

**IDENTIFIKASI PRIORITAS *EMPLOYABILITY SKILLS* SISWA
PENDIDIKAN VOKASI BERBASIS *FUZZY ANALYTICAL HIERARCHY*
*PROCESS***

TESIS

Diajukan sebagai salah satu syarat untuk memperoleh gelar Magister Pendidikan Teknologi
dan Kejuruan



Muh Abdul Latif
1906670

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

Identifikasi Prioritas *Employability Skills* Siswa Pendidikan Vokasi Berbasis *Fuzzy Analytical Hierarchy Process*

Oleh
Muh Abdul Latif

S.Pd Universitas Pendidikan Indonesia, 2018

Sebuah Tesis yang diajukan untuk memenuhi salah satu syarat memperoleh gelar Magister Pendidikan (M.Pd.) pada Sekolah Pascasarjana

© Muh Abdul Latif 2021
Universitas Pendidikan Indonesia
Agustus 2021

Hak Cipta dilindungi undang-undang.
Tesis ini tidak boleh diperbanyak seluruhnya atau sebagian,
dengan dicetak ulang, difoto kopi, atau cara lainnya tanpa ijin dari penulis.

LEMBAR PENGESAHAN

MUH ABDUL LATIF

IDENTIFIKASI PRIORITAS *EMPLOYABILITY SKILLS* SISWA PENDIDIKAN
VOKASI BERBASIS *FUZZY ANALYTICAL HIERARCHY PROCESS*

disetujui dan disahkan oleh pembimbing:

Dosen Pembimbing



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

Mengetahui,
Ketua Program Studi Pendidikan Teknologi dan Kejuruan



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

ABSTRAK

Penelitian ini mengidentifikasi prioritas *employability skills* siswa pendidikan vokasi menggunakan *Fuzzy AHP*. Tujuan dari penelitian ini ingin mengetahui keseragaman atribut *employability skills* secara global, mengidentifikasi atribut mana yang paling prioritas dibutuhkan lulusan vokasi berdasarkan perspektif guru SMK dan mengetahui perspektif guru SMK terkait pentingnya atribut *employability skills* bagi lulusan vokasi. Penelitian ini melibatkan 378 guru SMK di Indonesia sebagai responden. Teknik analisis konten digunakan untuk menentukan seperangkat atribut yang digunakan dalam beberapa *framework* dan metode MCDM berbasis *Fuzzy AHP* digunakan untuk membantu penentuan prioritas dan pengambil keputusan. Hasil didapat bahwa, kemampuan komunikasi, kemampuan bekerja sama, kemampuan memecahkan masalah, kemampuan manajemen diri, kemampuan merencanakan dan mengorganisir, kemampuan menggunakan teknologi dan kemampuan belajar sepanjang hayat merupakan atribut *employability skills* yang banyak digunakan secara global. Adapun atribut yang paling prioritas dibutuhkan oleh lulusan vokasi berdasarkan perspektif guru ialah kemampuan berinteraksi dengan rekan kerja, kemampuan penggunaan dasar teknologi informasi dan kemampuan memiliki visi dan misi pribadi. Hal lain yang digali dari perspektif guru ialah bahwa menurut mereka sangat penting lulusan vokasi memiliki kemampuan dalam aspek manajemen diri terutama disiplin terhadap waktu, memiliki sikap perilaku yang baik dan memiliki komitmen yang tinggi pada setiap pekerjaan yang ditekuninya. Hasil penelitian ini diharapkan dapat dijadikan sebagai bahan informasi kepada pihak-pihak terkait seperti pemerintah sebagai pemangku kebijakan, pihak sekolah dalam peningkatan kualitas lulusan dan pengajaran, pihak industri dalam peningkatan kualitas para pekerja, serta bagi siswa dan lulusan dalam menyiapkan diri untuk menjadi pekerja yang profesional.

Kata kunci: Employability skill, Multi-criteria decision making, Fuzzy AHP, pendidikan vokasi

ABSTRACT

This study identifies the priority employability skills of vocational education students using Fuzzy AHP. The purpose of this study is to find out the uniformity of employability skills attributes globally, identify which attributes are the most priority needed by vocational graduates based on the perspective of vocational teachers and to know the perspective of vocational teachers regarding the importance of employability skills attributes for vocational graduates. This study involved 378 SMK teachers in Indonesia as respondents. Content analysis techniques are used to determine a set of attributes that are used in several frameworks and the MCDM based Fuzzy AHP method is used to help determine priorities and decision makers. The results show that communication skills, collaboration skills, problem solving skills, self-management skills, planning and organizing skills, the ability to use technology and lifelong learning skills are attributes of employability skills that are widely used globally. The most priority attributes needed by vocational graduates based on the teacher's perspective are the ability to interact with colleagues, the ability to use basic information technology and the ability to have a personal vision and mission. Another thing that is explored from the teacher's perspective is that according to them it is very important that vocational graduates have the ability in aspects of self-management, especially discipline towards time, have good behavior and have a high commitment to every job they do. The results of this study are expected to be used as information material for related parties such as the government as policy makers, schools in improving the quality of graduates and teaching, industry in improving the quality of workers, as well as for students and graduates in preparing themselves to become professional workers.

Keywords: Employability skills, Multi-criteria decision making, Fuzzy AHP, vocational education

Muh Abdul Latif, 2021

IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS

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

DAFTAR ISI

KATA PENGANTAR	ii
UCAPAN TERIMA KASIH	iii
ABSTRAK	v
DAFTAR ISI	vi
DAFTAR TABEL	vii
DAFTAR GAMBAR	viii
BAB I PENDAHULUAN	1
1.1 Latar Belakang Masalah Penelitian	1
1.2 Rumusan Masalah Penelitian	4
1.3 Tujuan Penelitian	5
1.4 Manfaat Penelitian	5
1.5 Struktur Organisasi Tesis	6
BAB II KAJIAN TEORI.....	7
2.1 Keterampilan kelayakan kerja (<i>Employability skill</i>).....	7
2.2 <i>Employability Skills</i> di Sekolah Menengah Kejuruan.....	12
2.3 <i>Analytic Hierarchy Process (AHP)</i>	13
BAB III METODE PENELITIAN	17
3.1 Desain Penelitian	17
3.2 Partisipan.....	18
3.3 Instrumen Penelitian	19
3.4 Prosedur Penelitian	21
3.5 Analisis Data	22
BAB IV HASIL DAN PEMBAHASAN	31
4.1 Hasil	31
4.2 Pembahasan	64
BAB V KESIMPULAN, IMPLIKASI DAN REKOMENDASI	75
5.1 Kesimpulan.....	75
5.2 Implikasi.....	75
5.3 Rekomendasi	75
DAFTAR PUSTAKA	77

DAFTAR PUSTAKA

- Acharya, V., Sharma, S. K., & Gupta, S. K. (2017). Analyzing the factors in industrial automation using analytic hierarchy process. *Computers and Electrical Engineering*, 0, 1–10. <https://doi.org/10.1016/j.compeleceng.2017.08.015>
- Ahmed, F., & Kilic, K. (2019). Fuzzy Analytic Hierarchy Process: A Performance Analysis of Various Algorithms. *Fuzzy Sets and Systems*, 362, 110–128. <https://doi.org/10.1016/j.fss.2018.08.009>
- Alonso, J. A., & Lamata, M. T. (2006). Consistency in the analytic hierarchy process: A new approach. *International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems*, 14(4), 445–459. <https://doi.org/10.1142/S0218488506004114>
- Asmaak, L., & Nayan, S. (2010). Employability_Awareness_among_Malaysian. *International Journal of Business and Management*, 5(8), 119–123.
- Bakar, A., & Satisfaction, C. (2015). *Employability Skills Among the Students of Technical and Vocational Training Centers in Malaysia*. November.
- Bennett, T. M. (2006). Defining the Importance of Employability Skills in Technical Education. *Auburn University*.
- Buckley, J. J. (1985). Fuzzy Hierarchical Analysis. *Fuzzy Sets and Systems*, 17(3), 233–247. [https://doi.org/10.1016/0165-0114\(85\)90090-9](https://doi.org/10.1016/0165-0114(85)90090-9)
- Burgaz, B. (2008). Employability Competences of Vocational Secondary School Students. *Eurasian Journal of Educational Research (EJER)*, 31.
- Cavanagh, J., Burston, M., Southcombe, A., & Bartram, T. (2015). Contributing to a graduate-centred understanding of work readiness: An exploratory study of Australian undergraduate students' perceptions of their employability. *International Journal of Management Education*, 13(3), 278–288. <https://doi.org/10.1016/j.ijme.2015.07.002>
- Chang, D.-Y. (1996). Applications of the extent analysis method on fuzzy AHP. *European Journal of Operational Research*, 95(95), 649–655.
- Chang, D. (1996). *Applications of The Extent Analysis Method On Fuzzy AHP*. 2217(95).
- Chang, D. Y. (1996). Applications of the extent analysis method on fuzzy AHP. *European Journal of Operational Research*, 95(3), 649–655. [https://doi.org/10.1016/0377-2217\(95\)00300-2](https://doi.org/10.1016/0377-2217(95)00300-2)
- Chen, D. C., Chen, C. P., Lee, C. Y., You, C. S., & Jao, C. H. (2011). Using an analytic hierarchy process to develop competencies on mould product creativity for vocational college students. *World Transactions on Engineering and Technology Education*, 9(1), 54–59.

Muh Abdul Latif, 2021

IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS

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

- Chowdhury, T. M., & Murzi, H. (2020). The evolution of teamwork in engineering workplace from first industry revolution to industry 4.0: A literature review. *ASEE Annual Conference and Exposition, Conference Proceedings, 2020-June*. <https://doi.org/10.18260/1-2--35318>
- Clarke, L., & Winch, C. (2007). *Vocational education: International approaches, developments and systems*. Routledge.
- Cleary, M., Flynn, R., Thomasson, S., Alexander, R., & McDonald, B. (2007). Graduate Employability Skills. *Industry and Higher Education, August*, 167–169. <http://www.dest.gov.au/NR/rdonlyres/E58EFDBE-BA83-430E-A541-2E91BCB59DF1/20214/GraduateEmployabilitySkillsFINALREPORT1.pdf>
- Curtin, P. (2002). Employability skills for the future. *Education And Training, March*, 1–65. http://www.dest.gov.au/NR/rdonlyres/4E332FD9-B268-443D-866C-621D02265C3A/2212/final_report.pdf
- Deng, H. (1999). Multicriteria Analysis With Fuzzy Pairwise Comparison. *IEEE International Conference on Fuzzy Systems*, 2(x), 726–731. <https://doi.org/10.1109/fuzzy.1999.793038>
- Djojonegoro, W., & Slamet. (1998). *Pengembangan sumberdaya manusia melalui sekolah menengah kejuruan (SMK)*. Departemen Pendidikan dan Kebudayaan.
- Dodrige, M. (1999). Generic skill requirements for engineers in the 21st century. *Proceedings - Frontiers in Education Conference*, 3, 9–14. <https://doi.org/10.1109/fie.1999.840340>
- Elmahmoudi, F., Abra, O. E., Raihani, A., Serrar, O., & Bahatti, L. (2019). GIS Based Fuzzy Analytic Hierarchy Process for Wind Energy Sites Selection. *Proceedings - 2019 International Conference on Advanced Communication Technologies and Networking, CommNet 2019*, 1–5. <https://doi.org/10.1109/COMMNET.2019.8742365>
- Eskandari, S., & Miesel, J. R. (2017). Comparison of the fuzzy AHP method, the spatial correlation method, and the Dong model to predict the fire high-risk areas in Hyrcanian forests of Iran. *Geomatics, Natural Hazards and Risk*, 8(2), 933–949. <https://doi.org/10.1080/19475705.2017.1289249>
- European Social Fund. (n.d.). *DG Employability tap Skills Framework*.
- Florida Chamber Foundation. (2008). Florida 2030 Employability Skills Framework. In *Framework* (p. 5).
- Gnanavelbabu, A., & Arunagiri, P. (2018). ScienceDirect Ranking of MUDA using AHP and Fuzzy AHP algorithm. *Materials Today: Proceedings*, 5(5), 13406–13412. <https://doi.org/10.1016/j.matpr.2018.02.334>
- Gov.sg. (2020). *Employability Skills WSQ*. Government of Singapore. <https://www.ssg.gov.sg/wsq/wps.html>
- Güçdemir, H., & Selim, H. (2015). Integrating multi-criteria decision making and clustering for business customer segmentation. *Industrial Management and*

Data Systems, 115(6), 1022–1040. <https://doi.org/10.1108/IMDS-01-2015-0027>

- Hellne-Halvorsen, E. B., Lahn, L. C., & Nore, H. (2021). Writing Competences in Norwegian Vocational Education and Training: - How Students and Apprentices Express their Professional Competences. *Vocations and Learning*, 14(2), 243–264. <https://doi.org/10.1007/s12186-020-09262-0>
- Ho, W. (2008). Multiple Criteria Decision Making in Higher Education. *European Journal of Operational Research*, ii.
- International Labour Office. (2013). *Enhancing youth employability: The importance of core work skills* (Issue May, pp. 1–8). www.ilo.org/skills
- Ismail, S., & Mohammed, D. S. (2015). Employability Skills in TVET Curriculum in Nigeria Federal Universities of Technology. *Procedia - Social and Behavioral Sciences*, 204(November 2014), 73–80. <https://doi.org/10.1016/j.sbspro.2015.08.111>
- Jackson, D. (2013). Student Perceptions of the Importance of Employability Skill Provision in Business Undergraduate Programs. *Journal of Education for Business*, 88(5), 271–279. <https://doi.org/10.1080/08832323.2012.697928>
- Jackson, D. (2015). Employability skill development in work-integrated learning: Barriers and best practice. *Studies in Higher Education*, 40(2), 350–367. <https://doi.org/10.1080/03075079.2013.842221>
- Jamaludin, K. A., Alias, N., Dewitt, D., & Razzaq, A. R. A. (2019). Framework for technical communication skills content development for students in Malaysian vocational colleges: A fuzzy delphi study. *Journal of Technical Education and Training*, 11(4), 36–44. <https://doi.org/10.30880/jtet.2019.11.04.005>
- Jose, R., Narendran, M., Bindu, A., Beevi, N., L, M., & Benny, P. V. (2021). Public perception and preparedness for the pandemic COVID 19: A Health Belief Model approach. *Clinical Epidemiology and Global Health*, 9, 41–46. <https://doi.org/10.1016/j.cegh.2020.06.009>
- Jyothirmayee Ramisetty, D. K. D. (2017). Measurement of Employability Skills and Job Readiness Perception of Post – graduate Management students: Results from A Pilot Study. *International Journal in Management and Social Science*, 05(08), 82–94. https://s3.amazonaws.com/academia.edu.documents/58584371/IJMSS10Aug17-6840.pdf?response-content-disposition=attachment%3Bfilename%3DMeasurement_of_Employability_Skills_and.pdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIWOWYYGZ2Y53UL3A%2F20190
- Kahraman, C., Cebeci, U., & Ulukan, Z. (2003a). *Multi-criteria supplier selection using fuzzy AHP Cengiz Kahraman Other business considerations* : 16(6), 382–394. <https://doi.org/10.1108/09576050310503367>
- Kahraman, C., Cebeci, U., & Ulukan, Z. (2003b). Multi-criteria supplier selection

Muh Abdul Latif, 2021

IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS

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

- using fuzzy AHP. *Logistics Information Management*, 16(6), 382–394. <https://doi.org/10.1108/09576050310503367>
- Kamin, Y. Bin, Sukri, M., & Saud, B. (2013). *Acquisition of Employability Skills in Technical Vocational Education : Necessity for the 21 st Century Workforce*. 7(6), 9–14.
- Kazilan, F., Hamzah, R., & Bakar, A. R. (2009). Employability skills among the students of technical and vocational training centers in Malaysia. *European Journal of Social Sciences*, 9(1), 147–160.
- Khamis AlKhomeiri, A., & Khalid, K. (2018). Investigating Undergraduates' Perceptions on Employability Skills in the UAE: an Analytic hierarchy Process Model in Engineering and Business Students. *International Journal of Engineering & Technology*, 7(3.7), 138. <https://doi.org/10.14419/ijet.v7i3.7.16256>
- Kim, N., Park, J., & Choi, J. J. (2017). Perceptual differences in core competencies between tourism industry practitioners and students using Analytic Hierarchy Process (AHP). *Journal of Hospitality, Leisure, Sport and Tourism Education*, 20(June 2016), 76–86. <https://doi.org/10.1016/j.jhlste.2017.04.003>
- Kuntoro, A. (1994). *Action Reaserch : Metode Pengembangan dan Partisipasi*. 147–158.
- Kwok, M. (2003). Towards an Understanding of Employability Skills Development among University Graduates for Workplace Entry. *Employability Skills 1*, May, 1–28.
- Laarhoven, P. J. M. van, & Perdrycz, W. (1983). A Fuzzy Extension of Saaty's Priority Theori. *Fuzzy Sets and Systems*, 11, 229–241.
- Lane, S. (2016). *Promoting Collaborative Learning among Students*. 4(8), 602–607. <https://doi.org/10.12691/education-4-8-4>
- Lankard, B. A. (1990). Employability--The Fifth Basic Skill. ERIC Digest No. 104. *Employability--The Fifth Basic Skill. ERIC Digest No. 104.*, 104, 1–8.
- Lappalainen, P. (2010). Integrated language education - a means of enhancing engineers' social competences. *European Journal of Engineering Education*, 35(4), 393–403. <https://doi.org/10.1080/03043797.2010.488290>
- Lavic, Z., Vucijak, B., Pasic, M., & Dukic, N. (2018). *Consistency Check Of Fuzzy Pairwise Comparison Matrices Of Dimensions Larger Than 3 X 3*. 709–713. <https://doi.org/10.2507/29th.daaam.proceedings.102>
- Leon, J. E. De. (1998). High School Graduate Employment Trends and the Skills Graduates Need to Enter Texas Manufacturing Industries. *Journal of Vocational and Technical Education*, 15(1).
- Levary, R. R., & Wan, K. (1998). *A Simulation Approach For Handling Uncertainty In The Analytic Hierarchy Process*. 2217(1995).
- Mardani, A., Jusoh, A., & Kazimieras, E. (2015). *Expert Systems with Applications*
- Muh Abdul Latif, 2021
IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS
 Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

Fuzzy multiple criteria decision-making techniques and applications – Two decades review from 1994 to 2014. 42, 4126–4148.
<https://doi.org/10.1016/j.eswa.2015.01.003>

Mason, G., Williams, G., & Cranmer, S. (2009). Employability skills initiatives in higher education: What effects do they have on graduate labour market outcomes? *Education Economics*, 17(1), 1–30.
<https://doi.org/10.1080/09645290802028315>

Mcgunagle, D., & Zizka, L. (2020). *Employability skills for 21st- century STEM students : the employers ' perspective.* 10(3), 591–606.
<https://doi.org/10.1108/HESWBL-10-2019-0148>

Mckenzie, P. (2002). *Australian Council for Educational Research EMPLOYABILITY SKILLS FOR AUSTRALIAN INDUSTRY: Report to : Business Council of Australia Australian Chamber of Commerce and Industry. December 2001.*

Mcleish, A. (2002). *Employability Skills for Australian Small. February.*

Md Yusoff, Y., Omar, M. Z., Zaharim, A., Mohamed, A., & Muhamad, N. (2012). Employability skills performance score for fresh engineering graduates in Malaysian industry. *Asian Social Science*, 8(16), 140–145.
<https://doi.org/10.5539/ass.v8n16p140>

Meena, P. L., & Sarmah, S. P. (2012). Development of a supplier satisfaction index model. *Industrial Management and Data Systems*, 112(8), 1236–1254.
<https://doi.org/10.1108/02635571211264645>

Mulubrhan, F., Mokhtar, A. A., & Muhammad, M. (2014). Comparative analysis between fuzzy and traditional analytical hierarchy process. *MATEC Web of Conferences*, 13, 0–4. <https://doi.org/10.1051/mateconf/20141301006>

Nugraha, H. D., Djohar, A., & Komaro, M. (2019). *Employability Skills Framework for Mechanical Engineering.* 299(Ictvet 2018), 183–188.
<https://doi.org/10.2991/ictvet-18.2019.41>

Omar, M. K., Education, V., & Satisfaction, J. (2017). *Employability Skills of Malaysian Community College Students M . K . Omar , A . R . Bakar , & A . Mat Rashid . (2012). Employability Skill Acquisition among Malaysian Community ... December 2011.* <https://doi.org/10.13140/RG.2.2.35924.50567>

Onyene, V., Salisu, R., Johnson, O., & Olusanya, O. (2014). Indigenous Orientation in the Technical and Vocational Education Programme: Tool for a Sustainable Society. *International Studies in Educational Administration (Commonwealth Council for Educational Administration & Management (CCEAM))*, 42(1).

Pan, N. F. (2008). Fuzzy AHP Approach For Selecting The Suitable Bridge Construction Method. *Automation in Construction*, 17(8), 958–965.
<https://doi.org/10.1016/j.autcon.2008.03.005>

Pawar, S. S., & Rathod, R. R. (2019). Analytical Hierarchy Process for Student-Teacher-Industry Expectation Perspective. *Computing, Communication and*

Muh Abdul Latif, 2021

IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS

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

Signal Processing. <https://doi.org/10.1007/978-981-13-1513-8>

- Pouratashi, M. (2019). Higher education and activities to improve students' employability skills. *Journal of Education for Business*, 0(0), 1–7. <https://doi.org/10.1080/08832323.2018.1548421>
- Pusriawan, & Soenarto, S. (2019). Employability Skills Of Vocational School Students In Palu City For Entering The Work World. *Jurnal Pendidikan Vokasi*, 9(1), 33–42.
- Rasul, M. S., Abd Rauf, R. A., Mansor, A. N., & Puvanasvaran, A. P. (2012). Employability skills assessment tool development. *International Education Studies*, 5(5), 43–56. <https://doi.org/10.5539/ies.v5n5p43>
- Rasul, M. S., Puvanasvaran, A. P., & Keroh, A. (2009). Importance of Employability Skills As Perceived By. *Journal of Human Capital Development*, 2(2), 23–36.
- Robinson, J., Garton, B., & Vaughn, P. (2007). Becoming employable: A look at graduates' and supervisors' perceptions of the skills needed for employability. *NACTA Journal*, June, 19–26. http://www.nactateachers.org/attachments/article/254/Robinson_NACTA_Journal_June_2007-4.pdf
- Robinson, J. P. (2000). *What are Employability Skills?. Alabama Cooperative Extension system*.
- Robinson, J. S., & Garton, B. L. (2008). *An Assessment Of The Employability Skills Needed By Graduates In The College Of Agriculture , Food And Natural Resources*. 49(4).
- Robles, M. M. (2012). Executive Perceptions of the Top 10 Soft Skills Needed in Today's Workplace. *Business Communication Quarterly*, 75(4), 453–465. <https://doi.org/10.1177/1080569912460400>
- Saaty, T. L. (1977). A Scaling Method for Priorities in Hierarchical Structure. *Journal of Mathematical Psychology*, 281, 234–281.
- Saaty, T. L. (1990). How to make a decision. *International Series in Operations Research and Management Science*, 175, 1–21. https://doi.org/10.1007/978-1-4614-3597-6_1
- Saaty, T. L. (2000). *Fundamentals of Decision Making and Priority Theory With the Analytic Hierarchy Process* (Vol. VI of). RWS Publications. <https://doi.org/1888603151>
- Salleh, K. M., Sulaiman, N. L., & Talib, K. N. (2010). *Globalization 's Impact on Soft Skills Demand in the Malaysian Workforce and Organizations : What makes graduates employable ? November*, 10–11.
- Sayuti, M., & Mujiarto, M. (2018). Employability skills in vocational high school context: An analysis of the KTSP curriculum. *Journal of Vocational Education Studies*, 1(2), 33. <https://doi.org/10.12928/joves.v1i2.707>
- Sevкли, M., Koh, S. C. L., Zaim, S., Demirbag, M., & Tatoglu, E. (2008). Hybrid
- Muh Abdul Latif, 2021
IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS
 Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

- analytical hierarchy process model for supplier selection. *Industrial Management and Data Systems*, 108(1), 122–142. <https://doi.org/10.1108/02635570810844124>
- Sipayung, H. D., Sani, R. A., & Bunawan, W. (2018). *Collaborative Inquiry For 4C Skills*. 200(Aisteel), 440–445. <https://doi.org/10.2991/aisteel-18.2018.95>
- Spinks, N., Silburn, N. L. J., & Birchall, D. W. (2007). Making it all work: the engineering graduate of the future, a UK perspective. *European Journal of Engineering Education*, 32(3), 325–335. <https://doi.org/10.1080/03043790701278573>
- Stam, A., Sun, M., & Haines, M. (1996). Artificial neural network representations for hierarchical preference structures. *Computers and Operations Research*, 23(12), 1191–1201. [https://doi.org/10.1016/S0305-0548\(96\)00021-4](https://doi.org/10.1016/S0305-0548(96)00021-4)
- Stoffers, J. M. M., Heijden, B. I. J. M. Van Der, Jacobs, E. A. G. M., Stoffers, J. M. M., Heijden, B. I. J. M. Van Der, & Jacobs, E. A. G. M. (2018). Employability and innovative work behaviour in small and medium-sized enterprises. *The International Journal of Human Resource Management*, 5192(January), 1–28. <https://doi.org/10.1080/09585192.2017.1407953>
- Suarta, I. M., Suwintana, I. K., Sudhana, I. G. P. F. P., Kadek, N., & Hariyanti, D. (2017). *Employability skills required by the 21 st -century workplace : a literature review of labour market demand*. 102(Ictvt), 337–342.
- Sudarmaji, H., Susila, I. W., & Sutiadiningsih, A. (2021). The Influence Of Skill Aspect On Vocational Education Graduates For Improving Job Achievement In The Era Industry 4.0. *International Journal of Progressive Sciences and Technologies*, 24(1), 167–174. <https://www.ijshjournals.org/IJPSAT/index.php/ijpsat/article/view/2478>
- Suneela, E. R. (2014). Soft Skills are Employability Skills; With Special Reference to Communication Skills. *IOSR Journal of Humanities and Social Science*, 19(8), 59–61. <https://doi.org/10.9790/0837-19845961>
- Swarnendu. (2012). Employability Skill Acquisition among Malaysian Community College Students. *Journal of Social Sciences*, 8(3), 472–478. <https://doi.org/10.3844/jssp.2012.472.478>
- Syaban, A. (2005). *Teknik analisis data penelitian*.
- Tan, J., Fu, H. Z., & Ho, Y. S. (2014). A bibliometric analysis of research on proteomics in Science Citation Index Expanded. *Scientometrics*, 98(2), 1473–1490. <https://doi.org/10.1007/s11192-013-1125-2>
- Tymon, A. (2013). The student perspective on employability. *Studies in Higher Education*, 38(6), 841–856. <https://doi.org/10.1080/03075079.2011.604408>
- Wagiran. (2008). Butir-butir Pemikiran Pengembangan Pendidikan Vokasi secara Holistik. Makalah. Disampaikan salam Seminar Internasional Revitalisasi Pendidikan Kejuruan dalam Pengembangan SDM Nasional. Diselenggarakan oleh Aptekindo di Universitas Negeri Padang. *Seminar Internasional*

Muh Abdul Latif, 2021

IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS

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

Revitalisasi Pendidikan Kejuruan Dalam Pengembangan SDM.

- Wahyuni, L. M., Masih, I. K., & Mei Rejeki, I. N. (2018). Communication Skill Attributes Needed for Vocational Education enter the Workplace. *Journal of Physics: Conference Series*, 953(1). <https://doi.org/10.1088/1742-6596/953/1/012111>
- Wang, L., Zhao, L., Mao, G., Zuo, J., & Du, H. (2017). Way to accomplish low carbon development transformation: A bibliometric analysis during 1995–2014. *Renewable and Sustainable Energy Reviews*, 68, 57–69.
- Wang, T., Jiang, S., & Feng, C. (2016). *Application of Analytic Hierarchy Process on Employability Criteria of College Graduates by the Tourism Industry of Taiwan*. 3(5).
- Wang, W. C., Yu, W. Der, Yang, I. T., Lin, C. C., Lee, M. T., & Cheng, Y. Y. (2013). Applying the AHP to support the best-value contractor selection-lessons learned from two case studies in Taiwan. *Journal of Civil Engineering and Management*, 19(1), 24–36. <https://doi.org/10.3846/13923730.2012.734851>
- Wang, Y. M., Luo, Y., & Hua, Z. (2008). On The Extent Analysis Method For Fuzzy AHP and Its Applications. *European Journal of Operational Research*, 186(2), 735–747. <https://doi.org/10.1016/j.ejor.2007.01.050>
- Widarto, S. M., FitriRahmawati, N. Y. M. A. J. H., & Editor. (2018). *Employability Skills Lulusan SMK dan Relevansinya Terhadap Kebutuhan Dunia Kerja* (M. H. M. A. M. Ari (ed.)). Direktorat Pembinaan Sekolah Menengah Kejuruan Direktorat Jenderal Pendidikan Dasar dan Menengah Kementerian Pendidikan dan Kebudayaan.
- Wye, C., & Lim, Y.-M. (2009). *Perception Differential between Employers and Undergraduates on the Importance of Employability Skills*. 2008, 95–105.
- Yu, C. S. (2002). A GP-AHP Method For Solving Group Decision-Making Fuzzy AHP Problems. In *Computers and Operations Research* (Vol. 29, Issue 14). [https://doi.org/10.1016/S0305-0548\(01\)00068-5](https://doi.org/10.1016/S0305-0548(01)00068-5)
- Zadeh, L. A. (1965). Fuzzy Sets. *Information and Control*, 8, 1562–1569. <https://doi.org/10.1061/9780784413616.194>
- Zaharim, A., Yusoff, Y., & Omar, M. (2009). Engineering Employability Skills Required By Employers In Asia. *Proceedings of the 6th WSEAS International Conference on ENGINEERING EDUCATION Engineering*, 6(9), 195–201. <http://www.wseas.us/e-library/conferences/2009/rodos/EDU/EDU30.pdf>
- Zare, M., Pahl, C., Rahnama, H., Nilashi, M., Mardani, A., Ibrahim, O., & Ahmadi, H. (2016). Multi-Criteria Decision Making Approach in E-Learning: A Systematic Review and Classification. *Applied Soft Computing Journal*. <https://doi.org/10.1016/j.asoc.2016.04.020>
- Zegwaard, K., & Hodges, D. (2003). Science and technology stakeholders' ranking of graduate competencies part 3: Graduate perspective. *Asia-Pacific Journal of Cooperative Education*, 4(2), 23–35.

Muh Abdul Latif, 2021

IDENTIFIKASI PRIORITAS EMPLOYABILITY SKILLS SISWA PENDIDIKAN VOKASI BERBASIS FUZZY ANALYTICAL HIERARCHY PROCESS

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

Zyoud, S. H., & Fuchs-Hanusch, D. (2017). A bibliometric-based survey on AHP and TOPSIS techniques. *Expert Systems with Applications*, 78, 158–181. <https://doi.org/10.1016/j.eswa.2017.02.016>