

Documents

Qwasmi, R.D.A., Abdullah, A.B., Noor, N.M., Asmawi, Z.B.T.

The Insufficiency to Control COVID-19 Epidemic in Residential and Shopping Malls (Case Study of Bukit Bintang-Kuala Lumpur)

(2024) *ASM Science Journal*, 19, pp. 1-25.

DOI: 10.32802/ASMSCJ.2023.1543

Kulliyyah of Architecture & Environmental Design, International Islamic University Malaysia, Malaysia

Abstract

In December of 2019, SARS-CoV-2 (COVID-19) was found in Wuhan, China. With fatalities and confirmed cases in so many countries, WHO declared a worldwide pandemic. Territorial public and private socialising during the pandemic allowed the virus to spread rapidly. This study investigates the efficacy of social distance rules in preventing the spread of COVID-19 in Bukit Bintang, Malaysia, during the Recovery Movement Control Order period. The researchers in this study used both qualitative (structured observation) and quantitative (questionnaire) approaches to learn more about the role of environmental elements such as urban fabric, density, milieu, and accessibility in the spread of COVID-19 in Bukit Bintang. These elements were studied through structured observations and statistical analysis. In order to learn about respondents' concrete understanding of these elements' role in the COVID-19 spread, a questionnaire survey was used as part of the quantitative approach. The researchers surveyed 250 people for this study. The results of this study corroborate that the insufficiency to control COVID-19 spread strongly correlates with resident and shopping mall elements. The spread and mortality rate of COVID-19 is significantly influenced by social distance. The study found that people who disregarded the social distance rule spread the virus widely. © (2024), (Akademi Sains Malaysia). All Rights Reserved.

Author Keywords

COVID-19; Density; Human Behaviour; Social Distance; Urban Fabric

References

- Ab Hamid, MRB
Value-based performance excellence model for higher education institutions
(2015) *Quality & Quantity*, 49 (5), pp. 1919-1944.
- Abdullah, J, Ahmad, CB, Sa'ad, SRM, Wahab, SS
Public Participation in the Kuala Lumpur Draft City Plan 2020
(2015) *Procedia-Social and Behavioral Sciences*, 168, pp. 70-75.
- Abdullah, S, Mansor, AA, Napi, NNLM, Mansor, WNW, Ahmed, AN, Ismail, M, Ramly, ZTA
Air quality status during 2020 Malaysia Movement Control Order (MCO) due to 2019 novel coronavirus (2019-nCoV) pandemic
(2020) *Science of the Total Environment*, 729, p. 139022.
- Abu Aisheh, YI, Tayeh, BA, Alaloul, WS, Almalki, A
Health and safety improvement in construction projects: A lean construction approach
(2021) *International journal of occupational safety and ergonomics*, pp. 1-13.
us/PKPD-Kes-MenaraCity-One-berkait-dengan-kluster-tabligh
- Accarino, G, Lorenzetti, S, Aloisio, G
Assessing correlations between short-term exposure to atmospheric pollutants and COVID-19 spread in all Italian territorial areas
(2021) *Environmental Pollution*, 268, p. 115714.
- Adib, P, Teh, AY
(2020) *Emco enforced on KL skyscraper; 3,200 affected* | *New Straits Times*, New Straits Times Press, viewed 23 July 2022

- Aloi, A, Alonso, B, Benavente, J, Cordera, R, Echániz, E, González, F, Ladisa, C, Perrucci, L
Effects of the COVID-19 lockdown on urban mobility: Empirical evidence from (2020),
- **the city of Santander (Spain)**
Sustainability, 12 (9), p. 3870.
- Arbuckle, A
(2022) *Inside the squalid tenements of 1890s New York City*, Mashable, Mashable Inc. viewed 30 July 2022
- Awada, M, Becerik-Gerber, B, Hoque, S, O'Neill, Z, Pedrielli, G, Wen, J, Wu, T
Ten questions concerning occupant health in buildings during normal operations and extreme events including the COVID-19 pandemic
(2021) *Building and Environment*, 188, p. 107480.
- Axelson, PW, Chesney, DA, Kirschbaum, JB, Longmuir, PE, Lyons, C, Wong, KM, Galvan, DV
Designing Sidewalks and Trails for Access
(1999) *Part I of II: Review of Existing Guidelines and Practices*,
- Bao, R, Zhang, A
Does lockdown reduce air pollution? Evidence from 44 cities in northern China
(2020) *Science of the Total Environment*, 731, p. 139052.
- Berke, EM, Koepsell, TD, Moudon, AV, Hoskins, RE., Larson, EB
Association of the built environment with physical activity and obesity in older persons
(2007) *American Journal of Public Health*, 97 (3), pp. 486-492.
- Bernama, O
(2020) *PKPD: Kes Menara City One berkait dengan kluster tabligh*, *Sinar Harian*. *Sinar Harian*, viewed 20 May, 2022
- Bragaglia, F, Caruso, N
Temporary uses: a new form of inclusive urban regeneration or a tool for neoliberal policy?
(2022) *Urban Research & Practice*, 15 (2), pp. 194-214.
- **Crackdown on migrants and refugees an appalling violation of human rights, Amnesty Malaysia**
(2020),
Amnesty International. viewed 25 July, 2022
- Chen, YL, Shin, HB
Centering housing questions in Asian cities
(2019) *Neoliberal Urbanism, Contested Cities and Housing in Asia*, pp. 1-19.
Palgrave Macmillan, New York
- Cirrincione, L, Plescia, F, Ledda, C, Rapisarda, V, Martorana, D, Moldovan, RE, Theodoridou, K, Cannizzaro, E
COVID-19 pandemic: Prevention and protection measures to be adopted at the workplace
(2020) *Sustainability*, 12 (9), p. 3603.
- Clark, PJ, Evans, FC
Distance to nearest neighbor as a measure of spatial relationships in populations
(1954) *Ecology*, 35 (4), pp. 445-453.

- Curran, A, Grant, J, Wood, ME
Indicators for community action: Built environment and community health
(2006) *Journal of Rural and Community Development*, 2 (1).
- Daim, N
True colours: If you live in a COVID-19 red or orange zone, stay home, New Straits Times
(2020) *New Straits Times*,
viewed 13 July 2022
- Devlin, A, Frank, L, VanLoon, J
(2009) *Physical activity and transportation benefits of walkable approaches to community design in British Columbia*,
Report prepared for the British Columbia Recreation and Parks Association
- Dobesova, Z, Krivka, T
Walkability index in the urban planning: A case study in Olomouc city
(2012) *Advances in spatial planning*, 2.
- Dudzinski, A
Architectural Challenges of Designing Front Entrance Area at City Schools
(2019) *International Conference on Applied Human Factors and Ergonomics*, pp. 256-265.
Springer, Cham
- Feng, J, Glass, TA, Curriero, FC, Stewart, WF, Schwartz, BS
The built environment and obesity: a systematic review of the epidemiologic evidence
(2010) *Health & Place*, 16 (2), pp. 175-190.
- Forsyth, A
Measuring density: working definitions for residential density and building intensity
(2003) *Design brief*, 9 (1), pp. 2-8.
- Gan, WH, Koh, D
COVID-19 and return-to-work for the construction sector: lessons from Singapore
(2021) *Safety and Health at Work*, 12 (2), pp. 277-281.
- Giacobbe, A
How the COVID-19 pandemic will change the built environment
(2020) *Architectural Digest*,
- Gungor, BS, Ozanguc, KC
Functional Use Change in Green Spaces: A Case Study of Kirklareli Province
(2017) *In IOP Conference Series: Materials Science and Engineering*, 245 (5), p. 052008.
- Habitat, U
Urbanization and development: emerging futures
(2016) *World cities report*, 3 (4), pp. 4-51.
- Hahs-Vaughn, D, Lomax, R
(2013) *An introduction to statistical concepts*,
Routledge
- Hair, JF, Black, WC, Babin, BJ, Anderson, R, Tatham, R
(2006) *Multivariate Data Analysis*,
Pearson Prentice-Hall, Upper Saddle River, NJ
- He, G, Pan, Y, Tanaka, T
The short-term impacts of COVID-19 lockdown on urban air pollution in China
(2020) *Nature Sustainability*, 3 (12), pp. 1005-1011.

- Heffernan, E, Heffernan, T, Pan, W
The relationship between the quality of active frontages and public perceptions of public spaces
(2014) *Urban Design International*, 19 (1), pp. 92-102.
- Hossain, MS, Ahmed, S, Uddin, MJ
Impact of weather on COVID-19 transmission in South Asian countries: An application of the ARIMAX model
(2021) *Science of The Total Environment*, 761, p. 143315.
- Huang, J, Kwan, MP, Kan, Z, Wong, MS, Kwok, CYT, Yu, X
Investigating the relationship between the built environment and relative risk of COVID-19 in Hong Kong
(2020) *ISPRS International Journal of Geo-Information*, 9 (11), p. 624.
- Jagun, ZT
Risks in feasibility and viability appraisal process for property development and the investment market in Nigeria
(2020) *Journal of Property Investment & Finance*, 38 (3), pp. 227-243.
- Kibert, CJ
(2016) *Sustainable construction: green building design and delivery*,
John Wiley & Sons
- Krejcie, RV, Morgan, DW
Determining sample size for research activities
(1970) *Educational and psychological measurement*, 30 (3), pp. 607-610.
- Krier, R, Rowe, C
(1979) *Urban Space*,
Academy Editions, London
- Krizek, KJ, Johnson, PJ
Proximity to trails and retail: Effects on urban cycling and walking
(2006) *Journal of the American planning association*, 72 (1), pp. 33-42.
- Kuchler, T, Russel, D, Stroebel, J
(2020) *The Geographic Spread of COVID-19 Correlates with the Structure of Social Networks as Measured by Facebook*,
NBER Working Paper Series, National Bureau of Economic Research, Cambridge, MA
- LaRicca, L, Cittadino, A, Fiermonte, F, Garnero, G, Guerreschi, P, Vico, F
The Walkability of the Cities: Improving It Through the Reuse of Available Data and Raster Analyses
(2019) *Spatial Planning in the Big Data Revolution*, pp. 113-137.
IGI Global: Hershey, PA, USA
- Hui, Lee Long
(2021),
personal communication via email, March 18
- LePan, N, Harrison, S
(2022) *Visualizing the history of pandemics, Visual Capitalist*,
viewed 20 May, 2022
- Li, Z, Wang, H, Zhang, X, Wu, T, Yang, X
Effects of space sizes on the dispersion of cough-generated droplets from a walking person
(2020) *Physics of Fluids*, 32 (12), p. 121705.

- Littman, RJ
The plague of Athens: epidemiology and paleopathology
(2009) *Mt Sinai J Med*, 76 (5), pp. 456-467.
- Littman, T
(2017) *Transit Oriented Development: Using Public Transit to Create More Accessible and Livable Neighborhoods*. TDM Encyclopedia, Victoria Transport Policy Institute: Victoria, BC, USA
- Liu, J, Zhou, J, Yao, J, Zhang, X, Li, L, Xu, X, He, X, Yan, J
Impact of meteorological factors on the COVID-19 transmission: A multi-city study in China
(2020) *Science of the total environment*, 726, p. 138513.
- Lovasi, GS, Moudon, AV, Pearson, AL, Hurvitz, PM, Larson, EB, Siscovick, DS, Berke, EM, Psaty, BM
Using built environment characteristics to predict walking for exercise
(2008) *International Journal of Health geographics*, 7 (1), pp. 1-13.
- Malhotra, A, Schuler, SR, Boender, C
Measuring women's empowerment as a variable in international development
(2002) *background paper prepared for the World Bank Workshop on Poverty and Gender: New Perspectives*, Washington, DC: The World Bank
- Malhotra, N, Nunan, D, Birks, D
(2017) *Marketing Research: An Applied Approach*, Pearson
- Martinez-Haro, M, Green, AJ, Mateo, R.
Effects of lead exposure on oxidative stress biomarkers and plasma biochemistry in waterbirds in the field
(2011) *Environmental Research*, 111 (4), pp. 530-538.
- Mat Che, NF, Edinur, HA, Abdul Razab, MKA, Safuan, S
A single mass gathering resulted in massive transmission of COVID-19 infections in Malaysia with further international spread
(2020) *Journal of Travel Medicine*, 27 (3), p. taaa059.
- Megahed, NA, Ghoneim, EM
Indoor Air Quality: Rethinking rules of building design strategies in post-pandemic architecture
(2021) *Environmental Research*, 193, p. 110471.
- (2019) *Kenyataan Akhbar Kementerian Kesihatan Malaysia Situasi Semasa, Ministry of Health Malaysia*, viewed 30 June, 2022
- Nakada, LYK, Urban, RC
COVID-19 pandemic: Impacts on the air quality during the partial lockdown in São Paulo state, Brazil
(2020) *Science of the Total Environment*, 730, p. 139087.
- Osborne, JW
Curvilinear effects in logistic regression
(2015) *Best Practices in Logistic Regression*, pp. 200-242. London: Sage Publications
- Özogul, S, Tasan-Kok, T
One and the same? A systematic literature review of residential property investor

types

(2020) *Journal of Planning Literature*, 35 (4), pp. 475-494.

- Parks, JR, Schofer, JL
Characterizing neighborhood pedestrian environments with secondary data
(2006) *Transportation Research Part D: Transport and Environment*, 11 (4), pp. 250-263.
- Peters, T, Halleran, A
How our homes impact our health: using a COVID-19 informed approach to examine urban apartment housing
(2020) *Archnet-IJAR: International Journal of Architectural Research*,
- Pituch, KA, Stevens, JP
(2016) *Applied Multivariate Statistics for the Social Sciences*,
6th edn, New York and London
- Post, G
(2020) *Impact of covid-19 on garden design, outdoor living spaces, Total Landscape Care*,
viewed 03 July 2022
- Pugalis, L
The culture and economics of urban public space design: Public and professional perceptions
(2009) *Urban Design International*, 14 (4), pp. 215-230.
- Qwasmi, R, Abdullah, AB, bt Asmawi, Z, Noor, NM
The Impact of Human Mobility of COVID-19 Epidemic in Kuala Lumpur using GIS
(2022) *American Journal of Agricultural Science, Engineering, and Technology*, 6 (2), pp. 25-36.
- Ramzi, Q, Alias bin, A, Norzailawati, MN, Zainora, bt. A
Establishing a Covid-19 Defensible Space According to Urban Fabric Using Analytical Hierarchy Processes (AHP): Case Study in Bukit Bintang, Kuala Lumpur
(2022) *American Journal of Agricultural Science, Engineering, and Technology*, 6 (3), pp. 62-72.
- Rebecca, G
After covid-19, what's next for Landscape Architecture?
(2020),
Metropolis. SANDOW. viewed 19 July 2022
- Schmidt, JD
The challenge from South East Asia: Social forces between equity and growth
(2019) *In Uneven Development in South East Asia*, pp. 21-44.
Routledge
- Smith, TJ, McKenna, CM
A comparison of logistic regression pseudo R2 indices
(2013) *Multiple Linear Regression Viewpoints*, 39 (2), pp. 17-26.
- Sulaymon, ID, Zhang, Y, Hopke, PK, Zhang, Y, Hua, J, Mei, X
COVID-19 pandemic in Wuhan', Ambient air quality and the relationships between criteria air pollutants and meteorological variables before, during, and after lockdown
(2021) *Atmospheric research*, 250, p. 105362.
- Tanrıvermiş, H
Possible impacts of COVID-19 outbreak on real estate sector and possible changes to adopt', A situation analysis and general assessment on Turkish perspective
(2020) *Journal of Urban Management*, 9 (3), pp. 263-269.

- Tanzer-Gruener, R, Li, J, Eilenberg, SR, Robinson, AL, Presto, AA
Impacts of modifiable factors on ambient air pollution', A case study of COVID-19 shutdowns
(2020) *Environmental Science & Technology Letters*, 7 (8), pp. 554-559.
- Tello-Leal, E, Macías-Hernández, BA
Association of environmental and meteorological factors on the spread of COVID-19 in Victoria, Mexico, and air quality during the lockdown
(2021) *Environmental Research*, 196, p. 110442.
- Tobías, A, Carnerero, C, Reche, C, Massagué, J, Via, M, Minguillón, MC, Alastuey, A, Querol, X
Changes in air quality during the lockdown in Barcelona (Spain) one month into the SARS-CoV-2 epidemic
(2020) *Science of the total environment*, 726, p. 138540.
- Tomalty, R, Haider, M
(2009) *BC sprawl report*,
desLibris
- Tucker, P, Irwin, JD, Gilliland, J, He, M, Larsen, K, Hess, P
Environmental influences on physical activity levels in youth
(2009) *Health & Place*, 15 (1), pp. 357-363.
- Watts, A, Ferdous, F, Diaz Moore, K, Burns, JM
Neighborhood integration and connectivity predict cognitive performance and decline
(2015) *Gerontology and Geriatric Medicine*, 1, p. 2333721415599141.
- Wheaton, WC, Kinsella Thompson, A
(2020) *Doubts about density: COVID-19 across cities and towns*,
SSRN 3586081
- (2020) *Maintaining Essential Health Services and Systems*,
World Health Organization, World Health Organization, viewed 15 July, 2022
- Wong, DW, Li, Y
Spreading of COVID-19', Density matters
(2020) *PLOS One*, 15 (12), p. e0242398.
- Yezli, S, Khan, A
COVID-19 pandemic: it is time to temporarily close places of worship and to suspend religious gatherings
(2021) *Journal of travel medicine*, 28 (2), p. taaa065.
- Yuan, Q, Qi, B, Hu, D, Wang, J, Zhang, J, Yang, H, Zhang, S, Li, W
Spatiotemporal variations and reduction of air pollutants during the COVID-19 pandemic in a megacity of Yangtze River Delta in China
(2021) *Science of the Total Environment*, 751, p. 141820.
- Zeigler, PM
(2012) *What is a green building? Fundamental principles of green building and sustainable site design*,
- Zheng, Z, Xie, Z, Qin, Y, Wang, K, Yu, Y, Fu, P
Exploring the influence of human mobility factors and spread prediction on early COVID-19 in the USA
(2021) *BMC Public Health*, 21 (1), pp. 1-13.

Correspondence Address

Qwasmí R.D.A.; Kulliyah of Architecture & Environmental Design, Malaysia; email: alqawasmí_malaysia@hotmail.com

Publisher: Akademi Sains Malaysia

ISSN: 18236782

Language of Original Document: English

Abbreviated Source Title: ASM Sci. J.

2-s2.0-85196513156

Document Type: Article

Publication Stage: Final

Source: Scopus

ELSEVIER

Copyright © 2025 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

 **RELX Group™**