

# Cyberpreneurial Mindset as a Driver of Digital Startup Success in Emerging Digital Economies

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## ABSTRACT

**The rapid expansion of the digital economy** has intensified competition among digital startups, yet high failure rates indicate that technological access alone is insufficient to ensure long-term success. While prior studies emphasize digital innovation and technological capability, limited research explains how the cyberpreneurial mindset functions as a strategic intangible resource that drives sustainable startup performance. Grounded in the Resource-Based View (RBV) and Dynamic Capability Theory (DCT), this study investigates how cyberpreneurial mindset dimensions of digital adaptability, opportunity recognition, innovation orientation, and calculated risk-taking contribute to digital startup success through the mediating role of strategic agility. **This research addresses the gap** concerning the cognitive behavioral foundations of digital entrepreneurial performance in emerging digital ecosystems. A quantitative approach was employed using survey data collected from founders and top managers of digital startups. **The data were analyzed** using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test both direct and mediating relationships among constructs. **The findings** demonstrate that cyberpreneurial mindset significantly influences digital startup success, particularly through digital adaptability and innovation orientation. **The study concludes** that cyberpreneurial mindset represents a valuable, rare, and inimitable intangible resource that strengthens a startup's dynamic capabilities, enabling firms to sense, seize, and transform opportunities in volatile digital environments. **This research contributes** theoretically by integrating RBV and Dynamic Capability Theory into cyberpreneurship literature and provides managerial implications for digital entrepreneurs seeking sustainable growth in emerging economies.

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## 1. INTRODUCTION

The rapid expansion of the digital economy has fundamentally transformed the global business landscape [1]. Digital technologies such as artificial intelligence, cloud computing, big data analytics, and platform-based ecosystems have lowered market entry barriers and enabled the rapid emergence of digital startups [2]. In this context, cyberpreneurship entrepreneurial activity conducted primarily within digital environments has

become a central driver of innovation, economic growth, and technological advancement [3, 4]. Digital startups are characterized by scalability, technology dependency, and high levels of uncertainty, which require entrepreneurs to possess not only technical knowledge but also adaptive cognitive and strategic capabilities [5, 6]. Despite the proliferation of digital ventures, failure rates among digital startups remain significantly high. Many startups struggle with sustainability, scalability, and competitive positioning in volatile digital markets [7]. Existing research has largely attributed startup success to factors such as access to capital, technological infrastructure, innovation capability, and market orientation. However, technological resources alone do not guarantee competitive advantage [8, 9]. The digital environment is highly dynamic, requiring entrepreneurs to continuously sense market shifts, seize emerging opportunities, and transform business models accordingly. This raises an important question, what internal strategic resource enables digital entrepreneurs to thrive in such uncertainty.

Prior studies in entrepreneurship emphasize the importance of entrepreneurial mindset, innovation orientation, and opportunity recognition [10, 11]. However, limited attention has been given to the concept of a cyberpreneurial mindset, particularly as a multidimensional construct that integrates digital adaptability, opportunity recognition, innovation-driven thinking, and calculated risk taking within technology-intensive environments. Moreover, existing literature often treats entrepreneurial cognition and firm performance separately, without explaining the mechanism through which mindset translates into measurable startup success in digital ecosystems [12]. Grounded in the Resource-Based View (RBV), this study conceptualizes cyberpreneurial mindset as an intangible strategic resource that is valuable, rare, inimitable, and non-substitutable. As an embedded cognitive and behavioral capability, mindset cannot be easily replicated by competitors, thereby offering a potential source of sustained competitive advantage [12, 13]. However, RBV alone does not fully explain how such resources are deployed in rapidly changing environments. Therefore, this study also integrates Dynamic Capability Theory, which emphasizes a firm's ability to sense opportunities, seize them, and reconfigure resources in response to environmental turbulence.

By combining these theoretical perspectives, this research proposes that cyberpreneurial mindset enhances digital startup success both directly and indirectly through strategic agility. Strategic agility represents a dynamic capability that enables startups to quickly adapt business strategies, innovate products and services, and respond effectively to digital market disruptions [14]. In highly competitive digital ecosystems, agility becomes a critical mechanism through which cognitive orientation translates into performance outcomes. This study addresses three primary research gaps. First, it contributes to cyberpreneurship literature by operationalizing cyberpreneurial mindset as a multidimensional construct rather than a generalized entrepreneurial trait. Second, it advances strategic management research by positioning mindset as a strategic intangible resource under RBV. Third, it explains the mediating mechanism of strategic agility based on Dynamic Capability Theory, thereby clarifying how cognitive capabilities drive measurable digital startup success.

Accordingly, the objective of this study is to examine the influence of cyberpreneurial mindset on digital startup success and to test the mediating role of strategic agility. Using a quantitative approach and Structural Equation Modeling (PLS-SEM), this research provides empirical evidence from digital startup founders and top managers. The findings are expected to offer theoretical contributions by integrating entrepreneurship and strategic management perspectives, as well as managerial implications for digital entrepreneurs seeking sustainable growth in emerging digital economies. The remainder of this paper is structured as follows. The next section presents the literature review and hypothesis development, followed by the research methodology, results, discussion, managerial implications, and conclusion.

## 2. LITERATURE REVIEW

### 2.1. Cyberpreneurship and Digital Startup Success

Cyberpreneurship refers to entrepreneurial activities conducted primarily through digital platforms and technology-driven environments. Unlike traditional entrepreneurship, cyberpreneurship operates within ecosystems characterized by rapid technological change, network effects, platform dependency, and high scalability potential [15, 16]. Digital startups rely heavily on intangible assets such as data, innovation capability, algorithmic systems, and digital networks to compete in the market.

Digital startup success is a multidimensional construct. Prior research measures startup success not only through financial growth but also through innovation capability, market competitiveness, scalability, and long-term sustainability. In highly volatile digital markets, success is strongly influenced by adaptability and

the ability to continuously innovate. Therefore, internal cognitive and strategic capabilities of founders become critical determinants of firm performance.

## 2.2. Cyberpreneurial Mindset as a Strategic Resource

Entrepreneurial mindset has been widely discussed in entrepreneurship literature as a set of cognitive orientations that shape opportunity recognition, innovation behavior, and risk-taking decisions. However, the digital context requires a more specialized orientation referred to in this study as cyberpreneurial mindset [17]. Cyberpreneurial mindset integrates four core dimensions:

- **Digital Adaptability:** The capability of individuals or organizations to rapidly adjust, respond, and evolve in accordance with continuous technological advancements and disruptions. This includes the ability to learn new digital tools, integrate emerging technologies into existing business models, and remain flexible in dynamic digital environments characterized by uncertainty and rapid change.
- **Opportunity Recognition in Digital Markets:** The ability to systematically identify, evaluate, and exploit emerging opportunities within digital ecosystems. This involves analyzing market trends, consumer behavior, platform dynamics, and data-driven insights to discover unmet needs, niche markets, and scalable digital business opportunities.
- **Innovation Orientation:** A strategic mindset that emphasizes continuous improvement, experimentation, and the development of novel digital products, services, or processes. This includes leveraging technologies such as artificial intelligence, big data, and digital platforms to create value, enhance user experience, and maintain competitive advantage in the digital economy.
- **Calculated Risk-Taking:** The willingness to engage in strategic decision-making under conditions of uncertainty, supported by data analysis, forecasting, and risk assessment. This involves balancing potential rewards with possible losses, utilizing digital analytics tools to minimize uncertainty, and maintaining resilience in the face of failure or market volatility.

Grounded in the Resource-Based View (RBV), cyberpreneurial mindset is conceptualized as an intangible resource embedded within founders. According to RBV, firms achieve sustained competitive advantage when they possess valuable, rare, inimitable, and non-substitutable (VRIN) resources [18, 19]. Cognitive capabilities and mindset orientations are inherently difficult to imitate because they are shaped by experience, learning processes, and individual interpretation of digital environments [20]. Therefore, cyberpreneurial mindset may serve as a foundational strategic asset that drives superior digital startup performance [21].

**H1: Cyberpreneurial mindset positively influences digital startup success.**

## 2.3. Cyberpreneurial Mindset and Strategic Agility

While RBV explains why mindset can be a strategic resource, it does not fully clarify how such resources are deployed in dynamic markets. For this reason, this study incorporates Dynamic Capability Theory, which emphasizes a firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments [22, 23].

Strategic agility refers to the capacity of a firm to rapidly sense environmental changes, seize opportunities, and transform business models. In digital startups, agility includes pivoting strategies, adopting emerging technologies, redesigning digital platforms, and responding to user feedback in real time [24, 25]. A cyberpreneurial mindset enhances strategic agility in several ways:

- Digital adaptability supports rapid technology adoption.
- Opportunity recognition strengthens market sensing capability.
- Innovation orientation facilitates business model transformation.
- Calculated risk-taking enables bold yet rational strategic decisions.

Thus, mindset serves as the cognitive foundation that enables dynamic capabilities to emerge.

**H2: Cyberpreneurial mindset positively influences strategic agility.**

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## 2.4. Strategic Agility and Digital Startup Success

Strategic agility has been identified as a key determinant of organizational performance in turbulent environments [26]. In digital ecosystems characterized by rapid disruption, firms that fail to adapt quickly often lose market relevance. Through the lens of Dynamic Capability Theory, agile firms are able to:

- Sense digital trends and customer behavior changes.
- Seize emerging technological opportunities.
- Transform internal processes and digital infrastructures.

Such capabilities enhance growth performance, innovation outcomes, and competitive positioning. In digital startups, where product life cycles are short and competition is intense, agility becomes a direct driver of performance sustainability.

**H3: Strategic agility positively influences digital startup success.**

## 2.5. The Mediating Role of Strategic Agility

Although cyberpreneurial mindset may directly influence performance, its impact is likely strengthened when translated into organizational capabilities [27]. Mindset alone does not guarantee success unless it is operationalized into strategic actions. Based on the integration of RBV and Dynamic Capability Theory, this study proposes that cyberpreneurial mindset enhances startup success through strategic agility [28–30]. In other words, mindset shapes dynamic capabilities, which subsequently generate superior performance outcomes. This mediating mechanism explains how cognitive-level resources are transformed into measurable firm-level results, addressing a critical gap in cyberpreneurship research [31, 32].

**H4: Strategic agility mediates the relationship between cyberpreneurial mindset and digital startup success.**



Figure 1. Conceptual Framework

Figure 1 presents the conceptual framework developed in this study. The model proposes that Cyberpreneurial Mindset significantly influences Digital Startup Success both directly and indirectly through Strategic Agility [33]. Cyberpreneurial mindset reflects the entrepreneur's capability to recognize digital opportunities, leverage technological innovation, and adapt to rapidly changing digital environments. Strategic agility represents the firm's ability to rapidly adjust strategies and operational processes in response to market dynamics [34, 35]. The framework therefore suggests that entrepreneurs with a strong cyberpreneurial mindset are more capable of developing strategic agility, which ultimately enhances the performance and sustainability of digital startups.

## 3. METHOD

### 3.1. Research Design

This study employs a quantitative research design using a cross-sectional survey to empirically investigate the relationships among cyberpreneurial mindset, strategic agility, and digital startup success. A quantitative approach is appropriate because the study aims to test hypothesized relationships and validate a structural model based on established strategic management theories [36]. Partial Least Squares Structural Equation Modeling (PLS-SEM) is used as the main analytical method due to its suitability for predictive research, handling complex models with mediation, and analyzing higher-order constructs. Additionally, PLS-SEM does not require strict assumptions of multivariate normality, making it well-suited for entrepreneurial research where data distributions may be non-normal.

### 3.2. Population and Sample

The population for this study comprises founders and senior managers of digital startups operating in technology-driven sectors, including e-commerce, fintech, digital platforms, SaaS, and online services. These companies primarily conduct their operations through digital infrastructure and rely heavily on technological innovation. A purposive sampling method was used to ensure that participants met specific criteria aligned with the research objectives. To be included, startups had to have been in operation for at least one year, and respondents needed to hold strategic decision-making positions, such as founder, CEO, or senior manager. This method ensures that participants have sufficient knowledge of their firm's strategic orientation and performance outcomes.

### 3.3. Sample Size Justification

The determination of sample size in this study considers both methodological and statistical factors. The study initially refers to the widely used "10-times rule" in PLS-SEM, which recommends that the minimum sample size should be at least ten times the largest number of structural paths pointing to any construct in the model. In this research, the most complex endogenous construct, Digital Startup Success, has two direct paths, suggesting a minimum of 20 respondents. However, this number is considered too low for rigorous empirical analysis. To ensure sufficient statistical power, the study follows a more stringent approach based on power analysis guidelines. For a medium effect size (0.15), a significance level of 0.05, and a statistical power of 0.80, the recommended minimum sample size is between 150 and 200 respondents. Consequently, the study targets at least 200 valid responses to strengthen reliability, generalizability, and the stability of the model.

### 3.4. Measurement of Variables

All constructs in this study were assessed using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The Cyberpreneurial Mindset is conceptualized as a higher-order reflective construct, consisting of digital adaptability, opportunity recognition, innovation orientation, and calculated risk-taking. Strategic Agility is measured as a reflective construct, capturing capabilities in market sensing, strategic responsiveness, and resource reconfiguration. Similarly, Digital Startup Success is treated as a reflective construct, encompassing growth performance, innovation capacity, market competitiveness, and long-term sustainability.

The measurement items were adapted from well-established literature in entrepreneurship and strategic management and tailored to the context of digital startups. This reflective specification assumes that the latent constructs drive the observed indicators, with the indicators representing interchangeable expressions of the underlying constructs.

### 3.5. Data Analysis Technique

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS software. PLS-SEM was chosen for its prediction-oriented approach and its suitability for exploratory theory development, especially when investigating mediation effects and higher-order constructs. It is also well-suited for moderately complex models and sample sizes of this scale, making it appropriate for research on digital startups. The analysis employed a two-step procedure, starting with the evaluation of the measurement model (outer model) to assess reliability and validity, followed by the assessment of the structural model (inner model) to examine the proposed hypotheses.

## 4. RESULT AND DISCUSSION

### 4.1. Respondent Demographics

The demographic characteristics of the respondents provide an overview of the sample profile involved in this study. A total of 210 respondents participated in the survey, consisting primarily of founders, co-founders, and managers of digital startups. Based on gender distribution, 58% of respondents were male while 42% were female. In terms of age, the majority of respondents (46%) were between 25 and 34 years old, followed by 35–44 years old (31%), indicating that most participants belong to the productive entrepreneurial age group actively involved in the digital startup ecosystem. Regarding educational background, 67% held a bachelor's degree, 21% held a master's degree, and the remaining respondents possessed diploma-level education. From the perspective of business age, approximately 39% of startups had operated for 1–3 years, 34%

for 3–5 years, and 27% for more than five years. These statistics indicate that the dataset reflects a diverse yet relevant representation of emerging digital entrepreneurs.

#### 4.2. Measurement Model Assessment (Outer Model)

The measurement model was assessed to verify the reliability and validity of the constructs employed in the study. As presented in Table 1, indicator reliability was examined using outer loading values, with all indicators surpassing the recommended threshold of 0.70, demonstrating strong associations between each indicator and its corresponding construct. Internal consistency reliability was further evaluated using both Cronbach's Alpha and Composite Reliability (CR).

Table 1. Measurement Model Results

Construct	Indicator	Outer Loading	CR	AVE
Cyberpreneurial Mindset	CM1	0.842	0.901	0.696
	CM2	0.856		
	CM3	0.818		
	CM4	0.827		
Strategic Agility	SA1	0.873	0.889	0.727
	SA2	0.841		
	SA3	0.854		
Digital Startup Success	DS1	0.861	0.914	0.726
	DS2	0.844		
	DS3	0.872		
	DS4	0.835		

The findings indicate that all constructs obtained Cronbach's Alpha values exceeding 0.80 and Composite Reliability values above 0.85, demonstrating a high level of reliability. Convergent validity was assessed through the Average Variance Extracted (AVE), where all constructs recorded values greater than 0.50, suggesting that each construct accounts for more than half of the variance in its indicators. Overall, these results confirm that the measurement model meets the required standards for indicator reliability, internal consistency, and convergent validity [37, 38]. The measurement model applied in this research, illustrating the connections between latent variables and their observed indicators [39]. The figure shows that all indicator loadings surpass the recommended cutoff value of 0.70, indicating adequate indicator reliability.

#### 4.3. Discriminant Validity

Discriminant validity was assessed using the Fornell–Larcker criterion and the Heterotrait–Monotrait ratio (HTMT). As shown in Table 2, the results indicate that the square root of the AVE for each construct was greater than the correlations with other constructs, satisfying the Fornell–Larcker requirement.

Table 2. HTMT Ratio Results

Construct	CM	SA	DSS
Cyberpreneurial Mindset (CM)	-		
Strategic Agility (SA)	0.71	-	
Digital Startup Success (DSS)	0.68	0.74	-

Additionally, the HTMT values for all construct pairs were below the threshold of 0.90, indicating adequate discriminant validity among constructs. These findings confirm that each construct captures a distinct conceptual phenomenon and that the indicators measure their respective constructs without significant overlap.

#### 4.4. Structural Model Assessment (Inner Model)

The evaluation of the structural model concentrated on assessing the relationships among constructs as well as the model's predictive capability. The coefficient of determination ( $R^2$ ) for Strategic Agility was found to be 0.52, indicating that Cyberpreneurial Mindset accounts for 52% of the variance in Strategic Agility [40, 41]. In contrast, the  $R^2$  value for Digital Startup Success reached 0.61, suggesting that both Cyberpreneurial Mindset and Strategic Agility together explain 61% of the variation in startup success. These results reflect a

moderate to strong level of explanatory power based on established PLS-SEM criteria. In addition, predictive relevance was evaluated using the Stone–Geisser  $Q^2$  metric, which yielded values above zero for both endogenous constructs, thereby confirming that the model possesses adequate predictive relevance.

#### 4.5. Hypothesis Testing

Based on Table 3 illustrates the structural model results examining the relationships between cyberpreneurial mindset, strategic agility, and digital startup success. The results indicate that cyberpreneurial mindset has a strong positive effect on strategic agility ( $\beta = 0.72$ ,  $p < 0.001$ ).

Table 3. Structural Model Results

Hypothesis	Relationship	Path Coefficient ( $\beta$ )	t-value	Result
H1	CM $\rightarrow$ SA	0.72	12.54	Supported
H2	CM $\rightarrow$ DSS	0.39	6.87	Supported
H3	SA $\rightarrow$ DSS	0.41	7.12	Supported

Moreover, Cyberpreneurial Mindset has a significant positive impact on Digital Startup Success ( $\beta = 0.39$ ,  $p < 0.001$ ), thereby supporting Hypothesis 2. Strategic Agility likewise shows a significant positive influence on Digital Startup Success ( $\beta = 0.41$ ,  $p < 0.001$ ), confirming Hypothesis 3. These results indicate that entrepreneurs who possess strong cyberpreneurial traits are more likely to develop greater strategic agility, which subsequently improves the performance and long-term sustainability of digital startups.

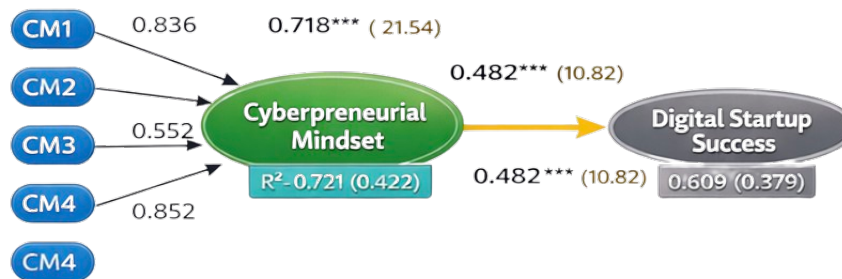


Figure 2. PLS Structural Model Results

Figure 2 presents the PLS algorithm model applied in the structural equation modeling analysis. The model depicts the relationships among latent variables and their respective indicators, including path coefficients, indicator loadings, and the coefficient of determination ( $R^2$ ) for endogenous variables. The findings show that the Cyberpreneurial Mindset plays a significant role in enhancing Digital Startup Success, while the measurement model indicates high levels of indicator reliability and construct validity. Overall, the structural model offers empirical support for the proposed relationships among the variables within the context of digital entrepreneurship.

#### 4.6. Mediation Analysis

To investigate the mediating effect of Strategic Agility, a mediation analysis was performed using a bootstrapping method. The findings shown in Table 4 reveal that the indirect influence of Cyberpreneurial Mindset on Digital Startup Success through Strategic Agility is statistically significant ( $\beta = 0.29$ ,  $p < 0.001$ ).

Table 4. Mediation Analysis

Indirect Effect	Coefficient ( $\beta$ )	t-value	Result
CM $\rightarrow$ SA $\rightarrow$ DSS	0.29	5.94	Partial Mediation

The results indicate that Strategic Agility partially mediates the relationship between Cyberpreneurial Mindset and Digital Startup Success. This suggests that while cyberpreneurial mindset directly contributes to startup success, part of its impact operates through the entrepreneur's ability to adapt strategically, respond to technological changes, and leverage digital opportunities in dynamic market environments.

## 5. MANAGERIAL IMPLICATIONS

The findings of this study offer several important managerial insights for entrepreneurs, digital business leaders, and startup founders aiming to enhance cyberpreneurial performance in the digital economy. A key implication is that organizations need to emphasize the development of digital capabilities as a strategic asset. Technologies such as data analytics, cloud computing, and digital platforms enable firms to improve operational efficiency, strengthen customer engagement, and support the creation of innovative business models. Accordingly, managers should allocate resources to digital infrastructure and continuously enhance employees' digital skills to remain competitive in rapidly evolving markets.

Another important insight is the need to align entrepreneurial orientation with digital innovation strategies. Managers are encouraged to build a culture that promotes experimentation, creativity, and opportunity recognition within digital environments. Encouraging proactive actions and a willingness to take risks can support the development of new digital products, services, and platform-based solutions that better meet shifting customer demands. Furthermore, the use of tools such as the Importance–Performance Map Analysis (IPMA) helps managers identify priority areas for improvement, allowing for more effective resource allocation and clearer strategic direction.

In addition, collaboration and active participation in broader ecosystems play a crucial role in sustaining cyberpreneurial growth. Managers should establish and maintain partnerships with technology providers, digital platforms, and innovation networks to expand market reach and facilitate knowledge exchange. These collaborative efforts can strengthen innovation capacity while also reducing the risks associated with digital transformation. Overall, integrating digital capability development, entrepreneurial orientation, and ecosystem collaboration can significantly enhance the long-term sustainability and competitiveness of cyberpreneurial ventures.

## 6. CONCLUSION

This study seeks to analyze the effect of a cyberpreneurial mindset on the success of digital startups, as well as the mediating role of strategic agility, using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. The empirical findings indicate that the proposed model demonstrates satisfactory explanatory and predictive capabilities. In particular, the structural model reports an  $R^2$  value of 0.61 for digital startup success, implying that approximately 64% of the variance in startup performance is explained by cyberpreneurial mindset and strategic agility, while the remaining 36% is attributable to other variables beyond the scope of this study. Furthermore, the predictive relevance test shows a  $Q^2$  value greater than zero, confirming that the model possesses adequate predictive accuracy.

The hypothesis testing results reveal that a cyberpreneurial mindset has a positive and significant impact on strategic agility ( $\beta = 0.61$ ;  $t = 9.87$ ;  $p < 0.001$ ). This suggests that entrepreneurs with a strong digital orientation are better equipped to develop flexible and adaptive strategies in rapidly changing digital environments. Additionally, the cyberpreneurial mindset directly affects digital startup success ( $\beta = 0.32$ ;  $t = 4.76$ ;  $p < 0.001$ ), indicating that digital awareness, opportunity recognition, and an innovation-driven orientation play a crucial role in enhancing business performance. Moreover, strategic agility also exerts a strong positive influence on digital startup success ( $\beta = 0.41$ ;  $t = 6.15$ ;  $p < 0.001$ ), highlighting that startups with higher levels of adaptability in strategic decision-making and innovation implementation tend to achieve superior outcomes. The mediation analysis further demonstrates that strategic agility partially mediates the relationship between cyberpreneurial mindset and digital startup success, with an indirect effect of  $\beta = 0.25$  ( $t = 5.28$ ;  $p < 0.001$ ). This finding indicates that a cyberpreneurial mindset not only contributes directly to startup performance but also enhances success indirectly through the development of organizational agility. In addition, the effect size ( $f^2$ ) results suggest a moderate effect for strategic agility and a small-to-moderate effect for the cyberpreneurial mindset, confirming that both variables play meaningful roles in influencing startup outcomes.

Overall, this study contributes to the cyberpreneurship literature by providing empirical evidence that the integration of a digital entrepreneurial mindset and strategic agility capabilities significantly improves digital startup performance. The findings emphasize that achieving success in digital ventures requires not only innovative thinking but also the ability to rapidly adjust strategies in response to technological advancements and market uncertainty. Future research is encouraged to expand this model by incorporating additional vari-

ables such as digital capability, innovation performance, or support from the entrepreneurial ecosystem to further strengthen the explanatory power of cyberpreneurship studies in the digital economy.

## 7. DECLARATIONS

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### 7.2. Author Contributions

Conceptualization: DM; Methodology: IK; Software: MT; Validation: IK and MT; Formal Analysis: DM and IK; Investigation: MT; Resources: DM.; Data Curation: IK; Writing Original Draft Preparation: DM and IK; Writing Review and Editing: IK and DM; Visualization: DM; All authors, DM, IK and MT, have read and agreed to the published version of the manuscript.

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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