Journal of
Theoretical and Applied
Electronic Commerce Research

MDPI

Article

The Experience Paradox: Problematizing a Common Digital Trace Proxy on Crowdfunding Platforms

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Abstract

Information Systems (ISs) research frequently relies on digital trace data, often using simple activity counts as proxies for complex latent constructs like 'experience'. However, the validity of such proxies is often assumed rather than critically scrutinized. This study problematizes this practice by treating a common proxy—a creator's prior project count on Kickstarter—not as a measure of experience, but as a focal signal whose meaning is inherently ambiguous and context-dependent. By analyzing large-scale data (N ≈ 16,407 projects), we uncover a nuanced 'experience paradox.' The proxy exhibits a significant inverted-U association with backer mobilization and non-linearly moderates the value of other positive signals. Strikingly, it also maintains a persistent negative direct association with total funding, with its meaning varying significantly across project categories. These findings reveal the profound ambiguity of seemingly objective digital traces. Our primary contribution is methodological and theoretical: we provide a robust empirical critique of naive proxy use and refine signaling theory for digital contexts by integrating it with cognitive limitations and contextual factors. We urge IS scholars to develop more sophisticated measurement models and offer specific, evidence-based cautions for platform managers against the simplistic use of activity metrics in the digital economy.

Keywords: digital trace data; proxy variables; measurement validity; signal ambiguity; signaling theory; crowdfunding; platform governance

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Received: 30 August 2025
Revised: 26 September 2025
Accepted: 29 September 2025
Published: 3 October 2025

Citation: Kim, O.; Lee, J. The Experience Paradox: Problematizing a Common Digital Trace Proxy on Crowdfunding Platforms. *J. Theor. Appl. Electron. Commer. Res.* **2025**, *20*, 270. https://doi.org/10.3390/jtaer20040270

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1. Introduction

Digital platforms are now central infrastructures of the global economy, generating an unprecedented volume of digital trace data—the archived records of user activities and interactions [1–3]. For Information Systems (ISs) researchers and platform managers, this data offers a seemingly direct window into complex social and economic phenomena [4]. The convenience of this data, however, often masks a fundamental measurement challenge: the pervasive use of easily observable metrics as proxies for complex, latent constructs like 'experience', 'quality', or 'influence' [5,6]. This gap between a simple, observable metric and the rich, underlying construct it purports to represent poses a significant threat to the validity of our research and the effectiveness of data-driven platform governance [7,8].

This issue is particularly acute on crowdfunding platforms like Kickstarter, where information asymmetry is high and backers rely heavily on digital signals to make funding decisions [9,10]. Perhaps no signal is more commonly used—by both researchers and backers—as a proxy for 'creator experience' than the simple count of prior projects

launched [10,11]. The prevailing assumption is linear: more projects equal more experience, signaling greater competence and a higher likelihood of success. Yet, emerging findings hint at an 'experience paradox'—a puzzling reality where creators with the most 'experience,' as measured by this proxy, do not always achieve the best outcomes, suggesting that the signal's meaning is far from straightforward [12,13].

This study directly confronts this critical measurement problem. Instead of assuming the validity of the 'prior project count' proxy to measure 'experience', we problematize the proxy itself. We treat the observable activity count not as a clean measure, but as a focal signal whose meaning is inherently ambiguous, non-linear, and deeply context-dependent [14]. To systematically deconstruct this ambiguity, we conduct a critical empirical investigation into the proxy's complex associative patterns, examining how its relationship with performance shifts when it interacts with other dynamic signals, such as a creator's communication style.

Our research is therefore guided by two central questions: (1) How does this widely used digital trace proxy exhibit complex—specifically, non-linear, interactive, and context-dependent—associative patterns with funding outcomes? (2) What are the implications of these paradoxical patterns, particularly the stark differences observed across project categories, for the methodological use of digital trace data in IS research and the application of signaling theory in digital environments?

Through analyzing a large-scale dataset of 16,407 Kickstarter projects, we uncover compelling evidence of the 'experience paradox,' characterized by inverted-U associations, persistent negative direct associations, and strong context dependency. Crucially, we leverage these paradoxical findings not merely as an empirical puzzle, but as a critical case illustrating fundamental measurement challenges in the digital age. Our primary contribution is therefore sharply methodological. We directly engage with broader debates in ISs methodology concerning the epistemology of digital traces and the crisis of construct validity in big data research [5,6]. By providing a robust empirical critique of naive proxy use, we demonstrate the urgent need for greater rigor in validation. While we offer secondary contributions—calling for more nuanced signaling models that account for proxy ambiguity and cautioning against simplistic algorithmic management—these are derived from our central argument: IS scholars must prioritize the critical scrutiny of the digital metrics upon which our theories and practices are built.

2. Theoretical Background and Hypothesis Development

To unravel the complex associations of digital trace proxies, our framework moves beyond classical signaling theory. We integrate it with critical insights on bounded rationality and cognitive load to build a more behaviorally realistic model of signal interpretation on digital platforms. This integrated approach allows us to theorize why the meaning of a seemingly simple signal—a creator's prior project count—is inherently ambiguous and results in complex, non-linear, and context-dependent associations with performance. Our focus is not on what the proxy is intended to measure (i.e., latent 'experience'), but on how the observable signal itself is processed and interpreted by receivers.

2.1. A Framework for Proxy Ambiguity and Interpretation

Our framework begins with the premise that digital trace proxies are often fundamentally ambiguous signals [5]. While signaling theory provides a cornerstone for understanding behavior under the information asymmetry that defines platforms like Kickstarter [15,16], where creators (signalers) use observable signals to convey unobservable qualities to backers (receivers) [17–19], the proxies derived from digital traces are inherently coarse simplifications of a complex reality [20].

This is especially true for the 'prior project count' proxy. This signal's ambiguity stems from its inability to differentiate between productive and unproductive activity [21], creating a significant interpretive challenge for receivers [22,23]. A high project count can be interpreted through a positive lens, signaling valuable human capital, legitimacy, persistence, and platform familiarity [20,24–26]. However, it can just as easily be viewed through a negative lens, signaling a lack of novelty, creative stagnation, or even a history of low-quality endeavors [20,27,28].

Crucially, we argue that this ambiguity is processed not by perfectly rational agents, but by backers operating under bounded rationality and cognitive load [29,30]. Faced with overwhelming information, receivers rely on heuristics and mental shortcuts, leading to interpretations that are often non-linear [31]. The diagnostic value of one signal can be influenced non-linearly by another salient but ambiguous signal [20,21,32,33]. A critical gap in applying signaling theory to digital trace data, therefore, is the failure to account for these cognitive limitations. To address this, we argue that it is essential to study the observable proxy's complex associative patterns, rather than assuming that it perfectly reflects a latent construct like 'true experience' [2,34].

2.2. Hypothesis Development

2.2.1. Analytical Communication Style as a Dynamic Signal (H1)

While the activity proxy is a static, historical signal, creators can also send dynamic signals through real-time project updates [35]. Among various communication styles, we focus on the analytical thinking reflected in the language of updates [36–38]. In the high-uncertainty crowdfunding environment, language characterized by logic and objectivity serves as a powerful signal of a creator's competence and professionalism [39]. From a cognitive perspective, it also lowers the cognitive load on receivers, allowing them to make funding decisions with greater confidence [30]. Therefore, we establish the following baseline hypothesis:

H1 (Baseline Association). *Analytical update style is positively associated with crowdfunding funding outcomes (pledged amount, backer count).*

2.2.2. The "Experience Paradox": Non-Linear Associations of the Activity Proxy (H2)

The inherent ambiguity of the creator activity proxy—bundling both positive and negative interpretations—likely leads to a non-monotonic relationship, a phenomenon we term the 'experience paradox'. At lower to moderate levels, the positive interpretations (e.g., learning curve, persistence) are likely to dominate [34]. However, at very high levels, negative interpretations (e.g., a lack of novelty, creative stagnation, core rigidity) may become more salient, leading to diminishing or even negative returns [13,27,28,36]. This logic suggests an inverted U-shaped relationship.

H2 (Inverted-U Association). *The creator activity proxy (project count) has an inverted U-shaped association with backer mobilization (backer count).*

2.2.3. Non-Linear Interaction Between Signals (H3 and H3a)

Receivers do not evaluate signals in isolation; they interpret them interactively [15,36]. Given the profound ambiguity of the activity proxy, its interaction with a clearer signal like analytical style is unlikely to be linear. We propose a non-linear intensification of a substitution effect. As a creator's project count becomes very high, its salience and ambiguity increase. Faced with this strong but puzzling signal, receivers under cognitive load may disproportionately discount the informational value of the secondary analytical signal [24,28].

Alternatively, their evaluation criteria may shift from assessing competence to assessing innovativeness, making the procedural signal of an analytical style less relevant [40,41].

H3 (Basic Substitution Association). *The creator activity proxy is negatively associated with the strength of the positive association between analytical update style and crowdfunding funding outcomes.*

H3a (Non-Linear Intensification of Substitution). *The negative moderating association of the creator activity proxy on the relationship between analytical update style and funding outcomes (as stated in H3) intensifies non-linearly as the activity proxy increases.*

2.2.4. Exploring Associative Pathways (H4)

Finally, we explore potential indirect associative pathways. A creator's activity history may systematically shape the communication strategies they employ in subsequent projects, reflecting learning, strategic adaptation, or path dependencies [42,43]. Understanding these indirect patterns can offer richer insight into the proxy's multifaceted role. It is crucial to frame this exploration carefully: we aim to descriptively map these associative pathways to better understand the mechanisms linking a creator's history to outcomes, not to establish strict causal mediation [44].

H4 (Associative Pathways). *The creator activity proxy is associated with funding outcomes partly via its association with communication strategy choices (e.g., the use of analytical, authentic, or clout styles; comment frequency).*

3. Methodology

3.1. Research Context: Kickstarter Platform

We situate our empirical investigation within the context of Kickstarter (kickstarter.com), one of the largest and most prominent global reward-based crowdfunding platforms [45,46]. Kickstarter facilitates funding for a wide array of creative and entrepreneurial projects, primarily operating under an 'all-or-nothing' funding model where projects must meet their funding goal to receive any money [47].

This context is particularly well suited for testing our hypotheses for several key reasons. First, the platform is characterized by substantial information asymmetry between project creators and potential backers, making it a natural laboratory for studying the complex signaling phenomena at the core of our research [9]. Backers must make decisions based on a limited set of observable digital signals to infer a project's quality and a creator's capability.

Second, Kickstarter provides rich, publicly archived, and multi-faceted data that is essential for our investigation. Crucially, this includes transparent creator histories, allowing for the precise construction of our focal creator activity proxy. It also contains the complete textual content of dynamic project updates, enabling the computational text analysis of communication styles. Finally, the platform provides clear outcome variables (e.g., pledged amount, backer count) and a wide array of control variables, allowing for a comprehensive analysis of the signals' associative patterns.

Third, the high volume and diversity of projects launched on Kickstarter allow for robust, large-sample statistical analysis, which increases the statistical power and generalizability of our findings regarding the complex, non-linear, and interactive patterns we aim to uncover [10]. In sum, the combination of high information asymmetry, rich multi-signal data, and a large, diverse sample makes Kickstarter an ideal empirical setting to critically examine the ambiguity and complex behavior of a widely used digital trace proxy.

3.2. Data Collection and Sample Construction

The data for this study were compiled from publicly available Kickstarter project data, covering projects launched between 2009 and 2023. Consistent with established practices in crowdfunding research [48] and to suit our focus on dynamic communication signals, we applied several systematic filtering steps. We began by removing duplicate entries and projects lacking essential information, such as the final funding outcome, funding goal, creator ID (necessary for constructing our activity proxy), project duration, or category.

Crucially, because our analysis centers on the creator's communication style, we excluded all projects that had no updates posted during their campaign. We also excluded projects for which linguistic analysis scores were otherwise missing. After addressing remaining missing values for control variables and employing log transformations for highly skewed variables to better meet the assumptions of our regression models, we arrived at a final analytical sample of N $\approx$ 16,407 unique projects with complete data for our primary analyses. The sample sizes for specific sub-analyses may vary slightly due to data availability.

3.3. Variable Operationalization

We operationalized all key constructs based on the available platform data and the established literature. A detailed definition, operationalization, and source for every variable used in our models is provided in Table A1 in Appendix A.

Dependent Variables. Our two primary outcome variables are log_pledged (the natural logarithm of 1 + the final pledged amount in USD) and log_backers_count (the natural logarithm of 1 + the final number of unique backers).

Key Independent and Moderator Variables. Our focal variable is the creator activity proxy, log_experience, calculated as the natural logarithm of (1 + the number of previously launched projects by the same creator ID), following prior work [10,11]. We applied a logarithmic transformation because creator activity metrics on digital platforms are often characterized by a highly right-skewed distribution, where a few creators have a very large number of projects. This transformation helps to normalize the distribution, reduce the influence of extreme outliers, and better satisfy the assumptions of OLS regression models. We explicitly acknowledge that this is a proxy capturing activity volume and platform familiarity, not a direct measure of true experience or skill.

Our key dynamic signal is mean_update_Analytic, which measures the creator's analytical communication style. We selected this variable because, in the high-uncertainty environment of crowdfunding, language reflecting analytical thinking—characterized by logic, structure, and objectivity—serves as a powerful and credible signal of a creator's competence, professionalism, and organized project management [36,39]. Such communication directly addresses backer uncertainty by demonstrating a clear, well-reasoned plan, thereby reducing the cognitive load required for backers to make a funding decision with confidence [30].

Control Variables. Based on a thorough review of the crowdfunding literature [10,36,49,50], we include a comprehensive set of control variables. These cover project characteristics (log_goal, duration, media counts), creator factors (log_creator_backing, facebook_connected), platform status signals (staff_pick), and communication volume (log_update_count). To control for stable unobserved differences across project types (e.g., differing funding norms in 'Tabletop Games' vs. 'Webcomics'), all models include project subcategory fixed effects [51].

3.4. Analytical Strategy

It is crucial to state at the outset that this study uses observational data and is designed to explore associative patterns, not to establish causal relationships. Our language and

interpretation are therefore intentionally framed in terms of association, correlation, and prediction rather than causal impact [52].

Our main regression models use Ordinary Least Squares (OLS) for our continuous dependent variables (log_pledged and log_backers_count), incorporating subcategory fixed effects to enhance robustness. To test our hypotheses (H1–H3a), we examine the statistical significance ($p < 0.05$) and sign of the relevant coefficients. All variables included in interaction or non-linear (i.e., squared) terms are mean-centered to reduce multicollinearity and aid in the interpretation of main effects.

For the exploratory H4, we use mediation analysis to estimate the Average Direct Association (ADA) and Average Mediated Association (AMA). We emphasize that we interpret these results descriptively as associative pathways, not as evidence of causal mediation, using simulations to generate robust confidence intervals [44]. We further probe the stability of our core findings through a series of robustness checks, including subgroup analyses across major project categories, the exclusion of potential outliers, and comparison with an alternative proxy variable. Finally, Variance Inflation Factor (VIF) diagnostics were conducted on our main models, confirming that multicollinearity is not a significant concern (max VIF $\approx$ 4.4, see Appendix A Table A2 for details) [53].

4. Results

This section presents the empirical findings from our analysis. We begin with descriptive statistics and correlations before moving to the formal hypothesis tests and robustness checks. Table 1 provides the descriptive statistics for all key variables in our sample, while Table 2 displays the Pearson correlation matrix. Notably, in the bivariate correlations (Table 2), our creator activity proxy (log_experience) shows a simple positive raw correlation with both funding outcomes (log_pledged and log_backers_count). This initial positive association highlights the potential for misleading conclusions if the proxy's effects are not examined within the more nuanced multivariate and non-linear context that our hypotheses propose.

Table 1. Descriptive statistics.

(A) Continuous and Binary Variables						
Variable	**Mean**	**SD**	**Median**	**Min**	**Max**	**Notes**
Pledged Amount (USD)	107,338.2	1,046,962	4128.5	0	$\$6.48 \times 10^7$	Final pledged amount
Goal (USD)	114,672.4	1,858,304	15,000	1	1.00×10^8	Funding goal
Backer Count	356.3	1509.8	36	0	105,857	Number of unique backers
Duration (Days)	36.16	12.60	30	1	90	Campaign duration
Creator-Launched Projects	2.14	3.96	1	1	89	Raw measure for activity proxy
Update Count	10.62	12.83	5	1	314	Number of project updates
Creator Backing Projects	4.96	22.25	0	0	1633	Proxy for network engagement
FAQ Count	2.89	5.98	0	0	121	Number of FAQs
Story Images Count	16.53	19.58	9	0	181	Number of images in story
Story Videos Count	0.64	1.54	0	0	27	Number of videos in story
Shown Comments Count	149.85	639.16	4	0	20,329	Proxy for engagement volume
Mean Update Analytic	30.23	25.75	31.12	0	99	Avg. analytical score
Mean Update Authentic	13.14	13.65	10.53	0	98.83	Avg. authentic score

Table 1. *Cont.*

(A) Continuous and Binary Variables						
Variable	**Mean**	**SD**	**Median**	**Min**	**Max**	**Notes**
Mean Update Clout	35.49	29.97	34.81	0	99	Avg. clout score
Staff Pick (1 = Yes)	0.15	0.36	0	0	1	Binary indicator
Facebook Connected (1 = Yes)	0.33	0.47	0	0	1	Binary indicator
(B) Category Group Frequencies (N = 17,109)						
Category Group			**Frequency**			**Percentage**
Product Hardware/Tech			9409			55.0%
Maker Tech and Tools			3085			18.0%
Software and Web Services			4615			27.0%
Other/Creative Tech			0			0.0%
Total			17,109			100.0%

Table 2. Correlation matrix.

Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. Outcome Success	1.00									
2. Log Pledged	0.68 *	1.00								
3. Log Backers Count	0.72 *	0.89 *	1.00							
4. Log Goal	−0.22 *	0.21 *	0.10 *	1.00						
5. Log Experience (Proxy)	0.24 *	0.13 *	0.18 *	−0.24 *	1.00					
6. Log Update Count	0.74 *	0.72 *	0.80 *	0.03 *	0.24 *	1.00				
7. Log Shown Comments	0.71 *	0.79 *	0.89 *	0.10 *	0.18 *	0.80 *	1.00			
8. Mean Update Analytic	0.58 *	0.61 *	0.63 *	−0.02 *	0.21 *	0.76 *	0.58 *	1.00		
9. Mean Update Authentic	0.49 *	0.45 *	0.48 *	−0.10 *	0.20 *	0.61 *	0.44 *	0.76 *	1.00	
10. Mean Update Clout	0.61 *	0.63 *	0.65 *	−0.04 *	0.21 *	0.73 *	0.60 *	0.91 *	0.74 *	1.00

Table Notes: Log transformations applied. Significance levels * $p < 0.05$.

4.1. Hypothesis Testing: Direct and Interactive Associations

We tested hypotheses H1-H3a using OLS regression models with subcategory fixed effects. The key results are summarized in Table 3. Overall, our analysis reveals a complex pattern of associations that challenges a simplistic interpretation of the activity proxy. We find strong support for the baseline value of analytical communication (H1). Crucially, we confirmed the 'experience paradox' by identifying a significant inverted-U relationship between the proxy and backer mobilization (H2), and strong evidence for the non-linear intensification of signal substitution (H3a). We now detail these findings.

H1: Baseline Association of Analytical Style. As expected (H1), an analytical update style is positively and significantly associated with both the amount pledged ($\beta \approx 0.015$, $p < 0.001$) and the backer count ($\beta \approx 0.002$, $p < 0.001$) across all models. This confirms that analytical communication serves as a valuable signal in this context.

H2: The Inverted-U Association of the Activity Proxy. We found strong support for H2 regarding backer mobilization. The significant positive linear term ($\beta = 0.139$, $p < 0.001$) and negative quadratic term ($\beta = -0.122$, $p < 0.001$) confirm an inverted U-shaped relationship (visualized in Figure 1). This indicates that the benefit of prior activity increases initially but turns negative at very high levels. Interestingly, this curvilinear pattern was not statistically significant for the total amount pledged. This divergence suggests that the 'experience

paradox' primarily affects the ability to attract a broad base of backers, rather than the total funds raised.

Table 3. Main regression results.

Predictor Variable/Model	Log Pledged (H1/H3 Base)	Log Pledged (H2 Base)	Log Pledged (H3a Base)	Log Backers (H1/H3 Base)	Log Backers (H2 Base)	Log Backers (H3a Base)
H1: Upd Analytic (C)	0.015 *** (0.001)	0.015 *** (0.001)	0.015 *** (0.001)	0.002 *** (0.000)	0.002 *** (0.000)	0.003 *** (0.001)
H2/H3: Activity Proxy (C)	0.051 (0.035)	0.033 (0.054)	0.077 (0.054)	0.024 (0.056)	0.139 *** (0.032)	0.103 *** (0.033)
H2: Activity Proxy $(C)^2$		−0.051 (0.031)	−0.018 (0.033)		−0.122 *** (0.018)	−0.065 *** (0.020)
H3: Exp(C) × UpdAn(C)	−0.008 *** (0.001)		−0.006 ** (0.002)	−0.003 *** (0.001)		0.005 *** (0.001)
H3a: $Exp(C)^2$ × UpdAn(C)			−0.001 (0.001)			−0.005 *** (0.001)
Log Goal	Yes	Yes	Yes	Yes	Yes	Yes
Duration	Yes	Yes	Yes	Yes	Yes	Yes
Creator Backing	Yes	Yes	Yes	Yes	Yes	Yes
FB Connect	Yes	Yes	Yes	Yes	Yes	Yes
Log Images	Yes	Yes	Yes	Yes	Yes	Yes
Log Videos	Yes	Yes	Yes	Yes	Yes	Yes
Log FAQ	Yes	Yes	Yes	Yes	Yes	Yes
Staff Pick	Yes	Yes	Yes	Yes	Yes	Yes
Log Update Count	Yes	Yes	Yes	Yes	Yes	Yes
Subcategory FE	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.704	0.703	0.704	0.749	0.750	0.751
Adj. R^2	0.703	0.703	0.703	0.749	0.749	0.750
N	16,407	16,407	16,407	16,407	16,407	16,407

Table Notes: Coefficients (β) from OLS regressions. Standard errors (SE) in parentheses. (C) indicates mean-centered variables. ** $p < 0.01$, *** $p < 0.001$.

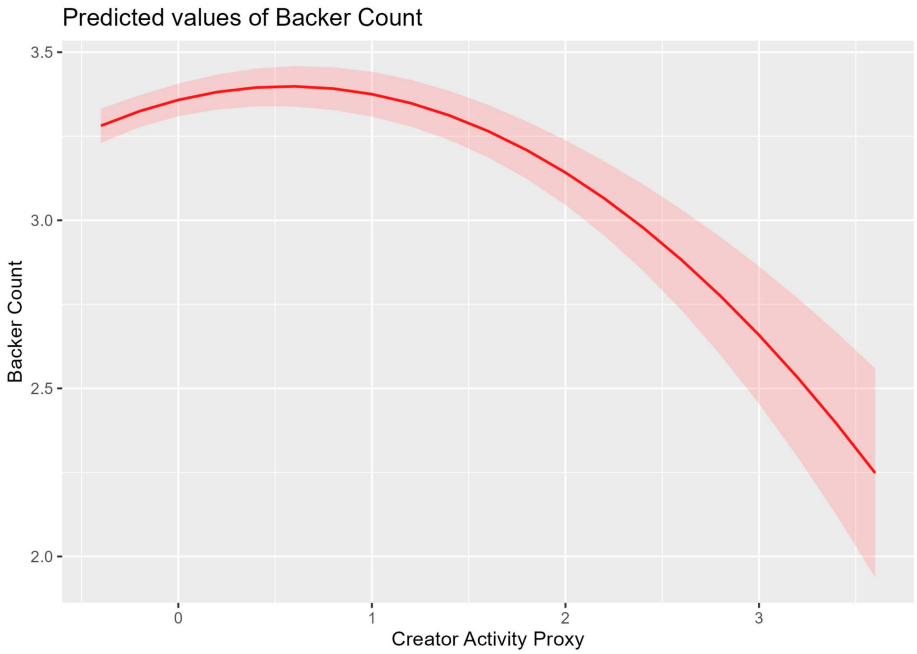

Figure 1. The non-linear (inverted-U) association between the creator activity proxy and predicted backer count.

This figure plots the predicted number of backers (on a log scale) based on the creator's prior activity level, holding all other variables in the regression model at their mean values.

The x-axis represents the creator activity proxy (the natural log of 1 + prior projects), while the y-axis represents the predicted outcome from the model. The curve clearly illustrates an inverted U-shaped relationship: as a creator's past activity increases from low to moderate levels, their ability to attract backers increases. However, after reaching an optimal point, a very high level of past activity becomes associated with a decline in the number of attracted backers, visually confirming the 'experience paradox.'

H3 and H3a: Non-Linear Signal Interaction. We then tested for the interaction between the two signals. We found evidence for signal substitution (H3), where the activity proxy negatively moderates the value of analytical style. More importantly, we strongly confirmed H3a for log_backers_count ($\beta = -0.005$, $p < 0.001$). This significant non-linear interaction demonstrates that the substitution effect is not constant; it intensifies dramatically as the creator activity proxy increases. Figure 2 illustrates this complex interaction: the positive impact of analytical style is strong for novice creators but flattens entirely for creators with very high activity levels.

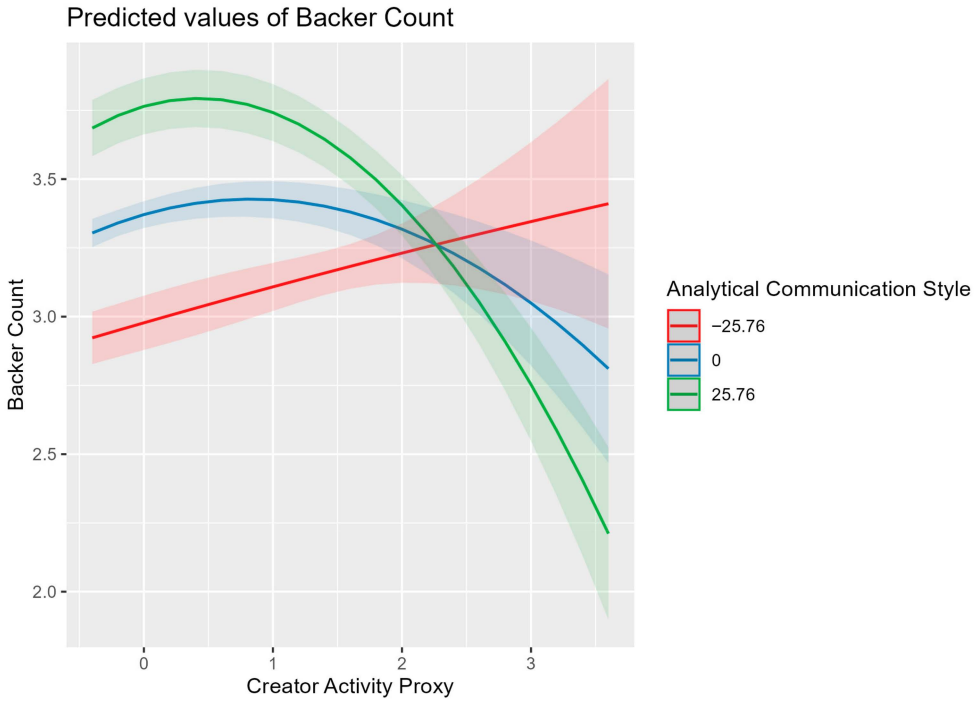

Figure 2. Moderating effect of analytical communication style on the non-linear association between the activity proxy and predicted backer count.

This figure illustrates the complex three-way interaction found in our results. It shows how the relationship between the creator activity proxy (x-axis) and the predicted number of backers (y-axis) changes at different levels of the creator's analytical communication style. The lines correspond to different levels of analytical style: a high level (green line; +1 SD above the mean), an average level (blue line; mean), and a low level (red line; −1 SD below the mean). The graph clearly shows that for creators with low past activity (the left side of the graph), a more analytical style is strongly associated with attracting more backers, as the green line is significantly higher than the red line. However, for creators with very high past activity (the right side of the graph), the positive association of an analytical style diminishes and the lines converge, indicating that the signal's value has almost disappeared. This visualizes the non-linear intensification of substitution proposed in H3a.

4.2. Exploring Associative Pathways (H4)

As outlined in our methodology, we explored H4 by mapping potential associative pathways, not by claiming causal mediation. The goal of this analysis is to descriptively understand whether the creator activity proxy is associated with funding outcomes, in part, because it is also associated with specific communication choices creators make. Accordingly, we interpret the results in terms of indirect associations and statistical linkages, rather than causal effects.

The analysis, summarized in Table 4 (with full results in Appendix A Table A3), reveals divergent indirect pathways. We find a significant positive indirect association linking the activity proxy to outcomes via comment volume, suggesting that more active creators tend to foster more engagement, which is statistically linked to better performance. Conversely, we find a significant negative indirect association operating via the use of clout language, suggesting that more active creators may adopt a communication style that is negatively correlated with performance. Crucially, even after accounting for these indirect pathways, a significant and puzzling negative direct association (ADA) persists between the creator activity proxy and log_pledged. This reinforces the 'experience paradox' and the profound ambiguity of the signal, highlighting the complex web of statistical relationships that exist beyond simple, direct effects.

Table 4. Exploring associative pathways.

Effect Type	Path	Estimate	Std. Err (Boot)	z-Value	*p*-Value	Std. Est. (All)
Activity Proxy (C) -> Log Pledged	c′ path (ADA)	−0.053	0.024	−2.202	0.028 *	−0.008
Log Comments (C) -> Log Pledged	b path	0.546	0.010	53.697	<0.001 ***	0.386
Activity Proxy (C) -> Log Comments (C)	a path	0.107	0.025	4.277	<0.001 ***	0.023
Indirect (ab)	indirect := ab (AMA)	0.059	0.014	4.276	<0.001 ***	0.009
Total (c′ + ab)	total := c′ + (ab)	0.005	0.028	0.191	0.849	0.001

Table Notes: ADA = Average Direct Association; AMA = Average Mediated Association. * $p < 0.05$, *** $p < 0.001$.

The full mediation analysis results (Appendix A Table A4) partially support H4, revealing divergent pathways. There are significant positive indirect associations linking the activity proxy to both outcomes via comment volume (log_shown_comments_c), suggesting that a higher activity volume is associated with more comments, which in turn is associated with better funding outcomes. Conversely, significant negative indirect associations operate via update clout language, suggesting that a higher activity volume is associated with the greater use of clout language, which in turn is associated with lower funding outcomes. However, pathways via the choice to use analytical or authentic styles were not significant indirect conduits linking the activity proxy to outcomes. This suggests that the proxy is more strongly associated with subsequent engagement volume and status signaling than with the adoption of these specific communication styles. Crucially, even accounting for these indirect paths, a significant negative direct association (ADA) persists between the activity proxy and both outcomes and was particularly strong for log_pledged. This reinforces the complexity and ambiguity surrounding the activity proxy signal, as its direct link to funding amount remains negative despite positive indirect links via engagement volume.

4.3. Robustness and Context Dependency

To ensure the validity of our findings, we conducted several additional analyses (detailed in Appendix A Table A4). First, the core finding of a negative non-linear interaction (H3a) remained robust and significant after excluding the top and bottom 1% of observations, suggesting that it is not driven by extreme outliers.

Second, a subgroup analysis revealed that the proxy's association is highly context-dependent. While the negative interaction was largely consistent across major categories, the proxy's *direct* association showed marked variation: it was positive and significant in the 'Product Hardware/Tech' category but strongly negative and significant in the 'Software and Web Services' category. This finding powerfully underscores that a universal interpretation of the activity proxy is untenable.

Finally, to highlight the unique nature of our focal proxy, we tested an alternative proxy for creator activity: the number of projects a creator has previously *backed*. The results showed distinctly different patterns, with the key interaction effect becoming non-significant. This divergence reinforces our core argument regarding the profound ambiguity and interpretation challenges of specific digital trace proxies.

5. Discussion

Our study set out to critically examine the complex, often taken-for-granted, nature of a common digital trace proxy. The results paint a clear picture of an 'experience paradox': the creator activity proxy's associations with performance are far from simple, exhibiting significant non-linearity (H2), complex non-linear interactions with other signals (H3, H3a), divergent indirect pathways (H4), a persistent negative direct association, and strong context dependency.

Our analysis uncovered a particularly puzzling finding: a persistent negative direct association between the activity proxy and total funding amount. This suggests that at high levels, the volume of activity itself becomes a liability. Rather than speculating on the causes, we interpret this 'experience paradox' through three theoretically grounded mechanisms derived from the existing ISs, entrepreneurship, and crowdfunding literature: network saturation, cognitive stagnation, and strategic misalignment.

First, from a social network perspective, the negative association likely reflects network saturation or backer fatigue. Crowdfunding success relies heavily on leveraging the creator's existing social capital, but launching numerous projects can systematically exhaust the financial capacity and goodwill of this core network. Furthermore, research indicates that complex social dynamics within backer communities can suppress further contributions. For instance, the concept of vicarious moral licensing [54] suggests that individuals may feel less compelled to contribute if they perceive their affiliates are already involved. This strongly implies that a network's capacity to support a single creator is finite.

Second, from a cognitive perspective, a high activity volume may signal creative stagnation rather than productive learning. Research on habitual entrepreneurship [55] argues that prior experience can paradoxically harm performance if used 'mindlessly,' entrenching routines and hindering the discovery of novel opportunities. Thus, a high project count might be interpreted by backers not as accumulated wisdom, but as a signal that the creator is repeating past formulas rather than innovating [28,32].

Third, the negative association may stem from strategic misalignment or overextension. As creators accumulate a long history, they may venture beyond their core competencies. Studies on serial entrepreneurship demonstrate that when entrepreneurs venture into technological domains unrelated to their prior ventures, they are less likely to achieve impactful innovations [56,57]. A high activity count, therefore, might signal a lack of focus or a dilution of expertise across disparate domains, ultimately failing to resonate with the crowd.

By anchoring our interpretation in these established theoretical frameworks, the ambiguity of the proxy becomes clearer: the signal bundles both the benefits of experience and these underlying negative social, cognitive, and strategic dynamics.

These complex and often counter-intuitive findings have significant implications for both ISs research methodology and the application of signaling theory in digital contexts, which we discuss in detail below.

5.1. Theoretical and Methodological Contributions

Advancing Methodological Rigor Through Critical Proxy Analysis. Central to our contribution is the critical empirical deconstruction of a widely used digital trace proxy—'prior project count'. Instead of taking its meaning for granted, we demonstrated its profound ambiguity. The multifaceted findings—the inverted-U association, the persistent negative direct association with total funding, the strong context dependency, and the divergence from alternative proxies—collectively provide powerful evidence against its validity as a straightforward measure of 'experience' or creator capability.

This work contributes directly to the vital methodological and epistemological conversation within the ISs field regarding the critical interpretation, validation, and theoretical grounding of proxy variables derived from digital trace data [5,6]. We answer the call for more rigorous scrutiny by providing a clear empirical case of how and why a seemingly simple proxy can fail in complex ways.

Refining Signaling Theory for Digital Contexts. Our methodological critique has direct implications for theory. This study provides compelling empirical evidence for non-linear signaling dynamics and the importance of complex signal interactions on platforms, moving beyond the simpler linear models often implicitly assumed in the literature [20].

Explaining these findings, particularly the robust non-linear substitution, requires integrating signaling logic with theories of bounded rationality, cognitive load, and organizational learning [28,29,34]. Classical signaling theory alone is insufficient. The substitution likely arises because receivers under cognitive load, when faced with a highly salient yet ambiguous activity signal (a high project count), disproportionately discount secondary, more nuanced signals like communication style. Our findings compel ISs signaling research to explicitly model these non-linearities and the underlying cognitive and contextual mechanisms.

The Crucial Role of Situated Interpretation. Perhaps our most powerful finding in demonstrating proxy ambiguity is the strong context dependency of the activity signal. The fact that the proxy's direct association was positive in the 'Product Hardware/Tech' category but strongly negative in 'Software and Web Services' provides compelling evidence that the meaning of a digital trace is not inherent. Instead, it is co-constructed by the norms and expectations of a specific institutional context.

This finding moves the discussion of proxy validity beyond a universal measurement problem to one of situated interpretation. For example, in hardware development, a high project count might signal valuable iterative learning. Conversely, in the fast-moving software industry, the same signal could be interpreted negatively as a failure to create a single breakout success. Integrating this contextual contingency is crucial for advancing signaling theory, pushing us to develop models where the meaning of a signal is conditional on the environment.

Mapping Complex Associative Pathways. The discovery of divergent indirect pathways further enriches our understanding [20]. The finding that the proxy's association with performance flows partly through subsequent observable behaviors like comment volume (positively) and the use of clout language (negatively) adds a new layer of complexity. It suggests that a creator's activity history may shape their subsequent interaction patterns and status signaling more predictably than it shapes their adoption of other communication styles. This calls for more nuanced ISs theoretical models that trace how different elements

of an actor's digital footprint are linked to specific subsequent actions and communication choices on a platform.

5.2. Managerial Implications for Information Systems Practice

The revealed complexities of the creator activity proxy have direct, actionable implications for ISs managers, e-commerce platform designers, and data analysts, challenging common heuristics and informing evidence-aware strategies for platform governance.

Critically Re-evaluate Reliance on Simple Activity Metrics. Our findings provide a clear warning against the naive use of simple activity counts in platform governance and algorithmic management. This directly challenges prevailing industry practices where platforms frequently highlight raw activity volume—such as Kickstarter's 'Launched X projects' badge or reputation systems that heavily weigh total transaction counts—as primary signals of quality. The fact that the proxy's association with performance is positive in one category ('Hardware/Tech') but strongly negative in another ('Software/Web Services') demonstrates that this simplistic reliance can lead to biased algorithms, unfair creator evaluations, and misallocated platform resources [58]. ISs managers must therefore move beyond these practices and implement holistic evaluation dashboards. A concrete implementation of such a dashboard should replace raw counts with a 'Contextualized Performance Profile' integrating the following specific components:

1. Trend Analysis vs. Totals: Visualizing the trajectory of success rates and backer feedback sentiment over recent projects (e.g., the last five), rather than just cumulative totals.
2. Novelty Indicators: Implementing a metric (e.g., based on textual analysis) that quantifies how distinct the current project is from the creator's previous work, addressing the risk of stagnation.
3. Category-Specific Benchmarks: Crucially, benchmarking all metrics against the norms of the specific project category (e.g., comparing activity relative to the 'Software' average). This multi-dimensional approach directly addresses the proxy ambiguity revealed in our study, providing the necessary context for accurate evaluation.

Design Context-Aware Platform Features and Support Systems. The strong context dependency we observed implies that a one-size-fits-all approach to platform design is suboptimal. Platform designers can act on these findings by creating category-specific analytics tools for creators themselves. Platform designers should move beyond generic analytics tools and implement actionable, dynamic feedback mechanisms integrated directly into the user interface. For example, drawing directly on our finding that high activity can be detrimental in dynamic fields like 'Software', the project creation workflow can be redesigned to provide proactive guidance. If a highly active creator initiates a new project in the 'Software' category, the interface could automatically analyze the draft and trigger a specific prompt: "Note: In the Software category, backers prioritize innovation. Our analysis suggests similarities between this draft and your past projects. Consider using the 'Technical Challenges' section to explicitly highlight novel features and technological distinctiveness." Furthermore, platform support programs must be tailored based on both activity level and category. Our results (H3a) showed that the value of analytical communication diminishes significantly for highly active creators. Therefore, while novices should be coached to demonstrate competence via analytical communication (H1), highly active creators should be advised to shift focus towards signaling innovation and fostering community engagement (which was positively associated via comments), especially in dynamic fields where high activity showed negative direct associations [59]. These design interventions directly translate our empirical findings into features that mitigate the risks of the 'experience paradox.'

Promote Critical Data Literacy and Interpretation Practices. The non-linear (inverted-U) pattern demonstrates that simply assuming 'more is better' is a flawed heuristic. ISs managers should train analysts and decision-makers to rigorously question the validity of digital trace data, actively looking for non-linearities and context dependencies before drawing conclusions. The recommendation is not to discard such data, but to triangulate it with other information sources (e.g., qualitative feedback) and to explicitly model its known complexities. Investigating 'puzzling' findings, like the persistent negative direct association we observed, should be encouraged as an opportunity to uncover deeper strategic insights or fundamental measurement issues. This critical approach can lead to more robust, evidence-based strategies that truly reflect the complex reality of the platform economy.

5.3. Limitations and Future Research Roadmap

Our study, while offering valuable insights, has limitations that naturally suggest clear avenues for future ISs research.

First, the primary limitation remains the nature of the measurement proxy itself. Although reframing this study around the proxy's ambiguity was a core part of our contribution, future research that develops and tests richer, multi-dimensional measures of 'experience' is crucial. Such measures could incorporate not just activity volume, but also factors like prior success rates, learning curves between projects, the relevance of past skills, and the time elapsed between projects. Capturing this complexity will likely require multi-method approaches, including surveys, integrated performance data, and qualitative case studies.

Second, our study's observational design means that we can only report on associations, not establish causality. The potential for endogeneity remains a critical limitation. For instance, omitted variable bias might arise from unobserved factors like a creator's 'innate creativity' (simultaneously leading to fewer, higher-quality project launches and greater funding success). Reverse causality is also plausible; repeated funding failures might compel a creator to launch more projects out of necessity, creating a spurious negative correlation between the activity proxy and success.

To move from an association to causality, future ISs research must employ designs that rigorously address these endogeneity challenges. This requires leveraging methods specifically suited for causal inference, such as field experiments and quasi-experimental designs.

Large-scale field experiments (A/B testing) conducted in partnership with platforms offer a powerful avenue to isolate the causal impact of the activity signal itself. For example, researchers could experimentally manipulate the presentation format of the 'prior project count'—comparing the impact of displaying the raw count, versus a category-specific benchmark, versus hiding the information entirely. This approach directly addresses endogeneity by randomly assigning the signal's exposure, allowing for the isolation of its causal effect on backer decisions.

Alternatively, quasi-experimental methods can leverage natural experiments within the platform ecosystem. If a platform introduced a policy change affecting how creator history is displayed at a specific point in time, a Difference-in-Differences (DiD) design could be used. Similarly, if a platform uses an arbitrary threshold of prior projects to grant a specific status (e.g., 'Veteran Creator'), a Regression Discontinuity Design (RDD) could exploit this cutoff to estimate the local average treatment effect of the status signal, mitigating selection bias.

It is crucial to emphasize that the current study should not be viewed as the final word on the 'experience paradox.' Rather, by rigorously documenting these complex associative patterns and highlighting the underlying measurement ambiguities, this work serves as

an essential foundational step. It provides the necessary methodological critique that motivates and informs the design of these more complex, causality-focused investigations within the broader ISs methodological conversation.

Third, while our study identifies complex patterns, a critical next step is to explore the underlying mechanisms that drive them. For instance, future research should explicitly investigate potential unobserved confounding variables that might explain the puzzling negative direct association of the activity proxy. As an example, could a high project count be correlated with a creator's financial dependency on the platform, potentially leading them to launch more frequent but less innovative or lower-quality projects over time? Uncovering such mechanisms is a critical task. Similarly, exploring why the proxy's meaning differs across contexts (e.g., via comparative case studies of the 'Hardware' and 'Software' categories) would provide deeper insights.

Finally, the findings are based on a single, albeit large, platform. Future research should test the generalizability of our findings across different platform types, such as equity crowdfunding or gig work platforms where 'experience' proxies are also ubiquitous, and across different cultural contexts where signals may be interpreted differently. Addressing these areas will help build a more robust and comprehensive understanding of the challenges of digital trace data, strengthening the foundations for both ISs theory and practice.

6. Conclusions

This study began by questioning a pervasive practice in the digital age: the uncritical use of simple digital trace data as proxies for complex constructs. Our empirical investigation into the 'prior project count' proxy on Kickstarter revealed a profound 'experience paradox,' characterized by non-linearity, complex interactions, and strong context dependency. The central contribution of this research is unequivocally methodological. We have used the 'experience paradox' to engage directly with the broader IS methodology debate on measurement validity, providing an evidence-based critique of naive proxy use. Our findings demonstrate the urgent need for greater rigor in validation practices. Crucially, the theoretical implications we identify—specifically, the need to refine signaling theory by integrating ambiguity and context—stem directly from this methodological critique, rather than standing as independent contributions. For practice, this work serves as a focused caution against flawed evaluations based on simplistic metrics, rather than a broad prescription for platform management. Ultimately, this study underscores a fundamental principle for ISs scholarship: the abundance of data must never supplant the critical pursuit of its true meaning.

Author Contributions: Conceptualization, O.K. and J.L.; methodology, O.K. and J.L.; formal analysis, O.K. and J.L.; investigation, O.K. and J.L.; writing—original draft preparation, O.K. and J.L.; writing—review and editing, O.K. and J.L.; visualization, O.K. and J.L. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on reasonable request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Variable definitions and operationalization.

Variable Name	Definition and Operationalization
log_pledged	Natural logarithm of (1 + the final pledged amount in USD).
log_backers_count	Natural logarithm of (1 + the total number of unique backers).
log_experience	Natural logarithm of (1 + the number of previously launched projects by the same creator ID).
log_experience_c	Mean-centered version of log_experience.
log_experience_c_sq	Square of log_experience_c. Used for non-linear tests.
mean_update_Analytic	Average LIWC "Analytical Thinking" score across all project updates for a campaign.
mean_update_Analytic_c	Mean-centered version of mean_update_Analytic.
log_shown_comments	Natural logarithm of (1 + count of comments displayed on project page).
mean_update_Authentic	Average LIWC "Authenticity" score across updates.
mean_update_Clout	Average LIWC "Clout" score across updates.
log_goal	Natural logarithm of (1 + funding goal in USD).
duration	Campaign duration in days.
log_creator_backing	Natural logarithm of (1 + count of projects backed by the creator).
facebook_connected	Binary variable: 1 if creator's Facebook account is linked, 0 otherwise.
staff_pick	Binary variable: 1 if designated as a Kickstarter Staff Pick, 0 otherwise.
log_update_count	Natural logarithm of (1 + number of updates posted).
log_story_images	Natural logarithm of (1 + count of images in project description).
log_story_videos	Natural logarithm of (1 + count of videos in project description).
subcategory_id	Identifier for project subcategory. Used for fixed effects.
category_group	Factor grouping subcategories. Used in subgroup analysis.

Variance Inflation Factors (VIFs) were calculated for the main regression models presented in Table 3. All values are well below the common threshold of 10, indicating that multicollinearity is not a significant concern.

Table A2. Multicollinearity diagnostics (VIF) summary.

Model Specification Component	Maximum Observed VIF	Assessment
Model with Linear Terms and Controls	<3.0	Low concern
Model with Interaction Term (H3)	<4.5	Acceptable
Model with Squared Term (H2)	<4.0	Acceptable
Model with Non-Linear Interaction (H3a)	<4.5	Acceptable

Table A3. Summary of mediation analysis results.

Outcome	Mediator	AMA (Indirect)	*p*-Value	ADA (Direct)	*p*-Value
log_pledged	log_shown_comments_c	0.043	<0.001 ***	−0.075	<0.001 ***
	mean_update_Analytic_c	0.006	0.192	−0.039	0.12
	mean_update_Authentic_c	0.002	0.372	−0.035	0.204
	mean_update_Clout_c	−0.025	<0.001 ***	−0.007	0.756
log_backers_count	log_shown_comments_c	0.046	0.004 **	−0.074	<0.001 ***
	mean_update_Analytic_c	0.001	0.224	−0.03	0.084
	mean_update_Authentic_c	0.001	0.444	−0.03	0.1
	mean_update_Clout_c	−0.011	<0.001 ***	−0.018	0.376

Table Notes: Results obtained using the mediation package with bootstrapping. AMA = Average Mediated Association (interpreted non-causally as an indirect association); ADA = Average Direct Association. *** $p < 0.001$, ** $p < 0.01$

Table A4. Robustness and subgroup analysis results for H3 interaction models.

Predictor	AltProxy Pledged	Subgroup HW/Tech Pledged	Subgroup SW/Web Pledged	Robust Trim 1% Pledged
Upd Analytic (C)	0.014 *** (0.001)	0.011 *** (0.001)	0.013 *** (0.002)	0.015 *** (0.001)
Experience (C)	-	0.135 * (0.041)	−0.516 * (0.099)	0.024 (0.035)
Exp(C) × UpdAn(C)	-	−0.003 * (0.001)	−0.007 * (0.003)	−0.008 * (0.001)
Alternative Proxy				
Alt Proxy (C)	0.090 *** (0.015)	-	-	-
Alt Proxy × UpdAn(C)	−0.001 (0.001)	-	-	-
N	16,407	9247	4227	16,242
R^2	0.707	0.703	0.456	0.698
Adj. R^2	0.707	0.702	0.454	0.698

Table Notes: Coefficients (β) from OLS regressions. SEs in parentheses. *** $p < 0.001$, * $p < 0.05$. All models include full controls. (C) indicates centered variables. AltProxy columns use log_creator_backing_c instead of log_experience_c. Subgroup columns are based on project category. Robust Trim columns exclude top/bottom 1% of observations based on log_pledged.

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