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Thesis Proposal on the Influence of Generational Diversity on Team Performance through the Effectiveness of Communication and Team Collaboration at Pt. Asdp Indonesia Ferry (Persero)

Nadhira Qotrunnada[1*], Corry Yohana[2], Tuty Sariwulan[3]
Universitas Negeri Jakarta, Jakarta, Indonesia
Corresponding Author: Nadhira Qotrunnada: Nadhiraqotrunnada@gmail.com

A R T I C L E I N F O

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A B S T R A C T

This study aims to analyze the influence of generational diversity on team performance through the effectiveness of team communication and collaboration at PT ASDP Indonesia Ferry (Persero) using a quantitative approach with a survey method of 120 permanent employees of PT ASDP Indonesia Ferry (Persero) Head Office. Data analysis was carried out using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with the help of SmartPLS 4 software. The results showed that generational diversity had a positive and significant effect on communication effectiveness ($\beta = 0.697$; $p < 0.001$), team collaboration ($\beta = 0.554$; $p < 0.001$), and team performance ($\beta = 0.194$; $p = 0.037$). Communication effectiveness has a positive and significant effect on team collaboration ($\beta = 0.355$; $p < 0.001$), while team collaboration had a positive and significant effect on team performance ($\beta = 0.485$; $p < 0.001$), communication effectiveness has been proven to mediate the influence of generational diversity on team performance ($\beta = 0.247$; $p < 0.001$), and team collaboration also mediated the relationship ($\beta = 0.269$; $p < 0.001$), good predictive ability with a determination coefficient value (R^2) of 0.486 in communication effectiveness, 0.307 in team collaboration, and 0.729 in team performance. These findings show that managing generational diversity through effective communication and strong team collaboration plays an important role in improving team performance at PT ASDP Indonesia Ferry (Persero).

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INTRODUCTION

PT ASDP Indonesia Ferry (Persero) is currently facing the challenge of managing a multigenerational workforce in the midst of an ever-growing process of organizational transformation and digitization of services. Based on the ASDP Corporate Transformation Report (2023), the composition of company employees consists of 54% of Generations Y and Z and 46% of Generation X and Baby Boomers. The composition shows that most work activities in an organization involve interaction between employees from different generational groups. This condition is important because each generation has different characteristics, work values, experiences, and communication preferences that have the potential to affect the effectiveness of teamwork.

Generational diversity is a form of workforce diversity that is increasingly found in modern organizations. The presence of various generational groups in one work environment can provide benefits in the form of diverse perspectives, experiences, knowledge, and abilities that can support innovation and problem-solving. The older generation generally has strong work experience and organizational understanding, while the younger generation tends to be more adaptive to technological developments and changes in the work environment. However, differences in life experience, work values, communication preferences, and perspectives on work also have the potential to create obstacles in work interactions if not managed effectively. Therefore, generational diversity can be a source of excellence and challenges for organizations.

If a business is successful in reaching its objectives, it will be reflected in its organisational performance. For contemporary managers, performance is about more than just getting things done; it's also about how well things work together, how well divisions work together, and how well companies can adjust to new circumstances. When an individual or team carries out their tasks in accordance with the assignments made of them, the outcome is their performance (Mangkunegara, 2020). Profitability is only one indicator of a company's health; the efficiency and effectiveness of its internal operations are just as important.

Human resources (HR) have a central role in achieving organizational performance. In the midst of the era of digital transformation and industrial disruption, the quality and resilience of human resources are the distinguishing factors that determine competitiveness. The Ministry of SOEs (2024) noted that improving the quality of human resources contributes up to 35% to increasing the productivity of SOEs, showing that the success of public and private organizations cannot be separated from the ability to manage their human potential. Human resources are not only the implementers of strategies, but also the drivers of innovation and the shaping of work culture that determines the direction of organizational sustainability.

RESEARCH METHOD

Using previously established assumptions as a basis, this research employs an explanatory quantitative strategy to provide light on the nature of the relationships between the variables under investigation. The study involves measuring and assessing the effects of generational diversity on team performance, with the efficacy of team communication and cooperation as a

mediating variable in the chain. This technique is employed because of the emphasis on this topic.

This study was designed to gain a comprehensive understanding of the relationships between variables. The variables were measured objectively through questionnaires and analysed using SmartPLS software, which is based on *Partial Least Squares - Structural Equation Modelling* (PLS-SEM).

According to Hair et al. (2019), PLS-SEM is a suitable method since it can handle non-normally distributed data, small sample sizes, and the analysis of direct and indirect correlations between latent variables. In order to understand the connection between generational diversity and team performance, this study's design was able to determine the mediating mechanism and the size of impact on the efficacy of communication and team collaboration.

Research Population

The population in this study is all employees of PT ASDP Indonesia Ferry (Persero) Head Office, which is located in Jakarta. The population was chosen because the organization represents a multigenerational work environment with a high diversity of ages and work experience, consisting of the Baby Boomers, X, Y (Millennials), and Z generations.

Wilayah Kerja Working Area		2024	2023
Kantor Pusat	Head Office	597	511
Kantor Regional (I-IV)	Regional Offices (I-IV)	41	51
Kantor Cabang	Branch Offices	4.089	4.176
Jumlah	Total	4.727	4.738

Source: annual report PT. ASDP Indonesia Ferry 2024

In 2024, the composition of employees in the Company will be dominated by Branch Offices of 86.5% of the total employees as can be seen in the table above, but this study focuses on the head office, which is as many as 597 employees.

Test Measurement Model (Outer Model)

The measurement model test aims to ensure that each indicator used is able to reflect latent constructs well. This analysis includes three main stages:

1. Convergent Validity Test
    a. It is obtained through the value of *outer loading* and *Average Variance Extracted (AVE).*
    b. The indicator is considered valid if *the outer loading* ≥ 0.70 and AVE ≥ 0.50 (Hair et al., 2019).
    c. The AVE value indicates the proportion of indicator variants that can be explained by latent constructs.
2. Discriminating Validity Test
    a. Using *the Fornell-Larcker Criterion* and *Cross Loading* approaches.
    b. A construct is said to have discriminative validity if the square root value of AVE is greater than the correlation between other constructs.
3. Construct Reliability Test
    a. It uses two main measures, namely *Composite Reliability (CR)* and *Cronbach's Alpha (a).*

b. Konstruk is declared reliable if it has a CR ≥ 0.70 and Cronbach's Alpha ≥ 0.70.

Structural Model Test (Inner Model)

Verifying that the measurement model is valid and reliable is the first stage in testing the structural model, which will evaluate the hypothesised causal links between latent variables.

The stages of the inner analysis of the model include:

1. R-Square Test (R^2)

Measures how much independent variables explain dependent variables.

a. The value $R^2 = 0.67$ indicates a strong model,
b. The value $R^2 = 0.33$ indicates a moderate model,
c. The value of $R^2 = 0.19$ indicates a weak model (Hair et al., 2019).

2. Test Effect Size (f^2)

Used to assess the relative contribution of each exogenous variable to the endogenous variable.

a. The values of $f^2 = 0.02$ (small), 0.15 (medium), and 0.35 (large).

3. Predictive Relevance Test (Q^2)

Obtained through *the Blindfolding procedure* to assess the predictive capabilities of the model.

a. $Q^2 > 0$ indicates that the model has good predictive ability.

4. Significance and Intervariable Relationship Test (Bootstrapping)

The t-statistic and p-value were obtained by hypothesis testing using the bootstrapping approach with 5000 samples.

a. The hypothesis is accepted when the *t-statistical* value ≥ 1.96 and *the p-value* ≤ 0.05 ($\alpha = 5\%$).
b. The results of this test are used to determine whether the direct or indirect influence between variables is statistically significant.

Serial Mediation Test

Because this study uses two mediation variables, namely communication effectiveness (M_1) and team collaboration (M_2), the effect of serial mediation was tested.

The analysis is carried out by assessing:

1. Direct effect between generational diversity and team performance.
2. Indirect effect through the effectiveness of communication and team collaboration.
3. If the indirect influence is significant and the direct influence is reduced or becomes insignificant, then mediation is said to have occurred.

The interpretation of mediation results follows the approach of Baron & Kenny (1986) and Preacher & Hayes (2008) to the *serial mediation* model, with an emphasis on *the value of bootstrapping indirect effects*.

Data Collection Techniques

Achieving research goals requires collecting empirical evidence, and data collecting strategies play a key role in this process. Primary data, in this case information gathered from people by means of questionnaires, are used in this research.

The questionnaire was prepared based on indicators on the operational definition of variables that have been adapted from previous credible and

indexed studies by Scopus and Sinta. Data collection was carried out by paying attention to research ethics and the confidentiality of respondents' identities.

The data collection procedure is carried out through several stages as follows:

Preparation of Research Instruments

The research tool was a closed-ended questionnaire that used a five-point Likert scale, where 1 indicates strong disagreement and 5 indicates strong agreement. With linguistic modifications to ensure ease of understanding for personnel of PT ASDP Indonesia Ferry (Persero), each questionnaire statement is developed based on the indications of each variable.

Content Validity Test

The questionnaire was pilot tested for content validity with the help of a supervisor and a human resource management specialist before it was sent out to respondents. Checking that the statement's item is relevant to the organization's context and in line with the notion being measured is the aim.

Distribution of Questionnaires to Respondents

After obtaining approval from the supervisor, the questionnaire was distributed to the respondents using an online method through Google Form. The use of online methods was chosen because it is more efficient, expands the reach of respondents, and facilitates the data collection process without interfering with employee work activities. Each respondent was given a brief explanation of the purpose of the research, how to fill it out, and guarantee the confidentiality of their answers.

Initial Data Collection and Processing

The data that has been collected will be checked first to ensure the completeness of the answers (data cleaning). Respondents who do not fill out the questionnaire completely will be excluded from the analysis process. The data that passes the examination is then further processed using SmartPLS software to test measurement models and structural models.

Through the use of a quantitative approach with Structural Equation Modeling analysis based on Partial Least Squares (SEM-PLS), this study is expected to be able to provide accurate and in-depth results regarding the relationship between variables, especially the influence *of generational diversity* on *team performance* through the *effectiveness of communication* and *team collaboration* as a chain mediation.

RESEARCH FINDINGS

Using SmartPLS 4.0.9, we will analyse this research model using the Partial Least Square (PLS) method. PLS is an alternative to Structural Equation Modelling (SEM) that can be used to solve problems with very complex variable relationships when the data sample size is small (30-100 samples) and the data does not follow a particular distribution (Yamin and Kurniawan, 2009).

Before diving into the model analysis, the first step of the SEM-PLS approach is to lay up the framework of the relationships between the study variables. The following graphic is provided to highlight the connection between variables in this paper:

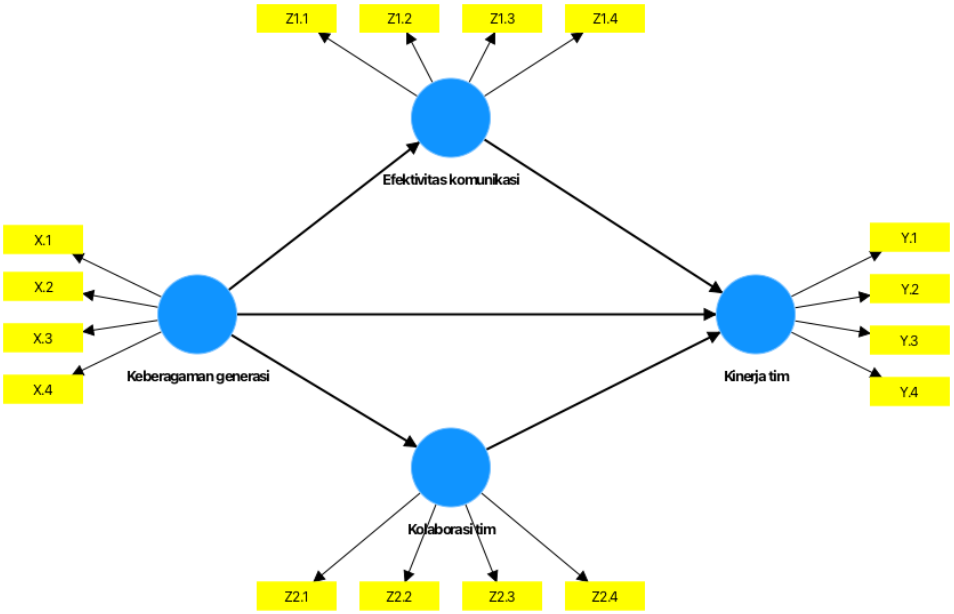

Figure 4.1 Structure of the relationship between research variables

Measurement model analysis (Outer Model)

External and internal model testing are both part of the Goodness of Model process. Several indications relating AVE values, convergent validity, discriminant validity, and composite reliability were examined to conduct the outer model test.

1. Convergent Validity

Examining the loading factor value, which indicates the reliability item (validity indicator), is how *convergent validity* is done. An indicator's loading factor is a numerical representation of the degree to which item scores correlate with constructor scores. To be considered legitimate, the loading factor value must be higher than 0.7. When first looking at the loading factor matrix, a value of about 0.3 is thought to have met the minimum level, 0.4 is considered better, and 0.5 is generally thought to be significant for a larger loading factor (Hair et al., 1998). The research in this study used a loading factor limit of 0.7. The findings of the loading factor analysis performed using SmartPLS 4.0.9 are shown below:

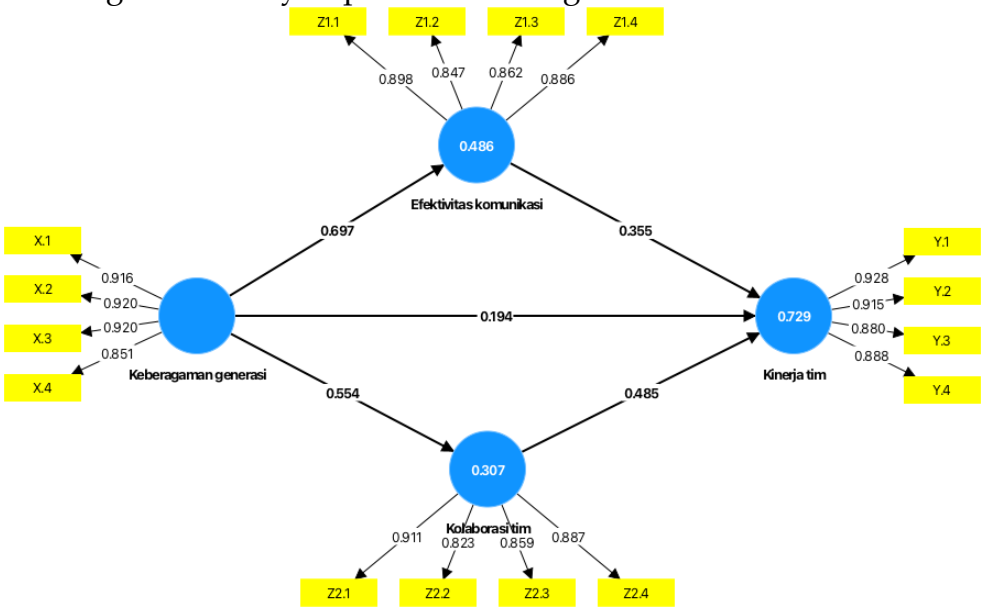

Figure 4.2 Load factor value of all research items iteration 1

The full picture above can be summarized in the following table:

Table 4.1 Loading Value Iteration Factor 1

	Generational diversity	Team performance	Communication effectiveness	Team collaboration	Ket
X.1	0,916				Valid
X.2	0,920				Valid
X.3	0,920				Valid
X.4	0,851				Valid
Y.1		0,928			Valid
Y.2		0,915			Valid
Y.3		0,880			Valid
Y.4		0,888			Valid
Z1.1			0,898		Valid
Z1.2			0,847		Valid
Z1.3			0,862		Valid
Z1.4			0,886		Valid
Z2.1				0,911	Valid
Z2.2				0,823	Valid
Z2.3				0,859	Valid
Z2.4				0,887	Valid

Results from iteration 2 of the load factor analysis (Table 2) demonstrate that all indicators in each construct have achieved convergent validity, as shown by loading factor values greater than or equal to 0.70. Indicators X.1–X.4 in the Generation Diversity variable are all considered legitimate since their loading values range from 0.851 to 0.920. In the Team Performance variable, indicators Y.1 to Y.4 have loading values between 0.880 to 0.928, which shows that all indicators are able to represent the Team Performance construct very well. Furthermore, in the Communication Effectiveness variable, indicators Z1.1 to Z1.4 have a loading value between 0.847 to 0.898, so all indicators are also declared valid. Similarly, in the Team Collaboration variable, indicators Z2.1 to Z2.4 have a loading value between 0.823 to 0.911, so all indicators meet the requirements for convergent validity. Thus, it can be concluded that in the second iteration, all indicators in the model are valid and suitable for further analysis, such as construct reliability tests, AVE, discriminant validity, and structural model testing.

2. Discriminant Validity

To check for discriminant validity, we examine the contract measurement's cross loading value. The cross loading value shows how strongly each constructor's indication is correlated with the indicators of the other block

constructions. If the correlation between one block constructor's indicator and the constructor is larger than the correlation between the other block constructor's indicator, then the measurement model has excellent discriminant validity. Once SmartPLS 4.0.9 has processed the data. The following table displays the cross loading results:

Table 4.2 Results *Cross Loading*

	Generational diversity	Team performance	Communication effectiveness	Team collaboration
X.1	0,916	0,685	0,638	0,535
X.2	0,920	0,672	0,685	0,508
X.3	0,920	0,660	0,604	0,551
X.4	0,851	0,532	0,584	0,390
Y.1	0,649	0,928	0,657	0,694
Y.2	0,655	0,915	0,652	0,628
Y.3	0,612	0,880	0,496	0,686
Y.4	0,649	0,888	0,619	0,616
Z1.1	0,625	0,555	0,898	0,318
Z1.2	0,542	0,540	0,847	0,339
Z1.3	0,608	0,602	0,862	0,286
Z1.4	0,652	0,646	0,886	0,373
Z2.1	0,481	0,681	0,371	0,911
Z2.2	0,429	0,581	0,259	0,823
Z2.3	0,419	0,562	0,282	0,859
Z2.4	0,579	0,688	0,383	0,887

Table 2 displays the findings of the cross loading, which demonstrate that regardless of the indicator, the construct to be assessed has the greatest loading value when compared to all other constructs. The loading on Team Performance, Communication Effectiveness, and Team Collaboration is lower than the loading on the Generational Diversity construct, which is greater in indicators X.1–X.4 (ranging from 0.851 to 0.920). In the Team Performance variable, indicators Y.1 to Y.4 have the highest loading value in the Team Performance construct, which is in the range of 0.880 to 0.928. Furthermore, indicators Z1.1 to Z1.4 have the highest loading value in the Communication Effectiveness construct, which is in the range of 0.847 to 0.898. Similarly, indicators Z2.1 to Z2.4 have the highest loading value in the Team Collaboration construct, which is in the range of 0.823 to 0.911. After examining the cross loading values, it is clear that each indicator is a stronger representation of its respective construct. As a result, the model meets the criteria for discriminant validity and may go on to the next analytical step.

Table 4.3 Fornel-Larcker Criterion

	Communication effectiveness	Generational diversity	Team performance	Team collaboration
Communication effectiveness	0,873			

Generational diversity	0,697	0,902		
Team performance	0,673	0,710	0,903	
Team collaboration	0,377	0,554	0,727	0,870

The whole construct has fulfilled the requirements of discriminant validity, as shown in Table 3, according to the findings of the Fornell-Larcker Criterion. The diagonal square root of AVE reveals this to be the case, with values of 0.873 for Communication Effectiveness, 0.902 for Generational Diversity, 0.903 for Team Performance, and 0.870 for Team Collaboration. Each construct's correlation value is lower than the diagonal value. For instance, compared to the correlations with Generational Diversity (0.697), Team Performance (0.673), and Team Collaboration (0.377), the Communication Effectiveness score is at 0.873. Team Collaboration (0.870) is higher than the correlation with other constructs, Team Performance (0.903) is higher than the correlation with Team Collaboration (0.727), and Generational Diversity (0.902) is higher than the correlation with Team Performance (0.710) and Team Collaboration (0.554). The model is deemed to fulfil the discriminant validity requirements according to the Fornell-Larcker criteria since each construct in the model has a distinct conceptual difference and can assess its own variables more strongly than its link to other constructs.

3. Composite Reliability and AVE

The reliability of constraints or latent variables, as assessed by composite reliability values, is another way to evaluate *the outer model*, alongside *convergent validity* and *discriminant validity*. With an AVE score more than 0.5 and a composite reliability greater than 0.7, the constructor is deemed dependable. The table below displays the results of the SmartPLS output for the composite reliability values:

Table 4.4 Composite Reliability and AVE Values

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Communication effectiveness	0,896	0,900	0,928	0,763
Generational diversity	0,924	0,930	0,946	0,814
Team performance	0,924	0,926	0,946	0,815
Team collaboration	0,893	0,903	0,926	0,758

According to Table 4, all of the model's constructs have been validated and have fulfilled the convergent reliability and reliability requirements according to the results of the AVE tests. All constructs exhibit outstanding internal consistency, as seen by Cronbach's Alpha values over 0.70 for the following variables: Communication Effectiveness (0.896), Generational Diversity (0.924),

Team Performance (0.924), and Team Collaboration (0.893). Moreover, all four indicators in each construct had Composite Reliability (rho_c) values greater than 0.70: Communication Effectiveness (0.928), Generational Diversity (0.946), Team Performance (0.946), and Team Collaboration (0.926). This indicates that the indicators accurately measure the latent variables within each construct. Communication Effectiveness(0.763), Generational Diversity(0.814), Team Performance(0.815), and Team Collaboration (0.758) all have AVE values that are higher than the minimal requirement of 0.50 for the whole construct. That is, over half of the variation in the indicators can be explained by each concept. Therefore, it is appropriate to use these variables for evaluating structural or inner models, since they are all convergently proclaimed to be reliable and valid.

Structural Model Analysis (Inner Model)

1. R2 value of the model

The following step is to test the structural model, which is an *inner model*, once the outer model has been fulfilled. The r-squared value (a reliability indicator for dependent constructors) and the t-statistical results from the path coefficient test may be used to assess the inner model. An improved research model's prediction capabilities are shown by an elevated r-squared value.

Table 4.5 R-Square value of the model

	R-square	R-square adjusted
Communication effectiveness	0,486	0,482
Team performance	0,729	0,722
Team collaboration	0,307	0,301

The model's capacity to explain endogenous variables is quite excellent, according to Table 6's R-squared value. Generational diversity accounts for 48.6% of the variance in Communication Effectiveness, with the remaining 51.4% explained by variables other than the model. This is supported by the variable's R-square value of 0.486 and R-square adjusted value of 0.482. Generational Diversity, Communication Effectiveness, and Team Collaboration can account for 72.9% of the variance in Team Performance, with other factors explaining the remaining 27.1%. This is supported by the variable's R-squared value of 0.729 and R-square adjusted value of 0.722. On the other hand, the Team Collaboration variable demonstrates that Generational Diversity may account for 30.7% of the variance in Team Collaboration, with the remaining 69.3% being explained by variables outside of the model. This is supported by an R-squared value of 0.307 and an R-square adjusted value of 0.301. As a result, the model's capacity to describe the efficacy of team communication and collaboration is low, while its capacity to explain team performance is quite strong.

4. F2 value of the model

Table 4.6 F-Square value of the model

	Communication effectiveness	Generational diversity	Team performance	Team collaboration
Communication			0,239	

effectiveness				
Generational diversity	0,946		0,058	0,443
Team performance				
Team collaboration			0,603	

According to Table 7, the F-squared value (f^2) shows how much each exogenous variable contributed to the endogenous variable in the model. As a general rule, 0.02, 0.15, and 0.35 are considered tiny, medium, and big, respectively. With a f^2 score of 0.946, the impact of generational diversity on communication effectiveness was classified as substantial according to the test findings. In other words, generational diversity provides a substantial explanation for why some forms of communication are more successful than others. In addition, the f^2 value of 0.443 for the effect of generational diversity on team collaboration is in the big category, indicating that generational diversity is a significant factor in team collaboration formation. Team Collaboration is a powerful component in enhancing Team Performance, as seen by the substantial f^2 value of 0.603 for the influence of Team Collaboration on Team Performance. At the same time, the direct impact of generational diversity on team performance is minimal at 0.058, but the effect of communication effectiveness on team performance is medium at 0.239. It follows that the Generational Diversity route has the most impact on Communication Effectiveness in this model, followed by Team Collaboration on Team Performance, while Generational Diversity has a little direct effect on Team Performance.

5. Predictive Relevance (Q^2)

The purpose of *predictive relevance* is to evaluate the efficacy of the research model in producing the desired outcomes. Here is how Q2 is calculated:

Table 4.7 ***Predictive Relevance***

	SSO	SSE	Q^2 (=1-SSE/SSO)
Communication effectiveness	492,000	317,478	0,355
Generational diversity	492,000	492,000	0,000
Team performance	492,000	208,750	0,576
Team collaboration	492,000	383,071	0,221

Table 9 displays the predictive relevance findings, which demonstrate that the model has high predictive skills, since all endogenous variables have Q^2 values greater than 0. A Q^2 score of 0.355 for the Communication Effectiveness variable suggests that the model is reasonably relevant for making predictions about this variable. The Team Performance variable obtained a Q^2 value of 0.576, making it the construct with the highest predictive ability in the model. This shows that the variables that affect Team Performance are able to provide excellent predictions of changes in Team Performance. Furthermore, the Team Collaboration variable has a Q^2 value of 0.221, which also indicates good

predictive relevance. It is not problematic that the Generational Diversity variable, which is an external variable not predicted by other model variables, has a Q^2 value of 0.000. The study model is predictively relevant, as can be shown from its predictions of team performance and the efficacy of team communication and collaboration.

Analysis of Hypothesis Testing Results

Results from the Inner Model test (structural model), which comprise r-squared output, parameter coefficients, and t-statistics, are used for hypothesis testing. Paying close attention to the significance values between contracts, t-statistics, and p-values, among other factors, may help determine whether a hypothesis can be accepted or rejected. The program SmartPLS (*Partial Least Square*) 4.0.9 was used to conduct the hypothesis test for this investigation. These values are visible in the bootstrapping results. This research employed the following guidelines: a beta coefficient of positive value, a significance threshold of p-value of 0.05 (5%), and a t-statistics > 1.96.

Direct Effect Testing

The purpose of doing hypothesis testing is to ascertain the direct and indirect effects of the overarching hypothesis put forward in this research. There are two ways to observe the criteria used to test research ideas. You can see the criteria for hypothesis testing in the statistical test scores and p-values. If the statistical value is higher than the t table value of 1.96 and the p-value is less than 0.05, the hypothesis is deemed acceptable. The following bootstrapping procedure is used for statistical testing:

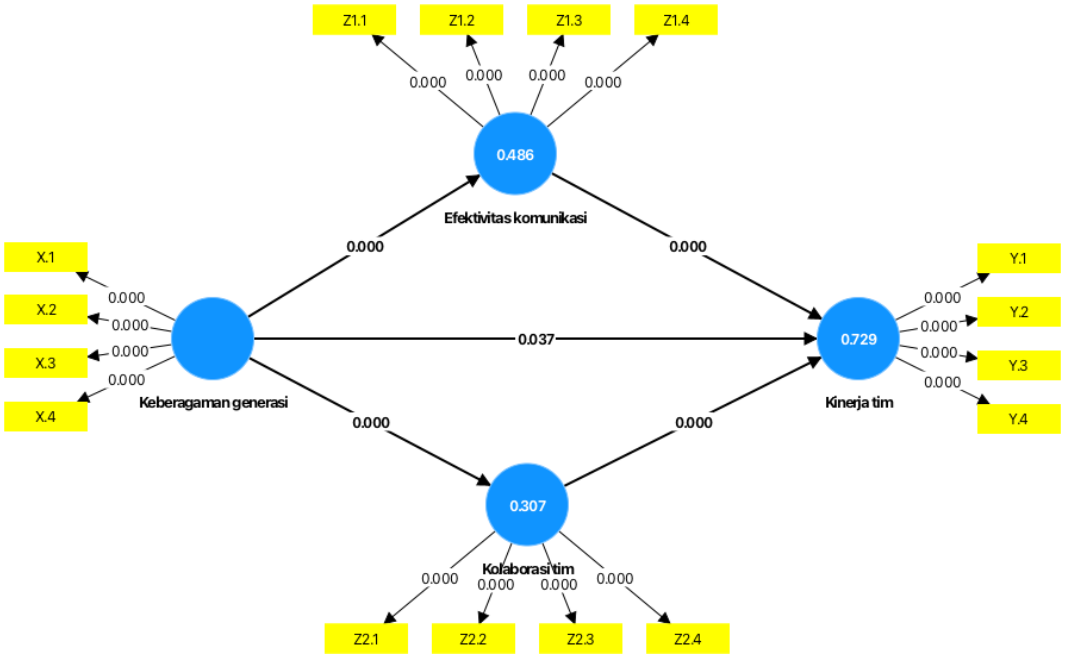

Table 4.8 Direct influence testing (*Direct effect*)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Communication effectiveness -> Team performance	0,355	0,354	0,076	4,696	0,000
Generational diversity -> Effectiveness of communication	0,697	0,696	0,056	12,508	0,000
Generational diversity -> Team performance	0,194	0,198	0,093	2,085	0,037
Generational diversity -> Team collaboration	0,554	0,555	0,076	7,256	0,000
Team collaboration -> Team performance	0,485	0,480	0,085	5,738	0,000

Hypothesis 1: The Effect of Communication Effectiveness on Team Performance

H_0: Communication Effectiveness does not have a significant effect on Team Performance.

H_1: Communication Effectiveness has a significant effect on Team Performance.

With an initial sample value of 0.355, a t-statistics value of 4.696, and a p-value of 0.000 < 0.05, the study revealed that Communication Effectiveness significantly and positively impacted Team Performance. Therefore, H_1 is approved and H_0 is denied. Based on these results, it's clear that a team's effectiveness improves when members communicate well with one another. Clear, open, and targeted communication can help team members understand tasks, reduce misunderstandings, speed up coordination, and improve the achievement of shared goals.

Hypothesis 2: The Influence of Generational Diversity on Communication Effectiveness

H_0: Generational Diversity does not have a significant effect on Communication Effectiveness.

H_1: Generational Diversity has a significant effect on Communication Effectiveness.

With an initial sample value of 0.697, a t-statistics value of 12.508, and a p-value of 0.000 < 0.05, the study demonstrated that Generational Diversity significantly and positively impacted Communication Effectiveness. Therefore, H_1 is approved and H_0 is denied. These findings show that the better the generational diversity is managed, the more effective communication within the

team. Differences in age, experience, perspective, and communication styles between generations can be a strength if directed positively, so that work communication becomes more adaptive and complementary.

Hypothesis 3: The Influence of Generational Diversity on Team Performance

H_0: Generational Diversity does not have a significant effect on Team Performance.

H_1: Generational Diversity has a significant effect on Team Performance.

With an initial sample value of 0.194, a t-statistics value of 2.085, and a p-value of 0.037 < 0.05, the study demonstrated that Generational Diversity significantly and positively impacted Team Performance. Therefore, H_1 is approved and H_0 is denied. Based on these results, it seems that teams with a mix of generations perform better. A team's performance may benefit from the inclusion of members from different generations because of the wealth of information, expertise, viewpoints, and experiences that everyone brings to the table.

Hypothesis 4: The Influence of Generational Diversity on Team Collaboration

H_0: Generational Diversity does not have a significant effect on Team Collaboration.

H_1: Generational Diversity has a significant effect on Team Collaboration.

The study revealed that Team Collaboration was positively and significantly impacted by Generational Diversity, with an initial sample value of 0.554, a t-statistics value of 7.256, and a p-value of 0.000 < 0.05. Therefore, H_1 is approved and H_0 is denied. According to these results, team cooperation may be enhanced by including members from different generations. Generational differences can enrich ideas, work strategies, and ways to solve problems. When managed well, team members from different generations can complement each other and work together more effectively.

Hypothesis 5: The Effect of Team Collaboration on Team Performance

H_0: Team collaboration has no significant effect on Team Performance.

H_1: Team Collaboration has a significant effect on Team Performance.

With an initial sample value of 0.485, a t-statistics value of 5.738, and a p-value of 0.000 < 0.05, the study revealed that Team Collaboration significantly and positively impacted Team Performance. Therefore, H_1 is approved and H_0 is denied. According to these results, team performance is directly proportional to how well the team works together. Strong collaboration encourages team members to help each other, share information, integrate skills, and complete tasks together. Based on the path coefficient value, the greatest influence on Team Performance came from Team Collaboration of 0.485, then Communication Effectiveness of 0.355, and Generational Diversity of 0.194.

The indirect effect of mediation

Table 4.9 Indirect influence testing (Indirect effect)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Generational diversity -> Communication effectiveness -> Team performance	0,247	0,246	0,055	4,476	0,000
Generational diversity -> Team collaboration -> Team performance	0,269	0,265	0,053	5,029	0,000

Hypothesis 6: The Influence of Generational Diversity on Team Performance through Communication Effectiveness

H_0: Communication Effectiveness does not mediate the influence of Generational Diversity on Team Performance.

H_1: Communication Effectiveness mediates the influence of Generational Diversity on Team Performance.

An original sample value of 0.247, a t-statistics value of 4.476, and a p-value of 0.000 < 0.05 were the outcomes of the study, which demonstrated that Generational Diversity → Communication Effectiveness → Team Performance had an indirect impact. Therefore, H_1 is approved and H_0 is denied. These results demonstrate that the impact of generational diversity on team performance may be mitigated via the mediation of communication effectiveness. This means that generational diversity can improve team performance if differences in age, experience, perspective, and work styles between generations are managed through effective communication. Open, clear, and adaptive communication helps cross-generational team members understand tasks, convey ideas, reduce misunderstandings, and align work goals.

Hypothesis 7: The Influence of Generational Diversity on Team Performance through Team Collaboration

H_0: Team Collaboration does not mediate the influence of Generational Diversity on Team Performance.

H_1: Team Collaboration mediates the influence of Generational Diversity on Team Performance.

According to the study, the indirect effect of Generational Diversity leading to Team Collaboration and Team Performance had a p-value of 0.000 < 0.05, a t-statistics value of 5.029, and an original sample value of 0.269. Therefore, H_1 is approved and H_0 is denied. This research shows that there is a moderating effect of team collaboration on the effect of generational diversity on team performance. In other words, when the disparities between generations are channelled into productive collaboration, teams with a mix of generations tend to perform better. Collaboration allows team members from different generations to share

knowledge, complement each other's skills, help with task completion, and work in a coordinated manner to achieve team goals.

Because the direct path of Generation Diversity → Team Performance was also significant, namely the p-value of 0.037 < 0.05, and the two indirect paths through Communication Effectiveness and Team Collaboration were also significant, the type of mediation that occurred was partial mediation. This means that Generational Diversity can affect Team Performance directly, as well as indirectly through the Effectiveness of Communication and Team Collaboration.

CONCLUSION

The purpose of this research is to examine the relationship between generational diversity and team performance at PT ASDP Indonesia Ferry (Persero), with a focus on the mediating impact of team communication and cooperation effectiveness. The study utilising Structural Equation Modeling-Partial Least Squares (SEM-PLS) findings indicate that the research goals were met. The findings of the study show that generational diversity is an organizational characteristic that not only describes the age difference between employees, but also reflects the diversity of experiences, ways of thinking, work styles, and communication preferences that affect team work dynamics. This diversity has been proven to have a role in shaping a more effective work process when supported by communication and collaboration that runs well.

Research shows that teams with members from different generations are better able to communicate and work together. These results show that generational differences are not a hindrance to getting things done, but rather have the potential to enhance communication and the sharing of expertise. Employees from different generations can complement each other through a combination of work experience, adaptability to technology, and diverse perspectives on getting things done. Thus, generational diversity can be a source of organizational excellence if it is managed through an open work culture, mutual respect, and encouragement of two-way communication.

This research also proves that the effectiveness of team communication and collaboration is an important factor in improving team performance. Communication that takes place clearly, openly, and with constructive feedback is able to create a common perception among team members so as to minimize misunderstandings in the execution of work. On the other hand, team collaboration, which is characterized by trust, coordination, and commitment in achieving common goals, is able to improve the team's ability to complete work effectively, efficiently, and with quality. These results confirm that the quality of the work process is the main factor that determines the success of the team in achieving optimal performance.

In addition to affecting the effectiveness of team communication and collaboration, generational diversity has also been proven to have a positive influence on team performance. These findings show that the diversity of team members does not automatically lead to conflict or decreased productivity as is often assumed, but can instead be a source of innovation, creativity, and

problem-solving if each team member is able to utilize differences in competencies and experiences as a common strength. Thus, effective management of generational diversity can make a real contribution to improving team performance in the organization.

This research establishes that the association between generational diversity and team performance is moderated by the quality of team communication and cooperation. The results demonstrate that team performance is impacted by generational diversity in two ways: first, via direct influence, and second, through excellent cooperation and efficient communication mechanisms. Put simply, for a company to get the full advantages of having employees from different generations working together, it must create a work atmosphere that encourages candid feedback, sharing of expertise, strong teamwork, and collaboration across generations. Therefore, communication and collaboration are important mechanisms that link the characteristics of generational diversity to improved team performance.

This study's findings provide credence to the Input-Process-Output (IPO) paradigm. Although generational diversity is an organisational input, the quality of the process specifically, how well teams communicate and collaborate influences the output optimal team performance. These findings show that organizations that are able to manage generational diversity through effective communication processes and strong collaboration will be better able to build teams that are adaptive, productive, and have better performance in facing organizational challenges. Thus, this study not only provides empirical evidence regarding the relationship between the variables studied, but also emphasizes the importance of multigenerational team management as one of the sustainable human resource development strategies at PT ASDP Indonesia Ferry (Persero).

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