

The Effectiveness of Intervention Techniques for the Use Of Accounting Applications To Overcome the Problem of Gender Gap in the Accounting Profession

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Abstract

Many companies today have used various accounting applications to be able to produce accurate financial statements and analysis. For example, Accurate, Zahir, Jurnal and MYOB. However, the accounting profession has a very important responsibility to manage risks that occur in a company. The task of accountants is also to analyze financial information and assist in making the right decisions by providing complete reports that show the company's real performance. The existence of female accountants in accounting activities that are synonymous with masculine traits and the needs related to how to adapt to new types of accounting that can work in harmony and control technology in the era of digitalization is an important point to assess gender equality and leadership abilities possessed by female accountants. This study uses one group pre-test and post-test design with variables of the use of accounting applications (X) and gender gaps in the accounting profession (Y). The purpose of this study is to see how the use of accounting applications affects the gender gap in the accounting profession. This study used SPSS 24 as a calculation tool. The object of this study is an 8th semester accounting student class of 2019 at State University of Malang. The results of this study show that the use of accounting applications has a significant positive effect on the gender gap in the accounting profession. This shows that there is a strong correlation between the increasing pace of technological development in the era of using accounting applications can affect the gender gap in the accounting profession. This study uses the theory of Cyberfemism which uses new media as a tool to eradicate cyberfeminists from male-dominated discourse. The relationship between women and technology is inadequate, easily undermined by society's stigma that technology is very difficult with the desire for technology. The symbolic depiction of theology produces stereotypes where the definition is incapable in the field of theology. Based on the research findings, it can be concluded that the use of accounting applications has a significant positive effect on the gender gap in accounting professions. This means that the development of technology will provide an increase in gender gaps in the accounting profession caused by the lack of representation and support of women in an adequate organization.

Keywords: *Use Of Accounting Apps, Female Accounting Students, Gender Gap*

INTRODUCTION

Technology is something that was created to make it easier for humans to meet their needs. Without realizing it, technology will continue to evolve and evolve with the times (Sowa et al., 2021). Current technological advances also make every individual have to deal with computers and computer software that changes the way of working in several industries where this condition is included in the digitalization era (Wijaya, 2021). This is a big fear for many parties where a person's job can be replaced by technology. This technological

advancement is a role that concerns many people and can help to facilitate human activities (Huang & Rust, 2018). In recent years, various media have presented information about professions and jobs where humans have a diminishing role due to technological developments such as information technology, robots, computation, and other automation (Wijayana, 2018). A study predicts the influence of this technological development will be a reduction in employees of 14-16% of all jobs worldwide by 2030 (Bughin et al., 2017; Le Clair, 2019).

Since the 21st century, business models have also utilized technology to support their operations. As done by a reputable home furnishings retail company from Sweden, IKEA. The company is digitizing by changing its business model to e-commerce. According to Aco and Endang (2017), e-commerce is a form of electronic commerce that allows transactions between merchants and buyers with a network or connected to the internet. In 2018, IKEA has made massive layoffs (layoffs) to its employees because IKEA chose to focus on the e-commerce business. This led to as many as 7,500 employees or workers being laid off. IKEA's layoffs are part of the company's reorganization program that focuses its business on e-commerce and small stores in the city center. According to Retail Manager, Ingka Tolga, this decision is based on a simpler, more effective, and more efficient policy of leading the business. IKEA has duplication of work across markets so the decision does not affect its distribution units as it keeps pace with current digital capabilities (CNN, 2018).

In general, many companies today have used various accounting applications to be able to produce accurate financial statements and analysis. For example, Accurate, Zahir, Jurnal and MYOB (Primasatya et al., 2023). However, the accounting profession has a very important responsibility to manage risks that occur in a company. The accountant's job is also to analyze financial information and assist in making the right decisions by providing complete reports that show the company's real performance (De Araújo Wanderley, 2022). Through this, there is a clash between the existence of technology in the form of software applications and the professional responsibilities inherent in an accountant. In the mainstream corner, accounting is a decision-making process that is synonymous with logical, materialistic and reductionist rationality which in various perspectives both cultural, philosophical, psychological to religious is often grouped under masculine traits. Seeing this, the existence of female accountants in the accounting profession who are synonymous with masculine nature must adapt to new types of accounting in order to control technology in the era of digitalization to show that female accountants are also in harmony with male accountants (Primasatya et al., 2023).

Based on data owned by the World Economic Forum (2021), women's participation is the second largest inequality of the four dimensions they studied. In its report, the WEF said that this year's gender gap is almost as large as last year where it experienced a small increase in scores from 57.8% in 2020 to 58% in 2021. Since 2006, scores have increased by 2.4 percentage points, which translates to an average annual progress of 0.16 percentage points each year over the period 2006-2020. As a result, it will take another 267.6 years to close this gap. In Indonesia, Indonesia's gender inequality in 2022 is ranked 110th out of 170 countries. This achievement is due to the success of the efforts made by the government through various policies in terms of health, empowerment, and access in the labor market, so that it has been able to raise up to 11 ranks since 2019 (Indeks Ketimpangan Gender, 2022).

In an article on gender inequality in the field of science and technology in Indonesia, it is explained that there are 30% of women studying in the field of science and technology in universities, the rest are dominated by men. There are several factors that describe gender inequality in the information technology sector, one of which is the utilization factor where the percentage of women and men who use technology is relatively the same but there is still an assumption that technology is a form of masculinity, so that its development is identical to men (Ekawati, 2021). In addition, in a national seminar on the results of research and policy brief

entitled *The Role of Civil Society Organizations in Encouraging Gender Equality in Indonesian Democracy in the Digital Age* by Sugeng Bahagijo as Executive Director of the International NGO Forum on Indonesian Development (INFID) explained that based on Susenas data (2019) internet access for women consistently experienced a gender gap during the 2016-2019 period. In 2016, the difference between female internet users was 7.6% less than men, in 2017 it shifted to 7.04%, in 2018 it fell to 6.34% and in 2019 it fell again to 6.26%. This disparity arises in the number of computer users in Indonesia. In addition, in a national seminar on the results of research and policy brief entitled *The Role of Civil Society Organizations in Encouraging Gender Equality in Indonesian Democracy in the Digital Age* by Sugeng Bahagijo as Executive Director of the International NGO Forum on Indonesian Development (INFID) explained that based on Susenas data (2019) internet access for women consistently experienced a gender gap during the 2016-2019 period. In 2016, the difference between female internet users was 7.6% less than men, in 2017 it shifted to 7.04%, in 2018 it fell to 6.34% and in 2019 it fell again to 6.26%. This disparity arises in the number of computer users in Indonesia. In 2019, the number of female computer users was only 13.77%, while men were 15.17%. One of these differences is due to the wage gap between female and male workers, which according to BPS in the 2019 economic report is in the range of Rp250,000 to Rp500,000 (Prastiwi, 2021)

Cyberfeminism is a philosophical meaning that recognizes the following phenomenon, first, that there are differences between women and men in digital discourse; Especially women who are ranked lower than men, because information and communication technology is more dominated by men. Second, cyberfeminists want to change that situation and have the opportunity to make new formulations in feminist theory and practice. It aims to deal with the new, highly complex social conditions that have been created by global technology. E-media can be used to encourage women's participation in the field of information and communication technology (Mulyaningrum, 2015).

This research is motivated to highlight the effectiveness of intervention techniques using accounting applications to address the issue of gender gap in the accounting profession. Intervention techniques given to the object of research using the peer tutor method (peer teaching). This peer tutor method is carried out by explaining the use of MYOB accounting to students. This research is an experimental research with the research design used is one group pre-test and post-test design is measured using pre-test conducted before treatment and post-test conducted after treatment.

RESEARCH METHODS

The research method used in this study is experimental research. Experimental research used with the approach is pre-experimental designs where this design is a serious experiment and there are still external variables that affect the dependent variable. Therefore, experimental results in the form of dependent variables are not solely influenced by independent variables. This happens, because there is no control variable and the sample is not randomly selected (Sugiyono, 2013). This study used all 8th semester accounting students class of 2019 at State University of Malang as a population. The samples taken were 30 accounting students in semester 8 of 2019. The sampling technique used in this study is non-probability sampling with the purposive sampling method, which is taking samples with a certain number and criteria (Sugiyono, 2013: 124). The questionnaire in this study was adapted from research by Wahid (2005), De Villiers (2010), Boulianne (2014), and Ramos (2022)

RESULT AND DISCUSSION

Normality test

The normality test aims to test whether, in a regression model, confounding or residual variables have a normal distribution. In this study, the normality test using Kolmogorov-Smirnov used SPSS. The basis for deciding on a normality test if its significance is less (<) than 0.05 means that the data to be tested is abnormal. Conversely, if the significance is greater (>) than 0.05, it means that the data to be tested is normal (Ghozali, I., & Latan, 2015: 25)

Table 1 Normality Test

Group	Normality test
Pre-test	0.200
Post-test	0.200

Source: Processed data (2022)

From the normality calculation data presented in table 4.2 that the data in the pre-test and post-test classes are declared to be normally distributed if the significance is greater than 0.05. From data processing in pre-test and post-test classes amounted to 0.200. Therefore, the tested data is normally distributed.

Homogeneity Test

The existing data was tested for homogeneity using One-Way ANOVA on SPSS. Homogeneity regarding pre-test and post-test with treatment in the following table:

Table.2 Homogeneity Test

Levene Statistic	df1	df2	Sig
3.488	1	57	0.984

Source: Processed data (2022)

The homogeneity test on a data aims to find out whether the data used in the study was obtained from a homogeneous variant population or not. The homogeneity test uses the Levene Test (variance homogeneity test) with test criteria if the significance value > 0.05 (greater than 0.05) then the data is homogeneous, on the other hand if the significance < 0.05 (smaller than 0.05) then the data is not homogeneous.

Hypothesis testing

In the hypothesis test, the pre-test group, there was an average of 96.63, while in the post-test group there was an average of 95.63. From the table above, it is known that the pre-test and post-test groups where the t value is obtained is 35,093 and 36,060 with a Sig. value of 0.000. Based on research that has been conducted, it shows that the influence of using accounting applications has a significant positive effect on the gender gap in the accounting profession. This shows that there is a strong correlation between the use of accounting applications and the gender gap in the accounting profession. The results of this study state that accounting applications are getting bigger due to the pace of technological development in the era of industry 4.0 and society 5.0 which makes technology an important component in information systems that are expected to be able to produce information quickly and precisely, so that the development of computer-based information systems is also growing rapidly (Candra, Fery Dwi et al., 2022; Winarni & Rahmawati, 2015). The use of accounting applications aims to facilitate the processing of accounting and financial data according to company needs, but this has a greater impact on the problem of gender gap. The results of this hypothetical test are in line with research conducted by Alderman (2021) which states that the existence of the use of this accounting application shows an increased risk of a considerable gender gap where women are underrepresented in job positions because jobs such as

bookkeeping, data entry and so on are held by women and some of these jobs in the future will be replaced by computers. Based on the theory of cyberfeminism, cyberfeminists use new media as a tool to free cyberfeminists from male-dominated discourse. The relationship between women and technology is never easy due to society's stigma that technology is very opposed to women. The symbolic portrayal of technology results in stereotypes that women are incapable of technology. In essence, men are in control of technology because women are perceived as ignorant of engineering and principles about how machines are operated (Sarah Gamble, 2010:101). The results of another study by Sowa et al (2021) explained that the use of technology can increase productivity due to improved cooperation between technology and humans and proves that the existence of technology in the future in a job must focus not on automation but on a collaborative approach between humans and computers. According to research conducted by the University of Oxford (2015) states that accountants will experience job losses because machines or computers take over the role of data analysis and figures with an estimate of 95%. In the next 20-30 years, routine and manual work that is usually done by an accountant will be taken over by machines or computers. The results of another study by Sowa et al (2021) explained that the use of technology can increase productivity due to improved cooperation between technology and humans and proves that the existence of technology in the future in a job must focus not on automation but on a collaborative approach between humans and computers. According to research conducted by the University of Oxford (2015) states that accountants will experience job losses because machines or computers take over the role of data analysis and figures with an estimate of 95%. In the next 20-30 years, routine and manual work that is usually done by an accountant will be taken over by machines or computers (Triatmaja, 2019). The peer tutor method (peer teaching) in the implementation of this research explains technological developments in the accounting profession, the use of computer-based applications, provides several examples of transactions and inputs them into the MYOB application. The peer tutor method (peer teaching) is very influential to be used as a concept in this study because this method provides good benefits through interactive information exchange between researchers and participants. Therefore, with this method both researchers and participants are able to understand the development of technology used by the accounting profession today. The development of students' abilities can be obtained since they are in college. The peer tutor method (peer teaching) in the implementation of this research explains technological developments in the accounting profession, the use of computer-based applications, provides several examples of transactions and inputs them into the MYOB application. The peer tutor method (peer teaching) is very influential to be used as a concept in this study because this method provides good benefits through interactive information exchange between researchers and participants. Therefore, with this method both researchers and participants are able to understand the development of technology used by the accounting profession today. The development of students' abilities can be obtained since they are in college. Higher education plays a very important role in creating graduates with quality that is in accordance with the needs of the industrial world, which is able to adapt well to technology, especially in adapting to computer-based technology. In addition, they also have quality knowledge in the field of accounting, so that graduates are able to master the field of accounting which also applies computer-based technology. So that companies or the industrial world no longer need to worry about accounting graduates, especially for women because they already have two provisions at once, namely accounting and technology, especially computer-based (Fadillah, 2021).

CONCLUSION

This study aims to determine the effect of the use of accounting applications on the gender gap in the accounting profession. Therefore, based on the results of research that has been conducted during the use of accounting applications has a significant positive effect on the gender gap in the accounting profession. This means that the development of technology will provide an increase in the gender gap in the accounting profession caused by the lack of representation and support of women in an adequate organization. The use of accounting applications is measured based on how much female students master the use of accounting applications which in this study uses MYOB. Although students are familiar with MYOB, both in lectures and during research, there are still some female students who find it difficult to understand the application of MYOB

The limitations in this study can be factors so that they can be more considered for future researchers to perfect this research. The limitations of this study are that researchers have difficulty finding articles that match the research theme to be a reference in this study and the small sample size in this study that only used 30 respondents may not be large enough to achieve broad generalizations in a larger population.

Based on the results and limitations of the study, researchers suggested several things, including the following: Practically, this research can be used as consideration and input for related parties in helping students develop the ability or skills to use computer-based technology in this case accounting applications by making coaching or policies related to competency assessment to measure student skills in using applications accountancy. The goal is to make it easier for students to operate these accounting applications when entering the world of work and for future research, it should improve the questionnaire and increase the assessment scale by using other data collection techniques such as conducting interviews so that the research results become more accurate and adding research samples from individuals who already work as accountants. In addition, researchers can further develop to examine the influence of other factors that have not been studied on the gender gap in the accounting profession

REFERENCES

- AICPA. (2017a). 2017 Accounting Graduates Supply and Demand Report. *Aicpa*, 28. <https://www.aicpa.org/interestareas/accountingeducation/newsandpublications/downloadabledocuments/2017-trends-report.pdf>
- AICPA. (2017b). 2017 CPA Firm Gender Survey. *Women's Initiatives Executive Committee*. <https://www.aicpa.org/content/dam/aicpa/career/womenintheprofession/downloadabledocuments/2019-cpa-firm-gender-survey.pdf>
- Alderman, J. (2021). Women in the smart machine age: Addressing emerging risks of an increased gender gap in the accounting profession. *Journal of Accounting Education*, 55, 100715. <https://doi.org/10.1016/j.jaccedu.2021.100715>
- Andrew. (2022). *Perjalanan Revolusi Industri 1.0 Hingga 5.0*. <https://www.gramedia.com/best-seller/perjalanan-revolusi-industri-1-0-hingga-5-0/>
- Boulianne, E. (2014). Impact of accounting software utilization on students' knowledge acquisition: An important change in accounting education. *Journal of Accounting and Organizational Change*, 10(1), 22–48. <https://doi.org/10.1108/JAOC-12-2011-0064>
- Bughin, J., Batra, P., Chui, M., Manyika, J., Ko, R., Sanghvi, S., Woetzel, J., & Lund, S. (2017). Jobs lost, jobs gained: Workforce transitions in a time of automation. *McKinsey*

- Global Institute, December, 1–160.* <https://www.mckinsey.com/featured-insights/future-of-organizations-and-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages>
- CNN Indonesia, R. (2018). *Alasan Kecerdasan Buatan Menakutkan.* <https://www.cnnindonesia.com/teknologi/20180612201256-185-305688/alasan-kecerdasan-buatan-menakutkan>
- de Villiers, R. (2010). The incorporation of soft skills into accounting curricula: preparing accounting graduates for their unpredictable futures. *Meditari Accountancy Research*, 18(2), 1–22. <https://doi.org/10.1108/10222529201000007>
- Fadillah, U. (2021). *Kecerdasan Buatan Dalam Profesionalisme Akuntansi.* <https://www.republika.co.id/berita/qqqbf1374/kecerdasan-buatan-dalam-profesionalisme-akuntansi>
- Ghozali, I., & Latan, H. (2015). *Partial Least Square Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0 Untuk Penelitian Empiris.* Universitas Diponegoro.
- Haraway, D. J. (2017). A Cyborg Manifesto. *Manifestly Haraway*, 3–90. <https://doi.org/10.5749/minnesota/9780816650477.003.0001>
- Hausmann, R., Tyson, L. D., & Zahidi, S. (2022). Global Gender Gap Report 2022: Insight Report. In *World Economic Forum*.
- Huang, M. H., & Rust, R. T. (2018). Artificial Intelligence in Service. *Journal of Service Research*, 21(2), 155–172. <https://doi.org/10.1177/1094670517752459>
- Indri, D. (2008). Perbedaan Gender dalam Profesi Akuntan. *Jurnal Equity*, 1(2), 102–120.
- Latifah, S., Junaidi, & Sari, A. F. K. (2020). Persepsi Mahasiswa Akuntansi Tentang Keilmuan Akuntansi Dan Soft Skill. *E-Jra, Vol. 09 No(05)*, 40–55. <http://riset.unisma.ac.id/index.php/jra/article/view/6292>
- Le Clair, C. (2019). *How Automation Is Impacting Enterprises In 2019.* <https://www.forrester.com/blogs/predictions-2019-automation-technology/>
- Nisarohmah, L., & Darmawan, D. (2022). Analisis Kesenjangan Gender dalam Bidang Pekerjaan pada Era Kontemporer. *Gunung Djati Conference Series*, 8, 113–120. <http://conferences.uinsgd.ac.id/index.php/gdcs/article/view/557/363>
- Norris, Era Dabla & Kochar, K. (2018). *Women, Technology, and the Future of Work.* <https://www.imf.org/en/Blogs/Articles/2018/11/16/blog-Women-Technology-the-Future-of-Work>
- Premuzic, T. C., Wade, M., & Jordan, J. (2018). As AI Makes More Decisions, the Nature of Leadership Will Change. *Harvard Business Review*. <https://hbr.org/2018/01/as-ai-makes-more-decisions-the-nature-of-leadership-will-change>
- Ramos, A., Latorre, F., Tomás, I., & Ramos, J. (2022). TOP WOMAN: Identifying barriers to women's access to management. *European Management Journal*, 40(1), 45–55. <https://doi.org/10.1016/j.emj.2021.06.005>
- Rampersad, G. (2020). Robot will take your job: Innovation for an era of artificial intelligence. *Journal of Business Research*, 116(January), 68–74. <https://doi.org/10.1016/j.jbusres.2020.05.019>
- Ratama, N. & M. (2019). *Konsep Kecerdasan Buatan Dengan Pemahaman Logika Fuzzy Dan Penerapan Aplikasi.* Uwais Inspirasi Indonesia, CV.
- Rosmida. (2019). *Transformasi Peran Akuntansi Dalam Era Revolusi Industri.* 7, 206–212. www.ejournal.polbeng.ac.id/index.php/IBP
- Sekaran, U. (2006). *Research Methods for Business (Metodologi Penelitian Untuk Bisnis)* (R. Widyaningrum (ed.); Pertama). Salemba Empat.
- Sowa, K., Przegalinska, A., & Ciechanowski, L. (2021). Cobots in knowledge work: Human – AI collaboration in managerial professions. *Journal of Business Research*, 125(November

- 2020), 135–142. <https://doi.org/10.1016/j.jbusres.2020.11.038>
- sugiyono. (2013). *METODE PENELITIAN BISNIS (Pendekatan Kuantitatif, Kualitatif dan R&D)*. ALFABETA.
- Tysiac, K. (2021). Skills that help accounting professionals succeed alongside AI. *Journal of Accountancy*. <https://www.journalofaccountancy.com/news/2018/jan/accounting-skills-to-succeed-alongside-artificial-intelligence-201818267.html>
- Wahid, F. (2005). Apakah Perempuan Indonesia Terbelakang dalam Adopsi Internet? : Temuan Empiris. *Teknoin*, 10(3). <https://doi.org/10.20885/teknoin.vol10.iss3.art4>
- Warawa, J. (2018). Ask the expert: Technology. *Journal of Accountancy*. <https://www.journalofaccountancy.com/issues/2018/jun/ask-the-expert-jennifer-warawa.html>
- Wijayana, S. (2018). *Benarkah Peran Akuntan Digantikan Oleh Teknologi (Informasi)?* <https://feb.ugm.ac.id/id/penelitian/artikel-dosen/2886-benarkah-peran-akuntan-digantikan-oleh-teknologi-informasi>
- World Economic Forum. (2021). *2021 The global gender gap report* (Issue March). <https://www.weforum.org/reports/global-gender-gap-report-2021>
- Yarrow, J. (2014). These Are The Jobs That Will Be Safe From The Imminent Invasion Of Robots. *24 Januari*. <https://www.businessinsider.com/jobs-that-will-be-lost-to-robots-2014-1>
- Zhang, Y., Xiong, F., Xie, Y., Fan, X., & Gu, H. (2020). The Impact of Artificial Intelligence and Blockchain on the Accounting Profession. *IEEE Access*, 8, 110461–110477. <https://doi.org/10.1109/ACCESS.2020.3000505>
- Zuhri, S., & Amalia. (2022). Menyatakan. *Murabbi : Jurnal Ilmiah Dalam Bidang Pendidikan*, 5(1), 17–41. <https://ejournal.stitalhikmah-tt.ac.id/index.php/murabbi/article/download/100/99>