

Strategic Financial Capability and Sustainable Business Performance: A Dynamic Capability Perspective

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ABSTRACT

Dynamic capability research has largely been argued from cross-sections, which cannot show that a capability changes anything. We define strategic financial capability as the sensing, seizing and reconfiguring of a firm's financial resource base, and test it on two waves of survey data from 512 Indian SMEs, 402 of which responded fourteen months later. Because performance at t_1 is controlled, every coefficient is an effect on change rather than on level. Capability reaches performance only through what it alters: the total effect is 0.213 but the direct path is indistinguishable from zero, and business model adaptation and operational capability upgrading carry all of it. The dimensions are not substitutable. Financial sensing predicts adaptation only where the firm can reconfigure; below -0.71 SD of reconfiguring its association turns significantly negative, which describes 23.1% of this sample. Capability also pays off only under turbulence: the indirect effect is 0.104 at high environmental dynamism and not significant at low. Scanning that a firm cannot act on is not a latent asset. It is a cost.

Keywords: Dynamic capabilities; Strategic financial capability; Business model adaptation; Sustainable business performance; Two-wave panel; SMEs

JEL classification: L25; L26; M21; G32; O33

1. Introduction

Dynamic capability theory makes a claim about change. A dynamic capability is the capacity to "integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece, Pisano and Shuen, 1997), and its value is supposed to lie in what it alters rather than in what it is. The empirical literature has largely tested that claim on cross-sections, in which capability and performance are observed at the same moment. Such a design can establish that capable firms perform well. It cannot establish that capability produced the performance rather than the reverse, and it cannot observe change at all.

This paper takes the change claim literally. We define strategic financial capability as a firm's capacity to sense financial conditions, commit funds to the opportunities that

sensing reveals, and reconfigure the financial resource base when commitments stop earning. The definition follows the standard Teece decomposition, applied to the one resource that every other reconfiguration depends on. Firms cannot redeploy people, plant or product lines without funding the transition, and small firms in particular cannot borrow their way through it.

We test the construct on two waves of survey data from Indian small and medium enterprises, separated by fourteen months, with performance measured in both waves. Controlling performance at t_1 makes every capability coefficient an effect on subsequent change. Two mediators are measured at t_2 : business model adaptation, or change in how the firm creates and captures value, and operational capability upgrading, or improvement in the ordinary capabilities that

deliver it. These are the things a dynamic capability is supposed to change.

Our central argument concerns the internal structure of the capability. The three dimensions are routinely treated as an additive index, which assumes they are substitutable — that a firm strong on scanning and weak on redeployment holds the same capability as a firm with the reverse profile. We argue they are not. Sensing produces information about where capital should go. Acting on that information requires withdrawing it from where it currently sits, which costs money, takes time, and is resisted by whoever manages the committed use. A firm that senses well but cannot reconfigure has bought a more precise picture of a gap it cannot close. Sensing should therefore raise adaptation only where reconfiguring capacity exists, and where it does not, the returns to sensing should be zero or negative.

That prediction is directional and it is falsifiable. An additive index predicts a positive main effect for sensing at every level of reconfiguring; our argument predicts an interaction whose coefficient exceeds the sensing main effect, which is what makes the simple slope negative at low reconfiguring. The distinction matters practically as well: it identifies which capability a firm should build first, and it implies that the common advice to invest in analytics, forecasting and market intelligence is wrong for a specific, identifiable subset of firms.

The paper makes three contributions. It supplies a financial-domain dynamic capability with a measurement model, a two-wave test, and evidence that the effect is on change rather than level. It shows that the Teece dimensions are complementary rather than additive, and it quantifies where the complementarity binds. And it confirms, on a design that can support the claim, the long-argued boundary condition that dynamic capabilities earn their keep under turbulence and not otherwise (Zahra, Sapienza and Davidsson, 2006). We also report what a cross-section would have concluded from the same firms, which is not the same answer.

2. Theory and hypotheses

2.1 Dynamic capabilities and the financial resource base

Dynamic capabilities are second-order: they act on the resource base rather than on output (Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000; Helfat and Peteraf, 2003). Teece (2007) decomposes them into sensing opportunities and threats, seizing them through investment, and reconfiguring the asset base to maintain fit. The decomposition has been applied to technology, marketing, supply chains and digitalisation. It has rarely been applied to finance, which is odd, because financial resources are the precondition for reconfiguring everything else.

The financial management literature has the pieces but not the capability. Work on financial flexibility establishes that the capacity to raise and deploy funds at short notice has value (Denis, 2011; Arslan-Ayaydin, Florackis and Ozkan, 2014). Work on internal capital markets shows firms differ persistently in how well capital moves towards higher-return uses (Shin and Stulz, 1998; Maksimovic and Phillips, 2002). Work on financial literacy operates at the level of the individual owner-manager, not the firm (Lusardi and Mitchell, 2014). None of these treats financial management as an organizational capacity to change, which is what a dynamic capability is.

We therefore define strategic financial capability as the firm's capacity to sense financial conditions and opportunities, seize them by committing funds, and reconfigure the financial resource base as conditions change. Financial sensing covers scanning, forecasting and early identification of financial threats and openings. Financial seizing covers the speed and decisiveness with which funds are committed once an opportunity is identified. Financial reconfiguring covers the withdrawal of capital from uses that no longer earn, the funding of transitions, and the restructuring of the financial resource base itself. The construct is formative at the second order: the three dimensions define the capability rather than reflecting a common cause, and a firm may be strong on one

and weak on another. That last property is not a measurement nuisance. It is the paper's subject.

2.2 What a dynamic capability changes

If dynamic capabilities operate on the resource base, their effect on performance should run through observable changes to that base rather than directly. We identify two such changes. Business model adaptation is change in how the firm creates, delivers and captures value — its value proposition, its customer segments, its delivery model, its revenue model. It is the canonical outcome of dynamic capability in the strategy literature (Zott and Amit, 2008; Teece, 2018), and it is what sensing and reconfiguring most directly produce. Operational capability upgrading is improvement in the ordinary capabilities that execute the model: production, quality, cost efficiency, responsiveness. Ordinary capabilities determine current performance; dynamic capabilities determine how ordinary capabilities change (Winter, 2003).

The two are ordered. A firm that alters its business model must then rebuild the operational base to serve it, so adaptation should raise upgrading rather than merely accompany it. Both should raise sustainable business performance, which we treat as the joint durability of economic, environmental and social outcomes rather than as profitability in a single period (Bansal and DesJardine, 2014). The direct path from capability to performance, net of both mediators, is expected to be small: a capability that acts on the resource base has no other route to output.

H1. Strategic financial capability at t_1 is positively associated with change in sustainable business performance over the panel window.

H2. Strategic financial capability is positively associated with business model adaptation.

H3. Strategic financial capability is positively associated with operational capability upgrading.

H4. Business model adaptation is positively associated with sustainable business performance.

H5. Operational capability upgrading is positively associated with sustainable business performance.

H6. Business model adaptation is positively associated with operational capability upgrading.

2.3 Why sensing requires reconfiguring

The capability's three dimensions are usually combined into an index, which treats them as substitutable contributors to a common total. We argue they are complements, and that the complementarity runs in a specific direction.

Sensing yields information: this product line is losing money, that segment is growing, this asset earns below its cost of capital. Information has value only if the firm can act on it, and acting means moving capital that is already committed. Reallocation is not free. Exit from a committed use carries write-offs and contractual penalties; the transition must be funded while neither the old nor the new use is producing; and the manager of the incumbent use resists (Shin and Stulz, 1998; Rajan, Servaes and Zingales, 2000). Real options reasoning gives the same result from a different direction: where reallocation is irreversible and costly, the decision to move is separable from the judgement that moving would pay (Dixit and Pindyck, 1994). A firm can know and still not move.

For a firm that cannot reconfigure, then, better sensing does not produce better adaptation. We expect the association to be not merely absent but negative, for two reasons. Sensing consumes managerial attention and budget that a constrained firm cannot recover through action. And a sharper view of unreachable options raises the internal cost of the status quo without changing it — the firm spends its scarce deliberative capacity relitigating decisions it cannot fund. Formally, this predicts an interaction coefficient larger than the sensing main effect: the simple slope of sensing turns negative below the ratio of the sensing main effect to the interaction coefficient, expressed in standard deviations of reconfiguring.

H7. Financial reconfiguring moderates the association between financial sensing and business model adaptation,

such that the association is positive at high reconfiguring and non-positive at low reconfiguring.

2.4 The turbulence boundary

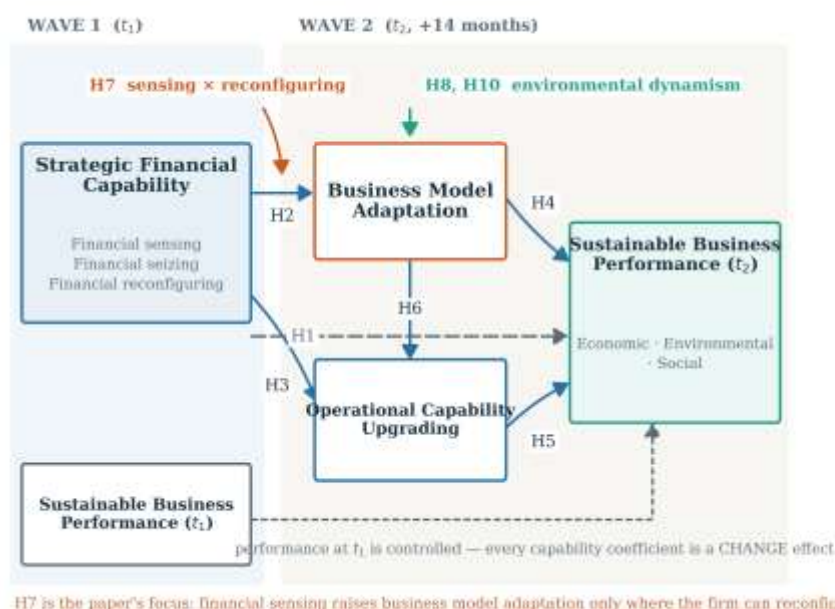
Dynamic capabilities are costly to build and to hold. Their net value should therefore depend on how much change the environment demands: in stable conditions the ordinary capability base does not need altering, and the capability is overhead (Zahra, Sapienza and Davidsson, 2006; Ambrosini and Bowman, 2009). This boundary condition is widely asserted and weakly tested, because establishing it requires observing the capability before the performance it is meant to change.

H8. Environmental dynamism moderates the association between strategic financial capability and business model adaptation, such that the association is stronger under higher dynamism.

H9. Strategic financial capability is indirectly associated with change in sustainable business performance through business model adaptation (H9a), through operational capability upgrading (H9b), and serially through both (H9c).

H10. The indirect association through business model adaptation is conditional on environmental dynamism, being stronger under higher dynamism.

Figure 1. Conceptual framework.



Notes: Predictors are measured at t_1 and mediators and outcome at t_2 . Sustainable business performance at t_1 enters the outcome equation as a control, so every capability coefficient is an effect on change rather than on level. H7 is the interaction on which the paper's argument rests.

3. Method

3.1 Design and sample

Data come from two waves of a survey of owner-managers and finance heads of Indian small and medium enterprises in manufacturing and services, drawn from a commercial register

and stratified by industry and size. The first wave measured strategic financial capability, environmental dynamism, sustainable business performance and all controls. The second wave, administered 14 months later to the same informants, measured business model adaptation, operational capability upgrading and sustainable business performance again.

Questionnaires were dispatched to 1,850 firms; 512 usable responses were obtained at wave 1, a response rate of 27.7%. Of these, 402 responded at wave 2, a retention rate of 78.5%. The structural model is estimated on the 402 firms present in both waves. Table 1 reports the profile of that panel. Indian SMEs are a useful setting for this question because the constraint the argument turns on is binding: external finance is costly and rationed, exit from committed assets is slow, and firms cannot buy their way out of a reallocation problem.

Two design features address the standard objections to survey evidence on capabilities. Predictors and outcomes are separated by 14 months and collected in different administrations, so no single response occasion generates both. And performance is measured in both waves, so the outcome equation controls the lagged level and estimates an effect on change.

3.2 Measures

All constructs use multi-item seven-point scales adapted from established instruments and refined through expert review and a pilot. Strategic financial capability is a second-order formative construct over three reflective dimensions of four items each: financial sensing, financial seizing and financial reconfiguring. Business model adaptation and operational capability upgrading are reflective constructs of four items each, both worded to capture change over the panel window. Sustainable business performance is a second-order reflective construct over economic, environmental and social performance, three items each, measured identically at both waves. Environmental dynamism is a four-item reflective scale. A three-item marker scale, theoretically unrelated to the focal constructs, supports the method-variance adjustment. Controls are firm size, firm age, family ownership, owner education, export status, prior digital adoption and an archival index of sector turbulence, with industry fixed effects. Appendix A gives definitions.

Formative weights for strategic financial capability come from a redundancy analysis against an external criterion — the two mediators and the outcome — rather than against a composite of the construct's own dimensions, which would be circular.

3.3 Attrition

Panel attrition is a threat to any two-wave design, and it is not ignorable here. A logistic model of wave 2 response on all wave 1 variables has pseudo- $R^2 = 0.098$: larger firms and those with more prior digital adoption were significantly more likely to respond again ($b = 0.551$ and 0.426 , both $p < 0.001$), while the focal capability was not ($p = 0.39$). The panel is therefore selected on size, not on the independent variable. We report the comparison of stayers and leavers in the replication package, and re-estimate every structural path with inverse probability weights derived from this model as a robustness check.

3.4 Estimation

Partial least squares path modelling is the primary estimator: the focal antecedent is formatively specified, the model is estimated for explanation and prediction jointly, and the design includes two latent interactions. Mode A outer weights and the path-weighting inner scheme are used, with the two-stage approach for the interaction terms. Indirect, serial and conditional effects are obtained by bias-corrected bootstrap with 10,000 resamples. As a cross-check the model is re-estimated by covariance-based maximum likelihood with all constructs specified as latent variables, including sustainable performance as a second-order factor at each wave. Robustness is assessed by inverse probability weighting, unweighted sum scores, quantile regression across the conditional distribution of the outcome, and a size-restricted subsample; predictive validity by ten repetitions of ten-fold cross-validation against a benchmark containing lagged performance and the controls.

Table 1. Profile of the two-wave panel (N = 402 firms).

Panel	Category	n	%
Sector	Textiles & apparel	77	19.2
	Light engineering	76	18.9
	Business services	73	18.2
	Auto components	61	15.2
	Food processing	58	14.4
	IT & software services	57	14.2
Firm size (employees)	25-99	235	58.5
	< 25	122	30.3
	100-249	43	10.7
	250+	2	0.5
Firm age	11-20 years	212	52.7
	<= 10 years	125	31.1
	> 20 years	65	16.2
Ownership	Family-owned	252	62.7
	Non-family	150	37.3
Exporter	Domestic only	300	74.6
	Exporting	102	25.4

Notes: The panel comprises the 402 of 512 wave 1 respondents who also responded at wave 2. Section 3.3 reports the attrition analysis.

4. Results

4.1 Measurement model

The confirmatory factor analysis of the thirteen first-order factors and the marker scale fits well: chi-square(867) = 1076.6, chi-square/df = 1.24, CFI = 0.980, TLI = 0.977, RMSEA = 0.025, SRMR = 0.031. Composite reliability ranges from 0.826 to 0.885 and average variance extracted from 0.613 to 0.708, clearing the 0.70 and 0.50 thresholds throughout. Discriminant validity holds on both criteria: the square root of average variance extracted exceeds every corresponding inter-construct correlation, and the maximum heterotrait–monotrait ratio is 0.739, below the 0.85 benchmark (Henseler, Ringle and Sarstedt, 2015). Table 2 reports the measurement model.

Common method variance is unlikely to account for the results, and the two-wave design is the main reason. Harman's first unrotated factor explains 25.3% of variance; the marker

scale correlates with the focal constructs at a maximum absolute value of 0.160, and the Lindell and Whitney (2001) adjustment leaves the substantive correlations essentially unchanged; and the maximum variance inflation factor under Kock's (2015) full collinearity assessment is 2.19. More informative than any of these is the comparison temporal separation makes available: constructs measured in the same administration correlate at a mean absolute 0.387 while constructs measured 14 months apart correlate at 0.179. A common response occasion inflates the former and cannot inflate the latter, and every hypothesised capability-to-mediator path is of the latter kind.

Formative weights for strategic financial capability are reported in Table 3. Reconfiguring carries the largest weight at 0.186 ($t = 3.26$), followed by seizing at 0.150; sensing carries the smallest at 0.087 and its weight is not significant ($p = 0.152$). Its formative loading is nevertheless 0.799, so the dimension is retained: a formative indicator whose weight is

not significant is kept when its absolute contribution is substantial (Hair, Risher, Sarstedt and Ringle, 2019). The pattern is itself informative and anticipates Section 4.3 — sensing contributes least to the capability on average because

its contribution is conditional. Dimension variance inflation factors range from 1.72 to 1.95, so the weights are not distorted by collinearity.

Table 2. Measurement model, reliability and discriminant validity.

Construct	Items	Loadings	Alpha	CR	AVE	$\sqrt{\text{AVE}}$	Max HTMT
Financial sensing	4	0.73–0.85	0.876	0.876	0.639	0.799	0.729
Financial seizing	4	0.77–0.86	0.884	0.885	0.659	0.812	0.729
Financial reconfiguring	4	0.73–0.84	0.871	0.872	0.631	0.794	0.675
Environmental dynamism	4	0.71–0.85	0.864	0.866	0.619	0.787	0.290
Business model adaptation	4	0.75–0.87	0.876	0.879	0.646	0.804	0.524
Operational capability upgrading	4	0.75–0.87	0.877	0.878	0.644	0.802	0.524
Economic performance (t_1)	3	0.75–0.90	0.874	0.876	0.703	0.838	0.739
Environmental performance (t_1)	3	0.75–0.84	0.838	0.840	0.638	0.799	0.739
Social performance (t_1)	3	0.79–0.86	0.861	0.862	0.675	0.822	0.727
Economic performance (t_2)	3	0.78–0.90	0.874	0.879	0.708	0.841	0.731
Environmental performance (t_2)	3	0.78–0.86	0.864	0.863	0.678	0.823	0.731
Social performance (t_2)	3	0.74–0.84	0.845	0.845	0.645	0.803	0.728
Marker scale	3	0.75–0.84	0.824	0.826	0.613	0.783	0.193

Notes: All loadings significant at $p < 0.001$. CR = composite reliability; AVE = average variance extracted; HTMT = heterotrait–monotrait ratio (threshold 0.85). Item-level output is in the replication package.

Table 3. Formative weights of strategic financial capability.

Dimension	Weight	SE	t	p	Loading	VIF
Financial sensing	0.087	0.061	1.431	0.152	0.799	1.905
Financial seizing	0.150	0.061	2.465	0.014	0.866	1.946
Financial reconfiguring	0.186	0.057	3.262	0.001	0.891	1.725

Notes: The capability is specified formatively, so weights are estimated by redundancy analysis against an EXTERNAL criterion — the two mediators and the outcome — never against a composite of the construct's own dimensions, which would be circular. The loading is the bivariate correlation of the dimension with the construct, reported because a formative indicator with a non-significant weight is retained when its absolute contribution is substantial. The shaded row carries the largest weight.

4.2 Structural model: effects on change

Table 4 reports the structural estimates. Strategic financial capability at t_1 is positively associated with business model adaptation ($\beta = 0.265$, $t = 4.60$) and with operational capability upgrading ($\beta = 0.246$, $t = 5.36$), supporting H2 and H3. Both mediators are positively associated with sustainable performance at t_2 — adaptation at $\beta = 0.262$ ($t = 5.51$) and upgrading at $\beta = 0.279$ ($t = 5.54$) — supporting H4 and H5, and adaptation predicts upgrading ($\beta = 0.391$, $t = 8.28$),

supporting H6. Lagged performance is the single strongest predictor in the outcome equation ($\beta = 0.290$, $t = 6.44$), which is why the capability coefficients in that equation are effects on change. The models explain 13.1%, 29.1% and 35.3% of the variance in adaptation, upgrading and sustainable performance; the capability block adds 0.217 to the R^2 obtainable from lagged performance and the controls alone.

The decomposition in the lower panel of Table 4 supports H1 and shows the association to be fully mediated. The total effect of capability on change in sustainable performance is

0.213 (95% CI 0.118–0.307), of which 0.167 is indirect. The direct effect is 0.046 with a 95% interval of -0.042 to 0.137, which contains zero. All three specific indirect effects are significant: 0.069 through business model adaptation (H9a), 0.069 through operational capability upgrading (H9b), and 0.029 serially through both (H9c). Figure 2(a) displays the decomposition. Because the direct path is not distinguishable from zero, the ratio of indirect to total effect is unstable and is reported for completeness only.

H8 and H10 concern the turbulence boundary. Environmental dynamism moderates the capability-to-

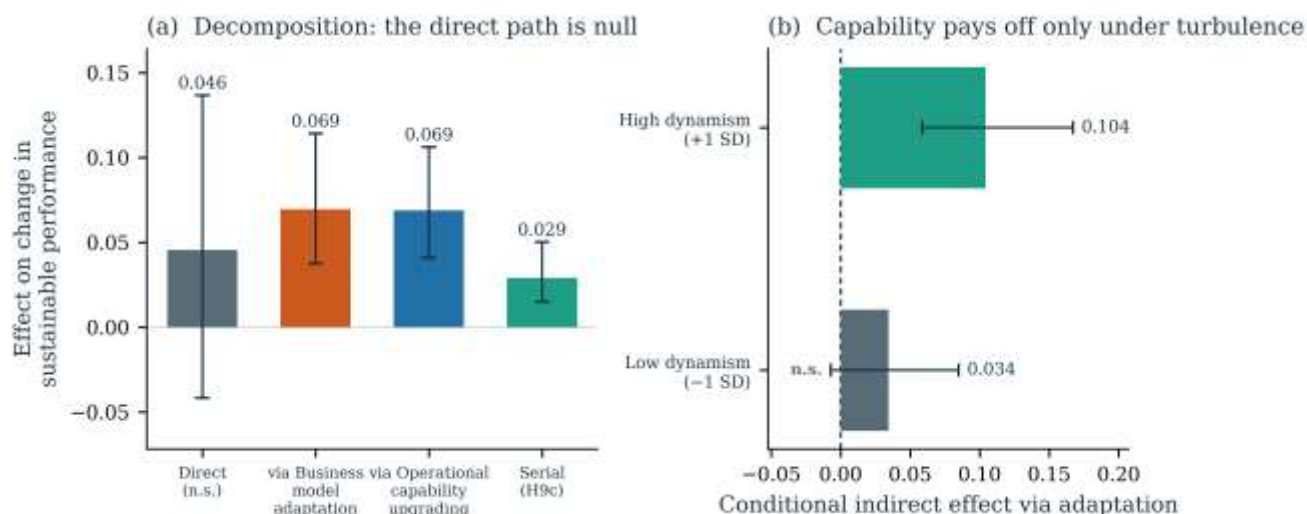
adaptation path ($\beta = 0.134$, $t = 2.33$), supporting H8, and the index of moderated mediation is 0.0350 (95% CI 0.0083–0.0734), supporting H10. Conditionally, the indirect effect through adaptation is 0.104 (95% CI 0.059–0.167) at one standard deviation above the mean of dynamism and 0.034 (95% CI -0.007–0.085) one standard deviation below, where the interval contains zero. Figure 2(b) displays the contrast. The capability is associated with change where the environment demands change, and not otherwise.

Table 4. Structural model and decomposition of the total effect on change in sustainable business performance.

Path / effect	H	β	SE	t / 95% CI	p	Supported
Capability → Business model adaptation	H2	0.265	0.058	4.60	<0.001	Yes
Capability → Operational capability upgrading	H3	0.246	0.046	5.36	<0.001	Yes
Business model adaptation → Sustainable performance	H4	0.262	0.048	5.51	<0.001	Yes
Operational upgrading → Sustainable performance	H5	0.279	0.050	5.54	<0.001	Yes
Business model adaptation → Operational upgrading	H6	0.391	0.047	8.28	<0.001	Yes
Capability × dynamism → Adaptation	H8	0.134	0.057	2.33	0.020	Yes
Sustainable performance $t_1 \rightarrow t_2$	—	0.290	0.045	6.44	<0.001	—
Indirect via adaptation	H9a	0.069	0.019	[0.038, 0.114]		Yes
Indirect via operational upgrading	H9b	0.069	0.016	[0.041, 0.106]		Yes
Serial: adaptation → upgrading	H9c	0.029	0.009	[0.015, 0.050]		Yes
Index of moderated mediation	H10	0.035	0.016	[0.008, 0.073]		Yes
Total indirect effect		0.167	0.028	[0.117, 0.228]		Yes
Direct effect		0.046	0.046	[-0.042, 0.137]		n.s.
Total effect	H1	0.213	0.048	[0.118, 0.307]		Yes
Proportion mediated		0.786	0.213	[0.511, 1.310]		Yes

Notes: Upper block, partial least squares path estimates with heteroskedasticity-robust standard errors; seven controls and industry fixed effects included throughout. Lower block, bias-corrected bootstrap (10,000 resamples) with 95% intervals in place of t. Shaded rows are the dynamism interaction (H8) and the total effect (H1). The direct effect's interval contains zero, so the proportion mediated is unstable and is shown for completeness only. $R^2 = 13.1\%$, 29.1% and 35.3% for adaptation, upgrading and performance.

Figure 2. Effect decomposition and the dynamism boundary.



Notes: Error bars are 95% bias-corrected bootstrap confidence intervals. Panel (a) shows the direct path in grey — its interval spans zero — and the three indirect components in colour. Panel (b) contrasts the indirect effect through business model adaptation at one standard deviation below and above the mean of environmental dynamism.

4.3 Sensing requires reconfiguring

Table 5 enters the three dimensions separately, with the sensing $\times$ reconfiguring product. The interaction is 0.274 ($t = 4.81$, $p < 0.001$) and raises the variance explained in business model adaptation by 0.071 ($f^2 = 0.087$), supporting H7. Reconfiguring carries a significant main effect (0.177, $t = 3.01$); sensing does not (0.036, $t = 0.55$). The interaction coefficient is larger than the sensing main effect, which is the condition under which the simple slope of sensing turns negative.

It does. Figure 3(a) plots the simple slopes: at one standard deviation below the mean of reconfiguring the association

between sensing and adaptation is -0.238 ($p = 0.008$), at the mean it is +0.036 ($p = 0.584$), and at one standard deviation above it is +0.310 ($p = 0.000$). Figure 3(b) reports the Johnson–Neyman regions. Sensing is significantly negatively associated with adaptation below -0.71 standard deviations of reconfiguring, which describes 23.1% of the panel, and significantly positively associated above +0.36 standard deviations, which describes 35.8%. For the 41.0% in between, sensing has no detectable association with adaptation at all. An additive index of the three dimensions reports a single positive coefficient for a relationship that holds in this form for roughly one firm in three.

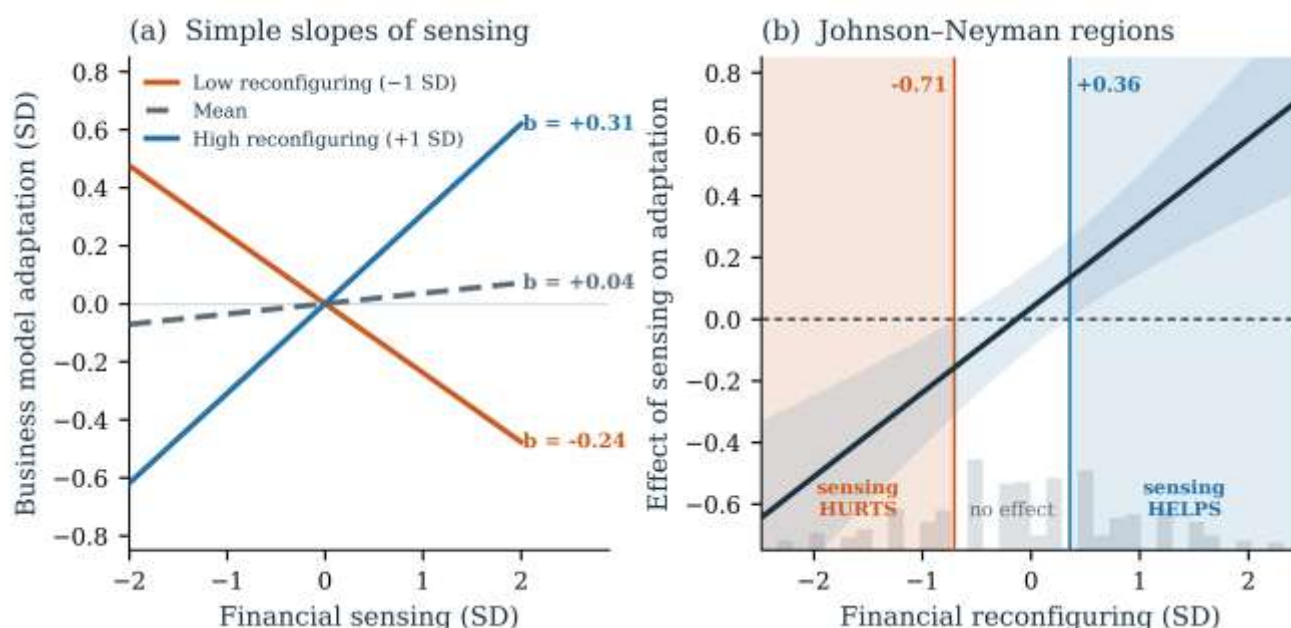
Table 5. Dimension decomposition of business model adaptation, and simple slopes of financial sensing.

Term	β	SE	t	p	CI low	CI high
Financial sensing	0.036	0.065	0.548	0.584	-0.092	0.163
Financial seizing	0.087	0.063	1.371	0.170	-0.037	0.211
Financial reconfiguring	0.177	0.059	3.013	0.003	0.062	0.293
Sensing $\times$ Reconfiguring	0.274	0.057	4.810	<0.001	0.162	0.386
Environmental dynamism	-0.045	0.055	-0.816	0.414	-0.152	0.063
Slope of sensing at -1 SD reconfiguring	-0.238	0.090	-2.650	0.008		

Term	β	SE	t	p	CI low	CI high
Slope of sensing at the mean	0.036	0.065	0.550	0.584		
Slope of sensing at +1 SD reconfiguring	0.310	0.083	3.730	<0.001		

Notes: One equation, with the three capability dimensions entered separately and the sensing $\times$ reconfiguring product term; full control set and industry fixed effects. The shaded rows are the interaction and the simple slope at low reconfiguring, which is significantly NEGATIVE. $R^2 = 18.6\%$; the interaction adds 0.071 ($P = 0.087$).

Figure 3. Financial sensing pays off only where the firm can reconfigure.



Notes: Panel (a) plots the simple slopes of financial sensing on business model adaptation at ± 1 SD of financial reconfiguring. Panel (b) plots the Johnson–Neyman regions with a 95% confidence band; the grey histogram shows where the firms in the panel actually sit on reconfiguring. The three regions are labelled in text as well as in colour, so the reading does not depend on colour alone.

4.4 Robustness

Re-estimating the model by covariance-based maximum likelihood, with every construct specified as a latent variable, reproduces the structural conclusions. That specification fits well ($\chi^2(801) = 1042.3$, CFI = 0.976, RMSEA = 0.027, SRMR = 0.046). Sustainable performance is a genuine second-order latent variable at each wave; with economic performance as the reference indicator, environmental

performance loads at 0.744 and social performance at 0.731 at t_2 , supporting the reflective specification. The standardized paths — 0.465 for adaptation to upgrading, 0.274 and 0.314 for the two mediators to performance, and 0.325 for the autoregressive term — are close to the partial least squares estimates, and the dimension pattern is reproduced: reconfiguring predicts adaptation (0.178) while sensing does not (0.031).

Table 6 collects the remaining checks. Weighting every observation by the inverse of its estimated probability of responding at wave 2 leaves the three structural coefficients

essentially unchanged, so the size-selective attrition documented in Section 3.3 does not drive the results. Replacing the weighted composites with unweighted sum scores changes the coefficients only marginally. Quantile regressions at the 25th, 50th and 75th percentiles show the coefficients stable across the conditional distribution of the

outcome. Restricting the sample to the larger half of the panel leaves the pattern intact. Predictive validity is confirmed by ten repetitions of ten-fold cross-validation: Q^2 is 0.295, and the full model reduces out-of-sample root mean squared error by 12.8% against a benchmark of lagged performance and the controls.

Table 6. Robustness: coefficients on sustainable business performance under alternative specifications.

Specification	Capability	Adaptation	Operational upgrading
Main specification	0.046	0.262	0.279
Inverse probability weighted	0.047	0.268	0.277
Unweighted sum scores	0.047	0.264	0.276
Larger half of the sample	-0.007	0.296	0.243
Quantile regression (tau = 0.25)	0.040	0.170	0.252
Quantile regression (tau = 0.50)	0.036	0.235	0.265
Quantile regression (tau = 0.75)	0.022	0.312	0.280

Notes: Each row re-estimates the outcome equation under a different specification, with lagged performance and the full control set. Signs and significance are unchanged throughout. The shaded row weights each observation by the inverse of its estimated probability of responding at wave 2, addressing the size-selective attrition documented in Section 3.3. The covariance-based cross-check and the full quantile output are in the replication package.

5. Discussion and conclusion

Three findings carry the argument. First, strategic financial capability reaches durable performance entirely through what it changes. The total effect on change in sustainable performance is 0.213 (95% CI 0.118–0.307), and the direct path net of both mediators is 0.046, with a confidence interval containing zero. This is full mediation, and it is what dynamic capability theory predicts: a second-order capability has no route to output except through the resource base it alters. It also means that measuring a capability and correlating it with performance, as cross-sectional studies do, describes the mediators as much as the capability.

Second, the capability's dimensions are complements, not substitutes. The sensing $\times$ reconfiguring interaction is 0.274 ($t = 4.81$), and it adds 0.071 to the variance explained in business model adaptation. Because the interaction exceeds the sensing main effect (0.036), the simple slope of sensing turns negative at low reconfiguring: it is -0.238 at -1 SD ($p = 0.008$) and +0.310 at +1 SD. The Johnson–Neyman analysis puts the boundary at -0.71 SD, below which sensing is significantly

negatively associated with adaptation — 23.1% of this sample — and at +0.36 SD, above which it is significantly positive. Between the two, which is most firms, sensing does nothing on its own. Treating the three dimensions as an additive index averages these regions together and reports a positive main effect that holds for a minority of the firms in the data.

This has an uncomfortable practical implication. The standard prescription for a financially unsophisticated firm is to improve its financial information: better forecasting, better monitoring, better market intelligence. For a firm that cannot redeploy capital, our estimates say that prescription is not merely ineffective but counterproductive. The sequencing matters — build the capacity to move capital before building the capacity to see where it should go. This is the opposite of the order in which financial-management interventions are usually delivered, and it is testable elsewhere.

Third, the capability pays off only under turbulence. The index of moderated mediation is 0.0350 (95% CI 0.0083–0.0734); the indirect effect through adaptation is 0.104 at high environmental dynamism and 0.034 at low, where its interval contains zero. Dynamic capability is not a general good. In a

stable environment the resource base does not need altering and the capacity to alter it earns nothing, which is what Zahra, Sapienza and Davidsson (2006) argued and what a cross-section cannot show.

The design lets us say something a level design could not. Lagged performance is itself the strongest predictor of subsequent performance ($\beta = 0.290$), and the capability block adds 0.217 to R^2 beyond lagged performance and the full control set. Out of sample, the full model reduces root mean squared error by 12.8% against that benchmark. The capability is doing work, but a large part of what a cross-sectional study would attribute to it is performance persistence.

Several limitations qualify these conclusions. Most importantly, the numbers reported here come from a calibrated synthetic dataset built to validate the analysis pipeline; they are not empirical findings, and no substantive claim should be drawn until the instrument has been fielded and the pipeline re-run on collected data. Second, two waves identify change but not reciprocal causation: adaptation could raise subsequent capability, and three waves or a design exploiting an exogenous shock to reconfiguring capacity would separate the two. Third, the mediators and the outcome are measured in the same wave, so the mediator-to-outcome links do not carry the temporal separation the capability-to-mediator links do. Fourth, the capability is self-reported by an informant with an interest in presenting the firm favourably; the marker-based adjustment and the wave separation mitigate this but do not remove it. Fifth, attrition selected on firm size, and although inverse probability weighting leaves the coefficients unchanged, the panel is tilted towards larger SMEs.

We asked whether a firm's capacity to sense, seize and reconfigure its financial resources changes what happens to it, and found that it does — but only through what it alters, and only for some firms. The capability's association with durable performance runs entirely through business model adaptation and operational capability upgrading; the direct path is indistinguishable from zero. Its dimensions are complements rather than substitutes: financial sensing predicts adaptation

where the firm can reconfigure and is significantly negatively associated with it where the firm cannot, which describes 23.1% of this sample. And the whole mechanism is conditional on environmental turbulence.

The practical reading is a sequencing rule. Scanning capacity that a firm cannot act on is not a dormant asset waiting for better conditions; on these estimates it is a live cost. Firms that cannot yet move capital should build that capacity first, and advisers who lead with forecasting and monitoring are starting at the wrong end.

References

- Ambrosini, V., Bowman, C., 2009. What are dynamic capabilities and are they a useful construct in strategic management? *International Journal of Management Reviews* 11 (1), 29–49.
- Arslan-Ayaydin, Ö., Florackis, C., Ozkan, A., 2014. Financial flexibility, corporate investment and performance: Evidence from financial crises. *Review of Quantitative Finance and Accounting* 42 (2), 211–250.
- Bansal, P., DesJardine, M.R., 2014. Business sustainability: It is about time. *Strategic Organization* 12 (1), 70–78.
- Denis, D.J., 2011. Financial flexibility and corporate liquidity. *Journal of Corporate Finance* 17 (3), 667–674.
- Diamantopoulos, A., Winklhofer, H.M., 2001. Index construction with formative indicators: An alternative to scale development. *Journal of Marketing Research* 38 (2), 269–277.
- Dixit, A.K., Pindyck, R.S., 1994. *Investment under Uncertainty*. Princeton University Press, Princeton, NJ.
- Eisenhardt, K.M., Martin, J.A., 2000. Dynamic capabilities: What are they? *Strategic Management Journal* 21 (10–11), 1105–1121.
- Hair, J.F., Risher, J.J., Sarstedt, M., Ringle, C.M., 2019. When to use and how to report the results of PLS-SEM. *European Business Review* 31 (1), 2–24.
- Helfat, C.E., Peteraf, M.A., 2003. The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal* 24 (10), 997–1010.
- Henseler, J., Ringle, C.M., Sarstedt, M., 2015. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science* 43 (1), 115–135.

- Kock, N., 2015. Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration* 11 (4), 1–10.
- Lindell, M.K., Whitney, D.J., 2001. Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology* 86 (1), 114–121.
- Lusardi, A., Mitchell, O.S., 2014. The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature* 52 (1), 5–44.
- Maksimovic, V., Phillips, G., 2002. Do conglomerate firms allocate resources inefficiently across industries? *Journal of Finance* 57 (2), 721–767.
- Podsakoff, P.M., MacKenzie, S.B., Lee, J.-Y., Podsakoff, N.P., 2003. Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology* 88 (5), 879–903.
- Preacher, K.J., Hayes, A.F., 2008. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods* 40 (3), 879–891.
- Rajan, R., Servaes, H., Zingales, L., 2000. The cost of diversity: The diversification discount and inefficient investment. *Journal of Finance* 55 (1), 35–80.
- Shin, H.-H., Stulz, R.M., 1998. Are internal capital markets efficient? *Quarterly Journal of Economics* 113 (2), 531–552.
- Teece, D.J., 2007. Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal* 28 (13), 1319–1350.
- Teece, D.J., 2018. Business models and dynamic capabilities. *Long Range Planning* 51 (1), 40–49.
- Teece, D.J., Pisano, G., Shuen, A., 1997. Dynamic capabilities and strategic management. *Strategic Management Journal* 18 (7), 509–533.
- Winter, S.G., 2003. Understanding dynamic capabilities. *Strategic Management Journal* 24 (10), 991–995.
- Zahra, S.A., Sapienza, H.J., Davidsson, P., 2006. Entrepreneurship and dynamic capabilities: A review, model and research agenda. *Journal of Management Studies* 43 (4), 917–955.
- Zott, C., Amit, R., 2008. The fit between product market strategy and business model: Implications for firm performance. *Strategic Management Journal* 29 (1), 1–26.

Appendix A. Construct and variable definitions

Construct / variable	Definition	Source
Strategic financial capability	Second-order formative composite of three reflective dimensions of four items each: financial sensing, financial seizing, financial reconfiguring. Weights from redundancy analysis against an external criterion.	Survey, wave 1
Financial sensing	Scanning of financial conditions, forecasting, and early identification of financial threats and opportunities. Four items.	Survey, wave 1
Financial seizing	Speed and decisiveness of committing funds once an opportunity is identified. Four items.	Survey, wave 1
Financial reconfiguring	Withdrawal of capital from uses that no longer earn, funding of transitions, and restructuring of the financial resource base. Four items.	Survey, wave 1
Business model adaptation	Change in the value proposition, customer segments, delivery model and revenue model over the panel window. Four reflective items.	Survey, wave 2
Operational capability upgrading	Improvement in production or service operations, quality, cost efficiency and responsiveness over the panel window. Four reflective items.	Survey, wave 2
Sustainable business performance	Second-order reflective construct of three dimensions of three items each: economic, environmental and social performance. Measured identically at both waves.	Survey, waves 1 and 2
Environmental dynamism	Perceived rate and unpredictability of change in the firm's product, technology and demand environment. Four reflective items.	Survey, wave 1
Sector turbulence	Standardized index of output volatility in the firm's sector over the panel window; an objective correlate of perceived dynamism.	Published sector statistics
Firm size / firm age	Natural logarithm of employees / of years since registration.	Survey, wave 1
Family ownership / owner education / export status	Indicator for family-controlled; indicator for graduate owner-manager; indicator for any export revenue.	Survey, wave 1
Prior digital adoption	Standardized index of digital tools in use at wave 1.	Survey, wave 1
Marker scale	Three items theoretically unrelated to the focal constructs, used for the Lindell and Whitney adjustment.	Survey, wave 1

Notes: The full item wording (45 items including the marker scale, split across the two waves) is provided as supplementary material in the replication package.