

BAB V

KESIMPULAN DAN SARAN

Pada bab ini dipaparkan kesimpulan yang dapat ditarik berdasarkan pengolahan dan analisis data penelitian jenis pekerjaan dan jenis kelamin terhadap *working memory*. Saran diberikan untuk penelitian selanjutnya yang serupa.

V.1 Kesimpulan

Kesimpulan berisikan mengenai simpulan dari hasil penelitian mengenai jenis pekerjaan dan jenis kelamin terhadap waktu reaksi, waktu penyelesaian, dan akurasi *working memory* mahasiswa. Kesimpulan menjawab tujuan dari penelitian.

1. Berdasarkan uji pengaruh dengan menggunakan uji *two-way mixed ANOVA* dapat diketahui bahwa jenis pekerjaan memengaruhi waktu penyelesaian tugas (durasi pilihan ganda) dan akurasi *working memory* (nilai pilihan ganda dan akurasi visual) mahasiswa. Akan tetapi jenis pekerjaan tidak berpengaruh terhadap waktu reaksi serta jenis kelamin tidak berpengaruh terhadap waktu reaksi, waktu penyelesaian, dan akurasi *working memory* mahasiswa.
2. Usulan yang dapat diberikan kepada mahasiswa terkait pekerjaan *multitasking*, yakni mahasiswa mengerjakan tugas secara satu per satu. Adapun hasil dari penelitian ini menunjukkan bahwa mahasiswa yang mengerjakan *multitasking* memerlukan waktu penyelesaian tugas yang lebih lama. Selain itu, akurasi jawaban yang didapatkan menurun jika dibandingkan dengan pengerjaan secara *single tasking*. Akan tetapi, jika mahasiswa mengutamakan durasi waktu pengerjaan tugas yang lebih singkat, dapat diterapkan pengerjaan *multitasking*. Bagi mahasiswa yang mengutamakan kualitas pekerjaan yang baik (akurasi jawaban yang tinggi), dapat diterapkan pengerjaan *single tasking*.

V.2 Saran

Terdapat beberapa saran yang didapatkan terkait pelaksanaan penelitian yang telah dilakukan untuk diperbaiki pada penelitian selanjutnya terkait *multitasking* maupun *working memory*. Berikut merupakan saran terhadap penelitian yang didapatkan.

1. Menggunakan metode pengukuran *working memory* yang berbeda dengan penelitian ini untuk mendapatkan hasil pengujian *working memory* dari sudut pandang yang berbeda, seperti menggunakan *n-back task* dalam bentuk audio dan pengerjaan soal berita dalam bentuk tertulis.
2. Jumlah partisipan ditambah guna mendapatkan nilai *power of statistic* yang lebih besar, sehingga meningkatkan reliabilitas hasil penelitian.

DAFTAR PUSTAKA

- Al'Omairi, T. (2015). The Influence of Paying Attention in Classroom on Students' Academic Achievement in Terms of Their Comprehension and Recall Ability. *Second International Conference on Education and Social Sciences*, 684-693. Diunduh dari: https://files.osf.io/v1/resources/tk7dp/providers/osfstorage/59df5197594d9002b0c42e9b?action=download&public_file=True&version=1&mode=render&direct [Diakses 20 Juni 2022]
- Alloway, T. P., & Alloway, R. G. (2008). Working memory: Is it the new IQ? *Nature Precedings*. doi:10.1038/npre.2008.2343.1
- Alloway, T. P., & Copello, E. (2013). Working Memory: The What, the Why, and the How. *The Australian Educational and Developmental Psychologist*, 30(2), 105-118. doi:10.1017/edp.2013.13
- Ariana, P. D., & Hastjarjo, T. D. (2018). Pengaruh Perhatian Terbagi Terhadap Kesadaran Situasi. *Jurnal Psikologi*, 17, 87-96. doi:10.14710/jp.17.1.87-96
- Baddeley, A. (2003). Working memory and language: an overview. *Journal of Communication Disorders*, 36(3), 189-208. doi:10.1016/S0021-9924(03)00019-4
- Baddeley, A. (2007). *Working Memory, Thought, and Action*. doi:10.1093/acprof:oso/9780198528012.001.0001
- Baddeley, A. D., & Logie, R. H. (1999). Working memory the multiplecomponent model. In A. Miyake, & P. Shah (Eds.), *Models of Working Memory Mechanisms of Active Maintenance and Executive Control* (pp. 28-61). Cambridge University. doi:10.1017/CBO9781139174909.005
- Bakker, S., & Niemantsverdriet, K. (2016). The Interaction-Attention Continuum Considering Various Levels of Human Attention in Interaction Design. *International Journal of Design*, 10(2), 1-14. Diunduh dari: <https://www.proquest.com/docview/1819560656/C5BBB0B1A8314352PQ/1?accountid=31495> [Diakses 27 Maret 2022]

- Basil, M. D. (2011). Multiple Resource Theory. In N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (p. 2384). Springer. doi:https://doi.org/10.1007/978-1-4419-1428-6_25
- Bhinnety, M. (2015). Struktur dan Proses Memori. *Buletin Psikologi*, 16(2), 74 – 88. Diunduh dari: <https://core.ac.uk/download/pdf/304224565.pdf>
- Blades, S. (2021). The Multitasking Mirage. Diunduh dari: https://training.hr.ufl.edu/resources/LeadershipToolkit/transcripts/multitasking_mirage.pdf [Diakses 6 Mei 2022]
- Borsook, D., Burstein, R., & Nosedo, R. (2015). *Precuneus*. Diunduh dari: <https://www.sciencedirect.com/topics/neuroscience/precuneus> [Diakses 29 Juli 2022]
- Burak, L. (2012). Multitasking in the University Classroom. *International Journal for the Scholarship of Teaching and Learning*, 6. doi:10.20429/ijstl.2012.060208
- Cockcroft, K. (2015). The role of working memory in childhood education: Five questions and answers. *South African Journal of Childhood Education (SAJCE)*, 5(1), 1-18. doi:10.4102/sajce.v5i1.347
- Cohen, J. (1988). *Statistical Power Analysis for The Behavioral Sciences Second Edition*. Lawrence Erlbaum Associates.
- Coulacoglou, C., & Saklofske, D. H. (2017). *Psychometrics and Psychological Assessment Principles and Applications*. doi:10.1016/B978-0-12-802219-1.00005-5
- De Valck, P. E., Smeekens, M. L., & Vantrappen, M. L. (2015). Periodic Psychological Examination of Train Drivers' Fitness in Belgium. *Journal of Occupational and Environmental Medicine*, 57(4), 445-452. doi:10.1097/JOM.0000000000000384
- Deng, Y., Wang, X., Wang, Y., & Zhou, C. (2018). Neural correlates of interference resolution in the multi-source interference task: a meta-analysis of functional neuroimaging studies. *Behavioral and Brain Functions*, 14(8), 1-9. doi:10.1186/s12993-018-0140-0
- Edwards, K. S., & Shin, M. (2017). Media multitasking and implicit learning. *Attention, Perception, & Psychophysics*, 79, 1535–1549. doi:10.3758/s13414-017-1319-4

- Ellis, Y., Daniels, B., & Jauregui, A. (2010). The Effect of Multitasking on The Grade Performance of Business Students. *Research in Higher Education Journal*, 8, 1-10. Diunduh dari: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1595375
- Enz, S., Hall, A. C., & Williams, K. K. (2021). The Myth of Multitasking and What It Means for Future Pharmacists. *American Journal of Pharmaceutical Education*, 85(10), 1016-1020. doi:10.5688/ajpe8267
- Forns, J., Esnaola, M., López-Vicente, M., Suades-González, E., Alvarez-Pedrerol, M., Julvez, J., . . . Sunyer, J. (2014). The n-back Test and the Attentional Network Task as Measures of Child Neuropsychological Development in Epidemiological Studies. *Neuropsychology*, 28(4), 519–529. doi:http://dx.doi.org/10.1037/neu0000085
- Frey, B. B. (2018). The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation. doi:http://dx.doi.org/10.4135/9781506326139.n436
- Gastwirth, J. L., Gel, Y. R., & Miao, W. (2009). The Impact of Levene's Test of Equality of Variances on Statistical Theory and Practice. *Statistical Science*, 24(3), 343-360. doi:10.1214/09-STS301
- Geller, E. S. (1977). Latencies to name one of three stimulus dimensions: A study of probability effects and dimension integrality. *Perception & Psychophysics*, 22(1), 70-76. Diunduh dari: <https://link.springer.com/content/pdf/10.3758/BF03206082.pdf>
- Gerhardsson, A., Fischer, H., Lekander, M., Kecklund, G., Axelsson, J., Åkerstedt, T., & Schwarz, J. (2019). Positivity Effect and Working Memory Performance Remains Intact in Older Adults After Sleep Deprivation. *10*, 1-9. doi:10.3389/fpsyg.2019.00605
- Gesell, I. (2007). Time Travel The Myth Behind the Allure of Multitasking. *The Journal for Quality and Participation*, 30(4), 22-23. Diunduh dari: <https://www.proquest.com/docview/219115701/5BFA2062FD254C00PQ/5?accountid=31495>
- Gilbert, S. J., & Shallice, T. (2002). Task Switching: A PDP Model. *Cognitive Psychology*, 44(3), 297-337. doi:10.1006/cogp.2001.0770
- Haatveit, B. C., Sundet, K., Hugdahl, K., Ueland, T., Melle, I., & Andreassen, O. A. (2010). The validity of d prime as a working memory index: Results from

- the "Bergen n-back task". *Clinical and Experimental Neuropsychology*, 32(8), 871-880. doi:10.1080/13803391003596421
- Harbison, J. I., Atkins, S. M., & Dougherty, M. R. (2011). *N-back Training Task Performance: Analysis and Model*. Diunduh dari: https://www.researchgate.net/publication/228844600_N-back_Training_Task_Performance_Analysis_and_Model [Diakses 14 Maret 2022]
- Hirsch, P., Koch, I., & Karbach, J. (2019). Putting a stereotype to the test: The case of gender differences in multitasking costs in task-switching and dual-task situations. *PLoS ONE*, 14(8). doi:10.1371/journal.pone.0220150
- Horrey, W. J., & Wickens, C. D. (2004). Driving and Side Task Performance: The Effects of Display Clutter, Separation, and Modality. *Human Factors*, 46(4), 611–624. doi:10.1518/hfes.46.4.611.56805
- Idkhan, A. M., Baharuddin, F. R., & Palerangi, A. M. (2021). *Analisis Ergonomi*. Diunduh dari: <http://eprints.unm.ac.id/21381/2/Buku%20Referensi%20-%20Analisis%20Ergonomi.pdf>
- Ishak, I., Jufri, N. F., Lubis, S. H., Mohd Saat, N. Z., Omar, B., Arlin, R., . . . Mohamed, N. (2012). The study of working memory and academic performance of Faculty of Health Sciences students. *Procedia - Social and Behavioral Sciences*, 60, 596 – 601. doi:10.1016/j.sbspro.2012.09.428
- Jaeggi, S. M., Buschkuhl, M., Perrig, W. J., & Meier, B. (2010). The oncurrent validity of the N-back task as a working memory measure. *Memory*, 18(4), 394-412. doi:10.1080/09658211003702171
- Jarmon, A. L. (2008). Multitasking Helpful or Harmful? *Student Lawyer*, 36(8). Diunduh dari: https://ttu-ir.tdl.org/bitstream/handle/10601/925/Jarmon_Multitasking%20Helpful%20or%20Harmful.pdf?sequence=1&isAllowed=y
- Junco, R., & Cotten, S. R. (2012). The relationship between multitasking and academic performance. *Computers & Education*, 59(2), 505-514. doi:10.1016/j.compedu.2011.12.023
- Khan, M. (2019). Media Multitasking in University Students: Relatedness of Video to Learning Content. Diunduh dari: https://ir.lib.uwo.ca/cgi/viewcontent.cgi?article=1051&context=brescia_psych_uht [Diakses 25 Mei 2022]

- König, C. J., Bühner, M., & Mürling, G. (2009). Working Memory, Fluid Intelligence, and Attention Are Predictors of Multitasking. *Human Performance*, 18(3), 243-266. doi:10.1207/s15327043hup1803_3
- Konishi, M., Berberian, B., De Gardelle, V., & Sackur, J. (2021). Multitasking costs on metacognition in a triple-task paradigm. *Psychonomic Bulletin & Review*, 28, 2075–2084. doi:https://doi.org/10.3758/s13423-021-01967-0
- Kozak, M., & Piepho, H.-P. (2017). What's normal anyway? Residual plots are more telling than significance tests when checking ANOVA assumptions. *Journal of Agronomy and Crop Science*, 204(1), 86-98. doi:10.1111/jac.12220
- Krumm, S., Ziegler, M., & Buehner, M. (2008). Reasoning and Working Memory as Predictors of School Grades. *Learning and Individual Differences*, 18(2), 248-257. doi:10.1016/j.lindif.2007.08.002
- Lepp, A., Barkley, J. E., Karpinski, A. C., & Singh, S. (2019). College Students' Multitasking Behavior in Online Versus Face-to-Face Courses. *SAGE Open*, 9(1), 1-9. doi:10.1177/2158244018824505
- Lin, L., Cockerham, D., Chang, Z., & Natividad, G. (2016). Task Speed and Accuracy Decrease When Multitasking. *Tech Know Learn*, 21, 307–323. doi:10.1007/s10758-015-9266-4
- Logie, R. H., Law, A., Trawley, S., & Nissan, J. (2010). Multitasking, Working Memory and Remembering Intentions. *Psychologica Belgica*, 50(3-4), 309-326. doi:10.5334/pb-50-3-4-309
- Manjaly, J. A. (2015). *Cognition, Experience, and Creativity*. Orient Blackswan. Diunduh dari: https://www.researchgate.net/publication/277892786_Creativity_and_Working_Memory
- Mäntylä, T. (2013). Gender Differences in Multitasking Reflect Spatial Ability. *Psychological Science*, 24(4), 514-520. doi:10.1177/0956797612459660
- Martin, D. W. (2008). *Doing Psychology Experiments Seventh Edition*. Michele Sordi.
- Maxwell, S. E., & Delaney, H. D. (2004). *Designing Experiments and Analyzing Data a Model Comparison Perspective Second Edition*. Lawrence Erlbaum Associates.

- Miller, K., Price, C., Montijo, H., & Bowers, D. (2009). Is the N-Back Task a Valid Neuropsychological Measure for Assessing Working Memory? *Archives of Clinical Neuropsychology*, 24(7), 711–717. doi:10.1093/arclin/acp063
- Montgomery, D. C., & Runger, G. C. (2003). *Applied Statistics and Probability for Engineers*. Diunduh dari: https://spada.uns.ac.id/pluginfile.php/196559/mod_resource/content/1/Douglas%20C.%20Montgomery%20Applied%20Statistics%20and%20Probability%20for%20Engineers%203ed.pdf
- Moreno, M. A., Jelenchick, L., Koff, R., Eikoff, J., Diermyer, C., & Christakis, D. A. (2012). Internet use and multitasking among older adolescents: An experience sampling approach. *Computers in Human Behavior*, 28(4), 1097-1102. doi:10.1016/j.chb.2012.01.016
- Murphy, K., & Creux, O. (2021). Examining the Association Between Media Multitasking, and Performance on Working Memory and Inhibition Tasks. *Computers in Human Behavior*, 114. doi:10.1016/j.chb.2020.106532
- Núñez, I. M. (2010). EEG Artifact Detection Department of Cybernetics: Czech Technical University in Prague. Diunduh dari: https://riunet.upv.es/bitstream/handle/10251/10356/Project_Report_IB.pdf [Diakses 7 Agustus 2022]
- Nuryadi, Astut, T. D., Utami, E. S., & Budiantara, M. (2017). *Dasar-dasar Statistik Penelitian*. Sibuku Media. Diunduh dari: http://eprints.mercubuana-yogya.ac.id/6667/1/Buku-Ajar_Dasar-Dasar-Statistik-Penelitian.pdf
- Ophir, E., Nass, C., & Wagner, A. D. (2009). Cognitive Control in Media Multitaskers. (M. I. Posner, Ed.) 106, 15583–15587. doi:10.1073/pnas.0903620106
- Parasuraman, R., & Caggiano, D. (2002). Mental Workload. *Encyclopedia of the Human Brain*, 17-27. doi:10.1016/B0-12-227210-2/00206-5
- Proctor, R. W., & Vu, K.-P. L. (2012). Human Information Processing. In *Encyclopedia of the Sciences of Learning*. Springer. doi:10.1007/978-1-4419-1428-6
- Queensland, T. U. (2022). *Queensland Brain Institute*. Diunduh dari: Where are memories stored in the brain?: <https://qbi.uq.edu.au/brain-basics/memory/where-are-memories-stored> [Diakses 8 Agustus 2022]

- Razali, N. M. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21-33. Diunduh dari: <https://www.nrc.gov/docs/ML1714/ML17143A100.pdf>
- Ren, D., Zhou, H., & Fu, X. (2009). A Deeper Look at Gender Difference in Multitasking: Gender-Specific Mechanism of Cognitive Control. 13-17. doi:10.1109/ICNC.2009.542
- Research, A. S. (2019). *Perilaku dan Preferensi Konsumen Millennial Indonesia terhadap Aplikasi E-Commerce 2019*. Diunduh dari: <https://alvara-strategic.com/wp-content/uploads/2019/07/PRESS-CON-BAHASA-E-COMMERCE-REPORT.pdf>
- Rohde, T. E., & Thompson, L. A. (2007). Predicting academic achievement with cognitive ability. *Intelligence*, 35(1), 83–92. doi:10.1016/j.intell.2006.05.004
- Russ, M., & Crews, D. E. (2014). A Survey of Multitasking Behaviors in Organizations. *International Journal of Human Resource Studies*, 4(1), 137-153. doi:10.5296/ijhrs.v4i1.5155
- Sanda, V. D. (2018). *Hubungan Antara Multitasking dengan Job Performance*. Universitas Muhammadiyah Malang. Diunduh dari: <https://eprints.umm.ac.id/38272/> [Diakses 7 Maret 2022]
- Sandberg, K., & Harmon, S. (2003). Effects of Popular Music on Memorization Tasks. *Undergraduate Research at Minnesota State University*, 3. Diunduh dari: <https://cornerstone.lib.mnsu.edu/jur/vol3/iss1/6/>
- Sawyer, S. F. (2009). Analysis of Variance: The Fundamental Concepts. *Journal of Manual & Manipulative Therapy*, 17, 27E-38E. doi:10.1179/jmt.2009.17.2.27E
- Schachter, B. J. (2018). *Automatic Target Recognition Third Edition*. SPIE. Diunduh dari: <https://vdoc.pub/download/automatic-target-recognition-6e4tqv5bbqc0>
- Schmidt, C., Collette, F., Reichert, C., Maire, M., Vandewalle, G., Peigneux, P., & Cajochen, C. (2015). Pushing the limits: chronotype and time of day modulate working memory-dependent cerebral activity. *Front. Neurol*, 6, 1-9. doi:10.3389/fneur.2015.00199

- Sciences, N. I. (n.d.). *Circadian Rhythms*. Diunduh dari: National Institute of General Medical Sciences: <https://www.nigms.nih.gov/education/factsheets/Pages/circadian-rhythms.aspx> [Diakses 25 Juli 2022]
- Scrivener, C., & Gaftoneanu, I. (2018). *N-back*. Diunduh dari: <https://github.com/catrionascrivener/N-Back> [Diakses 30 Mei 2022]
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill-Building Approach Seventh Edition*. Wiley.
- Setyawan, I. A. (2021). *Petunjuk Praktikum Uji Normalitas & Homogenitas Data dengan SPSS*. Tahta Media Group. Diunduh dari: <http://poltekkes-solo.ac.id/cni-content/uploads/modules/attachments/20210902152251-2-Buku%20Petunjuk%20Praktikum%20Uji%20Normalitas%20dan%20Homogenitas%20Data.pdf>
- Shalchy, M. A., Pergher, V., Pahor, A., Van Hulle, M. M., & Seitz, A. R. (2020). N-Back Related ERPs Depend on Stimulus Type, Task Structure, Pre-processing, and Lab Factors. *frontiers in Human Neuroscience*, *14*, 1-13. doi:10.3389/fnhum.2020.549966
- Skerrett, P. J. (2012). *Multitasking—a medical and mental hazard*. Diunduh dari: <https://www.health.harvard.edu/blog/multitasking-a-medical-and-mental-hazard-201201074063> [Diakses 6 Mei 2022]
- Stachowski, A. A. (2011). *A Model of Time Use at Work: Individual Differences, Time Use, and Performance*. George Mason University, Filosofi. ProQuest. Diunduh dari: <https://www.proquest.com/docview/868552844/38ACA339996D470FPQ/2?accountid=31495>
- Stoet, G., O'Connor, D. B., Conner, M., & Laws, K. R. (2013). Are Women Better Than Men at Multi-Tasking? *BMC Psychology*, *1*, 1-10. doi:10.1186/2050-7283-1-18
- Stumpf, H. (1995). Gender Differences in Performance on Tests of Cognitive Abilities: Experimental Design Issues and Empirical Results. *Learning and Individual Differences*, *7*(4), 275-287. Diunduh dari: <https://zero.scribhub.se/1621/4b5400315325bc62feb56b841a4fb084/stumpf1995.pdf#navpanes=0&view=FitH>
- Szameitat, A. J., Hamaida, Y., Tulley, R. S., Saylik, R., & Otermans, P. C. (2015). "Women Are Better Than Men"—Public Beliefs on Gender Differences and

- Other Aspects in Multitasking. (M. A. Pavlova, Ed.) *PLOS ONE*, 10(10), 1-26. doi:10.1371/journal.pone.0140371
- Tschernegg, M., Neuper, C., Schmidt, R., Wood, G., Kronbichler, M., Fazekas, F., . . . Koini, M. (2017). fMRI to probe sex-related differences in brain function with multitasking. *PLoS One*, 12(7). doi:10.1371/journal.pone.0181554
- Usmadi. (2020). Pengujian Persyaratan Analisis. *Inovasi Pendidikan*, 7(1).
Diunduh dari:
<https://jurnal.umsb.ac.id/index.php/inovasipendidikan/article/viewFile/2281/1798#:~:text=Pengujian%20prasyarat%20analisis%2C%20merupakan%20konsep,untuk%20sebaran%20data%20hasil%20penelitian>
- Verma, J. P. (2015). *Repeated Measures Design for Empirical Researchers*.
Diunduh dari: <https://www.wiley.com/en-us/Repeated+Measures+Design+for+Empirical+Researchers-p-9781119052715>
- Verma, J. P. (2016). *Sports Research with Analytical Solution Using SPSS*.
doi:10.1002/9781119206767
- Watson, J. M., & Strayer, D. L. (2010). Supertaskers: Profiles in Extraordinary Multitasking Ability. *Psychonomic Bulletin & Review*, 17, 479-485.
doi:10.3758/PBR.17.4.479
- Wickens, C. D. (2008). Multiple Resources and Mental Workload. 50(3), 449-455.
doi:10.1518/001872008X288394
- Wickens, C. D., Hollands, J. G., Banbury, S., & Parasuraman, R. (2013). *Engineering Psychology and Human Performance Fourth Edition*.
- Widodo, S. (2021). *Analisis RUU Tentang APBN*. Pusat Kajian Anggaran – Badan Keahlian – SETJEN DPR RI. Diunduh dari:
<https://berkas.dpr.go.id/puskajianggaran/analisis-apbn/public-file/analisis-apbn-public-71.pdf>
- Wilson, D., & Conyers, M. (2015). *Put Working Memory to Work in Learning*.
Diunduh dari: George Lucas Educational Foundation:
<https://www.edutopia.org/blog/put-working-memory-to-work-donna-wilson-marcus-conyers> [Diakses 14 Maret 2022]
- Wylie, G., & Allport, A. (2000). Task Switching and the Measurement of "Switch Cost". *Psychological Research*, 63, 212–233. doi:10.1007/s004269900003

Zoss, A. (2022). *Monotasking for Productive Work Blocks*. Diunduh dari: Duke University Libraries:
<https://guides.library.duke.edu/projectmanagement/monotasking#:~:text=What%20is%20monotasking%3F,on%20any%20of%20those%20tasks.>