

Shaping Human Resource Resilience through Failure, Support, and Future Orientation

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Article History

Received on 4 February 2026

1st Revised on 9 February 2026

2nd Revised on 25 February 2026

3rd Revised on 17 March 2026

Accepted on 7 April 2026

Abstract

Purpose: This study examines how failure experiences, environmental support, and future orientation influence individual resilience through meaning-making. It also tests the moderating role of growth mindset in strengthening this relationship.

Research Methodology: A quantitative cross-sectional survey was conducted with 385 productive-age individuals outside formal organizations. Data were collected using validated scales and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Direct, mediation, and moderation effects were tested using bootstrapping procedures.

Results: Failure experiences, environmental support, and future orientation positively affect resilience both directly and indirectly through meaning-making. Meaning-making acts as a key mechanism that transforms experiences and support into psychological strength. Growth mindset strengthens the relationship between meaning-making and resilience. Individuals with stronger growth-oriented beliefs demonstrate higher resilience when they construct meaningful interpretations of their experiences. The model shows strong explanatory power in predicting resilience.

Conclusions: Resilience is influenced not only by challenges and support but also by the ability to construct meaning from experiences, with growth mindset amplifying this process.

Limitations: The cross-sectional design and reliance on self-reported data limit causal interpretation and generalizability across different contexts.

Contributions: This study proposes a moderated mediation framework that highlights meaning-making and growth mindset as central mechanisms in resilience development and provides practical insights for resilience-building interventions.

Keywords: *Environmental Support, Failure Experiences, Future Orientation, Growth Mindset, Individual Resilience, Meaning Making*

How to Cite: Ariyanto, B., Sudjaniah, D., Mulyanti, R. Y., Albiansyah, A. (2026). Shaping Human Resource Resilience through Failure, Support, and Future Orientation. *Annals of Human Resource Management Research*, 6(2), 69-89.

1. Introduction

In recent years, global attention to human resource resilience has shifted from a narrow focus on formal organizational settings toward a broader understanding of individuals who continuously face uncertainty, repeated failures, and social pressures across diverse contexts (Fischer, Huff, & Said, 2022; Liu, Schwarzenbach, & Shi, 2025). Individual resilience is no longer viewed merely as the ability to bounce back from adversity. It is increasingly defined as the capacity to construct meaning, adapt effectively, and grow amid economic crises, technological disruption, and social transformation

([Sabatini, Siebert, Diehl, Brothers, & Wahl, 2022](#)). The literature in positive psychology identifies failure experiences, environmental support, and future orientation as important determinants of sustainable resilience ([Sentin, Metin Camgoz, Bayhan Karapinar, Miski Aydin, & Tayfur Ekmekci, 2025](#)). Meaning-making is considered a central psychological mechanism that enables individuals to interpret negative experiences as part of a coherent life narrative, thereby strengthening long-term adaptation ([Putri & Laeli, 2024](#)). Cross-cultural research further confirms that the ability to construct meaning links life stressors to positive outcomes ([Fahrizal, Budiono, Khalid, & Santoso, 2025](#)).

Among productive-age individuals, life challenges have become more complex due to increasing uncertainty and evolving work patterns ([Padmanabhanunni, Pretorius, & Khamisa, 2023](#)). Studies in Indonesia and other Asian contexts show that future orientation and social support play an important role in sustaining psychological resilience, particularly during crisis and life transitions ([Kumalasari, 2023](#)). However, not all individuals are able to convert failure experiences and environmental support into adaptive resilience. Differences in cognitive orientation, especially growth mindset, may influence how constructed meaning is translated into psychological strength ([Suharsono & Fatimah, 2024](#)).

Empirical findings indicate that resilience levels among university students and young adults in developing countries remain relatively low compared to global benchmarks ([Putra & Istiyani, 2022](#); [Rosyafah, Hidayat, & Nitawati, 2025](#)). Research in Indonesia shows that academic and psychological resilience are influenced by future orientation and social support, yet these effects are not consistent across individuals ([Kumalasari, 2023](#)). Meta-analytic studies also report mixed effectiveness of resilience-building and growth mindset interventions, suggesting the presence of moderating psychological mechanisms ([Calo, Judd, & Peiris, 2024](#)).

This study is grounded in Meaning-Making Theory and Resilience Theory, which explain that individuals endure and grow through cognitive-affective processes that allow them to interpret and integrate life experiences ([Seginer, 2008](#)). Implicit Theories of Intelligence, or Growth Mindset Theory, further explain that beliefs about personal development shape how meaning is translated into adaptive behavior and resilience ([Seginer, 2008](#)). Although prior research has examined the relationship between future orientation and resilience, as well as the role of social support and growth mindset ([Burnette et al., 2023](#)); [Macnamara and Burgoyne \(2023\)](#) these variables are generally tested separately. Growth mindset is typically positioned as a direct predictor rather than as a contextual factor shaping underlying psychological mechanisms. In addition, meaning-making has rarely been placed as the central explanatory process linking life experiences to resilience ([Arslan & Wong, 2024](#); [Hermawati, Pusvita, Khairunnisa, & Putri, 2025](#)).

This study explicitly addresses these gaps by proposing a moderated mediation model that has not been empirically tested in this integrated form. Specifically, growth mindset is positioned as a moderating variable in the relationship between meaning-making and individual human resource resilience, rather than as a direct antecedent. Furthermore, failure experiences, environmental support, and future orientation are examined simultaneously as antecedents operating through meaning-making as the core psychological mechanism. By conceptualizing human resource resilience at the individual level outside formal organizational contexts, this study extends the human resource literature beyond managerial frameworks toward a more humanistic and cross-contextual perspective. Thus, the study clarifies when and how constructed life meaning is translated into resilience.

This study contributes theoretically by advancing a moderated mediation framework within resilience research. Practically, the findings provide a foundation for developing meaning-based and mindset-oriented interventions to strengthen resilience across educational, community, and broader social ([Liu et al., 2025](#)). Based on this framework, the study examines the roles of failure experiences, environmental support, and future orientation in shaping individual human resource resilience through meaning-making, with growth mindset serving as a moderating variable.

2. Literature Review and Hypotheses Development

2.1 Failure Experience and Individual Human Resource Resilience

Failure experience is not merely an adverse event but a developmental stimulus that may strengthen adaptive capacity when processed constructively. Developmental and resilience literature suggests that failure can promote reflective learning and cognitive flexibility, which are essential for long-term resilience ([Cañizares, Copeland, & Doorn, 2021](#)). This indicates that failure alone does not guarantee resilience; rather, its adaptive value depends on psychological processing. Therefore, failure experience is expected to positively influence individual human resource resilience.

H₁: Failure experience has a positive and significant effect on individual human resource resilience

2.2 Environmental Support and Individual Human Resource Resilience

Environmental support functions as a protective factor that buffers stress and enhances psychological security. Social, emotional, and instrumental assistance helps individuals manage adversity more effectively ([Knizek et al., 2021](#)). Cross-cultural findings consistently show that individuals with strong environmental support maintain higher resilience under stress ([Knizek et al., 2021](#)). These findings suggest that resilience is not solely internally driven but also socially reinforced. Accordingly, environmental support is expected to strengthen individual human resource resilience.

H₂: Environmental support has a positive and significant effect on individual human resource resilience

2.3 Future Orientation and Individual Human Resource Resilience

Future orientation provides individuals with long-term goals and hope, allowing them to interpret present difficulties as part of a broader developmental pathway ([Sundari, Sulistyo, Cahyono, Setiyarti, & Yusoff, 2025](#)). Empirical evidence shows that future-oriented individuals maintain motivation and optimism during uncertainty, which supports resilience ([Sundari et al., 2025](#)). Thus, future orientation may directly enhance adaptive endurance and resilience.

H₃: Future orientation has a positive and significant effect on individual human resource resilience

2.4 Failure Experience and Meaning-Making

Failure does not automatically lead to growth. Its positive impact depends on the individual's ability to construct meaning from negative experiences ([Knizek et al., 2021](#)). Meaning making enables cognitive reframing, transforming failure into learning and personal development. Individuals who successfully derive meaning from failure demonstrate better adaptive functioning. Therefore, failure experience is expected to positively influence meaning-making ([Knizek et al., 2021](#)).

H₄: Failure experience has a positive and significant effect on meaning-making

2.5 Environmental Support and Meaning-Making

Environmental support facilitates meaning construction through reflection, dialogue, and emotional validation. Social interaction helps individuals reinterpret adversity more constructively ([Cañizares et al., 2021](#)). Cross-cultural studies show that supportive environments enhance individuals' ability to build coherent life meaning. Thus, environmental support is expected to positively affect meaning-making ([Cañizares et al., 2021](#)).

H₅: Environmental support has a positive and significant effect on meaning-making

2.6 Future Orientation and Meaning-Making

Future orientation provides a cognitive structure that links present experiences with future goals ([Ramadhona et al., 2024](#)). Individuals with strong future orientation are more likely to interpret current adversity as purposeful and meaningful. Empirical findings confirm its role in strengthening adaptive meaning-making processes ([Ramadhona et al., 2024](#)).

H₆: Future orientation has a positive and significant effect on meaning-making

2.7 Meaning-Making and Individual Human Resource Resilience

Meaning-making acts as the central mechanism connecting life experiences to resilience. It integrates adversity into a coherent identity and strengthens psychological endurance ([Febrian, 2025](#); [Gu, Hu, & Wang, 2022](#)). Research in positive psychology consistently shows that meaning-making directly predicts resilience across contexts ([Gu et al., 2022](#)).

H₇: Meaning making has a positive and significant effect on individual human resource resilience

2.8 Growth Mindset and Individual Human Resource Resilience

Growth mindset refers to the belief that abilities can develop through effort and learning. Individuals with this belief tend to perceive challenges as opportunities rather than threats, which strengthens resilience ([Rasyid, Suhesty, Rahayu, Indayani, & Adhikarapandita, 2023](#)). Recent studies across educational and social contexts confirm its positive association with resilience ([Rasyid et al., 2023](#)). Therefore, growth mindset is expected to directly enhance individual human resource resilience.

H₈: Growth mindset has a positive and significant effect on individual human resource resilience

2.9 Mediation Role of Meaning-Making

Meaning-Making Theory and Resilience Theory suggest that life experiences influence resilience through internal cognitive processes rather than direct exposure alone ([Knizek et al., 2021](#)). Failure experiences, environmental support, and future orientation become adaptive resources when individuals construct meaning from them. This positions meaning-making as a central mediator ([Knizek et al., 2021](#)).

H₉: Meaning-Making mediates the relationship between failure experience and individual human resource resilience

H₁₀: Meaning-Making mediates the relationship between environmental support and individual human resource resilience

H₁₁: Meaning-Making mediates the relationship between future orientation and individual human resource resilience

2.10 Moderation Role of Growth Mindset

Although meaning making strengthens resilience, its effectiveness may depend on individual belief systems. Growth mindset functions as a psychological condition that enhances the translation of constructed meaning into resilience ([Jianping, Roslan, Soh, & Zaremohzzabieh, 2024](#); [Walker & Jiang, 2022](#)). Moderation studies show that growth mindset strengthens adaptive psychological processes under stress ([Bareket & Fiske, 2023](#)).

H₁₂: Growth mindset moderates the relationship between meaning-making and individual human resource resilience, such that the relationship is stronger at higher levels of growth mindset

The conceptual model of this study is depicted in the figure below, showing the proposed relationships among the variables, including the mediating and moderating mechanisms within the research framework.

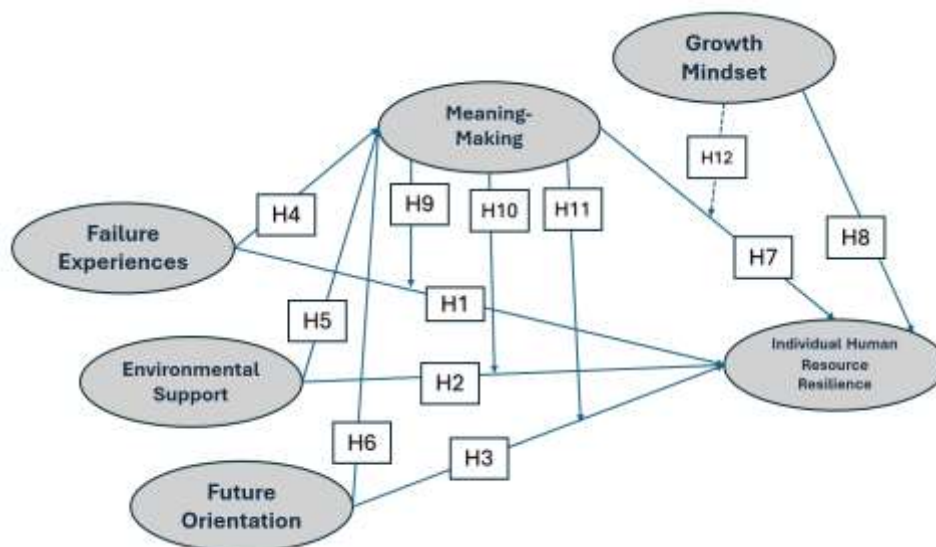


Figure 1. Conceptual framework

3. Methodology

3.1 Research Design

This study employed a quantitative cross-sectional survey design to test the proposed moderated mediation model. The model examines the influence of failure experiences, environmental support, and future orientation on individual human resource resilience through meaning-making, with growth mindset as a moderating variable. A cross-sectional approach was selected because it allows efficient data collection from a large number of respondents at a single point in time while enabling simultaneous testing of direct, indirect (mediation), and conditional (moderation) effects (Yildirim et al., 2025). This design is widely used in resilience and meaning-making research that applies structural equation modeling to examine complex relationships among latent constructs (Yildirim et al., 2025). The quantitative design is appropriate for hypothesis testing, measurement of latent psychological variables using validated instruments, and estimation of mediation and moderation paths. It is consistent with recent methodological practices in resilience research employing structural modelling techniques (Yusefi, Beigzadeh, & Kaya, 2025).

3.2 Population and Sample

The target population consists of productive-age individuals outside formal organizational settings, including university students and early-career adults. This population was selected because individuals in this developmental phase frequently encounter uncertainty, life transitions, and personal setbacks that are relevant to resilience formation. Respondents were required to meet two criteria: (1) having experienced personal setbacks or received environmental support in life contexts, and (2) being cognitively capable of responding to psychological survey instruments. These criteria ensured conceptual alignment between the theoretical model and participant characteristics.

3.3 Sampling Technique and Sample Size Justification

A purposive sampling technique was used to ensure that participants possessed relevant experiences related to failure, environmental support, and future orientation. Purposive sampling is appropriate when the study requires respondents with specific psychological exposure and reflective capacity (Yusefi et al., 2025). To determine the appropriate sample size, the study uses principles common in structural equation modelling. Following the recommended guideline of at least 5 to 10 respondents per indicator in SEM models, and considering a total of 30 indicators representing all scales, the minimum sample requirement was:

$$N_{min} = 30 \times 5 = 150 \quad (1)$$

while the upper threshold for model stability is:

$$N_{max} = 30 \times 10 = 300 \quad (2)$$

Because the study simultaneously tests mediation and moderation effects using SEM, a larger sample was required to ensure sufficient statistical power, stable parameter estimates, and robust bootstrapping results. Therefore, the final sample exceeded 385 respondents (Yusefi et al., 2025). This exceeds the upper threshold recommendation and supports predictive accuracy and model stability in PLS-SEM analysis.

3.4 Instruments and Measurement Scale

Data were collected using a structured self-report questionnaire consisting of reflective measurement models for all constructs. A total of 30 items were used, with five indicators per construct. All items were adapted from validated scales in prior empirical studies to ensure content validity and theoretical consistency. Each item was measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (Yildirim et al., 2025). The use of self-report instruments is consistent with resilience and meaning-making research employing cross-sectional survey methods. The constructs and their sources are as follows:

1. Failure Experience (Liu et al., 2025)
2. Environmental Support (Cañizares et al., 2021)
3. Future Orientation (Kumalasari, 2023)
4. Meaning-Making (Knizek et al., 2021)
5. Growth Mindset (Suharsono & Fatimah, 2024)
6. Individual Human Resource Resilience (Fischer et al., 2022; Liu et al., 2025)

All items were contextually adapted while maintaining conceptual equivalence with the original instruments. Content validity was ensured through alignment with established theoretical definitions, and reliability and validity were assessed during the measurement model evaluation phase using PLS-SEM procedures.

Table 1. Summary of variables and indicators

Variable	Indicators (Short Items)	Source
(X ₁) Failure Experience	1. Experiencing setbacks in work or personal tasks and reflecting on them. 2. Recognizing lessons learned from failures. 3. Facing repeated challenges without giving up. 4. Understanding personal limitations through failure. 5. Using failure as a motivation to improve future performance.	(Liu et al., 2025)
(X ₂) Environmental Support	1. Receiving guidance and assistance from colleagues and supervisors. 2. Access to resources that help overcome work challenges. 3. Emotional support in facing work difficulties. 4. Supportive organizational climate that encourages growth. 5. Constructive feedback to improve performance.	(Cañizares et al., 2021)
(X ₃) Future Orientation	1. Planning and setting long-term career or personal goals. 2. Anticipating possible challenges and preparing solutions. 3. Considering long-term consequences before making decisions. 4. Seeking opportunities for personal and professional growth. 5. Maintaining optimism and motivation toward future outcomes.	(Kumalasari, 2023)
M Meaning Making	1. Interpreting past experiences to derive personal growth. 2. Reflecting on life challenges to find purpose. 3. Understanding how failures contribute to personal development. 4. Connecting experiences with personal values and goals.	(Knizek et al., 2021)

	5. Using reflection to guide future behavior and decision-making.	
Z Growth Mindset	1. Believing abilities and intelligence can be developed through effort. 2. Embracing challenges as opportunities to learn. 3. Persisting despite setbacks or failures. 4. Viewing criticism and feedback to improve. 5. Celebrating others' success as inspiration rather than threat.	(Suharsono & Fatimah, 2024)
Y Individual Human Resource Resilience	1. Maintaining composure and effectiveness under stress. 2. Quickly recovering from work-related setbacks. 3. Adapting to changing demands and uncertain situations. 4. Demonstrating consistent performance despite obstacles. 5. Using personal and organizational resources to overcome challenges.	(Fischer et al., 2022 ; Liu et al., 2025)

3.5 Data Analysis Technique

3.5.1 Descriptive Statistics

Descriptive statistics were performed to characterize the demographic profile of respondents (e.g., age, gender, education level) and assess the distribution of responses to survey items.

3.5.2 Structural Equation Modeling (PLS-SEM)

Inferential analyses were conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) due to the predictive nature of the research model and the inclusion of both mediating and moderating paths ([J. Hair & Alamer, 2022](#); [J. F. Hair, 2014](#)). PLS-SEM is suitable for complex models with latent constructs measured by reflective indicators. The analysis followed a two-stage evaluation: first assessing the measurement model (validity and reliability), then evaluating the structural model (hypothesis testing).

Measurement Model Evaluation:

1. Convergent Validity: Indicator loadings ≥ 0.70 ; AVE ≥ 0.50 .
2. Construct Reliability: Composite reliability ≥ 0.70 ; Cronbach's alpha ≥ 0.70 .
3. Discriminant Validity: Fornell–Larcker criterion and HTMT ratio ≤ 0.90 .

Structural Model Assessment:

1. Coefficient of Determination (R^2): Explains variance in endogenous constructs.
2. Effect Size (f^2): Evaluates contribution of exogenous variables.
3. Significance Testing: Bootstrapping with 5,000 resamples to obtain t-statistics and p-values.
4. Mediation Analysis: Indirect effects via bootstrapping to test meaning-making as a mediator.
5. Moderation Analysis: Interaction terms (meaning-making $\times$ growth mindset) tested using product indicator or two-stage approach in PLS-SEM.

Overall, this methodology enables a rigorous and empirically grounded examination of how life experiences and cognitive factors shape individual resilience through meaning-making processes, and under which psychological conditions such mechanisms are strengthened.

4. Results and Discussions

4.1 Results

4.1.1 Descriptive Statistics of Respondents

This section presents the descriptive statistics of the respondents who participated in the study. The analysis includes the demographic characteristics, such as age, gender, education level, and work experience, as well as other relevant background information. These statistics provide an overview of the sample profile and help contextualize the subsequent analysis of the research variables.

Table 2. Respondent demographic profile (N = 385)

Demographic Variables	Category	Frequency (n)	Percentage (%)
Gender	Male	160	41.6
	Female	225	58.4
Age	20–29 years	140	36.4
	30–39 years	180	46.8
	40–49 years	55	14.3
	50 years and above	10	2.6
Education Level	Diploma	50	13.0
	Bachelor	260	67.5
	Master	70	18.2
	Doctorate	5	1.3
Job Position	Staff	210	54.5
	Supervisor	90	23.4
	Manager	60	15.6
	Director	25	6.5
Work Experience	< 1 year	30	7.8
	1–3 years	120	31.2
	4–6 years	100	26.0
	7–10 years	80	20.8
	> 10 years	55	14.3

The study involved 385 respondents, predominantly female (58.4%) and aged 30–39 years (46.8%). Most participants held a bachelor's degree (67.5%) and worked mainly at staff level positions (54.5%), followed by supervisors and managers. The majority had 1–6 years of work experience. Overall, the sample represents a productive and educated workforce with sufficient professional exposure relevant to examining resilience, meaning making, and growth mindset.

4.2 Outer Model

4.2.1 Outer Loading

This section presents the Outer Loading results of the research variables. Outer Loading values indicate the extent to which each indicator reliably measures its corresponding construct. High outer loading values demonstrate that the indicators are valid and contribute significantly to explaining the latent variables in the model. The following table summarizes the Outer Loading results for all indicators in this study.

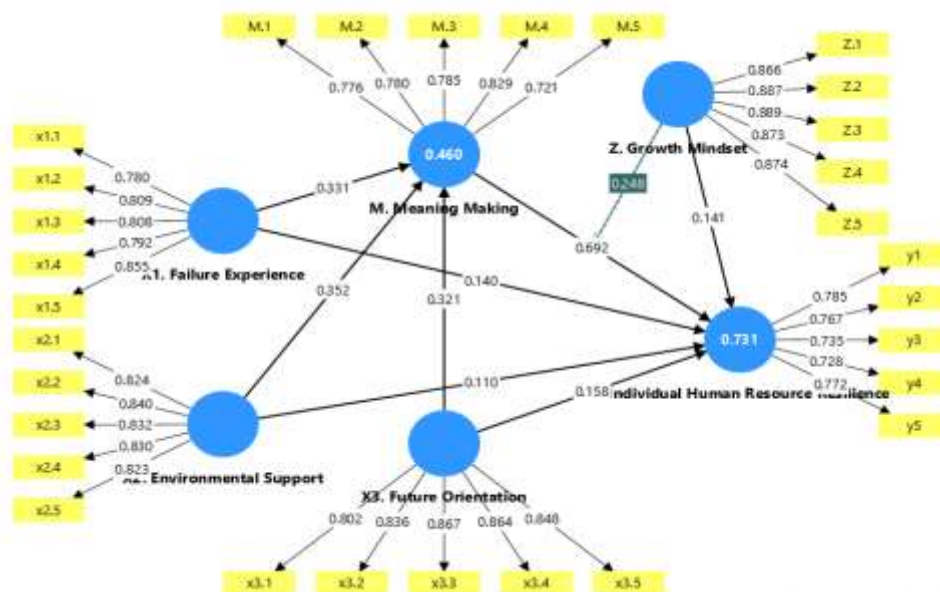


Figure 2. Outer loadings diagram

Figure 2 shows the Outer Loading results show that all indicators of the research variables have values above the recommended threshold of 0.70, indicating that each item reliably measures its respective construct. For Failure Experience (X_1), all five indicators range from 0.780 to 0.855, demonstrating that respondents' experiences with setbacks and learning from failures are consistently captured by the instrument. Environmental Support (X_2) indicators, with values between 0.823 and 0.840, confirm that access to guidance, resources, and emotional support is well-reflected in the measured items. Similarly, Future Orientation (X_3) indicators, ranging from 0.802 to 0.867, reliably represent employees' ability to plan, anticipate challenges, and maintain optimism for the future.

The mediating variable, Meaning Making (M), has outer loadings from 0.721 to 0.829, indicating that reflection on experiences and deriving personal growth is effectively measured. Individual Human Resource Resilience (Y) indicators, ranging from 0.728 to 0.785, confirm that employees' adaptability, recovery from setbacks, and performance consistency are adequately captured. The moderating variable, Growth Mindset (Z), shows very high loadings between 0.866 and 0.889, reflecting that respondent strongly believe in the developability of their abilities and embrace challenges as opportunities to grow. Finally, the interaction term Growth Mindset and Meaning Making has a perfect loading of 1.000, showing that this construct is precisely captured for modelling the moderation effect in the structural model.

Overall, these results indicate that the measurement model is valid and reliable, ensuring that all constructs failure experience, environmental support, future orientation, meaning making, growth mindset, and human resource resilience are adequately represented. This provides confidence in analyzing the relationships between these factors and understanding how employees develop resilience through meaning-making processes and the influence of a growth mindset.

4.2.2 Construct Reliability and Validity – Overview

This section presents an overview of the construct reliability and validity of the research variables. Assessing construct reliability ensures that the indicators consistently measure their respective latent variables, while evaluating validity confirms that the indicators accurately capture the intended constructs. The results of this analysis provide a foundation for examining the structural relationships among failure experience, environmental support, future orientation, meaning making, growth mindset, and individual human resource resilience.

Table 3. Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
M. Meaning Making	0.837	0.841	0.885	0.607
X_1 . Failure Experience	0.869	0.879	0.905	0.655
X_2 . Environmental Support	0.887	0.889	0.917	0.688
X_3 . Future Orientation	0.899	0.901	0.925	0.712
Y. Individual Human Resource Resilience	0.814	0.815	0.871	0.574
Z. Growth Mindset	0.926	0.930	0.944	0.770

The construct reliability and validity analysis show that all variables are reliable and valid. Cronbach's Alpha values range from 0.814 to 0.926, and Composite Reliability values range from 0.815 to 0.944, indicating strong internal consistency. AVE values range from 0.574 to 0.770, confirming that the indicators adequately represent their constructs. These results ensure that failure experience, environmental support, future orientation, meaning making, and growth mindset are measured reliably, providing a solid foundation for analyzing their influence on individual human resource resilience.

4.2.3 Discriminant Validity (HTMT Matrix)

This section presents the results of the discriminant validity analysis using the Heterotrait-Monotrait (HTMT) ratio. Discriminant validity ensures that each construct is distinct from the others, meaning that the indicators of one variable are not overly correlated with indicators of another variable. The HTMT matrix provides a clear overview of the relationships between constructs and confirms whether each variable measures a unique concept within the research model.

Table 4. Discriminant validity

	M. Meaning Making	X₁. Failure Experience	X₂. Environmental Support	X₃. Future Orientation	Y. Individual Human Resource Resilience	Z. Growth Mindset	Z. Growth Mindset x M. Meaning Making
M. Meaning Making							
X ₁ . Failure Experience	0.564						
X ₂ . Environmental Support	0.519	0.233					
X ₃ . Future Orientation	0.501	0.286	0.101				
Y. Individual Human Resource Resilience	0.877	0.545	0.441	0.457			
Z. Growth Mindset	0.541	0.310	0.222	0.200	0.499		
Z. Growth Mindset x M. Meaning Making	0.515	0.264	0.264	0.311	0.045	0.279	

The HTMT (Heterotrait-Monotrait) matrix shows that all values between constructs are below the recommended threshold of 0.85, indicating that discriminant validity is achieved. This means that each variable in the study measures a distinct concept.

1. Failure Experience (X_1), Environmental Support (X_2), and Future Orientation (X_3) are clearly distinct from Meaning Making (M) and Individual Human Resource Resilience (Y), ensuring that the effects of these predictors on resilience are not confounded.
2. Meaning Making (M) is distinct from Growth Mindset (Z) and their interaction term, confirming that the mediating and moderating constructs are measured independently.
3. Individual Human Resource Resilience (Y) shows moderate correlations with X_1 , X_2 , X_3 , and M , supporting theoretical expectations that resilience is influenced by employees' experiences, support, future orientation, and their ability to make meaning from challenges.

Overall, these results confirm that all constructs—failure experience, environmental support, future orientation, meaning making, growth mindset, and human resource resilience—are empirically distinct, providing a reliable basis for analyzing direct, mediating, and moderating effects in the research model.

4.3 Inner Model

4.3.1 R-Square

This section presents the R-Square (R^2) values of the endogenous constructs in the research model. R^2 indicates the proportion of variance in a dependent variable that is explained by its independent variables. Higher R^2 values reflect stronger explanatory power, showing how well failure experience,

environmental support, future orientation, meaning making, and growth mindset account for the variance in individual human resource resilience.

Table 5. R-Square

	R-square	R-square adjusted
M. Meaning Making	0.460	0.456
Y. Individual Human Resource Resilience	0.731	0.727

The R-Square values indicate the explanatory power of the independent variables in the research model. Meaning Making (M) has an R^2 of 0.460, meaning that 46% of the variance in meaning making is explained by failure experience (X_1), environmental support (X_2), and future orientation (X_3). This shows that employees' experiences, support, and future orientation substantially contribute to their ability to construct meaning from challenges.

Individual Human Resource Resilience (Y) has an R^2 of 0.731, indicating that 73.1% of the variance in resilience is explained by failure experience, environmental support, future orientation, meaning making, and growth mindset. This demonstrates that the model strongly accounts for how resilience develops, highlighting the key roles of employees' experiences, environmental support, future-oriented mindset, reflective meaning making, and growth mindset in enhancing human resource resilience. Overall, these results suggest that the research model has strong explanatory power, supporting the theoretical framework that links failure experience, environmental support, and future orientation to resilience through meaning making and moderated by growth mindset.

4.3.2 F-Square

This section presents the F-Square (f^2) values, which measure the effect size of each predictor on the endogenous constructs in the research model. F^2 values indicate the contribution of each independent variable to the explained variance of a dependent variable. Higher F^2 values reflect stronger impacts, showing how failure experience, environmental support, future orientation, meaning making, and growth mindset individually influence individual human resource resilience.

Table 6. F-Square

	M. Meaning Making	X_1. Failure Experience	X_2. Environmental Support	X_3. Future Orientation	Y. Individual Human Resource Resilience	Z. Growth Mindset	Z. Growth Mindset x M. Meaning Making
M. Meaning Making					0.770		
X_1 . Failure Experience	0.183				0.055		
X_2 . Environmental Support	0.219				0.035		
X_3 . Future Orientation	0.179				0.072		
Y. Individual Human Resource Resilience							
Z. Growth Mindset					0.057		
Z. Growth Mindset x M.					0.620		

Meaning Making							
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The F-Square (f^2) values indicate the individual contribution of each predictor to the variance of the endogenous constructs.

1. For Meaning Making (M), Failure Experience (X_1), Environmental Support (X_2), and Future Orientation (X_3) have small effect sizes ($f^2 = 0.183, 0.219$, and 0.179 , respectively), suggesting that each of these factors contributes moderately to explaining the variance in meaning making. This supports the idea that employees' experiences, support, and future-oriented mindset play a role in shaping how they construct meaning from challenges, though no single factor dominates.
2. The interaction term Growth Mindset $\times$ Meaning Making has a large effect size ($f^2 = 0.620$), indicating that the moderating effect of growth mindset on the relationship between meaning making and individual human resource resilience is substantial. In contrast, Growth Mindset (Z) alone has a small effect ($f^2 = 0.057$), suggesting that its direct impact is less pronounced but becomes influential when combined with meaning making.

Overall, these results highlight that while failure experience, environmental support, and future orientation modestly influence meaning making, the synergistic effect of growth mindset and meaning making strongly enhances individual human resource resilience, confirming the theoretical framework of the study.

4.4 Model Fit Assessment

To evaluate the overall adequacy of the proposed model, model fit indices were examined using established PLS-SEM criteria.

Table 7. Model fit

	Saturated model	Estimated model
SRMR	0.052	0.073
d ULS	1.235	2.478
d G	0.523	0.558
Chi-square	1162.726	1247.537
NFI	0.837	0.825

The estimated model demonstrates acceptable fit, as indicated by an SRMR value of 0.073 (< 0.08). Although the NFI value (0.825) is slightly below the ideal threshold of 0.90, the overall fit indices support the adequacy of the proposed model for structural analysis.

4.5 Hypothesis Result Direct Effect and Indirect Effect

This section presents the results of the direct effect analysis, which examines the influence of independent variables on the dependent variable without considering mediating or moderating effects. The analysis provides insight into how failure experience, environmental support, and future orientation directly impact individual human resource resilience, as well as the direct relationships with meaning making and growth mindset, forming the basis for understanding the primary drivers of resilience in the workplace.

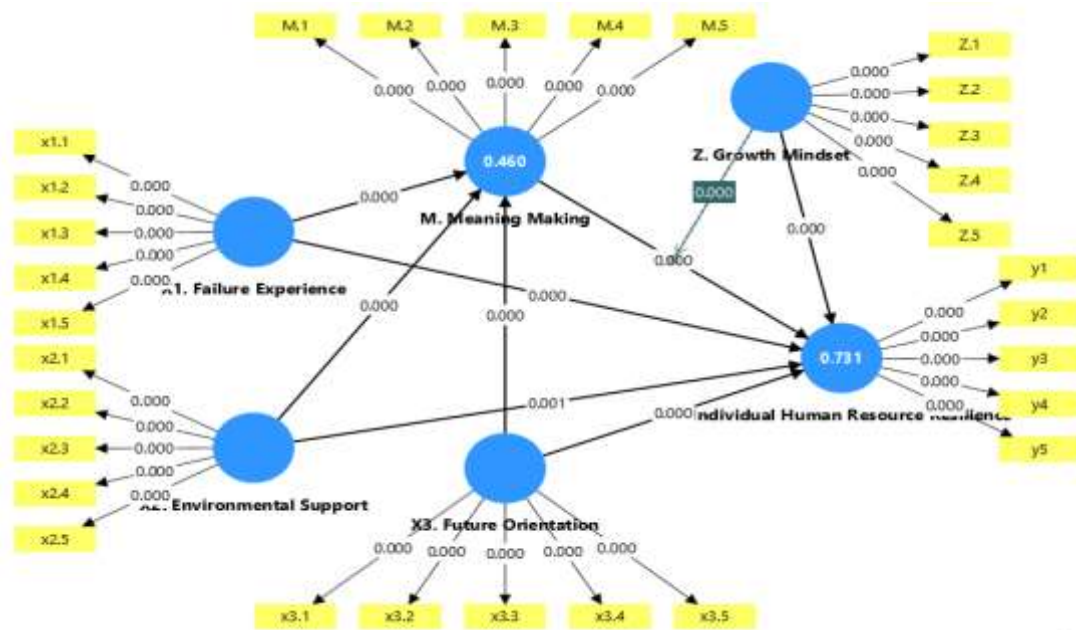


Figure 3. Path coefficients diagram

Table 8. Path coefficients direct effect and indirect effect

Hypothesis	Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Values	Hypothesis Accepted
H_1	Failure Experience affects Individual Human Resource Resilience	0.140	0.139	0.028	4.972	0.000	Supported
H_2	Environmental Support affects Individual Human Resource Resilience	0.110	0.110	0.032	3.477	0.001	Supported
H_3	Future Orientation affects Individual Human Resource Resilience	0.158	0.159	0.029	5.387	0.000	Supported
H_4	Failure Experience affects Meaning-Making	0.331	0.330	0.033	10.033	0.000	Supported
H_5	Environmental Support affects Meaning-Making	0.352	0.351	0.034	10.318	0.000	Supported
H_6	Future Orientation affects Meaning-Making	0.321	0.320	0.037	8.635	0.000	Supported
H_7	Meaning-Making affects Individual Human Resource Resilience	0.692	0.687	0.060	11.610	0.000	Supported
H_8	Growth Mindset affects Individual Human Resource Resilience	0.141	0.143	0.038	3.699	0.000	Supported

H_9	Failure Experience indirectly affects Individual Human Resource Resilience through Meaning-Making	0.229	0.227	0.032	7.080	0.000	Supported
H_{10}	Environmental Support indirectly affects Individual Human Resource Resilience through Meaning-Making	0.243	0.242	0.034	7.065	0.000	Supported
H_{11}	Future Orientation indirectly affects Individual Human Resource Resilience through Meaning-Making	0.222	0.220	0.036	6.189	0.000	Supported
H_{12}	Growth Mindset moderates the effect of Meaning-Making on Individual Human Resource Resilience	0.248	0.243	0.035	7.084	0.000	Supported

The combined analysis of direct and indirect effects shows that all hypothesized relationships are significant ($p < 0.05$) and positively influence resilience, confirming the theoretical model.

1. Failure Experience (H_1 & H_4) directly strengthens Individual Human Resource Resilience and also indirectly via Meaning-Making, suggesting that employees who encounter challenges or setbacks not only build resilience through direct coping but also by cognitively interpreting these experiences to derive personal insights.
2. Environmental Support (H_2 & H_5) positively affects resilience both directly and through Meaning-Making, highlighting that social, emotional, and organizational support helps employees navigate stress and transform external resources into internal resilience.
3. Future Orientation (H_3 & H_6) similarly contributes to resilience directly and via meaning-making, indicating that employees with a strong focus on goals and anticipated outcomes can frame present challenges as meaningful steps toward future success.
4. Meaning-Making (H_7) emerges as a central mediator that translates life experiences and environmental resources into enhanced resilience, reinforcing the importance of reflective and cognitive processes in human resource development.
5. Growth Mindset (H_8 & H_{12}) not only directly increases resilience but also moderates the effect of Meaning-Making on resilience, meaning that employees with a growth mindset are better able to convert meaningful reflections into tangible resilience outcomes.
6. Indirect effects (H_9 - H_{11}) confirm that the impact of failure experience, environmental support, and future orientation on resilience is amplified through Meaning-Making, highlighting the mediating role of cognitive interpretation and sense-making in adaptive human resource processes.

Overall, these results demonstrate that resilience in human resources is a function of experiences, support, and forward-looking mindset, filtered and strengthened through cognitive meaning-making, and further enhanced by a growth mindset. This aligns closely with the study's theme, emphasizing that developing individual resilience requires both environmental and psychological interventions, not just exposure to challenges.

4.6 Discussion

4.6.1 *H₁: Failure Experience has a positive and significant effect on Individual Human Resource Resilience*

The study results indicate that failure experience has a positive effect on individual human resource resilience. This phenomenon is particularly relevant, as many individuals face life uncertainty, social pressures, and career or educational challenges, yet not all are able to adaptively cope. Failures that are processed through reflection and meaning making help individuals develop coping strategies, cognitive flexibility, and adaptive capacity to life stressors. These findings align with Resilience Theory, which emphasizes that developmental stressors, including failures, can strengthen adaptive capacity when accompanied by effective adaptation processes, and with Meaning-Making Theory, which highlights the importance of interpreting negative experiences to build psychological strength. Previous studies support these results, such as [Cañizares et al. \(2021\)](#) who demonstrated that individuals who interpret failure as a learning opportunity exhibit higher resilience compared to those who perceive failure as a threat to their self-identity. The findings are also consistent with [Fischer et al. \(2022\)](#) and [Liu et al. \(2025\)](#), emphasizing the role of life experiences and reflective processes in shaping psychological resilience. Practically, this suggests the need for interventions that assist individuals in constructing meaning from failure, such as experience-based resilience training or mentoring focused on learning from setbacks, thereby enhancing the adaptive capacity of individual human resources.

4.6.2 *H₂: Environmental Support has a positive and significant effect on Individual Human Resource Resilience*

This study found that environmental support positively contributes to individual human resource resilience. This finding is particularly relevant because individuals do not live-in isolation but are influenced by social, emotional, and instrumental support from family, friends, or community. Such support helps reduce stress, enhances psychological safety, and strengthens the belief that life challenges can be managed collectively. These results align with Resilience Theory, which emphasizes the importance of external resources in building adaptive capacity, as well as with a humanistic perspective that recognizes social context as a key factor in the development of individual resilience. Previous studies also support this finding; for instance, [Knizek et al. \(2021\)](#) highlighted that individuals who receive strong social support are better able to maintain psychological balance under stress. Additionally, research by [Kumalasari \(2023\)](#) demonstrated that environmental support plays a significant role in sustaining resilience among students and young workers in Indonesia. The practical implication is the importance of cultivating supportive environments, such as mentoring programs, support groups, or collaborative initiatives, to enable individuals to better manage stress and sustainably enhance their adaptive capacity.

4.6.3 *H₃: Future Orientation has a positive and significant effect on Individual Human Resource Resilience*

The study revealed that future orientation positively affects individual human resource resilience. This phenomenon is particularly relevant because individuals with a long-term perspective tend to interpret life challenges as part of a broader journey toward meaningful goals. The ability to plan and envision future outcomes enhances psychological resilience, motivation, and optimism, enabling individuals to better cope with stress and uncertainty. These findings are consistent with Resilience Theory, which emphasizes that cognitive orientation toward the future can strengthen adaptive capacity, as well as with Meaning-Making Theory, which highlights that attributing meaning to goals and future outcomes helps build internal psychological strength. Previous research supports this finding; for example, [Sundari et al. \(2025\)](#), emphasized the role of future orientation in sustaining resilience through continuous motivation and hope, while [Kumalasari \(2023\)](#) found that young individuals in Indonesia with high future orientation tend to exhibit greater psychological resilience when facing social and academic stressors. The practical implication is the importance of guiding individuals to develop long-term planning and clear life goals through interventions such as self-management training, goal-setting workshops, or coaching programs that emphasize future projection, thereby optimizing individual human resource resilience.

4.6.4 *H₄: Failure Experience has a positive and significant effect on Meaning-Making*

The study found that failure experience positively influences individuals' capacity for meaning making. This is relevant because not all failures automatically lead to growth; individuals need to process and interpret these experiences to transform them into meaningful learning. Meaning making enables individuals to turn failure into a coherent life narrative, enhancing self-understanding and adaptive capacity. These findings align with Meaning-Making Theory, which emphasizes the active interpretation of negative experiences as central to psychological development and resilience. Previous studies support this, such as [Knizek et al. \(2021\)](#), who found that individuals who derive meaning from failure exhibit higher well-being and adaptive functioning, [Fischer et al. \(2022\)](#), and [Putri and Laeli \(2024\)](#), who highlighted meaning-making as a key mechanism for building internal strength and resilience. Practically, this suggests the value of interventions that foster reflective learning, experience-based coaching, or group discussions to help individuals constructively interpret failures and convert them into sources of psychological strength.

4.6.5 *H₅: Environmental Support has a positive and significant effect on Meaning-Making*

The study found that environmental support positively contributes to individuals' capacity for meaning making. This is relevant because those who receive social, emotional, and instrumental support from their surroundings are better able to interpret life experiences, including challenges and failures, in meaningful ways. These findings align with Meaning-Making Theory, which highlights the role of social interaction and environmental support in facilitating the construction of meaning and integrating life experiences into a coherent self-narrative. Previous research supports this, such as [Cañizares et al. \(2021\)](#), who showed that strong environmental support enhances individuals' ability to create life meaning during stressful situations, and [Fischer et al. \(2022\)](#), who emphasized that supportive social contexts enable deeper reflection and emotional validation, strengthening the meaning-making process. Practically, this underscores the importance of fostering supportive environments through mentoring, reflective discussion groups, or community support programs to help individuals constructively interpret life experiences and enhance psychological resilience.

4.6.6 *H₆: Future Orientation has a positive and significant effect on Meaning-Making*

The study found that future orientation positively influences individuals' capacity for meaning making. This is relevant because those with a long-term perspective are better able to connect current experiences with their goals and aspirations, interpreting challenges or failures as part of a meaningful journey toward desired outcomes. These findings align with Meaning-Making Theory, which emphasizes that constructing meaning depends on cognitive abilities to link experiences with life goals and future projections, thereby supporting psychological resilience. Previous research supports this, including [Ramadhona et al. \(2024\)](#), who found that individuals with a strong future orientation engage more effectively in meaning-making, especially during periods of uncertainty or life transitions, and [Sundari et al. \(2025\)](#), who highlighted that future orientation facilitates coherent life narratives, enhances motivation, and strengthens adaptive capacity. Practically, this underscores the importance of guiding individuals to develop a future orientation through long-term planning training, goal-setting workshops, or coaching programs that help them connect daily experiences to broader life objectives, optimizing the meaning-making process and supporting individual resilience.

4.6.7 *H₇: Meaning-Making has a positive and significant effect on Individual Human Resource Resilience*

The study found that individuals' capacity for meaning making from life experiences significantly enhances their human resource resilience. This is relevant because not all individuals can transform negative experiences, such as failure or social pressures, into psychological strength; meaning making serves as a cognitive and emotional mechanism that integrates these experiences into a coherent self-narrative, thereby strengthening adaptive capacity and stress resilience. The findings support Meaning-Making Theory and Resilience Theory, which emphasize that constructing meaning is central to long-term psychological resilience. Previous research reinforces this, including [Knizek et al. \(2021\)](#), who found that individuals capable of deriving meaningful interpretations from life experiences exhibit higher resilience and psychological well-being, [Fischer et al. \(2022\)](#) and [Putri and Laeli \(2024\)](#) who highlight meaning-making as a bridge between life experiences and adaptive capacity, especially under

stress or rapid change. Practically, this underscores the importance of psychological interventions, reflective training, or experiential learning programs that foster meaning-making, enabling individuals to enhance resilience and cope with life challenges more effectively.

4.6.8 H₈: Growth Mindset has a positive and significant effect on Individual Human Resource Resilience

The study found that growth mindset has a positive effect on individual human resource resilience. This is relevant because individuals who believe that their abilities and competencies can develop through effort and learning are better equipped to face challenges and life pressures adaptively. Growth mindset facilitates interpreting negative experiences as learning opportunities, thereby strengthening psychological capacity and resilience in the face of change. The findings align with Implicit Theories of Intelligence (Growth Mindset Theory), which emphasize that beliefs about personal development shape adaptive responses to adversity. Previous research supports these results, including [Rasyid et al. \(2023\)](#), who found that individuals with a growth mindset exhibit higher resilience because they perceive difficulties as opportunities for learning and growth, and cross-context studies in Asia and Europe [Kumalasari \(2023\)](#); [Arslan and Wong \(2024\)](#) confirm that growth mindset enhances psychological resilience among students and young adults. Practically, this highlights the importance of cultivating and reinforcing growth mindset through training, coaching, and personal development programs, enabling individuals to optimize adaptive capabilities and strengthen resilience against life pressures and changes.

4.6.9 H₉: Meaning-Making mediates the relationship between Failure Experience and Individual Human Resource Resilience

The study found that meaning making serves as a mediator in the relationship between failure experience and individual human resource resilience. This is significant because not all failure experiences directly enhance resilience; individuals who are able to interpret failure meaningfully can transform negative experiences into lessons, motivation, and adaptive strategies. The findings align with Meaning-Making Theory and Resilience Theory, which emphasize that the ability to construct meaning is a core cognitive mechanism linking life experiences to psychological resilience. Previous studies support these results, such as [Cañizares et al. \(2021\)](#), who found that individuals who derive meaning from failure tend to exhibit higher adaptive capacity and stronger resilience compared to those who perceive failure as a threat to their self-identity. [Fischer et al. \(2022\)](#) further noted that reflective and interpretive processing of failure allows experiences to be integrated into a coherent life narrative, thereby enhancing resilience. Practically, this underscores the importance of equipping individuals with reflection skills, coaching, and cognitive strategies for meaning making, enabling failure experiences to serve as sources of psychological strength and resilience development.

4.6.10 H₁₀: Meaning-Making mediates the relationship between Environmental Support and Individual Human Resource Resilience

The study found that meaning-making acts as a mediator in the relationship between environmental support and individual human resource resilience. This is significant because social, emotional, and instrumental support from one's environment does not automatically enhance resilience; individuals need to interpret this support meaningfully to integrate it into adaptive mechanisms and personal development. The findings align with Meaning-Making Theory and Resilience Theory, which emphasize that constructing meaning is key to transforming external resources into psychological strengths that foster resilience. Previous studies support these results, such as [Knizek et al. \(2021\)](#), who found that individuals who receive environmental support and process it through interpersonal reflection exhibit higher resilience. [Cañizares et al. \(2021\)](#) further noted that social interactions offering emotional validation and opportunities for discussion enable individuals to build coherent life narratives, thereby enhancing adaptive capacity. Practically, this highlights the importance of creating supportive environments and equipping individuals with reflection skills and meaning-making strategies so that external support can be optimally leveraged to strengthen psychological resilience.

4.6.11 *H₁₁: Meaning-Making mediates the relationship between Future Orientation and Individual Human Resource Resilience*

The study found that meaning making serves as a mediator in the relationship between future orientation and individual human resource resilience. This is important because, although future orientation provides long-term goals and perspectives, it does not automatically enhance resilience. Individuals who are able to interpret their future goals and plans meaningfully can connect current experiences with broader aspirations, thereby fostering motivation, perseverance, and adaptive strategies that strengthen psychological resilience. These findings align with Meaning-Making Theory and Resilience Theory, which highlight that constructing meaning is a central mechanism in transforming future-oriented perspectives into tangible psychological strengths. Previous research supports these results; for instance, [Sundari et al. \(2025\)](#) demonstrated that individuals with strong future orientation develop adaptive meaning-making abilities that help maintain resilience amid social and economic uncertainty, while [Ramadhona et al. \(2024\)](#) found that linking present experiences to future goals enables individuals to build coherent and meaningful life narratives, enhancing adaptive capacity. Practically, this suggests the importance of reflective training and interventions that guide individuals in setting and interpreting long-term goals meaningfully, allowing future orientation to optimally contribute to the development of individual resilience.

4.6.12 *H₁₂: Growth Mindset moderates the relationship between Meaning-Making and Individual Human Resource Resilience, such that the relationship is stronger at higher levels of Growth Mindset*

The study found that growth mindset strengthens the effect of meaning-making on individual human resource resilience. This is relevant because not all individuals can translate the meaning they construct from life experiences into tangible psychological strength. Individuals with a growth mindset, who believe that their abilities and potential can develop through effort and learning, are more effective at leveraging the meaning-making process to enhance resilience. These findings align with Implicit Theories of Intelligence (Growth Mindset Theory) and Resilience Theory, which emphasize that an individual's cognitive beliefs moderate the effectiveness of psychological processes in building adaptive resilience. Previous research supports this, as [Walker and Jiang \(2022\)](#) showed that individuals with a growth mindset are better able to transform constructed life meaning into practical adaptive strategies, thereby enhancing resilience, particularly under stress and life challenges. Similarly, [Rasyid et al. \(2023\)](#) found that a growth mindset enables individuals to perceive difficulties as learning opportunities rather than obstacles, strengthening the link between meaning-making and psychological resilience. Practically, this underscores the importance of developing adaptive mindsets through training, coaching, and psychological interventions, enabling individuals to optimize the potential of meaning-making to sustainably enhance human resource resilience.

5. Conclusions

5.1 Conclusion

This study demonstrates that individual human resource resilience is shaped by personal experiences, environmental factors, and cognitive orientation. Failure experiences, environmental support, and future orientation positively influence resilience both directly and indirectly through meaning-making. Meaning-making functions as a central psychological mechanism that transforms challenges and support into adaptive capacity. Importantly, growth mindset strengthens resilience and amplifies the impact of meaning-making, confirming its moderating role within the model.

These findings highlight that resilience is not merely determined by exposure to difficulties or support, but by individuals' ability to construct meaning from their experiences. The main contribution of this study lies in proposing and empirically validating a moderated mediation model that integrates meaning making as a mediating mechanism and growth mindset as a strengthening condition in the development of resilience. This integrated framework extends current resilience research by clarifying how and under what conditions psychological resources translate into adaptive strength.

5.2 Research Limitations

This study has several limitations. First, the use of self-reported measures may introduce response bias and subjective perception effects. Second, the cross-sectional design limits causal inference. Although significant relationships were identified, longitudinal research is necessary to confirm temporal and causal mechanisms. Third, the sample is concentrated within a specific productive-age group and social context, which may limit generalizability to other populations or organizational environments. Finally, while growth mindset was examined as a moderator, other psychological or contextual factors may also influence resilience development. Future research should explore additional moderating variables to enhance model robustness.

5.3 Suggestions and Directions for Future Research

Based on the findings and limitations of this study, several directions for future research are suggested. First, future studies could adopt a longitudinal design to examine how failure experiences, environmental support, and future orientation influence individual human resource resilience over time, allowing for stronger causal inferences. Second, research could explore additional moderating or mediating variables beyond growth mindset, such as emotional intelligence, coping strategies, or organizational culture, to better understand the conditions under which meaning making effectively translates life experiences into resilience. Third, future studies may expand the sample diversity by including individuals from different age groups, professions, or cultural contexts, which would enhance the generalizability of the findings and reveal cross-context variations in resilience mechanisms. Fourth, experimental or intervention-based research could test the effectiveness of meaning-making and growth mindset programs, such as resilience training, coaching, or reflective workshops, to provide practical evidence for enhancing individual adaptive capacities. Finally, integrating qualitative approaches alongside quantitative methods could offer deeper insights into how individuals interpret life experiences, construct meaning, and apply it in real-life challenges, thereby enriching the theoretical and practical understanding of human resource resilience.

Acknowledgement

The researcher would like to express sincere gratitude to all parties who have contributed to the completion of this study. Special appreciation is extended to the institutions, organizations, and participants who provided support, resources, and valuable insights that made this research possible. The researcher also acknowledges the guidance, encouragement, and constructive feedback received throughout the research process, which greatly facilitated the development and refinement of the study. Finally, gratitude is extended to family, friends, and colleagues for their moral support and motivation, which helped the researcher overcome challenges and complete this work successfully.

Author Contributions

All authors made substantial contributions to the conception and design of the study. BA was responsible for the conceptualization, methodology, data collection, formal analysis, and drafting of the manuscript. DS contributed to the supervision, validation, and critical review and editing of the manuscript. RYM and A contributed to data collection and revision of the manuscript. All authors have read and approved the final version of the manuscript.

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