

Employee Performance Education Transformation: Training Innovation for Women's Resource Development Through Digital Platforms

Safrida¹, Zenni Riana², Amirul Syah³, Satria Yudha Prayogi⁴, Ikbar Pratama⁵, Evi Susilawati⁶, Siti Sara Ibrahim⁸, Muttaqin⁹, Enika Eka Putri¹⁰, and Irene Natalia Ndraha¹¹

Abstract

The background of this research is based on its importance transformation education performance employees related to resource development training innovation women through digital platforms at the Office of the National Population and Family Planning Agency for North Sumatra Province. This research aims to: (1) analyze the performance of female employees who took digital platform training compared to female employees who did not take digital platform training, (2) to see significant differences in the performance of female employees between the experimental group (who took digital platform training) and the control group (who did not take part in digital platform training), (3) saw the positive impact of digital platform training in developing digital competence and female employees. The research methodology used a quasi-experiment with a simple randomized design. The subjects of this research were 85 female employees at the Population and Civil Affairs Agency Office, National Family Planning, North Sumatra Province. Data collection method, using a questionnaire with hypothesis testing using the Mann-Whitney U test Hypothesis testing can conclude that; (1) there is no significant increase in performance between female employees who take part in women's resource development training through digital platforms (X1) compared to those who do not take part in digital platform training (X2); (2) there is no significant difference in the performance of female employees between the experimental group (who took digital platform training) and the control group (who did not take digital platform training); (3) digital platform training does not have a significant positive impact on the development of digital competence and performance of female employees.

Keywords: *Training, Development, Digital Platform*

INTRODUCTION

Presidential Regulation Number 18 of 2020 concerning the National Medium-Term Development Plan (RPJMN) for 2020-2024 has outlined the Vision of Indonesia 2045, one of which includes the development of human resources (Ministry of National Development Planning, 2023). In this human resource development, every employee needs to contribute to the improvement of quality and highly competitive human resources. This is because in the current digital era, women's involvement in the workforce is increasingly being seen as

¹ Faculty of Economics and Business/Islamic University of North Sumatra, Medan, Indonesia. ORCID: <https://orcid.org/0009-0008-6822-797X>, Email: Safrida@fe.uisu.ac.id

² Faculty of Economics and Business/Islamic University of North Sumatra, Medan, Indonesia. ORCID: <http://orcid.org/0009-0002-9420-4559>, Email: zenni.riana@fe.uisu.ac.id

³ Faculty of Economics and Business/University of Muhammadiyah North Sumatra, Medan, Indonesia ORCID: <https://orcid.org/0009-0009-58851573>, E-mail: amirulsyah@umsu.ac.id

⁴ Faculty of Engineering/Islamic University of North Sumatra, Medan, Indonesia. ORCID: <https://orcid.org/0009-0008-1357-9724>, E-mail: satria.yp@ft.uisu.ac.id

⁵ Faculty of Economics and Business/University of Medan Area, Medan, Indonesia. ORCID: <https://orcid.org/0000-0002-7897-2737>, E-mail: ikbar.p@gmail.com

⁶ Faculty of Teacher Training and Education/Islamic University of North Sumatra, Medan, Indonesia. ORCID: <https://orcid.org/0000-0003-3928-7128>, E-mail: eviusilawati@fkip.uisu.ac.id

⁸ Faculty of Business Management, Universiti Teknologi MARA, Cawangan Negeri Sembilan, Malaysia ORCID: <https://orcid.org/0000-0002-04424068>, E-mail: saraibrahim@uitm.edu.my

⁹ Faculty of Economics and Business/ Islamic University of North Sumatra, Medan, Indonesia. ORCID: <https://orcid.org/0009-0008-6822-797X>

¹⁰ Faculty of Economics and Business/University of Muhammadiyah North Sumatra, Medan, Indonesia ORCID: <https://orcid.org/0009-0009-58851573>

¹¹ Faculty of Economics and Business/University of Medan Area, Medan, Indonesia. ORCID: <https://orcid.org/0000-0002-7897-2737>

an important factor in achieving organizational sustainability and balanced gender inclusivity (Dewi, Suroso, Fahmi & Syarie, 2023). Over the past five years, women's involvement in the workforce, particularly in the use of digital platforms, has been increasingly recognized as an important factor in achieving organizational sustainability and balanced gender inclusivity (Dwivedi, 2022).

Several recent studies and reports underline the importance of women's involvement in the digital platform-based work sector. According to the Women in Work Index (2023), equality in jobs using digital platforms between men and women is still far from balanced. This report indicates that efforts to increase the use of digital platforms and women's participation in the labor market can provide significant economic benefits. However, the digital platform usage gap still requires more than 50 years to overcome at the current rate of improvement. The World Bank (2022) in its report on women and the use of digital platforms in the workplace in Indonesia shows that the level of women's participation and the use of digital platforms have stagnated at around 50% over the past two decades. They emphasize the need for more effective policies and interventions to address the structural barriers faced by women in using digital platforms in the workplace.

The research results above show the need for more effective policies and interventions to address the structural barriers faced by women in using digital platforms in the workplace. Therefore, greater and more effective efforts are needed to accelerate progress in this regard, especially in overcoming existing structural barriers through the transformation of employee performance education related to the innovation of female resource development training through digital platforms. In relation to achieving the above goals, the National Population and Family Planning Agency of North Sumatra Province needs to make greater and more effective efforts in transforming employee performance education, particularly for the development of female resources through digital platforms. This is based on the fact that the National Population and Family Planning Agency of North Sumatra Province, as a government agency focused on population and family, plays an important role in overcoming this gap. By utilizing digital platforms, the National Population and Family Planning Agency of North Sumatra Province can reach more women and increase the effectiveness of its programs, and can help overcome the geographical and time constraints often faced by women.

Furthermore, with the transformation of employee performance education, especially women, it can improve the quality of human resources within the National Population and Family Planning Agency of North Sumatra Province itself and the community it serves. By carrying out this transformation effort, the National Population and Family Planning Agency of North Sumatra Province will not only increase the internal capacity of its institution but also contribute significantly to addressing the digital gender gap and increasing women's participation in the digital economy in Indonesia.

To achieve the goals of the National Population and Family Planning Agency of North Sumatra Province in transforming employee performance education, especially for the development of female resources through digital platforms, the organization is currently experiencing obstacles. Currently, there is still a digital skills gap between female and male employees, with female employees not yet mastering digital platforms. The employee performance education related to the training and development of female resources that has been carried out so far has not maximized the performance of female employees to work optimally using digital platforms. The problem-solving approach used in this research is to transform employee performance education, especially in innovating female resource development training through digital platforms.

RESEARCH METHOD

The research method used is a quasi-experiment with a descriptive qualitative research approach. The quasiexperimental research method is employed when the researcher cannot control all the variables involved in the study. This research method is used to address the following research objectives: (1) to analyze the significant performance improvement between female employees who undergo female resource development training through digital platforms compared to female employees who do not undergo digital platform training, (2) to analyze the significant performance differences between female employees in the experimental group (who undergo digital platform training) and the control group (who do not undergo digital platform training), (3) to observe the positive impact of female resource development training through digital platforms.

Research Design

This study uses a simple random experimental design. The simple random experimental design is a method to ensure that every individual or unit in the population has an equal chance of being selected to be part of the sample. The process of selecting the sample uses simple random sampling, where every individual in the population has an equal chance of being chosen, without bias. This is done to eliminate bias in sample selection, so that the results of the experiment can be generalized to a broader population. The simple random experimental design for the innovation of female resource development training through digital platforms is illustrated in the following figure:

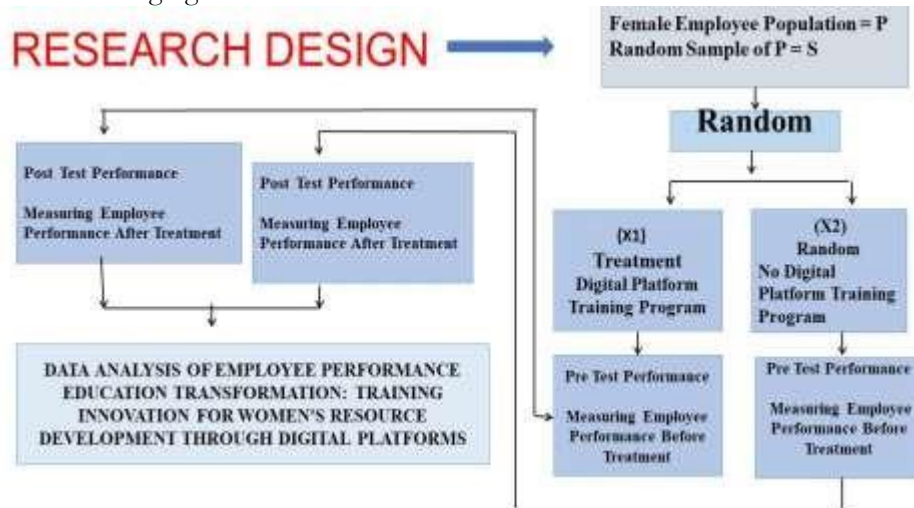


Figure 1. Simple Random Experimental Design for Female Resource Development Training through Digital Platforms

Observing the figure above, it can be seen that the simple random experimental design divides the sample randomly into treatment and control groups. The treatment group participates in female resource development training through digital platforms, while the control group does not participate in the training. This research activity is conducted through a pre-test, measuring employee performance before the treatment, and a posttest, measuring employee performance after the treatment. After conducting the pre-test and post-test, data analysis is performed to compare the effectiveness of the training program on employee performance at the end of the experiment.

Research Target/Subject

The subjects in this study consisted of 85 employees of the National Population and Family Planning Agency of North Sumatra Province. These were divided into two groups with the following distribution: Experimental Group: 43 individuals, and Control Group: 42 individuals. The procedure for selecting research subjects was carried out based on predetermined criteria. The research subjects were then divided into experimental and control groups according to the experimental design of this study.

Instruments, and Data Collection Techniques

The research instrument for this study consists of 30 indicators using a Likert Scale. The purpose of using the Likert Scale is to collect data using a questionnaire. The research instrument for female resource development through digital platforms is shown in the following figure.:

**RESEARCH INSTRUMENT FOR EMPLOYEE PERFORMANCE EDUCATION TRANSFORMATION:
TRAINING INNOVATION FOR WOMEN'S RESOURCE DEVELOPMENT THROUGH DIGITAL
PLATFORMS**

No	INDICATOR	STATEMENT
1.	Performance Improvement	Women's resource development training through digital platforms improved my performance.
2.	Substability to Career Needs	The training platform suits my career development needs
3.	Interactivity	The training methods used are interesting and interactive
4.	Ease of Access	I can access training materials easily via digital platforms
5.	Knowledge and Skills	Training instructors have adequate knowledge and skills
6.	Increased Understanding	The training provided a better understanding of my role and responsibilities
7.	Application in Work	I can apply the new skills gained from the training in my work
8.	Long Term Development	The training helped me in long-term career development
9.	Interaction with Other Participants	Training provides an opportunity to exchange ideas and experiences with other participants
10.	Spirit of Self Development	I feel motivated to continue learning and developing myself after attending the training
11.	Overcoming Job Challenges	Training helps me in overcoming challenges and problem faced at work
12.	Training Quality	I am satisfied with the quality of the training provided
13.	Substability to Job Requirements	Training provides knowledge and skills that are relevant to current job demands
14.	Ease of Implementation	I can apply new knowledge and skills easily at work
15.	Collaborate and Work in A Team	Training provides opportunities to collaborate and work in teams
16.	Clarity and Structure	Training materials are presented clearly and structured
17.	Increased Self-Confidence	I feel more confident in carrying out my duties and responsibilities after attending the training
18.	Leadership Development	The training helped me in developing leadership skills
19.	Increased Productivity	I feel more productive at work after attending the training
20.	Understanding Organizational Culture	Training provides a better understanding of the organizational culture
21.	Spirit of Contribution	I feel more motivated to contribute to achieving organizational goals after attending the training
22.	Network Expansion	Training provides an opportunity to expand your professional network
23.	Increased Job Satisfaction	I feel more satisfied with my work after attending the training
24.	Effective Communication	The training helped me in developing more effective communication skills
25.	Change Management	I feel better prepared to face challenges and changes in the workplace after attending the training
26.	Instructor Experience and Expertise	Training provides an opportunity to learn from the instructor's experience and expertise
27.	Spirit of Self Development	I feel more motivated to continue learning and developing myself after attending the training
28.	Understanding Gender Equality	Training provides a better understanding of the importance of gender equality in the workplace
29.	Increased Self-Confidence	I feel more confident in facing challenges and career opportunities after attending the training
30.	Resources and training materials	I can easily access resources and training materials via digital platforms

Figure 2. Research Instrument for Female Resource Development Training through Digital Platforms

Data Analysis Technique

The data analysis in this study uses descriptive statistics aimed at describing the characteristics of the data in general, using mean, median, mode, standard deviation, variance, frequency, and percentage distribution to provide an overview of the collected data. Furthermore, this research employs inferential statistics conducted through tests of normality using the Kolmogorov-Smirnov test and tests of variance homogeneity using the Levene's test. Based on the results of the Levene's test, it indicates that the control group and experimental group have unequal sample variances, thus the hypothesis testing proceeds using the Mann-Whitney U test.

RESULTS AND DISCUSSION Result

This section presents and discusses findings organized according to the research questions, starting from descriptive statistics to summarize the basic characteristics of the sample data before conducting inferential statistics. It further assesses data normality and determines whether data transformation techniques are needed, identifying underlying patterns or trends in the data that could affect further analysis outcomes. The calculation of research data using Mean, Median, Mode, Standard Deviation, Variance, Frequency, and Percentage Distribution for female resource development training through digital platforms in this study is shown in the following figure:

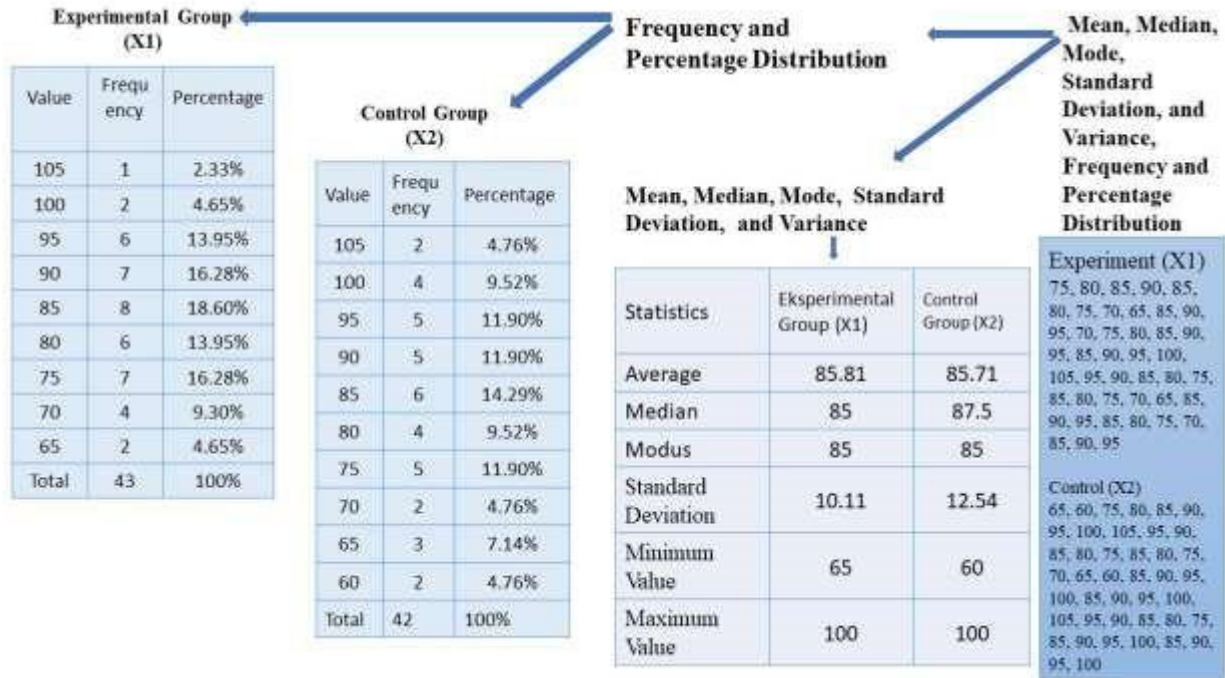
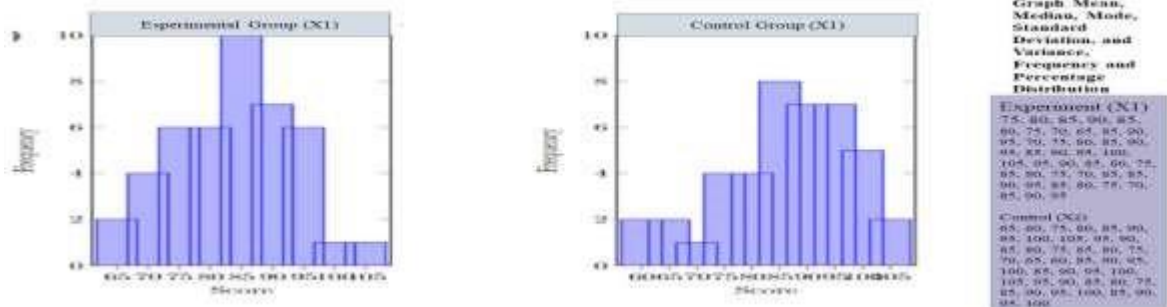


Figure 3. Calculation of Mean, Median, Mode, Standard Deviation, Variance, Frequency, and Percentage Distribution for Female Resource Development Training through Digital Platforms

The figure above shows that the mean score for the experimental group (X1) is 83.95, while the mean score for the control group (X2) is 85.71. The median and mode for both groups are the same, at 85. This calculation indicates that the middle value and the most frequently occurring value in both groups are identical. The control group (X2) has a higher standard deviation and variance (SD: 13.10, Variance: 171.64) compared to the experimental group (X1) (SD: 8.87, Variance: 78.69). This suggests that the data spread in the control group is larger than in the experimental group. The frequency distribution and percentage show that scores in the experimental group (X1) are more concentrated around values 85 and 90, while the control group (X2) scores are more scattered with some high values (100). The distribution of Mean, Median, Mode, Standard Deviation, Variance, Frequency, and Percentage Distribution in this study is shown in the following graph:



Graph 1. Graphical Representation of Data Spread: Mean, Median, Mode, Standard Deviation, Variance, Frequency, and Percentage Distribution for Female Resource Development Training through Digital Platforms. The graph shows the distribution of scores or values from both the experimental group (X1) and the control group (X2). The horizontal axis (X) displays the range of scores or values, while the vertical axis (Y) shows the frequency or number of data points within each score or value range. From the data, it can be observed that the frequency distribution graph for the experimental group (X1) has data concentrated around values 85 and 90, with a smaller standard deviation (SD: 8.87) compared to the control group (X2). The graph for the

experimental group (X1) will exhibit peaks or highest frequencies in the range of values 85 and 90. In contrast, for the control group (X2), the frequency distribution graph will show a more dispersed or spread-out data distribution, with some high values (100) and a larger standard deviation (SD: 13.10). The graph for the control group (X2) will appear flatter or less centered around specific value ranges, with a relatively high frequency occurrence at the value of 100.

Overall, looking at the graph, the average score of the control group is slightly higher, while the experimental group has data that are more centralized and less dispersed compared to the control group. However, the difference between the two groups is not significantly pronounced based on the given data. To further investigate these differences, the research continues with a Normality Test. The Kolmogorov-Smirnov test is used for this Normality Test. The rationale for using the Kolmogorov-Smirnov test in this study is because the sample size is large ($n > 50$) (Kotronoulas, 2023), (Mishra, Pandey, Singh, Gupta, & Keshri, 2019). A larger sample size improves the accuracy of the sample distribution approximation to the normal distribution (Tomšik, 2019), (Rico & Nielsen, 2023), (Cardoso & Galeno, 2023). The Normality Test for the research data using the Kolmogorov-Smirnov test is shown in the following figure.

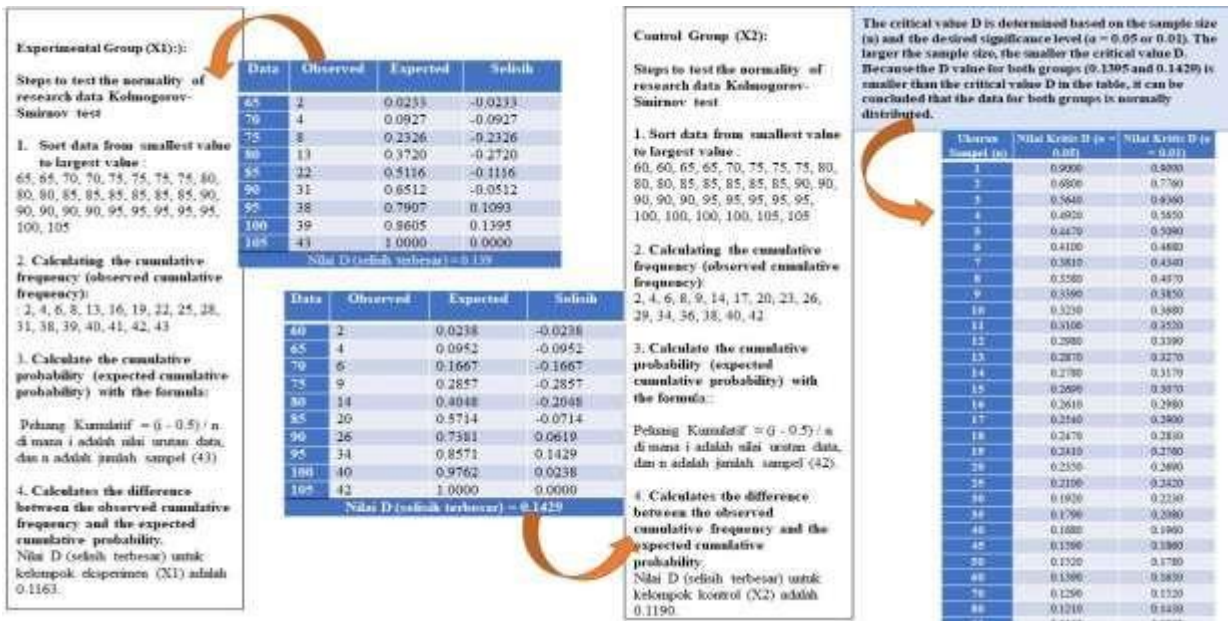


Figure 4. Kolmogorov-Smirnov Normality Test for Female Resource Development Training through Digital Platforms

Based on the Figure on the Kolmogorov-Smirnov test calculation, it shows that: (1) The D value (maximum difference between observed cumulative frequency and expected cumulative probability) for the experimental group (X1) is 0.1395, (2) The D value for the control group (X2) is 0.1429; (3) The critical D value in the Kolmogorov-Smirnov table with a significance level of 0.05 for samples of size 43 (experimental group) is 0.1932, and for samples of size 42 (control group) is 0.1939; (4) The D values for both groups (0.1395 and 0.1429) are smaller than the critical D value in the table. Because the D values for both groups are smaller than the critical D value in the Kolmogorov-Smirnov table at a significance level of 0.05, it can be concluded that the data for both the experimental group (X1) and the control group (X2) are normally distributed. In other words, the normality assumption for the data is met for both groups according to the Kolmogorov-Smirnov test. Therefore, further statistical analysis assuming normality of the data can be valid for this dataset, including the homogeneity of variance test using the Levene's test. The use of Levene's test is justified due to the unequal sample sizes between the experimental group (X1) and the control group (X2). This is based on the assertion by Chukwudi, Okenwe, & Sylvia (2019), stating that Levene's test is capable of detecting variance differences even in groups with vastly different sample sizes. The homogeneity of variance test for the research data using Levene's test is shown in the following figure:

Based on the Mann-Whitney U test calculation in Figure 7, it can be seen that the calculation results show that the obtained U statistic value is $U_2 = 1022$, while the critical U value at a 0.05 significance level (two-tailed) with sample sizes $n_1 = 43$ and $n_2 = 42$ is 800. Since $U_2 = 1022$ is greater than the critical U value = 800, we cannot reject the null hypothesis that there is no significant difference in the performance of female employees between the experimental group (those who participate in digital platform training) and the control group (those who do not participate in digital platform training). For the third hypothesis test, the details are as follows: (1) H0: Training for female resource development through a digital platform does not have a significant positive impact on the digital competence development of female employees; (2) H1: Training for female resource development through a digital platform has a significant positive impact on the digital competence development of female employees. Based on the Mann-Whitney U test calculation, it shows that the training for women's resource development through a digital platform does not have a significant positive impact on the development of digital competence among female employees. This is indicated by the two-tailed significance value (Sig. (2-tailed)) of 0.714, which is greater than the significance level of 0.05 (or 5%). With a significance value greater than 0.05, we cannot reject the null hypothesis, which states that there is no significant difference between the two groups. In other words, the digital platform training does not provide a significant positive impact on the development of digital competence and performance of female employees based on the obtained score data.

DISCUSSION Improvement of Female Employee Performance and Training for Women's Resource Development through Digital Platforms

Transformation of employee education performance currently needs to utilize digital platforms. This technology enables more flexible access and personalized training and development of women's resources at the BKKBN North Sumatra Province. The use of digital platforms follows the shift towards lifelong learning and continuous development. The importance of female employee performance participating in women's resource development training through digital platforms can certainly help enhance digital competencies in developing skills that are increasingly crucial in the modern era. However, training activities for human resource development through digital platforms often do not yield the expected performance improvements. Based on this research finding, there appears to be no significant difference in the performance improvement of female employees who underwent digital platform training (experimental group) compared to those who did not (control group). In other words, digital platform training did not significantly enhance the performance of female employees. Based on the score data obtained, the average score of the control group (85.71) is slightly higher than that of the experimental group (83.95). This difference is not substantial enough to indicate significant variation in this study. The research findings suggest factors contributing to the lack of performance difference between female employees undergoing digital platform training and those who did not, including participants being burdened with excessive office work, making it difficult to focus on training and balance work and study time. This research aligns with studies conducted by Callister & Love (2020), Tonhäuser & Büker (2021), Diamantidis & Chatzoglou (2018), and Sitzmann & Weinhardt (2022), which indicate that digital platform training does not achieve the anticipated impact on female employee performance. This is attributed to the transfer of learning from training to the workplace being influenced by the work environment, where participants are often burdened with excessive office work, hindering their focus on training and the ability to balance work and study time. Other factors include technological constraints related to a lack of basic technology skills, making it challenging for participants to engage in training. These research findings are consistent with studies by Rasouli, Rahbania & Attaran (2020), Muthuprasad et al. (2021), which suggest that digital divides can affect employees' ability to participate in and benefit from digital platform training. The implications of this research highlight the need for assessing and adjusting training strategies to ensure female employees effectively enhance their performance, especially female employees.

Differences in the Performance of Female Employees Participating in Digital Platform Training

Employee performance education can be conducted through various innovations in women's resource development training. One of them is through digital platforms. Based on research findings, female employees

participating in digital platform training at the National Population and Family Planning Agency of North Sumatra Province are expected to experience performance improvement in using and utilizing digital platforms. Digital platform training helps female employees master current technology, enhancing their efficiency and productivity in daily tasks. This automation reduces the time and effort previously required and provides faster and more accurate services to the public, such as in managing population and family planning data. Additionally, the National Population and Family Planning Agency of North Sumatra Province can optimize resources where more skilled employees can maximize resource utilization, ultimately enhancing overall organizational performance. However, this research indicates that digital platform training does not significantly impact the performance of female employees at the National Population and Family Planning Agency of North Sumatra Province. Although the average score of the control group (85.71) is slightly higher than that of the experimental group (83.95), this difference is not statistically significant. The research findings suggest that the digital platform training program provided to female employees at the National Population and Family Planning Agency of North Sumatra Province is ineffective in improving their performance. This aligns with studies by Rustiana (2020), Panggabean (2021), Nasution (2023), and Meitaningrum (2019), which indicate that digital platform-based training programs for female employees have not been effective in enhancing their performance. Several contributing factors include lack of active participant engagement, limited direct interaction with trainers, and insufficient adjustment of training content to specific female participant needs. Technical constraints such as limited internet access also affect the effectiveness of implemented training. Management needs to evaluate and possibly redesign training programs to ensure their relevance and effectiveness (Scheuch, 2024; Connolly et al., 2024). These research findings imply the need to enhance training quality, tailor methods to participant needs, and integrate training with overall organizational strategies. This approach can help improve female employee performance, benefiting both individual employees and overall organizational performance and public service delivery.

Women's Resource Development Training Through Digital Platforms and Its Positive Impact on the Development of Digital Competence Among Female Employees

Training for women's resource development through digital platforms is a crucial investment for the National Population and Family Planning Agency of North Sumatra Province. This research activity not only enhances the competence and empowerment of female employees but also brings positive impacts on operational efficiency, service innovation, and public satisfaction. Furthermore, the National Population and Family Planning Agency of North Sumatra Province has a vital mission in population control and family development. Women's resource development training through digital platforms plays a crucial role in supporting this mission. Ideally, this training should have a significant positive impact on the development of digital competencies among female employees at the National Population and Family Planning Agency of North Sumatra Province.

Through women's resource development training via digital platforms, there is a reinforcement of women's role in acquiring digital competencies necessary for efficiently managing data, information, and administrative tasks within the agency. Digital training strengthens their ability to perform these tasks more effectively, demonstrating a commitment to gender inclusion by providing equal opportunities for female employees to access training and advance their careers in digital competency development. However, in reality, the digital training implemented has not yet sufficiently strengthened the role of employees in performing these tasks more effectively. This is indicated by the two-tailed significance value (Sig. (2-tailed)) of 0.714, which is greater than the significance level of 0.05 (or 5%). With a significance value greater than 0.05, we cannot reject the null hypothesis stating that there is no significant difference between the two groups. In other words, digital platform training does not provide a significant positive impact on the development of digital competencies and performance of female employees. Several potential factors causing digital platform training to not significantly impact the development of digital competencies among female employees at the National Population and Family Planning Agency of North Sumatra Province are identified. Based on research findings, methods of delivering training that are not tailored to the specific needs of female employees can render training activities less effective in enhancing performance and developing female employees' resources. Consequently, their full potential remains unrealized, which in turn can affect organizational productivity and diversity as a whole. This research finding supports studies conducted by Ely, Ibarra, & Kolb (2021), Sandler (2020),

Susilawati, Lubis, Kesuma, Pratama, Khaira (2023), which suggest that training delivery methods not tailored to the specific needs of female employees can reduce training effectiveness, thereby hindering the realization of their full potential and impacting organizational productivity and diversity. A solution suggested by this research finding is for organizations to enhance training effectiveness for female employees, help realize their full potential, and ultimately enhance overall organizational productivity and diversity. Additionally, other approaches should be considered in developing digital competencies and improving the performance of female employees, such as continuous training, mentoring, or appropriate incentives.

CONCLUSION

Based on the research findings, here are several conclusions that can be drawn: (1) No significant improvement in employee performance: Women's resource development training through digital platforms did not result in significant performance improvement among female employees who underwent the training compared to those who did not: (2) No significant difference between experimental and control groups: There was no significant difference in performance between the experimental group (female employees who underwent training via digital platforms) and the control group (female employees who did not undergo training via digital platforms): (3) No significant positive impact on Digital Competence: Women's resource development training through digital platforms did not provide a significant positive impact on the development of digital competencies among female employees. Based on these conclusions, the following implications are suggested: (1) Re-evaluate the Effectiveness of Digital Training: Organizations need to reassess their women's resource development training programs through digital platforms, considering the lack of significant performance improvement observed. This evaluation may include reviewing curriculum, teaching methods, and the relevance of training materials to employee needs: (2) Alternative Training Methods: Given the lack of significant performance differences between the digital training and non-digital training groups, organizations could consider alternative training methods such as face-to-face training, mentoring, or a combination of digital and non-digital methods: (3) Further Research: Further research is needed to understand the factors influencing the effectiveness of digital training. This research could involve deeper analysis of participant motivation, management support, or even the technological infrastructure used. Based on the research findings, the following recommendations are suggested for consideration: (1) Conduct a comprehensive evaluation of existing training programs to identify weaknesses and areas for improvement. (2) Consider revising training content to make it more relevant to the actual needs and conditions of female employees. (3) Consider combining digital platform training with other methods such as face-to-face training, workshops, and mentoring. (4) Use interactive and engaging learning techniques to enhance participant engagement and motivation.

Acknowledgments

On this occasion, we, the writing team, would like to express our gratitude for the funding support provided for this research. This work was supported by a Grant from the Directorate of Research and Community Service of the Ministry of Education and Culture, which has provided grant assistance in the year 2024. We also extend our thanks for the moral support given by the Rector, the Head of the Research Institute, the Dean of the Faculty of Economics and Business at the Islamic University of North Sumatra, along with the research team from the University of Medan Area, University of Muhammadiyah North Sumatra, and all the students who collaborated in this research, who have been instrumental at every stage of this research. We appreciate the trust placed in us to conduct research on employee performance education transformation: innovation in women's resource development training through digital platforms. Thank you very much for all the contributions provided by the leadership. We hope that the results of this research will bring significant and sustainable benefits to family planning programs and serve as a foundation for further development in the future.

REFERENCES

- Al-kharabsheha, S. A. A., et al. (2023). The impact of digital HRM on employee performance through employee motivation. *International Journal of Data and Network Science*, 7(2023), 275–282. <https://doi.org/10.5267/j.ijdns.2022.10.0>

- Alshammary, F. M., & Alhalafawy, W. S. (2023). Digital Platforms and the Improvement of Learning Outcomes: Evidence Extracted from Meta-Analysis. *Sustainability*, 15, 1305, 1-21. <https://doi.org/10.3390/su15021305>
- Audrin, B., Audrin, C., & Salamin, X. (2024). Digital skills at work – Conceptual development and empirical validation of a measurement scale. *Technological Forecasting & Social Change*. <https://doi.org/10.1016/j.techfore.2024.123279>
- Badan Perencanaan Pembangunan Nasional. (2023). Rencana Pembangunan Jangka Menengah Nasional 2020-2024. Kementerian Perencanaan Pembangunan Nasional. <https://jdih.bappenas.go.id/peraturan/detailperaturan/1037> Brolpito, A. (2023). Digital skills and competence, and digital and online learning. European Training Foundation: Turin.
- Callister, R. R., & Love, M. S. (2020). A comparison of learning outcomes in skills-based courses: Online versus face-to-face formats. *Decision Sciences Journal of Innovative Education*, 14(2), 243-256. <https://doi.org/10.1111/dsji.12093>
- Cardoso, D. O., & Galeno, T. D. (2023). Online evaluation of the Kolmogorov–Smirnov test on arbitrarily large samples. *Journal of Computational Science*, 67, 1-11. <https://doi.org/10.1016/j.jocs.2023.101959>
- Chukwudi, O., Idochi, O., & Sylvia, I. O. (2019). Effect Of Sample Sizes On The Empirical Power Of Some Tests Of Homogeneity Of Variances. *International Journal of Mathematics Trends and Technology (IJMTT)*, 65(6), 119-134. <http://www.ijmtjournal.org>
- Connolly, A., et al. (2024). Barriers to supporting children’s mental health in Australian primary schools: Perspectives of school staff. *Mental Health & Prevention*, 33(2024), 200323. <https://doi.org/10.1016/j.mhp.2024.200323>
- Dewi, N. K., Suroso, A. I., Fahmi, I., & Syarie, R. (2023). The influence of women’s leadership on corporate sustainability in Indonesia. *Cogent Business & Management*, 10, 2262706, 1-22. <https://doi.org/10.1080/23311975.2023.2262706>
- Diamantidis, A. D., & Chatzoglou, P. D. (2018). Factors affecting employee performance: An empirical approach. *International Journal of Productivity and Performance Management*, 63(6), 658-671. <http://dx.doi.org/10.1108/IJPPM-01-2018-0012>
- Dwivedi, Y. K. (2022). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, 59, 1-37. <https://doi.org/10.1016/j.ijinfomgt.2020.102168>
- Ely, R. J., Ibarra, H., & Kolb, D. M. (2021). Taking gender into account: Theory and design for women's leadership development programs. *Academy of Management Learning & Education*, 20(2), 193-219. <https://doi.org/10.5465/amle.2010.0046>
- Ergin, M., & Koskan, O. (2023). Comparison of Student – t, Welch’s t, and Mann – Whitney U Tests in Terms of Type I Error Rate and Test Power. *Selcuk Journal of Agriculture and Food Sciences*, 37(2), 223-231. <https://doi.org/10.15316/SJAFS.2023.022>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage Publications: Newbury Park.
- Gámiz, M. L., Kulasekera, K. B., Limnios, N., & Lindqvist, B. H. (2011). *Applied Nonparametric Statistics in Reliability* (Springer Series in Reliability Engineering) (2011th ed.). Heidelberg: Springer.
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2023). Understanding the role of digital technologies in education: A review. *Sustainability*, 1-13, 275-285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- Kotronoulas, G., et al. (2023). An Overview of the Fundamentals of Data Management, Analysis, and Interpretation in Quantitative Research. *Seminars in Oncology Nursing*, 39 (2), 1-9. <https://doi.org/10.1016/j.soncn.2023.151398>
- Meitaningrum, D. A., et al. (2019). Efektivitas pendidikan dan pelatihan dalam meningkatkan kinerja pegawai. *IPDN*. <https://journal.uir.ac.id>
- Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of Cardiac Anaesthesia*, 22(1), 67-72. https://doi.org/10.4103/aca.ACA_157_18
- Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID-19 pandemic. *Social Sciences & Humanities Open*, 3(1), 100101. <https://pubmed.ncbi.nlm.nih.gov/34173507/>
- Öztop, F. (2023). A Meta-Analysis of the Effectiveness of Digital Technology-Assisted STEM Education. *Journal of Science Learning*, (2), 136-142. <https://doi.org/10.17509/jsl.v6i2.52316>
- Plekhanov, D., Franke, H., & Netland, T. H. (2023). Digital transformation: A review and research agenda. *European Management Journal*. <https://doi.org/10.1016/j.emj.2022.09.007>
- Poláková, M., et al. (2023). Soft skills and their importance in the labour market under the conditions of Industry 5.0. *Heliyon*, 9(1), e18670, 1-20. <https://doi.org/10.1016/j.heliyon.2023.e18670>
- Rico, V. B., & Nielsen, B. (2023). Normality testing after outlier removal. *Econometrics and Statistics*, 1-23. <https://doi.org/10.1016/j.ecosta.2023.06.001>
- Rosyadi, M. I., et al. (2023). The Role of AI In Vocational Education: A Systematic Literature Review. *JOVES (Journal of Vocational Education Studies)*, 6(2), 244-263. <https://doi.org/10.12928/joves.v6i2.9032244>
- Rustiana. (2020). Efektivitas pelatihan bagi peningkatan kinerja karyawan. *Jurnal Dinamika Manajemen*. <https://journal.unnes.ac.id/nju/index.php/jdm>
- Safirda, Y., Lubis, F. K., & Riana, Z. (2020). The effect model education and training to interestin students entrepreneurship of faculty economics Islamic University of North Sumatra Medan. *Scitepress*, 623-629. <https://www.scitepress.org/Papers/2018/88914/pdf/index.html>
- Safrida, S., Simbolon, R., Zenni, P., & Pratama, I. (2023). Preventive, education, and repressive strategies on the performance of Indonesian Government civil servants, with anti-fraud supervision as an intervention. *The Journal of Modern Project Management*, 11(1). <https://journalmodernpm.com/manuscript/index>

Employee Performance Education Transformation: Training Innovation for Women's Resource Development Through Digital Platforms

- Sandler, C. (2020). The gender gap in workplace learning: A mixed-methods study on the impact of gender-specific training needs. *Human Resource Development Quarterly*, 31(4), 435-456. <https://doi.org/10.3389/fpsyg.2015.01400>
- Scheuch, I., Peters, N., Lohner, M. S., Muss, C., Aprea, C., & Fürstenau, B. (2021). Resilience Training Programs in Organizational Contexts: A Scoping Review. *Frontiers in Psychology*, 12, 733036, 1-12. <https://doi.org/10.3389/fpsyg.2021.733036>
- Sheskin, D. J. (2020). *Handbook of parametric and nonparametric statistical procedures* (6th ed.). CRC Press: Boca Raton, FL.
- Sitzmann, T., & Weinhardt, J. M. (2022). Training engagement theory: A multilevel perspective on the effectiveness of workrelated training. *Journal of Management*, 44(2), 732-756. <https://doi.org/10.1177/0149206315574596>
- Spantel, M., Sofkova Hashemi, S., Lundin, M., & Algers, M. (2023). Digital competence and digital literacy in higher education research: Systematic review of concept use. *Cogent Education*, 5(2018), 1519143. <https://doi.org/10.1080/2331186X.2018.1519143>
- Tomšik, R. (2019). Power Comparisons of Shapiro-Wilk, Kolmogorov-Smirnov and Jarque-Bera Tests. *Scholars Journal of Research in Mathematics and Computer Science*, 3(3). <https://www.scischolars.com/journals/index.php/sjrmcs>
- Tönhäuser, C., & Bükler, L. (2021). Determinants of transfer of training: A comprehensive literature review. *International Journal for Research in Vocational Education and Training*, 3(2), 127-165. <https://doi.org/10.13152/IJRJET.3.2.4>
- UN Women. (2020). *The digital revolution: Implications for gender equality and women's rights 25 years after Beijing*. UN Women Headquarters. <https://www.unwomen.org/en/>
- Vuorikari, R., Kluzer, S., & Punie, Y. (2022). *Dig Comp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes*. EUR 31006 EN, Publications Office of the European Union, Luxembourg. https://doi.org/10.2760/115376_JRC128415
- Wang, H. (2023). Examining the applications of intelligent tutoring systems in real educational contexts: A systematic literature review from the social experiment perspective. *Education and Information Technologies*, 28, 9113-9148. <https://doi.org/10.1007/s10639-022-11555-x>
- Women in Work Index. (2023). *Perlu lebih setengah abad untuk mengatasi kesenjangan upah antargender di seluruh OECD*. PwC Report (PwC). <https://www.oecd.org/gender/>