisted of 215 males (51%) and 206 females (49%); the average age of the participants was 40.7 years, and their

average monthly household income was KRW 4,535,000 (approximately USD 3,710). The characteristics of the sample were similar to those of the general population according to the latest Korean census data from 2019 regarding gender (male, 50.1% and female, 49.9%), average age (42.1 years), and average monthly household income (KRW 4,284,000; approximately USD 3,504) (Korean Statistical Information Service, 2020).

Measures

In this study, the spatially explicit risks of COVID-19 (risk factors) were regarded as a regional-level variable, whereas resilience, sport media consumption (protective factor), and positive and negative affect (outcomes) were examined as individual-level variables. To identify the spatially explicit risks of COVID-19, spatially referenced data on the prevalence of COVID-19 from January to August in 2020 (57 weeks) were employed, including data on case numbers, districts, provinces, dates of diagnosis, age, sex, and regional populations. Based on Wen et al.'s (2010) study, we developed a spatially heterogeneous population-oriented risk intensity index for COVID-19 to measure the severity and magnitude of COVID-19 cases across 259 districts (Si/Gun/Gu[1] in this study), namely, the average number of COVID-19 cases during the sequential weeks corresponding to each regional pandemic wave that continued for more than two weeks. Each pandemic wave was equal to the sum of the waves—namely, confirmed COVID-19 cases—in each region that occurred over a given week. We employed the estimated risk intensity index not only to identify the local hot spots of exposure risk but also to code the spatially explicit risk of each participant, matching their residence in the test of the proposed model (e.g., the spatial risk factor of participants living in Seoul uses a spatially explicit risk index for Seoul). By comparing self-reported addresses with geolocation information such as latitude and longitude via the Qualtrics questionnaire, we verified the accuracy and authenticity

of participants' residential locations. Figure 2 shows the spatial distribution of the spatially explicit risks of COVID-19 in South Korea, ranging from 0 to 7,090 per 100,000 individuals.

[Insert Figure 2 here]

Based on the sport communication literature (e.g., Devlin & Brown-Devlin, 2017; Lim et al., 2010), the participants' sport media consumption was measured by asking them how many hours per week they consumed sport media. In the survey, sport media consumption was defined as the aggregate use of a range of media platforms, such as television and streamed digital media (internet), with sport-related content, including televised games and supplemental content (e.g., live games, pre- and post-game analyses, highlights, and news coverage). Our measure of sport media consumption included only passive media consumption to provide a reliable measure, as active second-screen use (e.g., posting on Facebook or Twitter) could inaccurately inflate the time spent consuming sport media (Devlin & Brown-Devlin, 2017).

To measure resilience, we used the Connor and Davidson Resilience Scale (CD-RISC), which comprises 25 items measured on a 5-point scale (1 = *not true at all*, 5 = *true nearly all the time*) and assesses resilience as a sort of adaptive capacity encompassing hardiness, adaptability, meaningfulness, optimism, regulation of emotion and cognition, and self-efficacy (Connor & Davidson, 2003). The CD-RISC has been employed in a range of disciplines with clinical and nonclinical populations to measure psychological resources for moderating psychiatric symptoms (Burns & Anstey, 2010).

We measured emotional responses—the positive and negative affect experienced when facing adversity—using the Positive Affect and Negative Affect Schedule (PANAS: Watson et al., 1988). The PANAS consists of two subscales (positive and negative) that represent each of the 10 affective adjectives on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*extremely*).

The MacArthur Scale of Subjective Social Status (SSS) was employed to measure the participants' perceived social stratification, which represented a cognitive average of their objective socioeconomic status (SES), including income, occupation, and educational level (Adler et al., 2000). This scale asked the participants to indicate their socioeconomic standing on a 10-rung social ladder, which was also based on age, occupation, income, and education. As a measure, the SSS reflects not only current social standing or social class but also a cumulative assessment of resources, opportunities, and past life opportunities, including future SES prospects (Singh-Manoux et al., 2003). Thus, the SSS captures more subtle aspects of social stratification that are not accessible through classical objective SES indices (Navarro-Carrillo et al., 2020). For control purposes, items related to demographics and COVID-19 situational factors were included (e.g., age, gender, income, health status, perceived exposure and infection, and individual and family positive tests).

Data Analysis

We performed data analysis in three steps via ArcGIS (version 10.8), R (version 4.1.0), and Mplus (version 8.6). First, we explored the spatial distributional patterns of the COVID-19 epidemic to measure spatially explicit risk. ESDA with Global Moran's I statistic (Park et al., 2019) was used to estimate the spatial patterns of the COVID-19 epidemic in Korea. Global Moran's I statistic is a measure of spatial clustering (spatial autocorrelation) in the context of Tobler's First Law of Geography (Park et al., 2020). Global Moran's I was measured as follows:

$$(1)\ \text{Global Moran's I} = \frac{N}{\sum_i \sum_j w_{ij}} \frac{\sum_i \sum_j w_{ij} w_{ij} (x_i - \mu)(x_j - \mu)}{\sum_i (x_i - \mu)^2}$$

where w_{ij} is a matrix of weights such that $w_{ij} = 1$ if district units (in this study, Si/Gun/Gu, i and j) are adjacent—otherwise, $w_{ij} = 0$; x_i is the risk index of the COVID-19 epidemic in district i (in this case, Si/Gun/Gu); x_j is the risk index of the COVID-19 epidemic in district j; μ is the

average risk index of the COVID-19 epidemic in Korea; and *N* is the total risk index of the examined districts (in this case, 259).

Although Global Moran's I test indicates the existence of spatial clusters, it cannot provide the location and type of spatial clusters (Kim & Kim, 2021). Thus, we employed local indicators for spatial association (LISA: Local Moran's I) analysis. LISA is measured as follows:

$$(2)\ \text{Local Moran's } I_i = \frac{(x_i - \mu)}{m_2} \sum_i w_{ij}(x_j - \mu)$$

where m_2 is calculated as $\sum_i (x_i - \mu)^2 / N$. The results of the LISA analysis are displayed as a LISA cluster map, which shows information regarding the types of spatial clusters, including (a) high–high clusters (hot spots), (b) high–low clusters (spatial outliers), (c) low–high clusters (spatial outliers), (d) low–low clusters (cold spots), and (e) nonsignificant clusters (Anselin, 1995).

After identifying significant clusters of the spatial risk index, the hot spots (high-high clusters) were used as the target area for individual-level data collection. Next, we employed a multigroup structural equation model (multigroup SEM) to examine the hypothesized model, based on a step-by-step procedure. In the model, the calculated regional risk intensity index across hot spots was used as a variable to represent the spatial risk of participants through individual matching of geolocation data with self-reported addresses. First, efforts to address common method bias (CMB; Podsakodd et al., 2012) were made via statistical controls using a regression-based marker (Siemsen et al., 2010) and unmeasured latent method construct technique (Podsakodd et al., 2012). The results indicated that the presence of common method variance did not bias the subsequent analyses or results. Thus, we examined the proposed model in the next step.

Second, the result obtained using Mardia's coefficient of multivariate skewness and kurtosis indicated a violation of multivariate normality (527.07, $p < .05$). Thus, Satorra and

Bentler's (1994) maximum likelihood mean adjusted estimators were employed in the subsequent analysis. Next, we examined the higher-order construct (i.e., resilience) in a separate measurement model using a two-step approach (Brown, 2015). During this process, seven items with factor loadings less than .50 were eliminated (Hair et al., 2005) from the original datasets, and 37 items were employed in the final model. After the measurement model was finalized, a confirmatory factor analysis (CFA) was performed to validate the full measurement model using a comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Once the measurement model was considered acceptable, a hypothesized structural model was tested using the bootstrapping technique with 10,000 interactions to examine the mediating effect of resilience. Finally, the structural paths of the two groups created by a median split procedure for the SSS scores (high social class vs. low social class) were compared via a multigroup SEM. Before estimating the differences across the groups in terms of the hypothesized paths, we tested for measurement invariance based on Byrne's (2012) suggestion. Figure 3 shows the methodological flow chart.

[Insert Figure 3 here]

Results

Spatial Patterns of COVID-19 Risks

The results of the ESDA indicated that the spatial pattern of COVID-19 risk across the examined regions was clustered. The Global Moran's I statistic (0.2) was statistically significant at the 0.05 level, indicating the existence of spatial clusters of COVID-19 risk. A significant, positive value of Moran's I indicates that variable values at a specific location are clustered (Anselin, 1995). Thus, the Moran's I result revealed spatial clusters of COVID-19 risk under the sampling density, indicating non-random spatial patterns of COVID-19 risk within

administrative boundaries (e.g., Si/Gun/Gu in this study). That is, spatial autocorrelation of COVID-19 risk was found in neighboring regions with similar (high or low) levels of COVID-19 risk.

The location and type of spatial COVID-19 risk clusters are visualized in Figure 4. Twenty-one (7.7%) of the 259 administrative districts (Si/Gun/Gu) showed statistical significance in the LISA analysis ($p < .05$). Specifically, several metropolitan districts in Seoul (e.g., Gangseo-Gu, Seocho-Gu, Gangnam-Gu, Gangdong-Gu, Gwangjin-Gu, and Eunpyeong-Gu), some cities in Gyeonggi Province (e.g., Anyang-Si, Gwangju-Si, Namyangju-Si, Paju-Si, Seongam-Si, Hwaseong-Si, and Yongin-Si), and the Daegu-metropolitan area (e.g., Buk-Gu, Dalseo-Gu, Dong-Gu, Jung-Gu, Nam-Gu, Seo-Gu, Suseong-Gu, and Gyeongsan-Si) showed significant COVID-19 hot spots (high-high clusters). These results indicated how and where a given region was exposed to the spatially explicit risk of COVID-19 (i.e., a total of 21 districts in 3 provinces).

[Insert Figure 4 here]

Global Measurement Model Estimation

After identifying the spatial patterns and clustering of COVID-19 risk, we examined the hypothesized model, controlling for COVID-19-related situational factors and demographics. A global measurement model, which incorporated all the items, showed an acceptable model fit (S-B $\chi 2/df = 781.312/529 = 1.47$. CFI = .93, SRMR = .05, RMSEA = .04; Mackenzie et al., 2011). Regarding the second-order constructs (resilience), the factor loadings of the first constructs (e.g., hardiness, adaptability, and meaningfulness) were greater than .70. With regard to the reliability and construct validity of both the first- and second-order constructs, the composite reliabilities (CR) exceeded the cutoff threshold of .70, and all the average variance extracted

(AVE) values of the constructs were greater than .50. In addition, the squared pairwise correlations of both the first and second constructs were less than their AVE, and the correlation between the first and second constructs did not exceed the .85 threshold (Kline, 2005). These results indicated that there were no severe singularity or multicollinearity issues. Table 1 presents all the AVE estimates, CRs, and correlations.

[Insert Table 1 here]

Hypothesized Structural Model Analysis

The hypothesized structural model showed an acceptable fit to the data (S-B χ^2/df = 696.151/496 = 1.40, $p < .001$, CFI = .94, SRMR = .05, RMSEA = .04). The model consisted of direct relationships among constructs, including the paths from the spatially explicit risk of COVID-19 to resilience (β = -.36, $p < .01$), the spatially explicit risk of COVID-19 to positive affect (β = .06, $p = .28$), the spatially explicit risk of COVID-19 to negative affect (β = -.14, $p = .06$), resilience to positive affect (β = .35, $p < .01$), and resilience to negative affect (β = -.25, $p < .01$). Given the results regarding nonsignificant direct paths (e.g., the spatially explicit risk of COVID-19 to positive affect and negative affect), the full mediation model with bootstrapping was selected as the final model (S-B χ^2/df = 701.20/498 = 1.40, $p < .001$, CFI = .94, SRMR = .05, RMSEA = .04) to examine whether resilience mediates the relationship between the spatially explicit risk of COVID-19 and both positive and negative affect (Hypothesis 1). In support of Hypothesis 1, as shown in Figure 5, the spatially explicit risks of COVID-19 negatively influenced resilience (β = -.36, $p < .05$), which was positively associated with positive affect (β = .34, $p < .01$) and negatively associated with negative affect (β = -.21, $p < .01$). That is, resilience fully mediated the effect of spatially explicit risks of COVID-19 on reduced positive affect (β = -.12, 95% CI [-.29, -.03]) and increased negative affect (β = .06, 95% CI [.01, .19]).

These results supported Hypotheses 1a and 1b. Regarding Hypothesis 2 (the moderating effect of sport media consumption), the results showed a significant negative effect of the latent interaction term on resilience ($\beta = -.27$, $p < .01$). This finding indicated that sport media consumption alleviated the negative effect of the spatially explicit risks of COVID-19 on resilience, thus supporting Hypothesis 2.

[Insert Figure 5 here]

To test Hypothesis 3, we examined the latent mean differences and structural paths between social class groups (high vs. low social class) by using multigroup SEM based on Kaplan's (2009) suggestion. In the unconstrained (baseline) model for the multigroup SEM with bootstrapping, the overall goodness-of-fit indices were satisfactory (S-B χ^2/df = 1329.89/990 = 1.34, $p < .001$, CFI = .95, SRMR = .06, RMSEA = .04). Table 2 presents the results regarding measurement invariance. Collectively, the configural invariance model (unconstrained model), metric invariance model (constrained factor loadings), and scalar invariance model all demonstrated a good fit to the data. In addition, the change in the CFI value was less than the threshold of .01 (Cheung & Rensvold, 2002). The scalar invariance model (constrained intercepts) also showed no substantial difference in terms of the indicator intercepts across the groups (ΔCFI = .001). Given the full scalar invariance, we compared the latent mean differences across the groups. The results revealed that for the high social class group, the latent means of resilience (mean difference = .388, *SE* = .12, $p < .001$, CR = 3.14, Cohen's *d* = .02) and positive affect (mean difference = .297, *SE* = .09, $p < .001$, CR = 3.15, Cohen's *d* = .03) were significantly higher than those of the low social class group.

[Insert Table 2 here]

With respect to differences in the path coefficients across the groups in the structural model, we conducted a chi-square difference test. The change in the χ^2 values of the unconstrained and constrained models was significant ($\Delta \chi^2 = 51.32$, $p < .001$), indicating that a difference existed between the groups in the structural model. Thus, a subsequent group comparison was justified. Although a significant difference in the path coefficients across the groups was found only between resilience and negative affect ($\beta_{\text{high social class}} = -.31$; $\beta_{\text{low social class}} = .04$; $p < .05$), different coefficient paths of individual groups were observed in the significance test. For the high social class group, the path coefficients from the spatially explicit risk of COVID-19 to resilience ($\beta = -.61$, $p < .01$), resilience to positive affect ($\beta = .29$, $p < .01$), and resilience to negative affect ($\beta = -.31$, $p < .01$) were significant, as was the moderating effect of sport media viewing on the relationship between the spatially explicit risk of COVID-19 and resilience ($\beta = -.37$, $p < .05$). However, for the low social class group, only the path coefficients between the spatially explicit risk of COVID-19 and resilience ($\beta = -.53$, $p < .05$) and between resilience and positive affect ($\beta = .27$, $p < .05$) were significant (Table 3). The results collectively indicated that, in line with our prediction in Hypothesis 3, individuals in the upper social class (compared to those in the lower social class) experienced a more pronounced effect of sport media consumption on mitigating the negative effect of the spatially explicit risks of COVID-19 on resilience associated with increased positive affect and reduced negative affect.

[Insert Table 3 here]

Discussion

This research aimed to uncover the role of sport media consumption as a potential protective factor for consumer resilience by investigating how the spatially explicit risks of COVID-19 influence resilience and its subsequent outcomes through the moderating channels of

sport media consumption and social class. To achieve this purpose, a novel integrated approach using spatial and aspatial analyses, including a spatial estimation of COVID-19 risk and a multigroup SEM, was employed. Unlike previous studies on psychological resources for resilience or well-being after hazards (e.g., Fasey et al., 2021; Fletcher & Sarkar, 2012), this study extended the resilience framework in the context of sport management by identifying resilience mechanisms underlying the effect of sport media consumption as a protective factor in the resilience process, including spatially explicit risks, resilience, and positive and negative affect, depending on social class.

First, using ESDA with a spatially visualized technique, we identified spatial clusters of COVID-19 risk as a significant risk factor across the examined regions. Second, a multigroup SEM was employed to analyze spatial information, indicating that the relationship between the spatially explicit risks of COVID-19 and resilience could be alleviated by sport media consumption. However, the effect of sport media consumption on resilience to the spatially explicit risks of COVID-19 was shown to vary according to social class. The findings of this study can provide empirical evidence regarding how sport can contribute to the community during difficult times in ways beyond business aspects. Further implications associated with resilience in the given context are discussed in the following sections.

Theoretical and Methodological Implications

Previous resilience research in sport management has mainly identified critical resources or factors affecting the recovery of sport organizations or their stakeholders from the aftereffects of adverse events (Filo et al., 2015; Wicker et al., 2013). Given the dramatic change in the sport industry environment due to the impact of COVID-19, increasing attention has been given to the resilience of sport consumers in terms of the supply and demand of spectator sport in the context

of disaster management (Nosal & Lopez-Gonzales, 2021). For example, researchers discussed the response of sport bettors to suspensions of the sport gaming marketplace (Miles & Shipway, 2020), fan engagement during the development of various sport media platforms (Majumdar & Naha, 2020), and fan attention toward small leagues during COVID-19 (Weimar et al., 2021). By examining the effect of sport media consumption on resilience considering spatially explicit risks and social classes, this research not only extends research on the increased demand for more sport content by the COVID-19 lockdown but also responds to the call for research on the sport industry from a broader angle, including concerns regarding business, communities, and society (Mastromartino et al., 2020).

This study is the first attempt to demonstrate the resilience process, including the spatially explicit risks of COVID-19 and its subsequent outcomes within social classes, in the context of sport consumption when facing adversity. First, this empirical study supported our theorizing and hypotheses regarding sport media consumption as a resource to cope with adversity in the resilience process. The findings of this study indicated that resilience plays a vital role in promoting positive affect and reducing negative affect. Through the mediating role of resilience, sport media consumption can serve as a protective factor for resilience damaged by the spatially explicit risks of COVID-19. This implies that sport media consumption constitutes a protective factor associated with reduced vulnerability to spatially explicit risks of COVID-19.

From a resilience standpoint, this study demonstrated that sport media consumers are likely to experience an attenuated negative effect of the spatially explicit risks of COVID-19. This might be due to the sociopsychological benefits they receive from sport consumption (e.g., social cohesion, a sense of achievement, and psychological well-being; Jang et al., 2017), which are associated with individual resilience composed of hardiness, optimism, and emotional

regulation (Connor & Davidson, 2003). In an adverse situation, sport media contexts created by sport organizations could also satisfy the needs of individuals and communities, providing sociopsychological resources that mitigate the negative effect of adversity (Inoue, Lock, Gillooly, et al., 2022). That is, sport organizations could provide individuals and communities with protective resources for resilience through a range of sport media contexts in adverse times. Thus, the present findings extended the related literature by indicating that sport media consumption can not only function as a buffer that mitigates spatially explicit risk but also promote consumer resilience in times of crisis.

Second, this empirical study showed that the spatial distribution of COVID-19 risk was unstable and autocorrelated across regions, implying that simple measures or risk estimation using random sampling across regions without considering spatial features cannot represent the true magnitude of this risk (Hohl et al., 2020). The effect of resilience may vary depending on the level of risk exposure. For example, for individuals surrounded by insignificant risks (or low-level risks), resilience is likely to be dormant in negative situations or environments. Conversely, for individuals with significant risk exposure to adversity (high-level risk), resilience can act as a buffer. That is, identifying true risk plays a critical role in the estimation of the resilience process. In this context, the findings of our spatial analysis implied that research regarding sport–resilience relations needs to consider the configuration of individual spatial attributes or features to accurately reflect the degree or level of risk while avoiding bias related to overpredicted or underestimated risks during pandemics or disasters.

Next, this research revealed that consumers from lower social classes may not receive the same level of benefits from sport media consumption as a protective factor for their resilience as their higher social-class counterparts. This finding implies that the effect of sport media

consumption on resilience could be either diluted or hindered depending on an individual's social class; thus, the function of resilience might not manifest equally in all groups. This effect might be aggravated by inequitable access to paid media to view sports because different forms of media use are associated with differences in social class status (Yates & Lockley, 2018). In this context, vulnerability to COVID-19 as a social construct could determine not only the influence of protective factors (e.g., sport media consumption) on resilience but also the capacity to deal with adversity. As such, when facing adversity, the level of social class could be a marker of where the resilience associated with sport media consumption is subjected to processes of exclusion. Research on the impact of COVID-19 has shown that the negative impact of the pandemic has been greater for people of lower socioeconomic classes (Furceri et al., 2020; Kim & Bostwick, 2020).

In South Korea, the COVID-19 pandemic has also placed a tremendous burden on lower socioeconomic classes across economic, educational, and social dimensions, raising concerns about the possibility that both preexisting and current social inequalities have lowered resilience and increased disadvantages, especially among the lower social classes most impacted by COVID-19. Such social inequality could be more evident in spatial patterns because residential location determines the quality of the living environment in terms of the advantages or disadvantages arising from access to resources to satisfy needs (Veblen & Mills, 2017). Thus, socio-spatial stratification and inequality in South Korea could influence individuals' capacities to cope with adversity due to unfairly distributed resources, opportunities, and powers across different regions (e.g., within Seoul vs. outside Seoul). In addition, the pandemic could introduce new inequalities most starkly in the consumption area through preexisting socioeconomic inequality in South Korea. As a kind of habitus, sport consumption could be related to

socioeconomic stratification, revealing differences in lifestyles among different social classes (Bourdieu, 1984). In this context, the pandemic may produce a new kind of class divide, such as that dividing protected and unprotected groups, which could promote or discourage sport consumption in the resilience process.

Finally, from a methodological standpoint, this study applied a novel integrated approach (e.g., spatial and aspatial analysis) at the intersection of interdisciplinary research, including sport management and geography. This research innovation contributes to a new methodological approach for the use of spatial data within the proposed model tests. Spatial analytics highlights the identification of spatial features in making inferences regarding population estimates, providing specific and appropriate location-based information to make optimal inferences, measuring the distribution of observations precisely, and sampling optimally across regions (Wang et al., 2012). In this regard, spatial statistical inferences have been widely applied in a range of studies in terms of spatial heterogeneity (Wang et al., 2010), spatial autocorrelation (Brown et al., 2017), and spatial distribution (Kumar, 2007) because of the optimized spatial sampling of targets and inferences that cannot be determined through nonspatial analyses using traditional statistics (Wang et al., 2012). Given the spatial features of COVID-19 across regions, the integrated approach in this study enabled us not only to measure spatially explicit risks but also to incorporate our results into the resilience process model within the context of sport media consumption. Compared to traditional methods, which use subjective data directly, the key significance of this study is that it can not only address the question of "where" and "to what degree levels exist" to facilitate accurate inferences of risk with explicit locations based on observations (i.e., regions truly exposed to risk) but also estimate parameters in the resilience process using spatial features rather than those from single sources or randomly targeted regions.

Managerial Implications

In the face of the COVID-19 pandemic and other future crises, enhancing resilience to cope with risks is a critical social agenda. Specifically, mental health morbidity and mortality have been critical issues for communities. They are caused by diseases and mitigation activities such as stay-at-home orders, social distancing, and lockdowns, which are intended to reduce the negative impact of COVID-19. In this respect, serious social issues have been reported during COVID-19 restriction periods (e.g., depression, interpersonal conflict, and boredom; Cohen et al., 2020). In these unprecedented times, sport media consumption can play a role in the resilience process. For example, sport organizations and media companies can develop sport brand communities for sport consumers through sport media platforms that fulfill an individual's sociopsychological needs via advanced technology devices (e.g., mobile apps and social media; Su et al., in press). Such interactions via technical devices can alleviate the negative effects of social isolation by activating resilience via social encounters and perceived intimacy. Within such a technical communication process, individuals' social classes should be considered in the resilience process. Indeed, for an individual of a lower social class, an uneven distribution of risk exposure and a nonsignificant association between sport consumption and resilience can be created. Thus, an elaborate resilience strategy is needed to enhance the resilience of individuals of lower social classes. To accomplish this, the shift (e.g., trying to find positives in a difficult situation by adjusting the meaning of stressors)-and-persist (e.g., staying optimistic about the future) approach may be more effective for enhancing resilience. Simultaneously, sport entities could benefit from positioning themselves as promoters of resilience to cope with adversity.

From the perspective of resilience policy for public health, local governments and health authorities should consider spatially heterogeneous risk levels to prioritize policy using sport

resources to cope with the current crisis and prepare for future adversity. As not all regions have the same level of outbreak response (e.g., social distancing and quarantine), the needs of sport consumers could differ, depending on the region's risk level. For example, virtual sport instruction, trams, and competition could be made more available for residents living in regions with high spatial risk because of their increased indoor activity time from social distancing. In contrast, GPS-based media platform services or location information systems to locate safe places for outdoor sports could be useful for residents in regions with lower spatial risk, which have more flexible social distancing standards. Thus, the use of regional-based strategies to customize sport resource development, considering outbreak response levels in a region, would be efficient for enhancing resilience in communities.

Limitations and Directions for Future Research

This study sheds light on the unexamined area of the association between COVID-19 and resilience in the sport management context. Despite the existing empirical contributions to the knowledge of resilience in the sport context, our findings may lack generalizability to other contexts (e.g., Western countries or other races). In addition, the cross-sectional design of this study could have made ascertaining the causal relationship difficult. The mediation analysis, which was based on a cross-sectional approach, may have also yielded biased estimations. Thus, further research examining a range of contexts and using longitudinal or experimental designs based on rigorous data collection and procedures would provide a more detailed understanding of the resilience process in the sport context. In addition, the inclusion of additional psychosocial variables in the sport−resilience model, such as sport involvement and social identification, could complement the findings of this study.

Finally, although this study did not measure the level of access to sport media content

(e.g., paid or unpaid subscriptions), given the potential influence of accessing sport media on resilience during or following a crisis, further empirical studies may wish to control for media accessibility in the proposed model or to test differences in resilience between lower and upper social classes, depending on the level of sport media accessibility.

Conclusion

Public health authorities are concerned about the possibility that other epidemics similar to COVID-19 may recur every few years because of environmental changes (Smitham & Glassman, 2021). In this study, we provided empirical evidence that sport media consumption contributes to enhancing resilience to cope with adversity in spatially explicit risks of COVID-19. Moreover, the resilience process may differ by the consumer's social class. The current findings, as well as the theoretical and managerial implications drawn from the findings, can catalyze and contribute to further discussion on sport−resilience relations in sport management and advance the discipline's understanding of the societal role of sport in times of adversity.

Note

[1]Si/Gun/Gu are municipal-level divisions in South Korea. Specifically, Si/Gun/Gu are equivalent to City, County, and District in the US, respectively (e.g., Si: municipal cities; Gun: counties; and Gu: cities' wards).

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Table 1. Measurement properties of the items

Scale items	Mean	*SD*	α	β	AVE	CR	1(1)	2(2)	3(3)	4(4)	5(5)	6(6)
1. Resilience			.90		.88	.97						
(1) Hardiness	5.34	.91		.89								
(2) Coping	5.35	.87		.91			(.79**)					
(3) Adaptability	5.19	1.01		.94			(.67**)	(.67**)				
(4) Meaningfulness	4.94	.90		.92			(.71**)	(.64**)	(.61**)			
(5) Optimism	5.23	1.10		.91			(.65**)	(.69**)	(.59**)	(.56**)		
(6) Emotion regulation	4.96	1.17		.87			(.62**)	(.63**)	(.53**)	(.51**)	(.59**)	
(7) Self-efficacy	5.54	.97		.91			(.77**)	(.73**)	(.56**)	(.61**)	(.67**)	(.61**)
2. Positive affect			.87		.89	.96	.31**					
(1) Excited	2.91	.96		.71								
(2) Strong	3.01	.93		.77			(.48**)					
(3) Enthusiastic	3.34	1.01		.71			(.53**)	(.54**)				
(4) Proud	3.16	1.05		.70			(.38**)	(.42**)	(.58**)			
(5) Alert	2.94	.95		.80			(.51**)	(.47**)	(.58**)	(.45**)		
(6) Inspired	3.20	1.07		.67			(.49**)	(.48**)	(.62**)	(.57**)	(.54**)	
(7) Active	3.21	.94		.60			(.42**)	(.47**)	(.56**)	(.51**)	(.52**)	(.69**)
3. Negative affect			.86		.85	.95	-.16**	.21**				
(1) Guilty	2.42	1.14		.73								
(2) Scared	2.45	1.12		.67			(.49**)					
(3) Hostile	2.49	1.01		.61			(.42**)	(.67**)				
(4) Ashamed	2.42	1.01		.60			(.45**)	(.49**)	(.49**)			
(5) Nervous	2.93	1.10		.71			(.37**)	(.37**)	(.46**)	(.42**)		
(6) Jittery	2.96	1.12		.77			(.38**)	(.51**)	(.42**)	(.45**)	(.48**)	
(7) Afraid	2.71	1.17		.60			(.45**)	(.59**)	(.52**)	(.41**)	(.42**)	(.65**)
4. COVID-19 risks	70.45	117.98					-.14**	.02	-.12			

Note. SD: standard deviation, AVE: average variance extracted, CR: construct reliability, **p<.001.

Table 2. The results of the measurement invariance test of the proposed research model

	χ^2	*df*	CFI	RMSEA (90% CI)	Differences in CFI
Configural invariance	584.56	23	.931	.040 (.034-.045)	
Metric invariance	612.17	29	.927	.040 (.034-.045)	.004
Scalar invariance	657.75	40	.925	.042 (.037-.047)	.002

Table 3. Structural path coefficients between constructs in the social class groups

	High	Low	$\Delta \chi^2$	Δ *P* values
COVID-19 cases → Resilience	-.61**	-.53*	1.04	.30
Resilience → Positive affect	.29**	.27*	.67	.41
Resilience → Negative affect	-.31**	.04	4.62	.03
Interaction effect of sport media	-.37**	-.07	2.97	.08

Note. *p<.05, **p<.001.

Figure 1. Research model

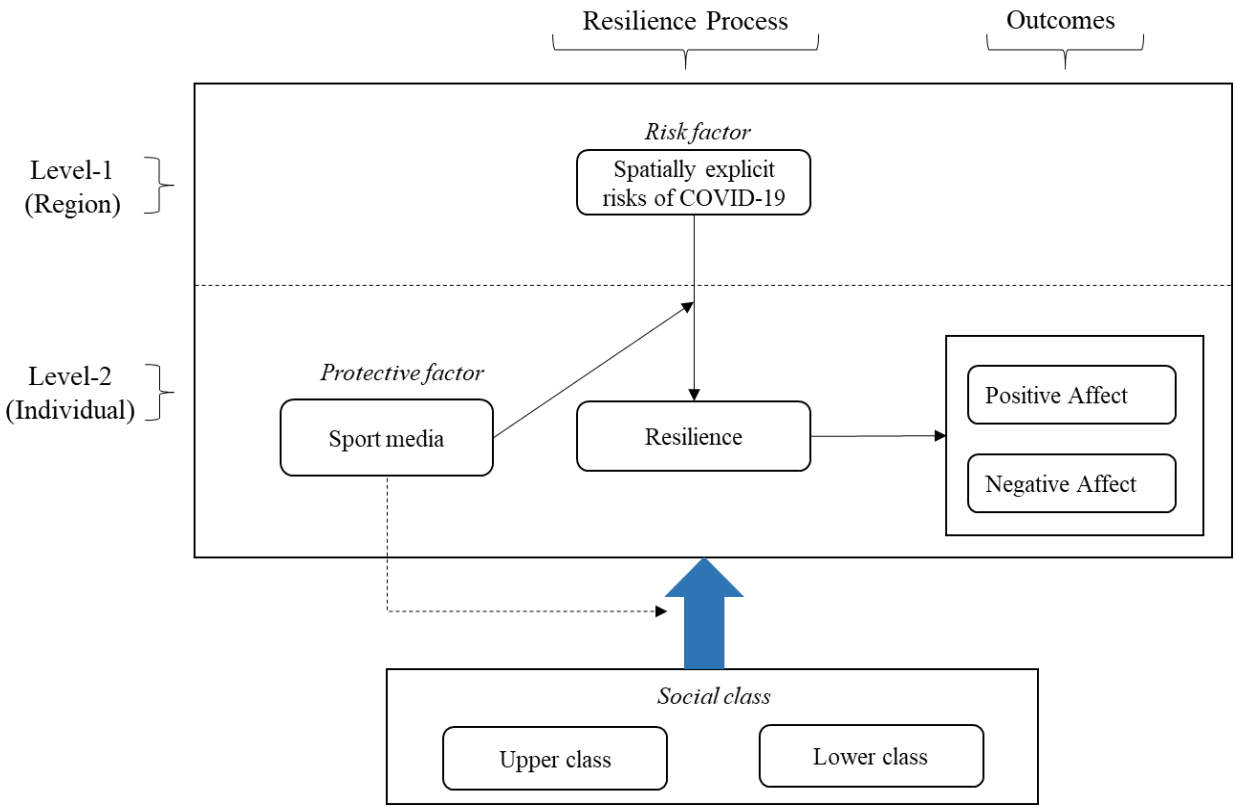


Figure 2. The spatial distribution of the COVID-19 cases in South Korea

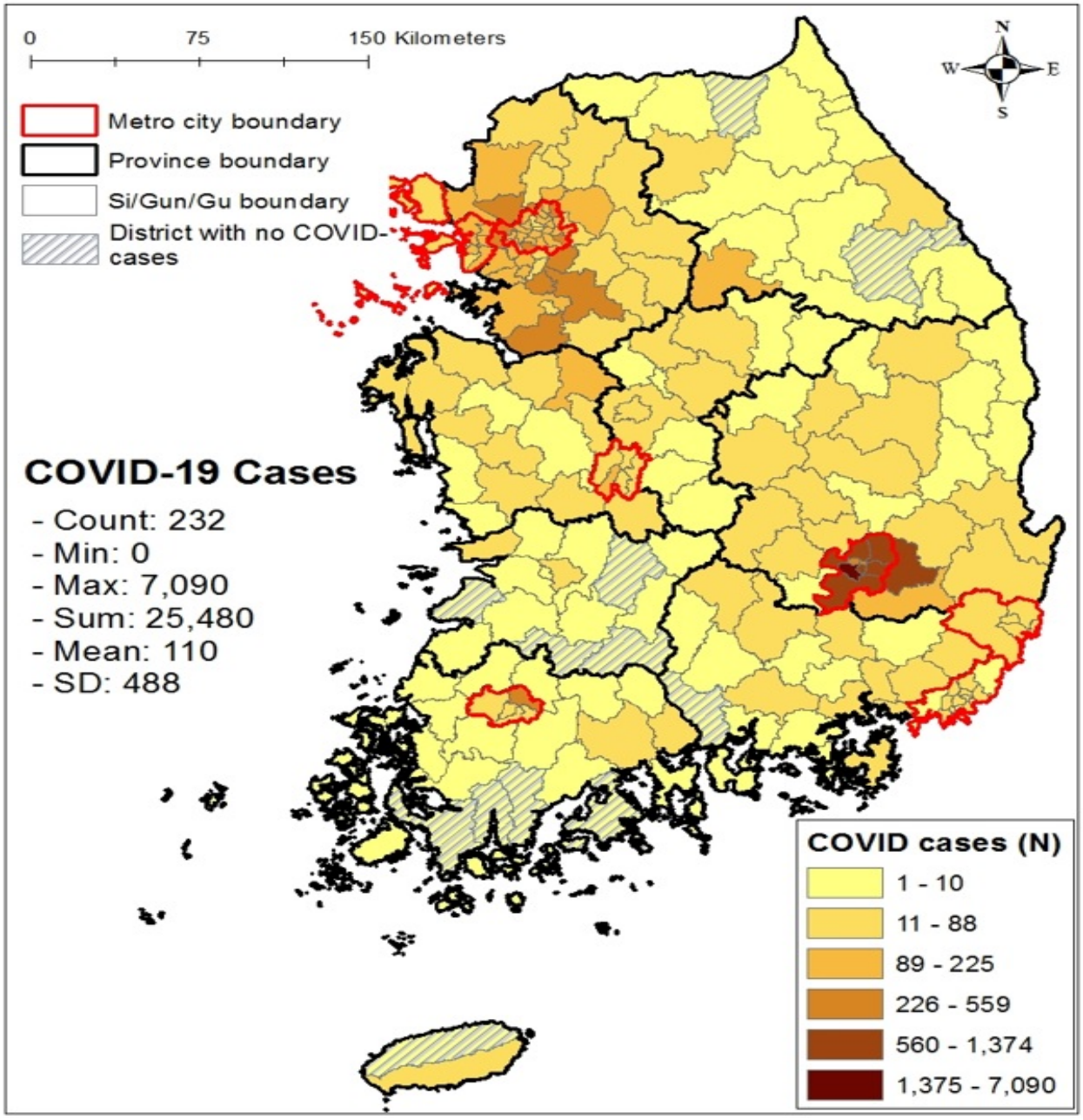


Figure 3. Methodological flow chart

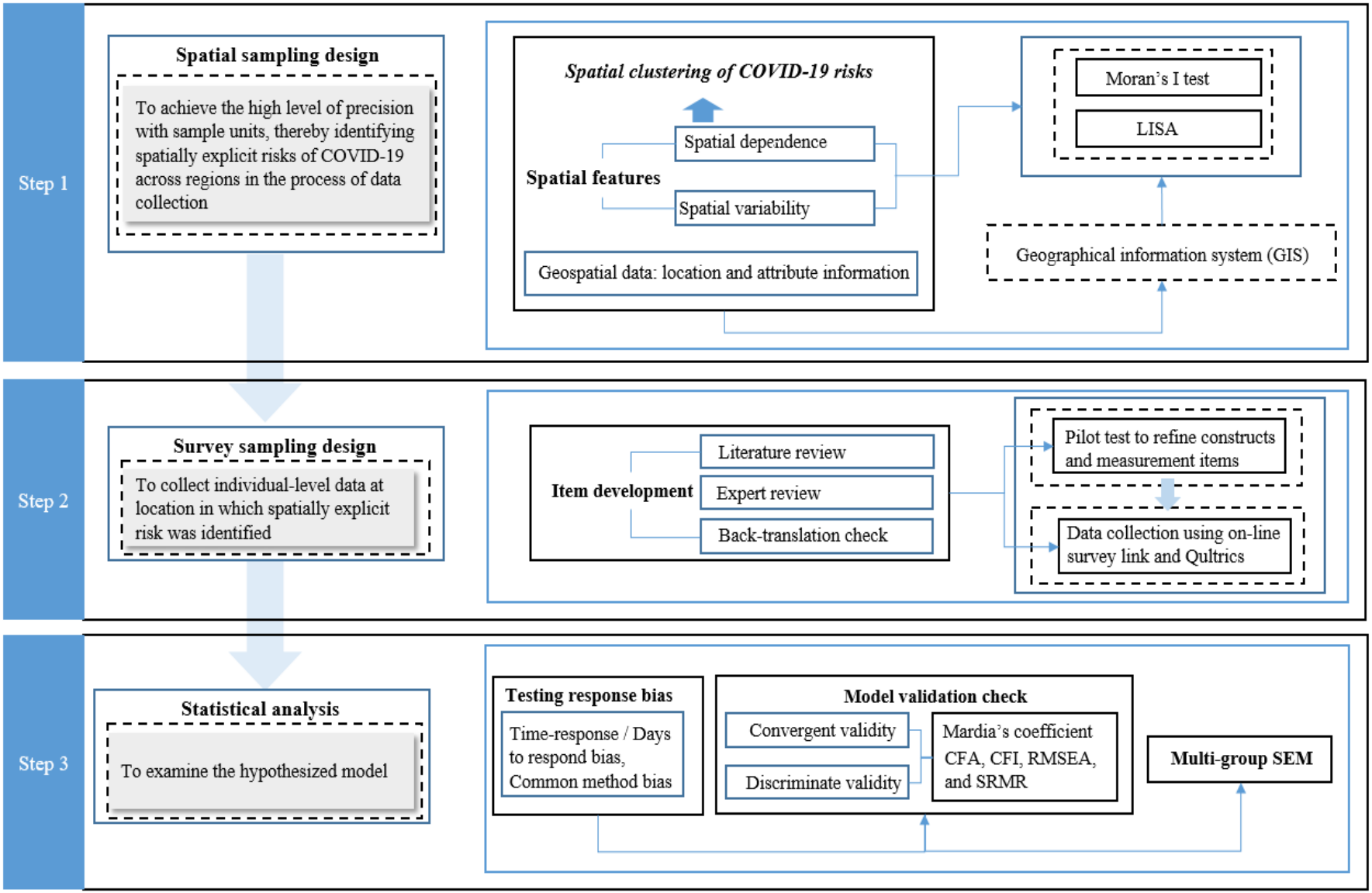


Figure 4. The Spatial clusters of the COVID-19 risks in South Korea

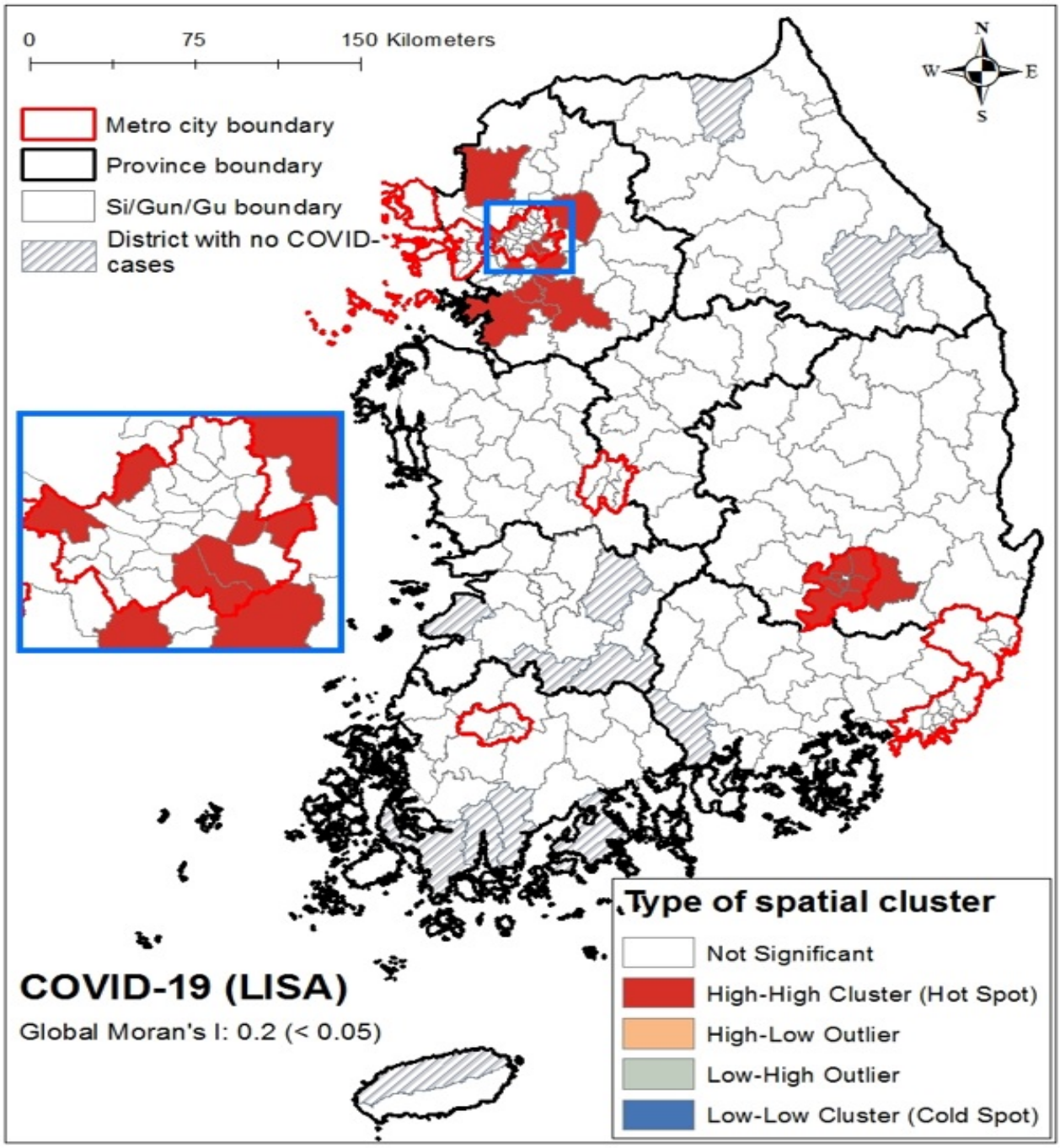
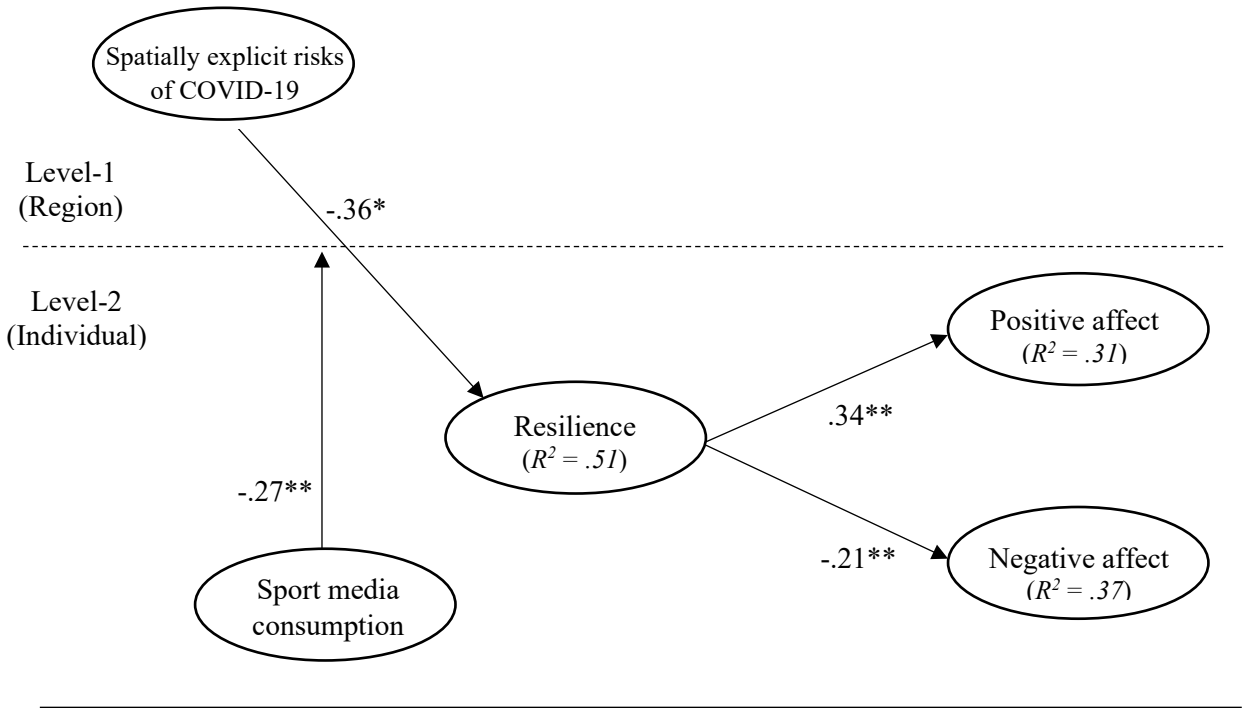


Figure 5. The structural equation model



Note. *p<.05, **p<.01