

**KESIAPSIAGAAN MITIGASI BENCANA DI SEKOLAH MENENGAH KEJURUAN
SEPANJANG SESAR LEMBANG**

TESIS

*diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar
Magister Pendidikan Teknologi dan Kejuruan*



oleh:

KHAERUNNISA NURBANI

NIM. 1803136

**PROGRAM STUDI PENDIDIKAN TEKNOLOGI DAN KEJURUAN
SEKOLAH PASCASARJANA
UNIVERSITAS PENDIDIKAN INDONESIA
2021**

**KESIAPSIAGAAN MITIGASI BENCANA DI SEKOLAH MENENGAH
KEJURUAN SEPANJANG SESAR LEMBANG**

oleh:

Khaerunnisa Nurbani

NIM. 1803136

Sebuah tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar
Magister Pendidikan Teknologi dan Kejuruan

© Khaerunnisa Nurbani

Universitas Pendidikan Indonesia

Januari 2021

Hak Cipta dilindungi Undang-Undang.

Tesis ini tidak boleh diperbanyak seluruhnya atau sebagian,
dengan dicetak ulang, difoto kopi, atau cara lainnya tanpa izin dari penulis.

Khaerunnisa Nurbani, 2021

KESIAPSIAGAAN MITIGASI BENCANA DI SEKOLAH MENENGAH KEJURUAN SEPANJANG SESAR LEMBANG

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

HALAMAN PENGESAHAN TESIS

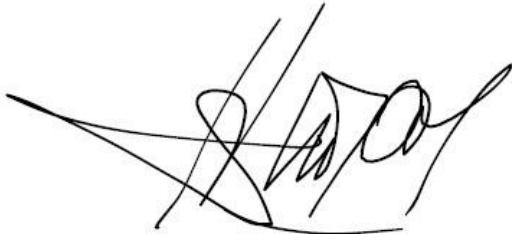
Khaerunnisa Nurbani

NIM. 1803136

KESIAPSIAGAAN MITIGASI BENCANA DI SEKOLAH MENENGAH KEJURUAN SEPANJANG SESAR LEMBANG

Disetujui dan disahkan oleh:

Dosen Penguji,



Dr. Sudjani, M. Pd.
NIP. 19630628 198803 1 002



Dr. H. Nanang Dalil Herman, S.T., M.Pd.
NIP. 19620202 198803 1 002



Dr. Dedy Suryadi, M.Pd.
NIP. 19670726 199703 1 001



Dr. Lili Widaningsih, M.T.
NIP. 19711022 1998022 001

Mengetahui,

Ketua Program Studi Pendidikan Teknologi dan Kejuruan
Sekolah Pascasarjana Universitas Pendidikan Indonesia,



Prof. Dr. Ade Gafar Abdullah, M. Si.
NIP. 19721113 199903 1 001

ABSTRAK

Untuk mengurangi risiko bahaya bencana gempa bumi, perlu kiranya memahami tingkat kesiapsiagaan dalam mitigasi bencana. Informasi dan pengetahuan merupakan faktor utama dan juga menjadi kunci utama untuk mitigasi bencana. Penelitian ini bertujuan untuk mengetahui persepsi pihak sekolah mengenai mitigasi bencana, juga persiapan apa saja yang telah dilakukan oleh pihak sekolah, seperti pengadaan titik kumpul, sosialisasi, simulasi, serta pemasangan rambu-rambu mitigasi bencana yang ada di Sekolah Menengah Kejuruan yang ada di daerah sesar Lembang, termasuk persiapan ketahanan bangunan sekolah terhadap gempa. Pengumpulan data dilakukan dengan cara observasi dan wawancara kepada guru Sekolah Menengah Kejuruan Taruna Mandiri. Hasil penelitian menunjukkan bahwa sebagian besar sudah tahu bahwa Sekolah Menengah Kejuruan Taruna Mandiri berada di jalur sesar Lembang, pihak sekolah juga sudah tahu akan bahaya sesar Lembang, namun kesadaran dalam pelaksanaan kesiapsiagaan mengenai mitigasi bencana belum dilakukan secara penuh. Simulasi dan sosialisasi mengenai mitigasi bencana belum pernah dilakukan.

Kata Kunci: Kesiapsiagaan, Mitigasi Bencana, Sesar Lembang

ABSTRACT

To reduce the risk of earthquake hazards, it is necessary to understand the level of preparedness in disaster mitigation. Information and knowledge are the main factors and also the main keys for disaster mitigation. This study aims to determine the school's perception of disaster mitigation, also what preparations have been made by the school, such as procurement of gathering points, socialization, simulations, and installation of disaster mitigation signs at Vocational High Schools in the Lembang fault area, including preparation for earthquake resilience of school buildings. Data collection was carried out by observation and interviews with the teachers of Taruna Mandiri Vocational High School. The results showed that most of them already knew that the Taruna Mandiri Vocational High School was in the Lembang fault line. They are also knows about the dangers of the Lembang fault, however, the awareness in implementing preparedness regarding disaster mitigation has not been fully implemented. Simulation and dissemination of disaster mitigation has not been done.

Key Word: Preparedness, Disaster Mitigation, Lembang Fault.

DAFTAR ISI

PERNYATAAN.....	Error! Bookmark not defined.
ABSTRAK	4
ABSTRACT	5
KATA PENGANTAR	Error! Bookmark not defined.
DAFTAR ISI.....	6
DAFTAR GAMBAR	8
DAFTAR TABEL.....	9
BAB I PENDAHULUAN	Error! Bookmark not defined.
A. Latar Belakang	Error! Bookmark not defined.
B. Rumusan Masalah.....	Error! Bookmark not defined.
C. Tujuan Penelitian.....	Error! Bookmark not defined.
D. Manfaat Penelitian.....	Error! Bookmark not defined.
E. Sistematika Penulisan	Error! Bookmark not defined.
BAB II TINJAUAN PUSTAKA.....	Error! Bookmark not defined.
A. Bencana Gempa.....	Error! Bookmark not defined.
B. Sesar Lembang	Error! Bookmark not defined.
C. Mitigasi Bencana	Error! Bookmark not defined.
D. Kesiapsiagaan.....	Error! Bookmark not defined.
E. Sekolah Menengah Kejuruan (SMK)	Error! Bookmark not defined.
F. Informasi	Error! Bookmark not defined.
G. Pengertian Pengetahuan	Error! Bookmark not defined.
H. Pengertian Karakteristik	Error! Bookmark not defined.
I. Pengertian Pengalaman	Error! Bookmark not defined.

BAB III METODE PENELITIAN.....	Error! Bookmark not defined.
A. Desain Penelitian.....	Error! Bookmark not defined.
B. Partisipan, Sampel, dan Populasi.....	Error! Bookmark not defined.
C. Teknik Pengumpulan Data	Error! Bookmark not defined.
D. Instrumen Penelitian.....	Error! Bookmark not defined.
E. Uji Validitas dan Uji Reliabilitas	Error! Bookmark not defined.
F. Analisis Data	Error! Bookmark not defined.
BAB IV HASIL DAN PEMBAHASAN	Error! Bookmark not defined.
A. Pemaparan Data Hasil Penelitian	Error! Bookmark not defined.
B. Pembahasan	Error! Bookmark not defined.
BAB V KESIMPULAN, IMPLIKASI, DAN REKOMENDASI.....	Error! Bookmark not defined.
A. Kesimpulan.....	Error! Bookmark not defined.
B. Implikasi	Error! Bookmark not defined.
C. Rekomendasi	Error! Bookmark not defined.
DAFTAR PUSTAKA	10

DAFTAR GAMBAR

Gambar 2.1 Gunung Api Aktif di Indonesia.....	7
Gambar 2.2 Beberapa Lokasi Sesar Utama di Jawa Barat.....	8
Gambar 2.3 Jenis Kegiatan Mitigasi Bencana Alam	10
Gambar 2.4 Kesiapsiagaan dalam Model Siklus Pengelolaan Bencana	12
Gambar 3.1 <i>Flowchart</i> Penyelesaian Laporan Tesis.....	20
Gambar 3.2 Jalur Sesar Lembang	21
Gambar 4.1 Site Plan SMK Taruna Mandiri	32
Gambar 4.2 Skenario Rencana Gempa	32
Gambar 4.3 Area Lapangan untuk Titik Kumpul di SMK Taruna Mandiri	48
Gambar 4.4 Jalur Menuju Titik Kumpul di SMK Taruna Mandiri.....	49
Gambar 4.5 Standar Tangga Darurat	49
Gambar 4.6 Denah Bangunan yang Terdiri dari Rangkaian Bangunan Simetris .	51
Gambar 4.7 Contoh Penempatan Dinding Penyekat	52
Gambar 4.8 Bangunan Sekolah Tahan Gempa	53

DAFTAR TABEL

Tabel 3.1 Lembar Observasi Mitigasi Bencana	24
Tabel 3.2 Kisi-Kisi Wawancara Kesiapan Mitigasi Bencana	26
Tabel 4.1 Lembar Hasil Observasi	34
Tabel 4.2 Lembar Hasil Wawancara.....	36
Tabel 4.3 Rambu dan Papan Informasi Bencana	45

DAFTAR PUSTAKA

- Abidin, H. Z. (2008). *Peranan Geodesi Satelit Dalam Memahami Dinamika Bumi Di Wilayah Indonesia.*
- Afiyanti, Y. (2008). Validitas dan Reliabilitas Dalam Penelitian Kualitatif. *Jurnal Keperawatan Indonesia*, 12(2), 137–141.
- Agusta, I. (2003). Teknik Pengumpulan dan Analisis Data Kualitatif, (1998), 1–11.
- Arun Jothi, J. (2015). A study to evaluate the effectiveness of structured teaching programme on knowledge regarding disaster management among students selected nursing schools in Kanyakumari District. College of Nursing, Dharmarathnakara Dr. Mahalingam Institute of Paramedical
- Bachri, B. S. (2010). Meyakinkan Validitas Data Melalui Triangulasi Pada Penelitian Kualitatif. *Jurnal Teknologi Pendidikan*, 10(1), 46–62.
- Badan Meteorologi, K. dan G. (2017). Penjelasan BMKG Terkait Hasil Kajian Sesar Lembang yang Berpotensi Memicu Gempa Berkekuatan M=6.8. Jakarta. Retrieved from <https://www.bmkg.go.id/berita/?p=penjelasan-bmkg-terkait-hasil-kajian-sesar-lembang-yang-berpotensi-memicu-gempa-berkekuatan-m6-8&tag=press-release&lang=ID>
- Badan Nasional Penanggulangan Bencana. (2015). Peraturan kepala Badan Nasional Penanggulangan Bencana - Rambu dan Papan Informasi Bencana. Jakarta.
- Badan Standardisasi Nasional. (2000). *SNI 03-1746-2000 - Tata Cara Perencanaan dan Pemasangan Sarana Jalan ke Luar untuk Penyelamatan Terhadap Bahaya Kebakaran Pada Bangunan Gedung*. Jakarta.
- Baytiyeh, H. (2014a). How Can School Education Impact Earthquake Risk Reduction in Lebanon ?, 7(2/3), 120–132. <https://doi.org/10.1108/EBS-12-2013-0051>
- Baytiyeh, H. (2014b). The Assessment of Earthquake Preparatory Knowledge and Activities of Lebanese Engineering Students.

- Baytiyeh, H., & Naja, M. K. (2014). Can Education Reduce Middle Eastern Fatalistic Attitude Regarding Earthquake Disasters? *Disaster Prevention and Management*, 23(4), 343–355. <https://doi.org/10.1108/DPM-12-2013-0219>
- Baytiyeh, H., & Naja, M. K. (2015). Are Colleges in Lebanon Preparing Students for Future Earthquake Disasters? *International Journal of Disaster Risk Reduction*, 14, 519–526. <https://doi.org/10.1016/j.ijdrr.2015.10.007>
- Becker, J. S., Paton, D., Johnston, D. M., & Ronan, K. R. (2012). A model of Household Preparedness for Earthquakes: How Individuals Make Meaning of Earthquake Information and How This Influences Preparedness, 107–137. <https://doi.org/10.1007/s11069-012-0238-x>
- Becker, J. S., Paton, D., Johnston, D. M., Ronan, K. R., & Mcclure, J. (2017). The Role of Prior Experience in Informing and Motivating Earthquake Preparedness. *International Journal of Disaster Risk Reduction*, 22(July 2016), 179–193. <https://doi.org/10.1016/j.ijdrr.2017.03.006>
- Bodnar, G. H., & William, S. (2006). *Sistem Informasi Akuntansi*. Jakarta : Salemba Empat.
- Bonfadelli, H. (2002). The Internet and knowledge gaps: A theoretical and empirical investigation. *European Journal of Communication*, 17(1), 65–84.
- Braun-fahrlaender, C., Tekeli-yes, S., Dedeo, N., & Tanner, M. (2010). Factors Motivating Individuals to Take Precautionary Action for an Expected Earthquake in Istanbul, 30(8). <https://doi.org/10.1111/j.1539-6924.2010.01424.x>
- Bulus Kirikkaya, E., Çakin, O., Imali, B., & Bozkurt, E. (2011). Earthquake Training is Gaining Importance : The Views of 4th and 5th Year Students on Earthquake, 15, 2305–2313. <https://doi.org/10.1016/j.sbspro.2011.04.098>
- Cartwright, C., Hall, M., & Lee, A. C. K. (2017). The Changing Health Priorities of Earthquake Response and Implications for Preparedness : A Scoping Review. *Public Health*, 150, 60–70. <https://doi.org/10.1016/j.puhe.2017.04.024>
- Chariri, A. (2009). Landasan Filsafat dan Metode Penelitian Kualitatif.
- Chikoto, G. L., Sadiq, A.-A., & Fordyce, E. (2012). Disaster Mitigation and Preparedness : Comparison of Nonprofit ,Public, and Private Organizations,

- 42(2), 391–410. <https://doi.org/10.1177/0899764012452042>
- Clark, A., Kjorholt, A. T., & Moss, P. (2005). *Beyond Listening - Children's Perspectives on Early Childhood Services*. United Kingdom: The Policy Press in University of Bristol.
- Darmawan, R. (2013). Pengalaman , Usability , dan Antarmuka Grafis : Sebuah Penelusuran Teoritis, 4(2), 95–102.
<https://doi.org/10.5614/itbj.vad.2013.4.2.1>
- Daryono, M. R., Natawidjaja, D. H., Sapiie, B., & Cummins, P. (2018). Earthquake Geology of the Lembang Fault, West Java, Indonesia. *Tectonophysics*. <https://doi.org/10.1016/j.tecto.2018.12.014>
- Direktorat Cipta Karya - Departemen Pekerjaan Umum. (2005). *Pedoman Teknis Rumah dan Bangunan Gedung Tahan Gempa*. Jakarta.
- Dunn, P. T., Ahn, A. Y. E., Bostrom, A., & Vidale, J. E. (2016). Perceptions of Earthquake Early Warnings on the U.S. West Coast. *International Journal of Disaster Risk Reduction*, 1–11. <https://doi.org/10.1016/j.ijdr.2016.10.019>
- Gao, M., Liu, Y., & Shi, Y. (2020). Do People Feel Less at Risk? Evidence from Disaster Experience. *Journal of Financial Economics*.
<https://doi.org/10.1016/j.jfineco.2020.06.010>
- Gustiansyah, T. (2019). *Analisis Strategi Mitigasi Bencana Bumi Di Zona Sesar Lembang Seksi Cimeta*.
- Haryati, S. (2017). Pendidikan Karakter Dalam Kurikulum 2013.
- Hasanah, H. (2016). Teknik-Teknik Observasi. *Jurnal At-Taqaddum*, 8(1), 21–46.
- Hasugian, J. (2009). *Dasar-Dasar Ilmu Perpustakaan dan Informasi*.
- Heri, & Caesar, M. R. (2018). Kesiapsiagaan Menghadapi Bencana Berbasis Sekolah. *Jurnal Academia Praja*, 1(2), 91–106.
- Hidayati, K., & UNY, J. (2011). Validasi Instrumen Non Tes dalam Penelitian Pendidikan Matematika, 503–511.
- Hoffmann, R., & Muttarak, R. (2017). Learn from the past, prepare for the future: Impacts of education and experience on disaster preparedness in the Philippines and Thailand. *World Development*, 96, 32–51.
- Hsiao, H., Chen, M., & Yang, H. (2008). Leadership of Vocational High School Principals in Curriculum Reform : A Case Study in Taiwan. *International*

- Journal of Educational Development*, 28, 669–686.
<https://doi.org/10.1016/j.ijedudev.2007.12.002>
- Jahre, M., Persson, G., Kovács, G., & Spens, K. M. (2007). Humanitarian logistics in disaster relief operations. *International Journal of Physical Distribution & Logistics Management*.
- Janti, S. (2014). Analisis Validitas Dan Reliabilitas Dengan Skala Likert Terhadap Pengembangan SI/TI Dalam Penentuan Pengambilan Keputusan Penerapan Strategic Planning Pada Industri Garmen. *Prosiding Seminar Nasional Aplikasi Sains & Teknologi (SNAST)*, 15, 155–160.
- K, R. C., & Supriharjo, R. D. (2013). Mitigasi Bencana Banjir Rob di Jakarta Utara. *Jurnal Teknik Pomits*, 2(1).
- Karashima, K., & Ohgai, A. (2019). Implementation Issues of the Planning Support Tool in Japan: Focusing on Urbandisaster Mitigation. *Frontiers of Architectural Research*, (xxxx). <https://doi.org/10.1016/j.foar.2019.07.002>
- Katongole, C. (2020). The Role of Disaster Risk Financing in Building Resilience of Poor Communities in Karamoja Region of Uganda: Evidence From an Experimental Study. *International Journal of Disaster Risk Reduction*, 101458. <https://doi.org/10.1016/j.ijdrr.2019.101458>
- Keraf, A. S., & Dua, M. (2001). *Ilmu Pengetahuan*. Yogyakarta: Kanisius (Anggota IKAPI).
- Kirschenbaum, A. A., Rapaport, C., & Canetti, D. (2016). The Impact of Information Sources on Earthquake Preparedness. *International Journal of Disaster Risk Reduction*. <https://doi.org/10.1016/j.ijdrr.2016.10.018>
- Koswara, A., Amri, A., Zainuddin, F. K., Ngurah, I., Muzak, J., Mutmainnah, L., ... Tebe, Y. (2019). *Pendidikan Tangguh Bencana - Mewujudkan Satuan Pendidikan Aman Bencana di Indonesia*. (Sanusi, R. Jati, Mukhlis, M. R. Amri, Janaka, & N. I. Warman, Eds.). Badan Nasional Penanggulangan Bencana.
- Kyne, D., Cisneros, L., Delacruz, J., Lopez, B., Madrid, C., Moran, R., ... Fernanda, M. (2020). Empirical Evaluation of Disaster Preparedness for Hurricanes in The Rio Grande Valley. *Progress in Disaster Science*, 5. <https://doi.org/10.1016/j.pdisas.2019.100061>

- Lestari, I., & Siswanto, B. T. (2015). The Effect of School On-The Job Experiences, Student Achievement In Productive and Social Support on Student Work Readiness of Vocational High Scholl. *Jurnal Pendidikan Vokasi*, 5(2), 183–194.
- Lunt, H., & Heenan, H. (2019). Mitigating the Impact of Disasters and Emergencies on Clinical Trials Site Conduct : A Site Perspective Following Major and Minor Unforeseen Events. *Contemporary Clinical Trials Communications*, 16, 100487. <https://doi.org/10.1016/j.conctc.2019.100487>
- Mao, C., Yu, X., Zhou, Q., Harms, R., & Fang, G. (2019). Knowledge Growth in University-Industry Innovation Networks – Results From a Simulation Study. *Technological Forecasting & Social Change*, 151. <https://doi.org/10.1016/j.techfore.2019.119746>
- Moabi, R. M. (2008). Knowledge, attitudes and practices of health care workers regarding disaster preparedness at Johannesburg hospital in Gauteng Province, South Africa. University of the Witwatersrand.
- Muttarak, R., & Lutz, W. (2017). Is Education a Key to Reducing Vulnerability to Natural Disasters and hence Unavoidable Climate Change? *Ecology and Society*, 19(1), 1–8.
- Nirmala, R. P. A. (2013). Pengaruh Independensi, Pengalaman, Due Professional Care, Akuntabilitas, Kompleksitas Audit, Dan Time Budget Pressure Terhadap Kualitas Audit. Semarang.
- Noor, D. (2014). *Pengantar Mitigasi Bencana Geologi* (1st ed.). Yogyakarta: DEEPUBLISH.
- Nurdiani, N. (2014). Teknik Sampling Snowball Dalam Penelitian Lapangan, 5(9), 1110–1118.
- Nurroh, S. (2017). *Filosafat Ilmu*. Jakarta: Sinar Harapan.
- O'Cal, A., & Topkaya, Y. (2011). Earthquake Preparedness in Schools in Seismic Hazard Regions in the South-East of Turkey. *Disaster Prevention and Management*, 20(3), 334–348. <https://doi.org/10.1108/09653561111141754>
- Pahleviannur, M. R. (2019). Edukasi Sadar Bencana Melalui Sosialisasi Kebencanaan Sebagai Upaya Peningkatan Pengetahuan Siswa Terhadap Mitigasi Bencana. *Jurnal Pendidikan Dan Ilmu Sosial*, 29(1), 49–55.

- Pearce, L. (2003). Disaster management and community planning, and public participation: how to achieve sustainable hazard mitigation. *Natural Hazards*, 28(2–3), 211–228.
- Rao, S. (2020). A natural disaster and intimate partner violence : Evidence over time. *Social Science & Medicine*.
- Razaque, A., Rizvi, S., Khan, M. J., Almiani, M., & Rahayfeh, A. Al. (2019). State-of-art Review of Information Diffusion Models and Their Impact on Social Network Vulnerabilities. *Journal of King Saud University - Computer and Information Sciences*. <https://doi.org/10.1016/j.jksuci.2019.08.008>
- Rohman, I. Y. (2016). *Game Edukasi Penyelamatan Korban Bencana Gempa Bumi Berbasis Multi Platform*.
- Rusilowati, A., Supriyadi, Binadja, A., & Mulyani. (2012). Mitigasi Bencana Alam Berbasis Pembelajaran Bervisi Science Environment. *Jurnal Pendidikan Fisika Indonesia*, 8, 51–60.
- Sadeka, S., Suhaimi, M., & Kabir, S. (2020). Disaster Experiences and Preparedness of the Orang Asli Families in TasikChini of Malaysia: A Conceptual Framework Towards Building Disaster Resilient Community. *Progress in Disaster Science*, 6, 100070. <https://doi.org/10.1016/j.pdisas.2020.100070>
- Sarkar, S., Mitsui, M., Liu, J., & Shah, C. (2019). Implicit Information Need as Explicit Problems , Help , and Behavioral Signals. *Information Processing and Management*. <https://doi.org/10.1016/j.ipm.2019.102069>
- Sattler, D. N., Kaiser, C. F., & Hittner, J. B. (2000). Disaster Preparedness: Relationships Among Prior Experience, Personal Characteristics, and Distress 1. *Journal of Applied Social Psychology*, 30(7), 1396–1420.
- Semiawan, C. R. (2010). *Metode Penelitian Kualitatif*. (A. L, Ed.). Jakarta: PT Grasindo.
- Srividhya, K., Mohan, A., Tholkapiyan, M., & Arunraj, A. (2020). Earth Quake Disaster Mitigation (EQDM) Through Engineering Design. Retrieved from <https://doi.org/10.1016/j.matpr.2019.11.303>
- Subagia, I. W., Wiratma, I. G. L., & Sudita, I. K. (2015). Pelatihan Mitigasi Bencana Alam Gempa Bumi Pada Siswa Sekolah Dasar Negeri 1

- Pengastulan Kecamatan Seririt Kabupaten Buleleng Bali, 4(1), 585–598.
- Sudrajat, A. (2011). Mengapa Pendidikan Karakter? *Jurnal Pendidikan Karakter*, 1(1), 47–58.
- Suhardjo, D. (2010). Arti Penting Pendidikan Mitigasi Bencana Dalam Mengurangi Resiko Bencana. *Cakrawala Pendidikan*, (2), 174–188.
- Supartini, E., Kumalasari, N., Andry, D., Susilastuti, Fitrianasari, I., Tarigan, J., ... Raditya Nugi. (2017). *Latihan Kesiapsiagaan Bencana - Membangun Kesadaran, Kewaspadaan dan Kesiapsiagaan dalam Menghadapi Bencana*. (N. Kumalasari, Susilastuti, J. Tarigan, & T. Mulyadi, Eds.) (April 2017). Jakarta: Deputi Bidang Pencegahan dan Kesiapsiagaann BNPB.
- Tekeli-yesil, S., Tanner, M., & Kara, M. (2018). The role of the print media in earthquake risk communication: information available between 1996 and 2014 in Turkish newspapers. *International Journal of Disaster Risk Reduction*. <https://doi.org/10.1016/j.ijdrr.2018.10.014>
- Timotius, K. H. (2017). *Pengantar Metodologi Penelitian: Pendekatan Manajemen Pengetahuan untuk Perkembangan Pengetahuan*. (P. Christian, Ed.). Yogyakarta: ANDI.
- Torunoğlu, Th., & Gençtanırı̄m, D. (2015). The Perceptions of School Counselors About the Counseling and Guidance Programs of Vocational High Schools. *Social and Behavioral Sciences*, 174, 368–376. <https://doi.org/10.1016/j.sbspro.2015.01.675>
- Triyono, Kurniah, Andriana, N., Kusumawati, T., & Hardianto, N. (2017). *Pedoman Kesiapsiagaan Menghadapi Gempa Bumi dan Tsunami*. Jakarta.
- Triyono, M. B. (2015). The Indicators of Instructional Design for E- learning in Indonesian Vocational High Schools. *Procedia - Social and Behavioral Sciences*, 204, 54–61. <https://doi.org/10.1016/j.sbspro.2015.08.109>
- Tsai, C.-H., & Chen, C.-W. (2010). An earthquake disaster management mechanism based on risk assessment information for the tourism industry-a case study from the island of Taiwan. *Tourism Management*, 31(4), 470–481.
- Tuladhar, G., Yatabe, R., Dahal, R. K., & Bhandary, N. P. (2014). Knowledge of disaster risk reduction among school students in Nepal. *Geomatics, Natural Hazards and Risk*, 5(3), 190–207.

- Utami, Y. G. D., & Hudaniah. (2013). Self Efficacy Dengan Kesiapan Kerja Siswa Sekolah Menengah Kejuruan. *Jurnal Ilmiah Psikologi Terapan*, 01(01), 40–52.
- Wardyaningrum, D. (2014). Perubahan Komunikasi Masyarakat Dalam Inovasi Mitigasi Bencana Di Wilayah Rawan Bencana Gunung Merapi. *Jurnal ASPIKOM*, 2(3), 179–197.
- Wenjing, P., Shijie, S., & Yan, Z. (2019). Consumer Health Information Needs : A Systematic Review of Measures. *Information Processing and Management*. <https://doi.org/10.1016/j.ipm.2019.102077>
- Wibowo, N. (2015). Upaya Memperkecil Kesenjangan Kompetensi Lulusan Sekolah Menengah Kejuruan Dengan Tuntutan Dunia Industri. *Jurnal Pendidikan Teknologi Dan Kejuruan*, 23(1), 45–50.
- Wu, H., Greer, A., Murphy, H. C., & Chang, R. (2017). Preparing for the New Normal: Students and Earthquake Hazard Adjustments in Oklahoma. *International Journal of Disaster Risk Reduction*, (June), 0–1. <https://doi.org/10.1016/j.ijdrr.2017.09.033>
- Wu, X., Wang, Z., Gao, G., Guo, J., & Xue, P. (2019). Disaster Probability, Optimal Government Expenditure for Disaster Prevention and Mitigation, and Expected Economic Growth. *Science of the Total Environment*, 135888. <https://doi.org/10.1016/j.scitotenv.2019.135888>
- Wulandari, W., Wakhid, A., & Saparwati, M. (2019). Gambaran Karakteristik Kesiapsiagaan Bencana Pada Remaja. *Jurnal Gawat Darurat*, 1(1), 1–6.
- Yanuarto, T., Pinuji, S., Utomo, A. C., & Satrio, I. T. (2019). *Tanggap Tangkas Tangguh Menghadapi Bencana*. (T. Yanuarto, Ed.). Jakarta: Pusat Data Informasi Dan Humas Badan Nasional Penanggulangan Bencana - Graha BNPB.
- Yen, C. H., Che An Ahmad, & Abdullah, K. (2019). Disaster Relief Work: The Experiences of Volunteers in Malaysia. *International Journal of Disaster Risk Reduction*, 43. <https://doi.org/10.1016/j.ijdrr.2019.101414>
- Yunarto, Susilowati, Y., Nur, W. H., & Kumoro, Y. (2019). Pemetaan Kesiapsiagaan Rumah Tangga Dalam Mengantisipasi Bencana Gempa Bumi Patahan Lembang, 11(1), 1–18.

