

Human and Social Capital in Platform-Based Freelancing: The Mediating Role of Digital Engagement in Freelance Success

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Abstract

The rapid expansion of global digital labor platforms has increased opportunities for Thai freelancers to access cross-border work. However, success in algorithmically governed labor markets depends on more than technical competence alone. It involves the interplay of individual capabilities, relational networks, and platform-based engagement behaviors. This quantitative study develops and tests a structural model examining the effects of human capital, social capital, and digital engagement on freelance success. Data were collected from 459 Thai freelancers with verified cross-border experience and analyzed using Structural Equation Modeling (SEM). Research results indicate that human capital has significant direct effects on social capital, digital engagement, and freelance success. Social capital emerges as the strongest predictor of freelance success and positively influences digital engagement. Bootstrap mediation analysis confirms that both social capital and digital engagement transmit the effects of human capital to career outcomes. Research findings suggest that freelance success in platform economies is shaped by the interaction between competence, network embeddedness, and digital engagement behaviors. These results provide empirical evidence from an emerging economy context and offer implications for strengthening workforce capability development in global digital labor markets.

Keywords: Human capital, Social capital, Digital engagement, Freelance success

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Introduction

The emergence of digital labor platforms has accelerated the expansion of freelance markets across the world by creating a new environment of location-independent work arrangements, algorithmic work coordination, and international transactions (Wood et al., 2018). Platforms such as Upwork and Fiverr have changed the dynamics of labor matching and evaluation by creating an algorithm-based environment for evaluating workers' performance based on factors such as visibility, responsiveness, and reputation.

Thailand has also witnessed a change in the freelance market with the expansion of cross-border freelancing in creative industries, information technology services, and digital services with the implementation of digital strategies and integration of the country's service sectors into the global service sectors (Sattayathamrongthian et al., 2023). However, Thai workers face difficulties in maintaining cross-border freelance work arrangements due to a lack of cross-cultural capabilities and a fragile professional network.

The extant literature has provided partial explanations on how human capital, social capital, and digital engagement might be related to each other and how they, in turn, might be related to freelance success. Human capital theory has focused on skills and competencies as drivers of productivity (Becker, 1993), whereas social capital theory has focused on networks and trust as enablers of access to opportunities under uncertainty (Coleman, 1988; Putnam, 2000).

Digital engagement has been studied from the perspective of algorithmic governance, wherein visibility, responsiveness, and reputation have been identified as critical factors influencing market outcomes (Burtch et al., 2018). However, most of these perspectives have been studied independently, without adequately accounting for how human capital, social capital, and digital engagement might be related as a system of interrelated mechanisms. The relevance of this study is further underscored by the fact that, unlike in Western economies, institutional protection for freelancers is not well developed in Southeast Asian economies, wherein social networks are critical drivers of economic exchange.

The objective of this study, therefore, is to develop and test a structural model of Human Capital, Social Capital, Digital Engagement, and Freelance Success among Thai freelancers engaged in cross-border platform work. The study contributes to the literature by providing a structural model of human capital, social capital, and digital engagement as drivers

of freelance success, wherein capital-based resources are integrated with algorithmically mediated systems of labor.

Research Questions

- 1) How does human capital shape social capital and digital engagement among Thai freelancers engaged in cross-border platform work?
- 2) How do social capital and digital engagement influence freelance success in algorithmically mediated labor markets?
- 3) Do social capital and digital engagement mediate the relationship between human capital and freelance success?

Research Objectives

- 1) To examine the effects of human capital on social capital and digital engagement in cross-border freelance platforms.
- 2) To investigate the influence of social capital and digital engagement on freelance success.
- 3) To test the mediating roles of social capital and digital engagement in the relationship between human capital and freelance success.
- 4) To validate an integrated structural model explaining freelance success through competence, relational capital, and platform engagement mechanisms.

Hypotheses Development

- H1: Human Capital (HC) positively affects Social Capital (SC).
- H2: Human Capital (HC) positively affects Digital Engagement (DE).
- H3: Human Capital (HC) positively affects Freelance Success (FS).
- H4: Social Capital (SC) positively affects Digital Engagement (DE).
- H5: Social Capital (SC) positively affects Freelance Success (FS).
- H6: Digital Engagement (DE) positively affects Freelance Success (FS).
- H7: Social Capital (SC) mediates the relationship between Human Capital (HC) and Freelance Success (FS).
- H8: Digital Engagement (DE) mediates the relationship between Human Capital (HC) and Freelance Success (FS).
- H9: Digital Engagement (DE) mediates the relationship between Social Capital (SC) and Freelance Success (FS).

H10: Social Capital (SC) and Digital Engagement (DE) sequentially mediate the relationship between Human Capital (HC) and Freelance Success (FS).

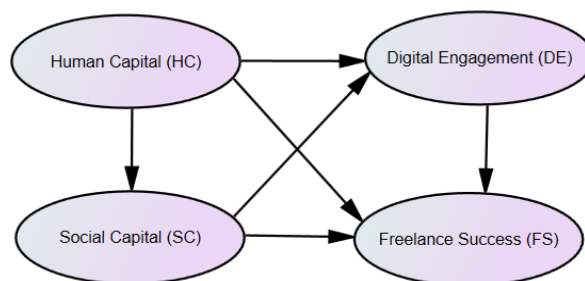


Figure 1 Conceptual Framework

This model illustrates the structural relationships among Human Capital (HC), Social Capital (SC), Digital Engagement (DE), and Freelance Success (FS) in platform-based labor markets. Human Capital directly influences Social Capital, Digital Engagement, and Freelance Success, indicating that skills and competencies form the foundation of performance. Social Capital also affects both Digital Engagement and Freelance Success, highlighting the importance of professional networks and trust-based relationships. Digital Engagement directly contributes to Freelance Success by enhancing visibility and reputation within algorithm-driven platforms.

Literature Review

The rapid growth of digital freelancing has fueled interest in performance management in digital labor markets, where matching algorithms and rating systems influence opportunity distribution (Wood et al., 2018). In algorithmic management systems, worker visibility is governed by platform-generated signals, such as ratings, responsiveness, and activity levels, which shape performance outcomes independently of underlying competence (Duggan et al., 2019; Newlands, 2020). This highlights the need to understand how performance management systems convert individual capabilities into market-recognized outcomes.

Human capital theory posits that knowledge and skills enhance individual productivity and economic value (Becker, 1993). In digital labor markets, freelancers require multidimensional capabilities, including technical, digital, and adaptive skills (Kuhn & Maleki, 2017). However, such capabilities must be made observable through platform signals—such as portfolios, ratings, and feedback—to influence opportunity access (Lehdonvirta et al., 2019).

This suggests that human capital alone is insufficient unless it is effectively communicated within platform-mediated environments.

Social capital provides access to networks and relationships that mitigate uncertainty in remote and transaction-based interactions (Granovetter, 1985; Coleman, 1988). In platform economies, social capital is manifested through repeat clients, referrals, and professional communities, which enhance income stability and opportunity continuity. In transnational contexts where formal institutional protections are limited, these relational structures function as informal governance mechanisms that facilitate trust, coordination, and risk reduction (Lehdonvirta, 2022). More importantly, social capital extends beyond opportunity access by serving as a mechanism of relational validation, through which freelancers establish credibility and legitimacy within platform ecosystems. In this sense, social capital not only reduces uncertainty but also transforms individual capability into socially recognized and economically actionable value.

Digital engagement represents the behavioral capacity to interact strategically with platform infrastructures and algorithmic systems. Active engagement—through profile updates, timely responses, and content visibility—enhances ranking and client attraction (Burtch et al., 2018; Duggan et al., 2019). More critically, digital engagement serves as a transmission mechanism through which human and social capital are transformed into algorithmically recognizable signals of professionalism and reliability (Newlands, 2020), thereby linking latent resources to observable performance.

Freelance success is inherently multidimensional, encompassing income stability, client satisfaction, and sustained access to opportunities (Kässi & Lehdonvirta, 2018). Within platform economies, performance is best understood as the outcome of an integrated process in which competence (human capital), relational embeddedness (social capital), and algorithmic visibility (digital engagement) interact dynamically. This perspective provides a theoretical basis for examining social capital and digital engagement as key mediating mechanisms through which human capital is translated into performance outcomes in digitally governed labor markets.

Research Methodology

1) Research Design and Sample

This study employed a quantitative, cross-sectional research design to examine the relationships among Human Capital (HC), Social Capital (SC), Digital Engagement (DE), and

Freelance Success (FS). Structural Equation Modeling (SEM) was applied using the two-step approach, separating measurement and structural model evaluation (Anderson & Gerbing, 1988; Rex B. Kline, 2016).

Ethical approval was obtained from the Human Research Ethics Committee of Rajamangala University of Technology Rattanakosin (RMUTR). Participation was voluntary, and informed consent was secured prior to data collection, ensuring confidentiality and anonymity in accordance with established research ethics guidelines (John W. Creswell & J. David Creswell, 2018).

Data were collected between January and May 2024 in Bangkok, Thailand. The target population consisted of Thai freelancers engaged in cross-border platform work. A purposive sampling technique was employed to ensure respondents possessed relevant experience, including individuals aged 18 years or above who had completed at least one international freelance project within the past six months. Survey distribution was conducted through online freelancer communities and offline professional networks. A total of 459 valid responses were obtained, exceeding recommended thresholds for SEM analysis (Kline, 2016).

2) Measurement and Data Collection

Four latent constructs (HC, SC, DE, FS) were operationalized using established scales adapted from prior literature. All items were measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Human Capital (HC) was measured using 15 items adapted from Becker (1993) and Kuhn and Maleki (2017), capturing skills, knowledge, and professional capability. Social Capital (SC) was measured using 15 items adapted from Coleman (1988) and Granovetter (1985), reflecting network strength, trust, and professional relationships. Digital Engagement (DE) was measured using 15 items adapted from Burtch et al. (2018) and Newlands (2020), capturing platform activity, responsiveness, and visibility-enhancing behaviors. Freelance Success (FS) was measured using 15 items adapted from Kassi and Lehdonvirta (2018) and Wood et al. (2018), reflecting income stability, satisfaction, and opportunity quality.

Content validity was ensured through scale adaptation and expert review. Internal consistency reliability was confirmed with Cronbach's α values exceeding .90 (Nunnally & Bernstein, 1994). Convergent validity was assessed using Composite Reliability (CR) and Average Variance Extracted (AVE), while discriminant validity was evaluated using the Fornell-

Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio (Fornell & Larcker, 1981; Henseler et al., 2015).

To reduce common method bias, procedural remedies were applied, including anonymity assurance, scale separation, and careful questionnaire design (Podsakoff et al., 2011). Data collection followed the tailored design method to enhance response quality and reliability (Dillman et al., 2014).

3) Data Analysis

Data analysis was conducted in three stages using covariance-based SEM. First, Exploratory Factor Analysis (EFA) was performed to assess dimensionality and initial construct structure. Second, Confirmatory Factor Analysis (CFA) using Maximum Likelihood Estimation (MLE) was conducted to validate the measurement model. Model fit was evaluated using multiple indices, including χ^2/df , CFI, TLI, RMSEA, and SRMR, based on established cutoff criteria (Hu & Bentler, 1999; Kline, 2016).

Finally, the structural model was estimated to test hypothesized relationships. Direct and indirect effects were examined using standardized path coefficients and bias-corrected bootstrapping with 5,000 resamples, providing robust estimates of mediation effects (Preacher & Hayes, 2008). This approach enhances statistical rigor and reduces bias in indirect effect estimation.

Research Result

The sample (N = 459) consists of 60.8% male and 39.2% female respondents, with the majority aged 18–30 years (83.4%) and the remainder aged 31–45 years (16.6%). Most participants are highly educated, with 77.8% holding a bachelor's degree, followed by postgraduate (11.3%), senior high school (5.9%), and diploma (5.0%) qualifications. Income levels are generally moderate, with 60.6% earning between 15,001 and 50,000 Baht per month, 27.7% earning below 15,000 Baht, and 11.8% earning between 50,001 and 100,000 Baht.

In terms of freelance fields, respondents are primarily engaged in photo/video and animation (30.3%), tutoring/education (26.8%), and graphic design (21.1%), followed by lifestyle and health (10.5%), web development and programming (5.4%), and other fields (5.9%). Regarding work characteristics, 50.3% are hybrid workers combining full-time employment with freelance work, while 33.6% are long-term freelancers and 16.1% are new freelancers.

Table 1 Construct-Level Descriptive Statistics (N = 459)

Construct	Items	Mean	SD	Skewness	Kurtosis	Mean Range	SD Range
Human Capital (HC)	15	4.288	0.489	0.466	-.744	4.207–4.344	.431–.532
Social Capital (SC)	15	4.273	0.524	0.154	-.580	4.196–4.442	.493–.566
Digital Engagement (DE)	15	4.303	0.467	0.78	-1.049	4.255–4.344	.443–.483
Freelance Success (FS)	15	4.301	0.51	0.292	-.650	4.222–4.381	.470–.537

All constructs show high mean scores with low variability, indicating consistently positive perceptions among freelancers. Skewness and kurtosis values fall within acceptable ranges, supporting the normality assumptions required for SEM.

Table 2 Descriptive Statistics and Pearson Correlations Among Study Variables (N = 459)

Variable	M	SD	1	2	3	4
Human Capital (HC)	4.288	0.489	1			
Social Capital (SC)	4.273	0.524	.691**	1		
Digital Engagement (DE)	4.303	0.467	.739**	.642**	1	
Freelance Success (FS)	4.301	0.51	.821**	.683**	.693**	1

Note: Pearson correlation coefficients are reported. $p < .01$ (two-tailed).

All correlations are positive and significant ($p < .01$), indicating strong and consistent relationships among the constructs.

Table 3 KMO, Bartlett's Test, and Exploratory Factor Analysis Results (N = 459)

Construct	Items Retained	KMO	Bartlett's χ^2 (df)	Variance Explained (%)	Factor Loadings
Human Capital (HC)	10	0.904	3267.951 (45)	58.21	.718–.958
Social Capital (SC)	8	0.902	2103.815 (28)	59.11	.776–.885
Digital Engagement (DE)	9	0.884	3321.919 (36)	61.27	.825–.954
Freelance Success (FS)	10	0.933	3017.213 (45)	59.68	.703–.954

All KMO values exceed .80 and Bartlett's tests are significant ($p < .001$), indicating strong factorability.

Factor loadings exceed .70 and variance explained is above 50%, supporting unidimensionality and suitability for CFA.

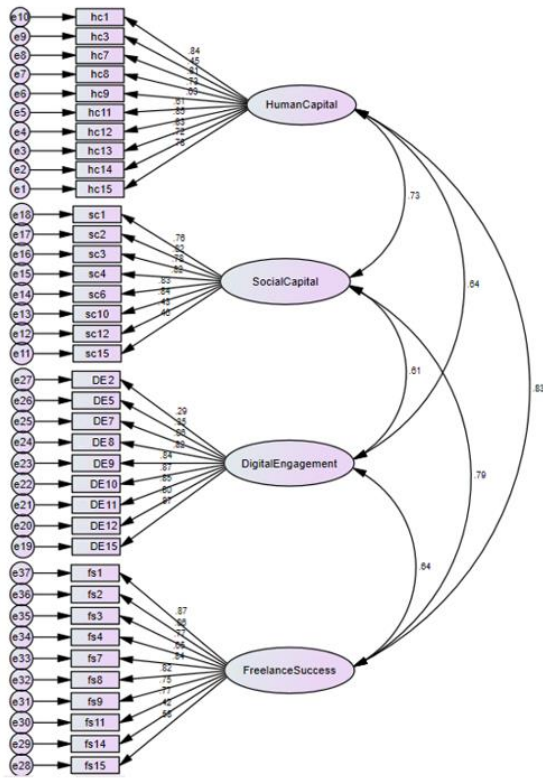


Figure 2 CFA Figures

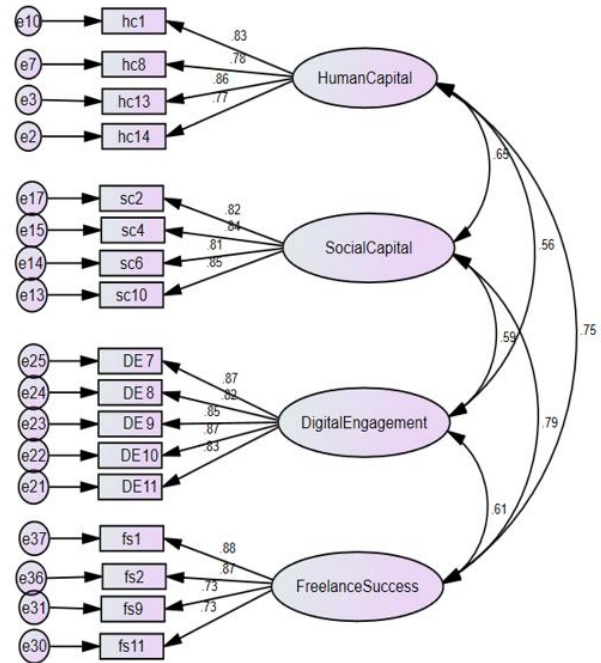


Figure 3 CFA Figures After Refinement

The original CFA model contained many indicators, some with weak loadings, resulting in unnecessary complexity. After refinement, only high-loading items were retained, improving convergent validity, reducing measurement error, and significantly enhancing overall model fit. The final model is more parsimonious, stable, and suitable for SEM.

Table 4 Standardized Factor Loadings and Measurement Properties (CFA Results) (N = 459)

Construct	Item	Loading
Human Capital (HC)	HC13	0.86
	HC1	0.83
	HC8	0.78
	HC14	0.77
Social Capital (SC)	SC10	0.85
	SC4	0.84
	SC2	0.82

Table 4 Standardized Factor Loadings and Measurement Properties (CFA Results) (N = 459)
(Continued)

Construct	Item	Loading
Digital Engagement (DE)	SC6	0.81
	DE7	0.87
	DE9	0.87
	DE10	0.83
	DE8	0.82
Freelance Success (FS)	DE11	0.79
	FS1	0.88
	FS2	0.81
	FS9	0.73
	FS11	0.73

Table 4 reports on the CFA results for all retained items. Standardized loadings range from .73 to .88, indicating strong indicator reliability. Error variances are within acceptable limits, supporting measurement precision.

Table 5 Construct Reliability and Validity Assessment

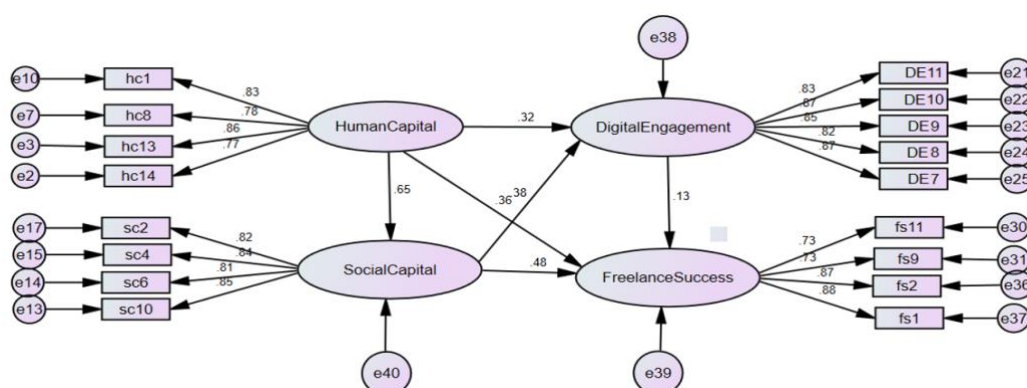
Construct	α	CR	AVE	$\sqrt{\text{AVE}}$	Correlations (DE / HC / SC / FS)	HTMT
Human Capital (HC)	0.941	0.877	0.658	0.811	DE (.630), SC (.560), FS (.610)	0.742
Social Capital (SC)	0.931	0.884	0.690	0.830	DE (.590), HC (.560), FS (.750)	0.693
Digital Engagement (DE)	0.943	0.926	0.722	0.849	HC (.630), SC (.590), FS (.790)	0.736
Freelance Success (FS)	0.947	0.869	0.651	0.807	DE (.790), HC (.610), SC (.750)	0.784

The CFA results show that all items load strongly on their intended constructs, with standardized loadings ranging from .73 to .88, exceeding the recommended minimum threshold of .50. Error variances are low and consistent, demonstrating good measurement precision.

Table 6 Goodness-of-Fit Indices for the Confirmatory Factor Analysis Model

Fit Index	Value	Threshold	Interpretation
χ^2/df	1.542	< 3.000	Excellent
RMSEA	0.034	< 0.060	Excellent
SRMR	0.007	< 0.080	Excellent
CFI	0.989	> 0.950	Excellent
TLI	0.987	> 0.950	Excellent
GFI	0.957	> 0.900	Good
AGFI	0.941	> 0.900	Good
PCLOSE	0.997	> 0.050	Excellent

All constructs demonstrated excellent internal consistency ($\alpha = .931-.947$; CR = .869–.926) and strong convergent validity (AVE = .651–.722). The square roots of AVE ($\sqrt{AVE} = .807-.849$) exceeded inter-construct correlations, and all HTMT ratios (.693–.784) remained below the .85 threshold, confirming robust discriminant validity.



Note: Standardized path coefficients are shown. All paths are statistically significant at $p < .05$

Figure 4 Structural Equation Model of Freelance Success

Figure 4 presents the final SEM results, showing strong indicator reliability with standardized loadings ranging from .71 to .88. Human Capital significantly predicts Social Capital ($\beta = .65$), Digital Engagement ($\beta = .32$), and Freelance Success ($\beta = .36$), while Social Capital further influences Digital Engagement ($\beta = .38$) and Freelance Success ($\beta = .48$), confirming its central role. Digital Engagement also has a smaller but significant effect on Freelance Success ($\beta = .13$), indicating partial mediation. The model demonstrates excellent fit (CFI = .989, TLI = .987, RMSEA = .034, SRMR = .007), with additional indices supporting model adequacy ($\chi^2/df = 1.542$; GFI = .957; AGFI = .941; PCLOSE = .997).

Table 7 Standardized Regression Weights for Structural Paths (N = 459)

Hypothesis	Structural Path	β	p-value	Result
H1	HC $\rightarrow$ SC	0.654	< .001	Supported
H2	HC $\rightarrow$ DE	0.317	< .001	Supported
H3	HC $\rightarrow$ FS	0.360	< .001	Supported
H4	SC $\rightarrow$ DE	0.379	< .001	Supported
H5	SC $\rightarrow$ FS	0.481	< .001	Supported
H6	DE $\rightarrow$ FS	0.128	0.003	Supported

Human Capital significantly predicts Social Capital ($\beta = .654$), Digital Engagement ($\beta = .317$), and Freelance Success ($\beta = .360$), while Social Capital also influences Digital Engagement ($\beta = .379$) and Freelance Success ($\beta = .481$). Digital Engagement shows a smaller but significant effect on Freelance Success ($\beta = .128$), supporting its mediating role.

Table 8 Discriminant Validity Using Fornell–Larcker Criterion

Construct	HC	SC	DE	FS
HC	0.811			
SC	0.565	0.83		
DE	0.599	0.586	0.85	
FS	0.747	0.792	0.614	0.807

Table 8 presents the Fornell–Larcker assessment of discriminant validity. The square root of AVE for each construct exceeds its correlations with other constructs, indicating that each construct shares more variance with its indicators than with other variables. These results confirm adequate discriminant validity across all constructs.

Table 9 Bootstrap Indirect and Serial Mediation Effects (5,000 Resamples)

Hypothesis	Mediation Path	Indirect β	Boot SE	95% CI (LL–UL)	p	Result
H7	HC $\rightarrow$ SC $\rightarrow$ FS	0.315	0.042	.234 – .401	< .001	Supported
H8	HC $\rightarrow$ DE $\rightarrow$ FS	0.041	0.019	.012 – .079	0.004	Supported
H9	SC $\rightarrow$ DE $\rightarrow$ FS	0.049	0.021	.015 – .091	0.006	Supported
H10	HC $\rightarrow$ SC $\rightarrow$ DE $\rightarrow$ FS	0.032	0.015	.009 – .066	0.006	Supported

According to Table 9, the results indicate that Human Capital influences Freelance Success through both Social Capital and Digital Engagement. The strongest indirect pathway operates via Social Capital ($\beta = .315$), followed by sequential mediation through Social Capital and Digital Engagement ($\beta = .032$). All confidence intervals exclude zero, confirming the presence of significant mediation effects.

Table 10 Total Effects and Explained Variance (R^2) of Endogenous Constructs (N = 459)

Panel A. Total Effects				
Predictor	Outcome	Direct β	Indirect β	Total β
HC	SC	0.654	—	0.654
HC	DE	0.317	0.248	0.565
SC	DE	0.379	—	0.379
HC	FS	0.36	0.388	0.748
SC	FS	0.481	0.049	0.53
DE	FS	0.128	—	0.128
Panel B. Explained Variance				
Endogenous Construct		R^2		
Social Capital (SC)		0.428		
Digital Engagement (DE)		0.516		
Freelance Success (FS)		0.672		

Note: Indirect effects were derived from bias-corrected bootstrap procedures. R^2 values indicate the proportion of variance explained in each endogenous construct. Higher R^2 values reflect stronger explanatory power of the model.

According to Table 10, Human Capital shows the strongest overall impact on Freelance Success (total $\beta = .748$), reflecting both direct and mediated pathways. Social Capital also demonstrates a substantial influence ($\beta = .530$), while Digital Engagement contributes a smaller but significant effect ($\beta = .128$). The model explains 42.8% of the variance in Social Capital, 51.6% in Digital Engagement, and 67.2% in Freelance Success, indicating strong explanatory power of the proposed framework.

Conclusion

This study demonstrates that human capital, social capital, and digital engagement jointly shape freelance success, with social capital exerting the strongest direct effect. Mediation analysis shows that social capital and digital engagement partially transmit the influence of human capital on performance outcomes. These findings reaffirm that competencies generate value when embedded in relational networks (Granovetter, 1985) and made visible through platform-based signals of credibility and professionalism (Burtch et al., 2018).

Theoretically, this study integrates human capital, social capital, and digital engagement into a unified framework explaining performance in platform-mediated work. It extends human capital theory (Becker, 1993) and broadens digital labor market research beyond Western contexts (Lehdonvirta, 2022). The findings suggest that success in algorithmically governed freelance markets depends on the interaction of competence, connectivity, and digital visibility rather than technical skill alone.

Practically, the results highlight the importance of strengthening digital literacy, cross-cultural communication, client management, and strategic platform engagement among Thai freelancers. These priorities align with research on adaptive professional development and collaborative practices (Sattayathamrongthian & Vanpetch, 2023). Policymakers, universities, and workforce agencies can use these insights to design integrated capacity-building strategies that enhance Thailand's competitiveness in global digital labor markets.

Discussion

The findings provide a more precise explanation of freelance performance by demonstrating that success in platform-based labor markets is not driven by isolated competencies, but by a sequential process of capital activation. While human capital forms the foundational resource, it becomes economically valuable only when socially validated and algorithmically amplified, shifting the analytical focus from static resource possession to dynamic resource activation within digitally mediated environments. This finding challenges the conventional assumption that human capital directly translates into economic returns, highlighting instead the conditional nature of value realization in algorithmically governed markets.

The strong effect of Human Capital on Social Capital ($\beta = .65$) suggests that skills function not only as productivity-enhancing assets but also as relational signals that enable

trust formation and network embeddedness. Extending human capital theory (Becker, 1993), the results indicate that competence must first be recognized and legitimized within a social structure before it becomes monetizable. This positions human capital as a latent resource whose economic value depends on relational validation.

Social Capital emerges as the dominant predictor of Freelance Success ($\beta = .48$), reinforcing its central role in governing opportunity access under conditions of institutional uncertainty. Building on prior work (Coleman, 1988; Granovetter, 1985), the findings suggest that social capital operates as an informal governance mechanism within platform economies. In contexts such as Thailand, where formal institutional protections are limited, relational networks substitute for formal coordination mechanisms, stabilizing income, enabling repeat transactions, and facilitating access to higher-quality opportunities.

Although Digital Engagement exhibits a smaller direct effect ($\beta = .13$), its theoretical significance lies in its role as an algorithmic transmission mechanism. Platform-based markets allocate opportunities through visibility systems, where performance depends on observable signals such as responsiveness, reputation, and activity (Burtch et al., 2018; Newlands, 2020). Digital engagement transforms both competence and relational trust into algorithmically legible signals, thereby linking latent resources to platform-recognized outcomes. In this sense, digital engagement functions as the operational interface between capital and performance.

Taken together, the findings support a four-stage mechanism of freelance performance: competence $\rightarrow$ embeddedness $\rightarrow$ visibility $\rightarrow$ success. This mechanism extends existing perspectives by demonstrating that performance is co-produced through the interaction of human capital, social capital, and digital engagement, rather than being determined by skill accumulation alone. It reframes value creation in platform economies as a sequential and interdependent process of capital activation.

Importantly, the study introduces the concept of “algorithmic activation of capital,” which extends human and social capital theory into digitally governed contexts. In such environments, value realization depends on the ability to convert resources into signals recognized by platform ranking systems, positioning algorithmic visibility as a critical mediating layer between capability and outcome.

Finally, by situating the analysis within a Southeast Asian context, the findings highlight that capital activation processes are context dependent. In environments

characterized by weaker institutional protections and greater reliance on informal coordination, social capital becomes disproportionately central, while digital engagement is essential for overcoming visibility constraints. This challenges the Western-centric bias of existing gig economy research and underscores the importance of institutional embeddedness in shaping platform-based outcomes.

Theoretical Implications

This study advances human and social capital theory by demonstrating that human capital achieves its strongest performance impact when transmitted through relational mechanisms, particularly social capital. The findings reinforce the argument that skills alone are insufficient unless embedded within trust-based networks that facilitate information exchange and opportunity access (Becker, 1993). In emerging digital economies, human capital becomes performance-relevant only when activated through relational structures.

The study further conceptualizes digital engagement as an operational form of capital that transforms competencies and networks into algorithmically visible outcomes. Engagement behaviors enhance visibility and credibility within platform governance systems, extending theories of algorithmic visibility and digital market coordination (Burtch et al., 2018).

Methodologically, the research demonstrates the robustness of Structural Equation Modeling for examining interdependent resource-based and platform-mediated relationships. The strong model fit supports the integration of human capital, social capital, and digital engagement within a unified framework and provides a foundation for future studies exploring algorithmic management and cross-context comparisons (Anderson & Gerbing, 1988).

Practical Implications

The findings provide multi-level implications for enhancing Thailand's competitiveness in global digital freelancing. At the individual level, freelancers should strengthen digital literacy, cross-cultural communication, project management, and specialized technical skills—core components of human capital that improve adaptability and long-term performance in international environments (Becker, 1993).

At the community and platform level, structured online communities, mentorship systems, and peer-learning networks can strengthen social capital. Trust-based exchanges and referral relationships reduce uncertainty and enhance income stability in digital labor markets, particularly within collectivist contexts such as Thailand (Granovetter, 1985).

Strategic digital engagement is also essential. Activities such as profile optimization, portfolio development, responsiveness, and data-driven adjustments enhance algorithmic visibility and client acquisition on platforms such as Upwork and Fiverr effectively translating human and social capital into observable performance signals (Burtch et al., 2018).

At the policy and educational level, universities and public agencies should develop integrated programs that combine skill development, network-building, and platform strategy training. Such initiatives can strengthen Thailand's digital workforce and improve its competitiveness in global online labor markets (Kuek et al., 2015; Sattayathamrongthian & Vanpetch, 2023).

Limitations, Future Research Directions, and Recommendations

This study has several limitations. First, the cross-sectional design limits causal inference and does not capture the dynamic evolution of freelance careers; future research should adopt longitudinal or panel designs to examine how human capital, social capital, and digital engagement co-evolve (Bryman, 2016). Second, reliance on self-reported data raises potential common method bias; future studies should incorporate multi-source and behavioral data (e.g., platform analytics, client evaluations) to enhance measurement accuracy (Podsakoff et al., 2011). Third, further theoretical development is needed, and future research could extend the model by incorporating contextual moderators such as algorithmic governance intensity, institutional support, and cross-national differences.

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