Proposing an E-Learning Model with Emphasis on Psychological Capital in Mellat Insurance

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Abstract

This study investigates the role of psychological capital (PsyCap) in enhancing the effectiveness of e-learning systems with a focus on organizational infrastructure at Mellat Insurance. The study aims to explore how the key components of PsyCap—self-efficacy, optimism, hope, and resilience—affect employee engagement, adaptability, and learning outcomes in an organizational context, particularly within e-learning frameworks. The research utilized a descriptive-survey method, with a focus on structural equation modeling (SEM) to examine the relationships between psychological capital and organizational factors influencing e-learning systems. A sample of 395 participants from Mellat Insurance was selected using random sampling based on Cochran's formula. Data were collected through a structured Likert-scale questionnaire validated by experts and tested for reliability using Cronbach's alpha. The data were analyzed using both descriptive and inferential statistical methods, including bootstrapping and SEM, with the aid of SPSS and SmartPLS software. The results confirmed a significant relationship between psychological capital and the effectiveness of e-learning systems. The standardized factor loading for the impact of e-learning infrastructure on external organizational factors was 0.734, with a t-statistic of 3.478, indicating a statistically significant relationship. Moreover, psychological capital was found to mediate the relationship between e-learning adoption and employee adaptability, reducing job-related stress and burnout. The findings align with previous research, highlighting PsyCap's role in fostering innovation, resilience, and engagement in both educational and organizational settings. Psychological capital plays a critical role in improving e-learning systems' effectiveness by enhancing employee engagement, adaptability, and overall organizational performance. Organizations that invest in developing their employees' psychological capital are likely to experience better learning outcomes and reduced stress, leading to improved innovation and productivity.

Keywords: *Psychological capital, e-learning systems, employee engagement, organizational infrastructure, Mellat Insurance, structural equation modeling, resilience, innovation.*

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1. Introduction

Psychological capital (PsyCap) has become an increasingly important focus in research related to organizational behavior, employee performance, and education, particularly as organizations and educational institutions strive to improve individual well-being and collective outcomes. Defined by Luthans, Youssef, and Avolio (2007), psychological capital encompasses four key dimensions: self-efficacy, optimism, hope, and resilience. These attributes collectively enhance an individual's capacity to succeed, adapt, and thrive in both personal and professional contexts. PsyCap has been widely studied for its positive influence on employee engagement, innovation, well-being, and performance across various industries and settings [1-3].

The role of psychological capital is not confined to organizational environments. In education, particularly during periods of stress, uncertainty, and rapid change, the psychological attributes that comprise PsyCap have been shown to positively influence students' academic success and well-being. As Liu (2024) suggests, students' learning motivation, emotional engagement, and PsyCap are closely linked to their academic performance in blended learning environments, particularly as educational institutions transition towards more flexible, hybrid models [4]. This is particularly relevant in light of the COVID-19 pandemic, where resilience, optimism, and self-efficacy were critical for students and educators navigating new online learning platforms and environments [5, 6].

Moreover, the concept of psychological capital has been explored in terms of its relationship with social and emotional support, particularly in learning contexts. Mei-rong, Cao, and Wang (2022) highlighted the importance of goal orientation in fostering innovation, suggesting that psychological capital plays a mediating role in enhancing employees' innovation behavior and students' academic success. This view aligns with McElravy, Matkin, and Hastings (2018), who posited that PsyCap could prepare students for future career challenges by building their resilience, hope, and self-efficacy through service-learning programs. In these programs, the experiential learning process builds both psychological and human capital, equipping students with the mental and emotional resources to tackle the workforce [7].

The influence of psychological capital extends to job satisfaction and commitment in professional settings. Bhatnagar and Aggarwal (2020) found that employees who perceive organizational support, particularly in terms of environmental initiatives, are more likely to experience meaningful work [8]. This, in turn, enhances their PsyCap and reduces feelings of alienation. This interplay between organizational support and psychological well-being mirrors findings in other studies that emphasize the importance of positive work environments in fostering psychological resources like resilience and hope [9]. Similarly, employees with high levels of PsyCap are more likely to engage in adaptive and innovative behaviors, contributing positively to team performance and organizational success [10, 11].

In addition to the organizational benefits, psychological capital has been linked to individual well-being and mental health. Cai and Ye (2018) explored the relationship between PsyCap and job burnout, suggesting that higher levels of psychological capital can mitigate the negative effects of burnout by fostering better mental health [12]. In a related vein, psychological capital has been identified as a crucial factor in enhancing individuals' ability to cope with stress and maintain mental health during challenging times, such as the COVID-19 pandemic (Zhao et al., 2022). This relationship underscores the mediating role of PsyCap in the relationship between external stressors and individual well-being, as documented in studies across various sectors, including healthcare [13, 14].

The educational sector has also benefited from an understanding of psychological capital. Safriani and Muhid (2022) investigated the role of PsyCap in enhancing academic buoyancy and reducing academic procrastination among college students, illustrating the broader impact of psychological resources on academic outcomes [15]. Students with higher levels of self-regulated learning, fueled by strong psychological capital, are better equipped to navigate academic challenges, leading to improved academic performance and overall satisfaction [16]. This perspective is reinforced by research suggesting that psychological capital acts as a buffer against negative academic outcomes, such as burnout and disengagement [17, 18].

Furthermore, psychological capital is increasingly being recognized for its role in fostering innovation and creativity, both in educational and professional settings. As Geremias, Lopes, and Soares (2022) observed, teams with higher levels of psychological capital are more likely to engage in internal learning processes, leading to enhanced innovation [19]. This finding is consistent with Dimas et al. (2022), who posited that psychological capital plays a significant role in driving team learning and innovation, especially in complex

and dynamic work environments [10]. In line with these findings, Waters et al. (2020) reported that team-level psychological capital is a significant predictor of team outcomes, including performance and innovation [20].

The relationship between psychological capital and academic achievement has also been a focal point of research in higher education. Chen (2018) highlighted the positive influence of PsyCap on students' academic achievements, particularly in competitive academic environments [21]. Similarly, research by Rahmi and Safitri (2023) demonstrated that psychological capital, particularly self-regulation and resilience, plays a mediating role in reducing academic procrastination, thereby enhancing academic performance. This suggests that interventions aimed at developing students' psychological capital could have far-reaching benefits in educational settings, particularly in promoting academic success and personal well-being [22].

A key aspect of psychological capital is its ability to enhance individuals' adaptive capacities in the face of change and uncertainty. This is particularly relevant in organizational contexts, where employees are required to adapt to new technologies, processes, and environments. Jiao, Yu-hui, and Liu (2022) explored the impact of psychological capital on organizational change, suggesting that leaders' psychological capital can influence the effectiveness of change initiatives, particularly in times of crisis [23]. This view is supported by Han, Kang, and Joung (2020), who demonstrated that positive psychology activities could enhance happiness and psychological capital among nursing students, ultimately improving their ability to cope with stress and uncertainty in their professional lives [24].

Similarly, the role of psychological capital in enhancing entrepreneurial success has been explored in various contexts. Niu (2023) examined the relationship between psychological capital and entrepreneurial performance among digital entrepreneurs, highlighting the importance of resilience, hope, and optimism in driving entrepreneurial success [25]. This view is supported by Juhdi et al. (2015), who posited that psychological capital is a key determinant of entrepreneurial success, particularly in challenging and dynamic business environments [26].

Social capital, often studied in conjunction with psychological capital, also plays a significant role in fostering individual and organizational success. Ahmed et al. (2020) explored the relationship between social capital and psychological well-being, highlighting the mediating role of internet marketing in enhancing individuals' psychological resources. This perspective aligns with Gu, Wang, and Wang (2013), who emphasized the importance of social capital in fostering innovation in R&D teams, with psychological safety and learning from mistakes playing critical mediating roles. These findings suggest that the interplay between social and psychological capital can have a profound impact on both individual and team outcomes, particularly in knowledge-intensive environments [27].

In summary, psychological capital has emerged as a critical factor in enhancing individual well-being, organizational performance, and academic success. Its role in fostering resilience, hope, optimism, and self-efficacy has been widely documented across various sectors, including education, healthcare, and entrepreneurship. As organizations and educational institutions continue to navigate the challenges of a rapidly changing world, psychological capital offers a valuable resource for individuals seeking to adapt, innovate, and thrive in their personal and professional lives. Through the development of psychological capital, individuals can build the mental and emotional resilience necessary to overcome challenges, seize opportunities, and achieve success in an increasingly complex and uncertain environment.

2. Methodology

In this study, a descriptive and survey-based research design was utilized. The target population comprised two distinct groups: experts in the fields of education, e-learning, and psychology with a focus on psychological capital, and senior managers within the insurance industry, specifically from Mellat Insurance. These groups were selected due to their relevance to the study's objectives and their ability to provide insights into the integration of psychological capital within e-learning frameworks. The survey aimed to gather their perspectives on the proposed model.

Given that the population is assumed to be infinite, the sample size was calculated using Cochran's formula, a widely accepted method for determining sample size in large populations. Based on this formula and the estimated size of the population, a sample of 384 individuals was determined to be statistically adequate. The survey was distributed randomly to these 384 participants, with 600 questionnaires being sent out in total. Of these, 395 were completed and returned, providing a response rate that ensures the reliability of the collected data.

The primary tool for data collection in this study was a structured questionnaire, a common instrument in survey-based research. The questionnaire was designed with a Likert scale format, specifically tailored to assess variables related to psychological capital and e-learning. The questionnaire was reviewed by experts to ensure its validity and was tested for reliability using Cronbach's alpha coefficient. This process of validation and reliability testing ensured that the instrument accurately captured the data needed for the analysis.

In terms of data analysis, both descriptive and inferential statistical methods were employed. Descriptive statistics, such as frequency tables, percentages, means, and standard deviations, were used to provide a clearer understanding of the demographic data and to summarize the participants' responses. Inferential statistics were applied to test the research hypotheses, utilizing multivariate regression and structural equation modeling (SEM) approaches. The SEM was selected due to its ability to examine complex relationships between multiple variables, making it ideal for analyzing the integration of psychological capital into e-learning models. All initial data analysis was conducted using SPSS software, while SEM testing was carried out using SmartPLS, allowing for a comprehensive examination of the study's hypotheses.

In addition to the quantitative analysis, thematic analysis was applied as a complementary method, providing a qualitative perspective on the collected data. This combination of quantitative and qualitative methods ensured a robust approach to understanding the complex dynamics involved in implementing psychological capital within e-learning in the insurance sector.

3. Findings

The model validation was conducted using the Partial Least Squares (PLS) technique. In general, the relationships between variables in the PLS technique are categorized into two types: the outer model, which shows the relationships between latent variables and observed variables, and the inner model, which examines the relationships among latent variables themselves.

The outer model demonstrates the validity of the items selected to measure each of the main factors. The strength of the relationship between factors (latent variables) and items (observable variables) is indicated by the factor loading. The factor loading takes a value between 0 and 1. If the loading is less than 0.30, the relationship is considered weak. Loadings between 0.30 and 0.60 are acceptable, and values greater than 0.60 are considered highly desirable. To test the significance of the observed correlations, resampling methods such as bootstrapping or jackknife cross-validation are used. In this study, bootstrapping was employed to calculate the t-statistic. At a 5% error level, if the bootstrapping t-value is greater than 1.96, the observed correlations are significant.

In all cases, the factor loadings were greater than 0.60, indicating that the items play a significant role in explaining each of the factors. Furthermore, the t-statistics for all items exceeded 1.96, confirming the statistical significance of the observed factor loadings.

Convergent validity indicates the extent to which the variables of a construct align with each other. Converent validity is assessed based on the outer model and calculated using the Average Variance Extracted (AVE). The AVE criterion represents the average variance shared between each construct and its indicators. Simply put, AVE reflects the degree of correlation between a construct and its indicators, with higher correlations indicating better model fit. Fornell and Larcker (1981) suggest that if AVE is greater than 0.50, the measurement model demonstrates convergent validity.

Composite Reliability (CR) is considered a superior and more reliable criterion than Cronbach’s alpha in structural models. This is because, in calculating Cronbach’s alpha, all indicators for a construct are weighted equally, whereas in CR, indicators with higher factor loadings are given more weight. As a result, CR provides a more accurate and realistic measure of reliability compared to Cronbach’s alpha. For convergent validity and composite reliability (CR), the following relationships must hold:

$$CR > 0.7; CR > AVE; AVE > 0.5$$

In the current study, the AVE for all constructs exceeded 0.50, indicating the presence of convergent validity. Cronbach’s alpha for all variables was greater than 0.70, confirming the reliability of the constructs. Moreover, the CR values were greater than AVE in all cases and exceeded the 0.70 threshold, fulfilling the third condition.

Table 1. Internal Validity of the Constructs in the E-learning Model with Emphasis on Psychological Capital in Mellat Insurance

Main Constructs	AVE	Composite Reliability (CR)	Cronbach's Alpha
Institutionalization of Psychological Capital (C1)	0.840	0.940	0.905
Educational Content (C2)	0.625	0.909	0.881
Effectiveness (C3)	0.796	0.940	0.915
External Organizational Factors (C4)	0.740	0.895	0.824
Internal Organizational Factors (C5)	0.863	0.950	0.920
E-learning Infrastructure (C6)	0.872	0.932	0.854

Since the Average Variance Extracted (AVE) is greater than 0.50 for all constructs, convergent validity is confirmed. All Cronbach's alpha values exceed 0.70, confirming reliability. Additionally, composite reliability (CR) values are greater than AVE and all exceed 0.70, meeting the third condition.

The relationships between the variables in each hypothesis were tested using a causal structure based on the PLS technique. The overall model is depicted in the output generated by Smart PLS software, which summarizes the results for the standardized factor loadings of the variables. The t-statistics and bootstrapping values used to assess the significance of the relationships are also presented.

For example, the standardized factor loading for the impact of e-learning infrastructure on external organizational factors was 0.734, while the t-statistic was 3.478. Therefore, with 95% confidence, it can be concluded that this hypothesis is supported. The remaining relationships were confirmed based on factor loadings greater than 0.30 and t-statistics exceeding 1.96.

Figure 1. Model Validation Output Using Partial Least Squares (PLS)

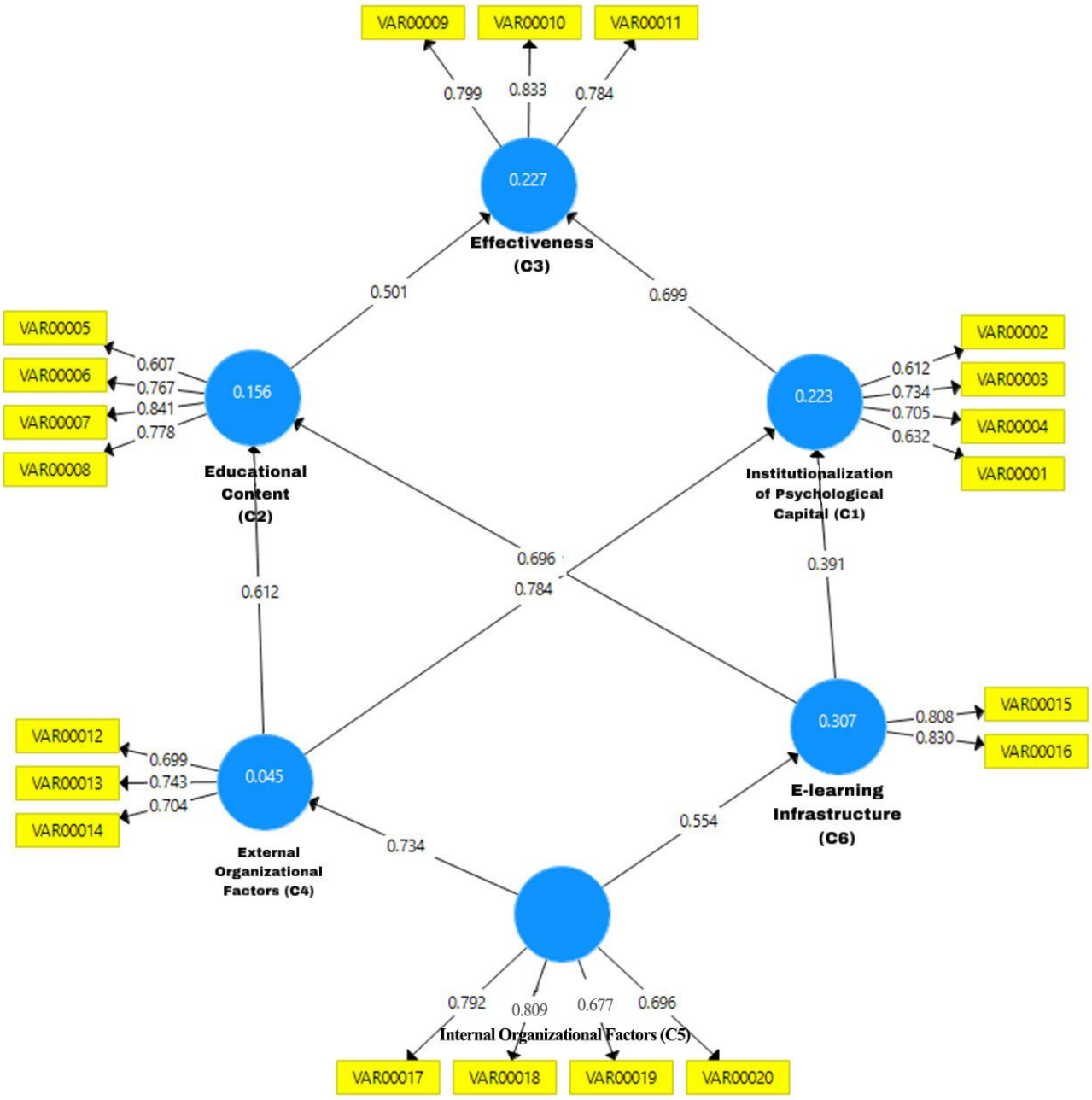
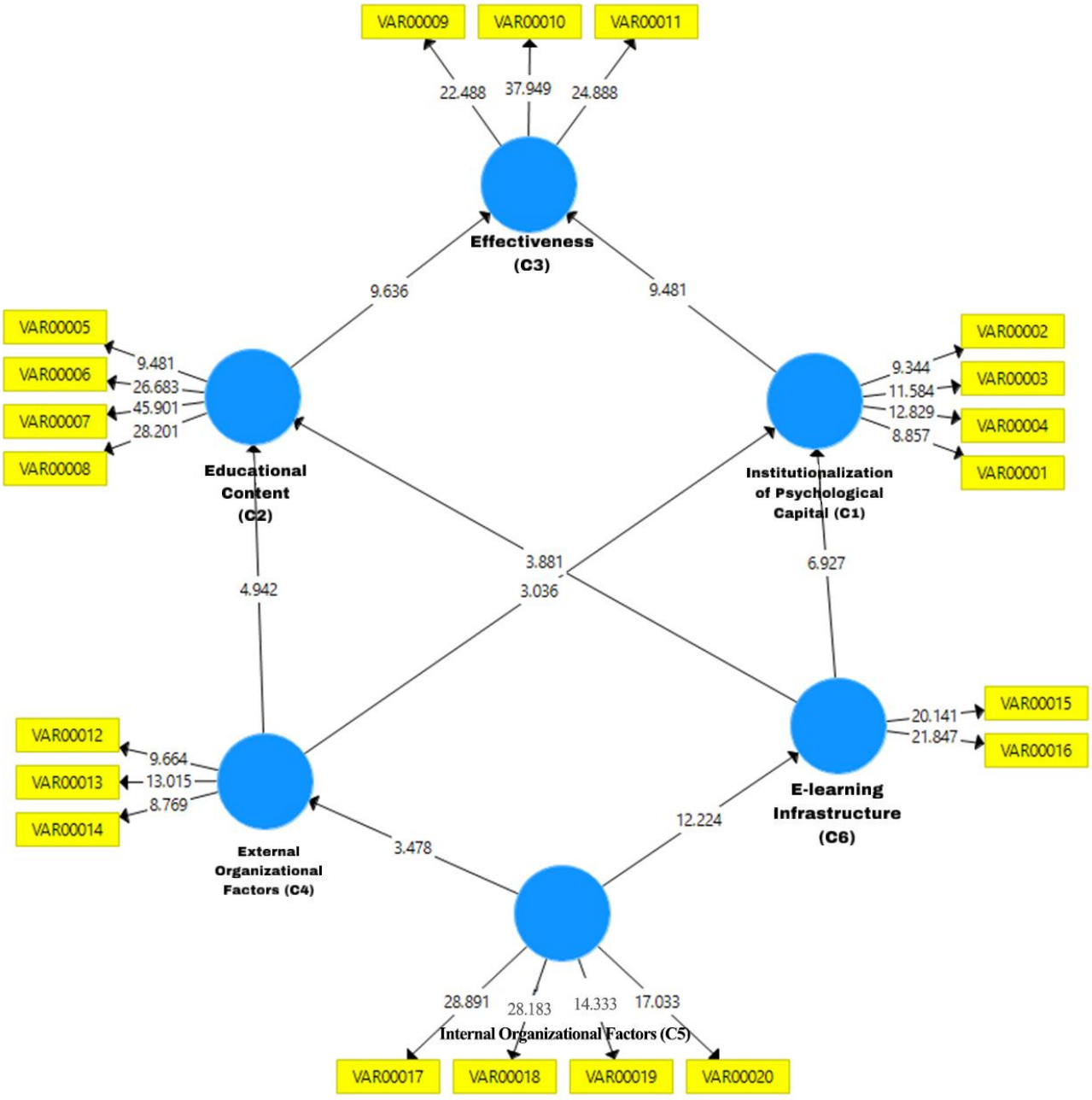


Figure 2. Significance of Variable Relationships Using Partial Least Squares (Bootstrapping)



The standardized factor loading for the influence of e-learning infrastructure on external organizational factors was found to be 0.734, while the t-statistic was 3.478. Thus, with 95% confidence, it can be asserted that this hypothesis is confirmed. The remaining relationships are validated based on factor loadings greater than 0.30 and t-statistics exceeding 1.96.

Finally, the fit of the outer model was evaluated. Unlike measurement models, the structural part of the model does not consider observable variables but focuses solely on latent variables and their relationships. The coefficient of determination (R^2) is a measure that indicates the amount of variance in each dependent variable that is explained by the independent variables. The R^2 value is only reported for endogenous variables, and for exogenous constructs, its value is zero. The higher the R^2 value for endogenous constructs, the better the model fit. Chin (1998) identified three benchmark values for the R^2 measure: 0.19, 0.33, and 0.67, representing weak, moderate, and strong model fit, respectively.

The Stone-Geisser criterion (Q^2) or predictive relevance index determines the model's predictive power. Blindfolding is a resampling technique that allows for the calculation of the Q^2 index. The Stone-Geisser index is a criterion for

assessing cross-validity in PLS models. While the R^2 index measures the accuracy of prediction, the Q^2 index determines the relevance of the prediction. If the Q^2 value is positive, predictive relevance is confirmed.

Models with an acceptable structural fit should be able to predict the indicators of the model's endogenous constructs. In other words, if the relationships between constructs are well-defined in a model, the constructs should sufficiently influence each other's indicators, thereby validating the hypotheses. Henseler et al. identified three values—0.02, 0.15, and 0.35—for weak, moderate, and strong predictive power, respectively. If the Q^2 value for an endogenous construct is zero or negative, it indicates that the relationships between the other constructs in the model and that endogenous construct are poorly explained. The blindfolding technique in PLS software is used to calculate the Q^2 value.

Two cross-validity indices are obtained through this technique:

- Cross-validated redundancy (CV-Red)
- Cross-validated communality (CV-Com)

Table 2. Cross-validated Redundancy and Communality Values

Main Constructs	Coefficient of Determination (R^2)	Cross-validated Communality	Cross-validated Redundancy
Institutionalization of Psychological Capital (C1)	0.750	0.487	0.451
Educational Content (C2)	0.456	0.272	0.236
Effectiveness (C3)	0.815	0.443	0.407
External Organizational Factors (C4)	0.682	0.387	0.351
Internal Organizational Factors (C5)	-	0.510	0.474
E-learning Infrastructure (C6)	0.706	0.519	0.483

For both cross-validated redundancy and communality, positive values indicate a well-fitting model. As shown in Table 4-22, these values are positive for all constructs in the study. Moreover, most variable values fall within the range of 0.15 to 0.35 or exceed 0.35, indicating the predictive power of the constructs ranges from moderate to strong. The R^2 values for the endogenous constructs of the research model are satisfactory. The R^2 value for the e-learning model with an emphasis on psychological capital in Mellat Insurance is reported to be 0.395, which is acceptable.

The most important index for model fit in the PLS technique is the Goodness of Fit (GOF) index. This index assesses the overall fit of the model, evaluating both the measurement and structural parts. The GOF index is calculated by taking the square root of the product of the "mean R^2 index" and the "mean redundancy index." Wetzels et al. (2009) introduced three values—0.01, 0.25, and 0.36—as benchmarks for weak, moderate, and strong GOF. The GOF index obtained in this study is 0.545, indicating a strong model fit.

4. Discussion and Conclusion

The current study aimed to explore the relationship between psychological capital (PsyCap) and the implementation of e-learning models with an emphasis on organizational infrastructure within Mellat Insurance. The results of the study confirmed that psychological capital significantly contributes to the effectiveness of e-learning initiatives, particularly in enhancing employee engagement, adaptability, and learning outcomes. The standardized factor loading for the impact of e-learning infrastructure on external organizational factors was found to be 0.734, with a t-statistic of 3.478, suggesting that the hypothesis was supported with 95% confidence. These results align with previous research, highlighting the critical role of psychological capital in organizational settings, particularly in promoting innovation, adaptability, and employee well-being [10, 11, 19].

One of the key findings of this study is the significant relationship between psychological capital and the adoption of e-learning infrastructures within the organization. This relationship suggests that employees with higher levels of psychological capital are more likely to engage with e-learning systems, resulting in improved learning outcomes and organizational performance. This finding is consistent with the research conducted by Chen et al. (2022), which demonstrated that psychological capital and academic self-efficacy significantly influence learning outcomes among students. The current study extends this relationship to professional settings, where e-learning plays a crucial role in organizational development and employee training [16]. Similarly, Liu (2024) found that psychological capital enhances emotional engagement and academic performance, further supporting the current findings [4].

The positive impact of psychological capital on organizational factors such as external relationships and adaptability is also noteworthy. Previous studies have emphasized the role of PsyCap in fostering team collaboration, innovation, and learning within organizations. For example, Dimas et al. (2022) found that teams with higher psychological capital are more likely to engage in internal learning processes, which in turn boosts innovation [10]. This aligns with the findings of the current study, where e-learning systems are viewed as key tools for enhancing organizational learning and adaptability. Furthermore, psychological capital's role in enhancing innovation and creativity has been widely documented [8, 28], supporting the notion that PsyCap is a valuable asset in driving organizational success.

Another significant finding of the study is the mediating role of psychological capital in mitigating job-related stress and burnout, particularly in the context of e-learning. This finding is consistent with the research conducted by Cai and Ye (2018), who demonstrated that psychological capital plays a crucial role in reducing job burnout by fostering better mental health and emotional resilience [12]. Similarly, Jiang and Zhou (2020) found that psychological capital is significantly associated with life quality and job immersion, particularly among nursing staff working in high-stress environments [29]. The current study's results further confirm the importance of psychological capital in reducing stress and enhancing employee well-being, particularly in the context of e-learning and continuous professional development.

Moreover, the study's findings indicate that organizational support plays a key role in fostering psychological capital, which in turn enhances the effectiveness of e-learning systems. This aligns with the findings of Gu, Wang, and Wang (2013), who demonstrated that social capital and psychological safety are critical for fostering innovation within R&D teams [27]. In the context of Mellat Insurance, organizational support for e-learning initiatives, combined with high levels of psychological capital, contributed to improved organizational outcomes, particularly in terms of employee engagement and learning adaptability. This further supports the argument that psychological capital is a key factor in promoting positive organizational outcomes [30].

Despite the valuable insights provided by this study, several limitations must be acknowledged. First, the cross-sectional nature of the study limits the ability to establish causal relationships between psychological capital and e-learning effectiveness. While the study demonstrates a significant correlation between the two variables, further longitudinal studies are needed to establish causality. Second, the study was conducted within a single organization—Mellat Insurance—limiting the generalizability of the findings to other organizations and industries. The unique organizational culture and specific context of Mellat Insurance may have influenced the results, and future studies should seek to replicate these findings in different organizational settings, particularly in other sectors such as education and healthcare. Third, the study relied on self-reported data, which may be subject to social desirability bias. Participants may have overestimated their levels of psychological capital or engagement with e-learning systems, potentially skewing the results. Future research should incorporate objective measures of psychological capital and organizational outcomes to mitigate this limitation.

Future research should aim to address the limitations of the current study by adopting a longitudinal design to establish causal relationships between psychological capital and e-learning effectiveness. A longitudinal approach would allow researchers to track changes in psychological capital over time and assess its impact on employee engagement, learning outcomes, and organizational performance. Additionally, future studies should seek to expand the generalizability of the findings by conducting research in diverse organizational contexts, including offshore banking, education, and healthcare sectors. Investigating the role of psychological capital in these different industries would provide valuable insights into the applicability of the current findings across various professional settings.

Moreover, future research should explore the potential moderating effects of other organizational factors, such as leadership styles, organizational culture, and technological infrastructure, on the relationship between psychological capital and e-learning effectiveness. Understanding how these factors interact with psychological capital could provide a more nuanced understanding of the conditions under which PsyCap contributes to positive organizational outcomes. Furthermore, future studies should investigate the potential mediating role of psychological capital in other organizational processes, such as innovation, employee retention, and job satisfaction. By examining the broader implications of PsyCap within organizations, researchers can develop a more comprehensive understanding of its impact on employee well-being and performance.

The findings of this study have important implications for organizational practice, particularly in the context of e-learning and employee development. Organizations should prioritize the development of psychological capital among their employees as a means of enhancing engagement with e-learning systems and improving overall organizational performance. This can be achieved through targeted interventions aimed at fostering self-efficacy, optimism, hope, and resilience among employees. For example, organizations can implement positive psychology training programs that focus on building these key psychological resources, as suggested by Han, Kang, and Joung (2020). By enhancing employees' psychological capital, organizations can improve their adaptability to change, foster innovation, and reduce job-related stress and burnout.

In addition to developing psychological capital, organizations should also focus on creating supportive environments that promote employee engagement with e-learning systems. This includes providing access to the necessary technological infrastructure, offering continuous professional development opportunities, and fostering a culture of learning within the organization. Moreover, organizations should ensure that leaders play an active role in fostering psychological capital among their teams by providing support, encouragement, and opportunities for growth.

Finally, organizations should recognize the importance of psychological capital in reducing job-related stress and burnout, particularly in high-stress environments such as offshore banking and healthcare. By investing in programs that build employees' psychological resilience and emotional well-being, organizations can mitigate the negative effects of job stress and enhance employee retention and satisfaction. As Cai and Ye (2018) demonstrated, psychological capital is a key factor in reducing job burnout, and organizations that prioritize the development of PsyCap among their employees are likely to experience improved well-being and productivity.

In conclusion, the current study highlights the critical role of psychological capital in enhancing the effectiveness of e-learning systems within organizations. By fostering resilience, optimism, hope, and self-efficacy, organizations can improve employee engagement, adaptability, and learning outcomes, ultimately contributing to positive organizational outcomes. Future research should continue to explore the broader implications of psychological capital in diverse organizational contexts, while organizations should take proactive steps to develop these psychological resources among their employees. Through the strategic development of psychological capital, organizations can build a workforce that is well-equipped to thrive in an increasingly dynamic and complex professional environment.

Authors' Contributions

Authors equally contributed to this article.

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Declaration of Interest

The authors report no conflict of interest.

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Ethical Considerations

All procedures performed in this study were under the ethical standards.

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