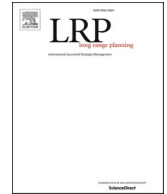




ELSEVIER

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Long Range Planning

journal homepage: www.elsevier.com/locate/lrp

Operating synergy and post-acquisition integration in corporate acquisitions: A resource reconfiguration perspective[☆]

Tuhin Chaturvedi^{a,*}, Carmen Weigelt^b^a Brunel Business School, Brunel University London, 104M, Eastern Gateway Building, Uxbridge, UBS 3PH, UK^b A.B.Freeman of School of Business, Tulane University, 611, Goldring Woldenberg Business Complex, New Orleans, LA, 70118, USA

ARTICLE INFO

Keywords:

Mergers and acquisitions
 Post-acquisition integration
 Cost and revenue synergy
 Resource reconfiguration
 Acquirer performance

ABSTRACT

We theorize that contingent on whether acquisitions put more emphasis on realizing cost versus revenue synergy, they require different degrees of post-acquisition integration due to their different resource reconfiguration requirements. We use data from 448 US-based acquirers and 1452 domestic acquisitions to find strong support for our theoretical conjecture. On the one hand, we find that for acquisitions that emphasize cost synergy more than revenue synergy, the degree of integration exerts a linear mediating effect on acquirer performance. That is, performance increases as the degree of integration increases. On the other hand, we find that for acquisitions that emphasize revenue synergy more than cost synergy, the degree of integration exerts an inverted U-shaped mediating effect. That is, performance is highest at intermediate degrees of integration. We advance research on post-acquisition integration by first demonstrating the importance of aligning the degree of integration with the synergy rationale in acquisitions (emphasis on cost or revenue synergy) to achieve high acquisition performance. Second, we introduce a novel, replicable approach for empirically operationalizing the degree of post-acquisition integration. We contribute to the resource reconfiguration lens of dynamic capabilities by showing that firms whose managers align the intended source of value creation with their approach to reconfiguration may achieve higher performance outcomes.

1. Introduction

“And so, I think we believe that what’s important for us to do in this integration, is to get to work on our cost [sic.], get our cost down and move aggressively to finish all of this major restructuring work that we have so that we’ll be able to compete effectively in what is a competitive bread category.” - Daniel Servitje, Chairman & CEO, Bimbo Bakeries USA, discussing the integration plan for the Sara Lee Bakeries USA acquisition (Bimbo Bakeries, 2014).

“We’ll look for ways to help the Blue Buffalo team nurture and grow this modern, authentic 21st century brand, and we’ll stay out of their way where they don’t need us. We’ll help them on the sales side where we can - our industry-leading retail sales force, partnerships

[☆] The authors would like to thank Profs. Randi Lunnan, Aseem Kaul, Samina Karim, Mario Schijven, Emilie Feldman, Harbir Singh, Ravi Madhavan, four anonymous reviewers and participants in the Symposium on Mergers and Acquisitions: New Research Insights at the 2020 Strategic Management Society Annual Conference, and participants in the 2022 Wharton Annual Corporate Strategy Conference for their comments on prior versions of this manuscript.

* Corresponding author.

E-mail addresses: tuhin.chaturvedi@brunel.ac.uk (T. Chaturvedi), cweigelt@tulane.edu (C. Weigelt).

<https://doi.org/10.1016/j.lrp.2024.102428>

Received 26 April 2023; Received in revised form 21 February 2024; Accepted 23 February 2024

Available online 29 February 2024

0024-6301/© 2024 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

and marketing capabilities will help increase the likelihood of success of their expansion.” - Jeffrey Harmening, Chairman & CEO, General Mills Inc., introducing the integration plan for the Blue Buffalo Pet Products acquisition (General Mills Inc, 2018).

Post-acquisition integration - the assimilation of an acquired firm is a key example of resource reconfiguration (Capron et al., 1998, 2001; Capron, 1999; Chaturvedi and Prescott, 2022; Graebner et al., 2017; Karim and Mitchell, 2000, 2004; Karim, 2006). Research on post-acquisition integration owes its intellectual heritage to the foundational study of Haspeslagh and Jemison (1991) who developed four approaches to integration (absorption, preservation, symbiosis, and holding). They proposed that the appropriate degree of integration for an acquisition depends on two factors - the degree of strategic interdependence between the acquirer and target and the degree of autonomy required by the target.

Inspired by Haspeslagh and Jemison (1991), several studies examined the relationship between post-acquisition integration and acquirer performance (Schijven et al., 2024). One set of studies found that integration positively affects performance as it enables the realization of targeted synergies (Bauer and Matzler, 2014; Cording et al., 2008; Larsson and Finkelstein, 1999; Pablo, 1994; Zollo and Singh, 2004). A second set of studies conceptualized integration as a ‘dilemma’ pertaining to whether acquirers should structurally integrate targets, or in contrast, grant them autonomy (Dattée et al., 2022; Puranam et al., 2003, 2006, 2009; Puranam and Srikanth, 2007; Ranft and Lord, 2002). These studies found that granting autonomy positively affects performance as it preserves the target’s resources and enables acquirers to reap the benefits of the acquisition over time. A third set of studies found that acquirers adopting a ‘blended’ approach to integration i.e., acquirers that integrate some target resources and grant autonomy to other resources may be more likely to record a positive effect on performance (Chaturvedi and Prescott, 2022; Kroon et al., 2022; Schweizer, 2005; Wei and Clegg, 2020; Zaheer et al., 2013).

Notwithstanding Haspeslagh and Jemison (1991)’s foundational study and the above research, rarely have scholars examined how acquirers choose the degree of post-acquisition integration given the type of operating synergy they target and how this affects acquirer performance. Operating synergies entail reducing the costs of the combined acquirer and target firm i.e., cost synergy (Anand and Singh, 1997; Banaszak-Holl et al., 2002; Maksimovic et al., 2011; Wood, 2009), or increasing the combined firm’s revenue i.e., revenue synergy (Capron and Hulland, 1999; Karim and Mitchell, 2000; Lambkin and Muzellec, 2010; Puranam et al., 2006). While Haspeslagh and Jemison (1991) discussed how post-acquisition integration approaches must balance the strategic interdependence between the acquirer and target and the target’s need for autonomy, they did not formally examine how their proposed approaches affect the realization of cost or revenue synergy.

In this study, we advance research on post-acquisition integration by developing theoretical and empirical insight on how acquirers choose the degree of integration when they intend to realize cost or revenue synergies from acquisitions and how this affects their performance. This is an important line of inquiry because synergy is not a ‘monolithic’ or ‘unidimensional’ construct but has different rationales for value creation (Capron, 1999; Castañer and Karim, 2013; Feldman and Hernandez, 2022; Rabier, 2017). Furthermore, prior research has found that acquirers may intend to realize cost synergy to a greater extent relative to revenue synergy in some acquisitions and vice versa in others (Castañer and Karim, 2013; Chatterjee and Brueller, 2015; Dranove and Shanley, 1995; Houston et al., 2001).

Building on the above studies, we posit that when acquirers intend to realize cost synergy to a greater extent than revenue synergy from an acquisition, they place a *higher relative emphasis* on cost synergy in that acquisition. In contrast, when acquirers intend to realize revenue synergy to a greater extent than cost synergy from an acquisition, they place a *higher relative emphasis* on revenue synergy in that acquisition. We conjecture that it is unlikely that the same degree of integration enables acquirers to effectively realize *both* cost and revenue synergies. Thus, the degree of integration that acquirers employ to realize cost synergy may be different from the degree of integration they employ to realize revenue synergy. For instance, in the above quotes, the senior executives hinted at employing different degrees of integration as the relative emphasis on cost and revenue synergies was different in both acquisitions. Thus, it is likely that acquirers that choose the degree of integration in accordance with their relative emphasis on cost or revenue synergy in an acquisition may record superior performance. Accordingly, we ask – ‘Given an acquirer’s relative emphasis on cost or revenue synergy in an acquisition, how does the degree of post-acquisition integration affect acquirer performance?’

We addressed our research question in two steps. First, we define the *degree of post-acquisition integration* as ‘the magnitude of change in the resources of the combined acquirer and target firm relative to their resources prior to the acquisition’. We adopt this definition as per prior research on acquisitions that has employed the resource reconfiguration (RR) lens of the literature on dynamic capabilities (Capron et al., 1998, 2001; Capron, 1999; Chaturvedi and Prescott, 2022; Karim, 2006; Karim and Capron, 2016). In their review, Karim and Capron (2016) define RR as comprising four mechanisms that enable firms to renew their resources– *adding, subtracting, redeploying, and recombining*.

We theorize that the degree of post-acquisition integration is a manifestation of RR, the practical aspects of which involve acquirers adding the target’s resources to their internal resources, redeploying or reconfiguring a proportion of the target’s resources, and divesting (i.e., subtracting) other resources. Thus, the four mechanisms proposed by Karim and Capron (2016) enable us to examine the magnitude of change in the combined firm’s resources that occurs as a result of post-acquisition integration compared to the resources of the standalone acquirer and target firms *prior* to the acquisition. We submit that the greater the magnitude of change in the combined firm’s resources compared to the acquirer and target’s resources prior to the acquisition, the higher is the degree of integration.

Second, we theorize that acquisitions with a higher relative emphasis on cost or revenue synergies require different degrees of post-acquisition integration for synergy realization and superior performance. We hypothesize that when acquirers place a higher relative emphasis on realizing cost synergy, the degree of integration will exert a positive and linear mediating effect on performance. However, when acquirers place a higher relative emphasis on realizing revenue synergy, the degree of integration will exert an

inverted U-shaped mediating effect on performance i.e., it will exert a positive effect on performance up to a point, after which this effect will turn negative.

We examined our hypotheses related to the mediating effect of the degree of post-acquisition integration on the relationship between the relative emphasis on cost and revenue synergies and acquirer performance in a multi-industry sample of 448 US-based acquirers that made 1452 domestic acquisitions over 2008–2019. Our hypotheses received strong support and withstood several robustness checks.

Our study advances research on post-acquisition integration. A central implication of our study is that examining the performance effect of the degree of integration should consider the type of operating synergy that acquirers emphasize in their acquisitions. Such an approach may tease out finer nuances related to how post-acquisition integration affects performance and thereby develop novel theoretical and practical insights on this relationship. Our study thus responds to a call by Graebner et al. (2017) who emphasized the potential of the reconfiguration perspective as a theoretical lens to uncover novel insights related to post-acquisition integration.

Our study also extends prior research on the resource reconfiguration (RR) lens of research on dynamic capabilities. To the best of our knowledge, our study is the first that explicitly examines how the link between the level of RR (high or low) and the source of value creation (cost reduction or revenue growth) affects firm performance. Hence, our study extends prior work by showing how the alignment between the *magnitude* of RR (high or low) and the *source* of value creation (cost reduction or revenue growth) may enable firms to record superior performance (Karim and Capron, 2016, p. 2).

Finally, we develop a novel approach for operationalizing the degree of integration. To measure the magnitude of change in the combined acquirer and target firm's resources relative to the pre-acquisition resources of both firms, we employed data related to the proceeds (revenue) from resource divestiture, the acquirer's integration costs, and the target's overall resources that were added to the acquirer's existing resources. We obtained this data from the annual financial statements of acquirers and targets.¹ Our measure overcomes the limitations inherent in prior approaches to operationalizing the degree of integration that have employed patent data (Arora et al., 2014; Puranam and Srikanth, 2007), categorical variables (Chaturvedi and Prescott, 2022; Puranam et al., 2006, 2009; Zollo and Reuer, 2010), and surveys (Capron et al., 1998, 2001; Zaheer et al., 2013; Zollo and Singh, 2004).

2. THEORY AND HYPOTHESES.

1.1. The degree of post-acquisition integration and integration costs

We define the degree of post-acquisition integration as '*the magnitude of change in the resources of the combined acquirer and target firm relative to their resources prior to the acquisition*'. We adopt this definition as per prior research on acquisitions that bears its intellectual origin to the resource reconfiguration (RR) lens of the literature on dynamic capabilities (Capron et al., 1998, 2001; Chaturvedi and Prescott, 2022; Karim, 2006; Karim and Capron, 2016). Karim and Capron (2016) define RR as comprising four mechanisms that facilitate resource renewal – *adding, subtracting, redeploying, and recombining*. We theorize that the degree of post-acquisition integration is a manifestation of RR whereby acquirers add the target's resources to their internal resources, redeploy or reconfigure a proportion of the target's resources, and divest other resources. We submit that the greater the magnitude of change in the combined firm's resources compared to the acquirer and target resources prior to the acquisition, the higher the degree of integration. In parallel, we propose that contingent on the degree of integration that acquirers choose, they incur integration costs to implement the four mechanisms of RR and change the resources of the combined firm (Agrawal et al., 2019; Bodner and Capron, 2018; Salsberg and Kaske, 2023; Shaver, 2006).

For instance, at low degrees of integration, acquirers may preserve the target's resources by providing it operational autonomy i.e., full decision rights for product development, R&D, and marketing while ensuring that important target personnel are retained in the combined firm (Puranam et al., 2003, 2006; Puranam and Srikanth, 2007; Ranft and Lord, 2002). Even if acquirers interact with the target's resources, they may do so selectively e.g., to provide the target with important functional resources (Brueller et al., 2014; King et al., 2008; Zaheer et al., 2013) or access to new distribution channels and product markets (Austin and Leonard, 2008; Brueller and Capron, 2021; Sarason and Dean, 2019). Thus, the integration costs corresponding to low degrees of integration are likely to be low as the target's need for autonomy and selective interaction may only permit acquirers to implement a low magnitude of change in the resources of the combined firm.

As acquirers transition to intermediate degrees of integration, they may invest in multiple coordination mechanisms to increase the level and quality of bilateral resource redeployment with the target, thus implementing a relatively greater magnitude of change in the resources of the combined firm. For instance, acquirers may form cross-functional and cross-organizational teams to share resources with the target and vice versa (Graebner, 2004; Kroon et al., 2022; Wei and Clegg, 2020). In parallel, acquirers may transfer personnel (Hébert et al., 2005; Karim and Williams, 2012), develop boundary spanner roles (Teerikangas et al., 2011), and build an informal network to develop 'common ground' with the target (Puranam et al., 2009; Ranft and Lord, 2002; Vaara et al., 2012) for greater effectiveness in transferring knowledge and best practices. Due to the investment in coordination mechanisms, the integration costs at

¹ The annual statements of acquirers i.e., balance sheet, income statement, and statement of cash flows factor in realized synergies and the post-acquisition integration costs and hence, represent a plausible alternative for operationalizing the degree of post-acquisition integration (Puhakka, 2017). Annual statements provide insights on the 'stock' of resources in the combined acquirer and target firm in year 't+1' with respect to the 'stock' of resources in both standalone firms prior to the acquisition in year 't'. This approach enabled us to capture the 'addition, subtraction, recombination, and redeployment' processes that Karim and Capron (2016) propose in their RR definition. We discuss this in detail below in the subsection 'Mediator variable' where we introduce the operationalization of the degree of integration mediator variable.

intermediate degrees of integration may be greater than those at low degrees of integration wherein acquirers grant autonomy or selectively interact with the target.

Finally, as acquirers transition to high degrees of integration, they may implement an even greater magnitude of change in the combined firm’s resources compared to low or intermediate degrees of integration. For instance, acquirers may consolidate a portion of the target’s resources (Anand and Singh, 1997; Chatterjee and Brueller, 2015) and divest inefficient resources (Aktas et al., 2022; Capron et al., 2001; Maksimovic et al., 2011). Acquirers may layoff personnel (Krishnan et al., 2007), retire excess capacity (Wood, 2009), and restructure the functional organization (Wei and Clegg, 2020) to overcome redundancies in the combined firm. In parallel, acquirers may augment the processes of mutual learning and bilateral resource redeployment by investing in additional coordination mechanisms that are more interaction intensive. These may include recombining or co-locating acquirer and target resources (Birkinshaw et al., 2000; Karim and Mitchell, 2004; Van Oorschot et al., 2023), investing in formal reporting relationships (Lin, 2014; Yu et al., 2005), developing customized synergy targets and incentives (Cooke and Huang, 2011; Dessein et al., 2010), and installing planning and control systems to monitor progress in synergy realization (Pablo, 1994; Park and Choi, 2014). Finally, acquirers may repeat these initiatives as part of an exhaustive exercise to optimize realized synergy (Barkema and Schijven, 2008; Karim and Mitchell, 2004; Karim, 2006). Thus, the integration costs pertaining to high degrees of integration may be greater compared to those at low or intermediate degrees of integration.

Next, we develop theory on how the degree of integration mediates the relationship between the relative emphasis on cost or revenue synergy in acquisitions and acquirer performance.

1.2. The mediating effect of the degree of post-acquisition integration

We propose that the mediating effect of the degree of post-acquisition integration on the relationship between the relative emphasis on cost or revenue synergy in acquisitions and acquirer performance arises from two factors - i) the cost or revenue synergy realized due to the magnitude of change in the combined firm’s resources based on the chosen degree of integration and ii) the costs associated with this degree of integration (Agrawal et al., 2019; Bodner and Capron, 2018; Salsberg and Kaske, 2023; Shaver, 2006). The mediating effect of the degree of integration is likely to vary contingent on whether acquirers employ low, intermediate, or high degrees of integration. Thus, while developing our hypotheses, we provide theoretical arguments for why realized synergy and

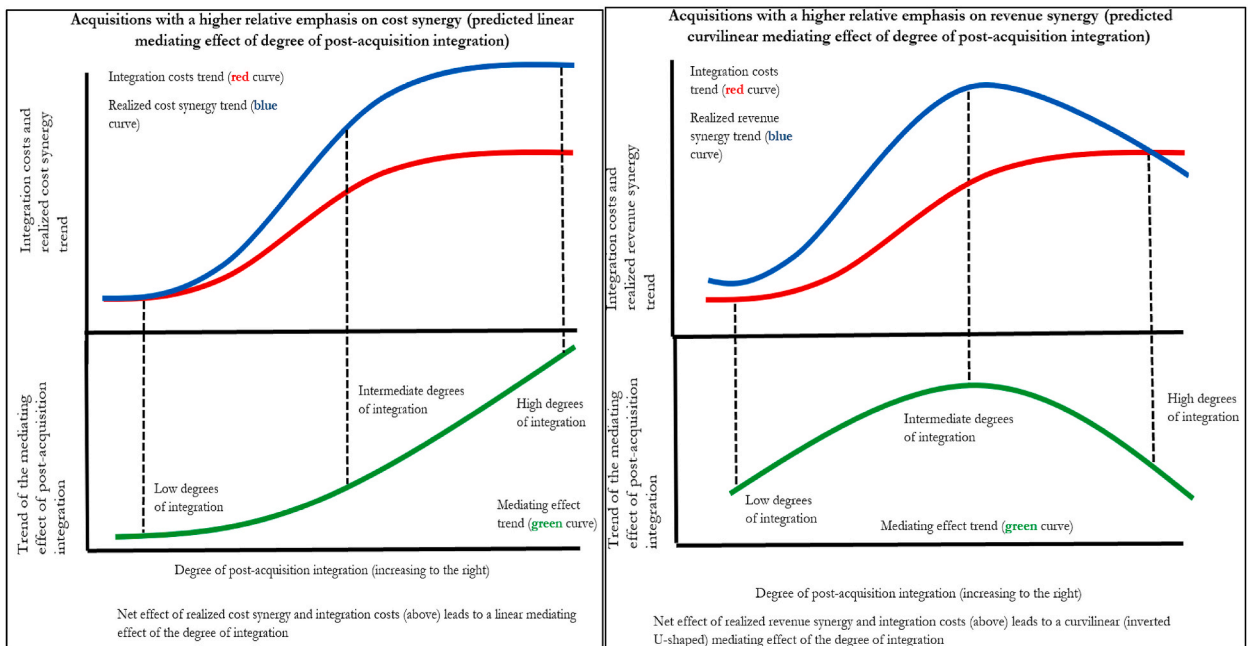
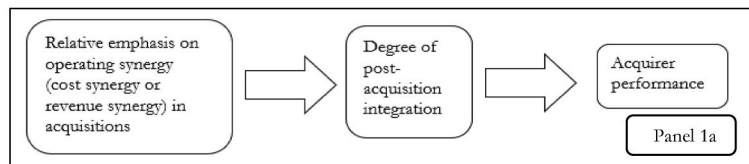


Fig. 1. Panel 1a shows the theoretical model of the study. Panels 1b and 1c show the predicted mediating effect of the degree of post-acquisition integration on acquirer performance for a higher relative emphasis on cost and revenue synergy in acquisitions respectively.

integration costs may increase or decrease as the degree of integration varies from low to intermediate to high degrees. This approach enables us to conduct a fine-grained examination of the mediating effect (Haans et al., 2016; Pitariu and Ployhart, 2010). Panel 1a of Fig. 1 shows our theoretical model. Panels 1b and 1c show our predicted mediation effects. Below, we develop our hypotheses.

1.3. Higher relative emphasis on cost synergy, degree of integration and acquirer performance

In acquisitions, cost synergy may arise from two sources – i) economies of scale and scope when an acquirer consolidates a target's resources and divests (eliminates) redundant or inefficient resources (Aktas et al., 2022; Anand and Singh, 1997; Capron et al., 2001; Maksimovic et al., 2011; Wood, 2009) and ii) operational efficiencies resulting from the bilateral redeployment of resources (e.g., knowledge and best practices) that reduce the costs of the combined acquirer and target firm (Banaszak-Holl et al., 2002; Berchicci et al., 2012; Bruton et al., 1994; Capron, 1999; Li et al., 2018).

We theorize that acquirers need to implement a greater magnitude of change in the resources of the combined firm to effectively reduce its costs and hence, realize cost synergy. This outcome is more likely to be achieved when acquirers employ high degrees of integration. Thus, we predict that for acquisitions with a higher relative emphasis on cost synergy, the degree of integration will exert a positive and linear mediating effect on performance. We develop our theoretical arguments as follows,

At low degrees of integration, acquirers may not realize targeted cost synergy as they may be restricted to implementing a low magnitude of change in the combined firm's resources. For instance, acquirers may not realize scale or scope economies in the combined firm as overcapacity in manufacturing (Anand and Singh, 1997; Wood, 2009), overlapping product lines, brands, and salesforces (Fee et al., 2012; Homburg and Bucerius, 2005), and redundancy in the supplier base and information technology (IT) systems (Agarwal et al., 2018; Tanriverdi and Uysal, 2015) may persist at low degrees of integration. As a result, cost synergy is unlikely to materialize in production, marketing, procurement, and IT systems in the combined firm. In addition, at low degrees of integration, acquirers may not be able to leverage the coordination mechanisms required to facilitate bilateral resource redeployment with the target e.g., cross-functional or cross-organizational teams, personnel transfer, boundary spanning roles, and planning and control systems (Birkinshaw et al., 2000; Bresman et al., 1999; Graebner, 2004). The resulting lack of interaction may hinder the adoption of practices that could potentially improve the operational efficiency of the combined firm e.g., process innovation, quality control, inventory, and waste reduction (Banaszak-Holl et al., 2002; Berchicci et al., 2012; Li et al., 2018; Reus et al., 2016). Thus, acquirers may not be able to implement the magnitude of change required to reduce the costs of the combined firm and cost synergy may not be realized. In parallel, due to acquirers being restricted to implementing a low magnitude or change in the combined firm's resources, integration costs may not increase beyond a level. Thus, we predict that as acquirers persist with low degrees of integration, both realized synergy and integration costs may be low.

As acquirers transition to intermediate degrees of integration, they are likely to realize cost synergy to a greater extent than at low degrees of integration as they may be able to implement a relatively greater magnitude of changes to the combined firm's resources. For instance, the use of multiple coordination mechanisms may enhance the relative absorptive capacity of the acquirer and target, improve the quantity and quality of bidirectional resource redeployment, and thus effectively translate into tangible learning outcomes for both parties (Birkinshaw et al., 2000; Bresman et al., 1999; Capron et al., 1998; Reus et al., 2016). This may lead to cost synergy via productivity and quality improvements (Banaszak-Holl et al., 2002; Maksimovic et al., 2011), lower procurement, functional, and administrative costs (Braguinsky et al., 2015; Cho and Wang, 2017; Li et al., 2018), and greater waste reduction (Berchicci et al., 2012). Thus, we submit that at intermediate degrees of integration, the integration costs and realized cost synergy may both be greater than those at low degrees of integration.

We predict that as acquirers persist with intermediate degrees of integration, realized synergy is likely to increase as long as there is scope for acquirers to reduce costs in the combined firm (Barkema and Schijven, 2008; Karim and Mitchell, 2004; Karim, 2006). Acquirers may initially incur idiosyncratic ('one-off') integration costs related to installing the above-mentioned coordination mechanisms (Bodner and Capron, 2018; Kretschmer and Puranam, 2008; Salsberg and Kaske, 2023). However, *ex post* installation, the integration costs pertaining to maintaining and monitoring the mechanisms may decrease as the mechanisms become routinized, acquirers develop common ground with the target, and the processes of bilateral resource redeployment and mutual learning become more effective (Gates and Very, 2003; Lajoux, 2006; Puranam et al., 2009; Safavi, 2021).

Ultimately, as acquirers transition to high degrees of integration, they may realize cost synergy to an even greater extent as they may be able to implement a greater magnitude of change in the resources of the combined firm. Realized synergy may owe its origin to two sources. First, the processes of consolidating and divesting the target's resources or recombining them with the acquirer's internal resources may lead to 'combinatorial' cost synergy i.e., arising from economies of scale and elimination of redundancies and inefficiencies (Aktas et al., 2022; Harrigan, 2012; McLetchie and West, 2010). In parallel, a second source of cost synergy may entail fast-tracking operational efficiency initiatives to aggressively and systematically reduce costs in the combined firm (Banaszak-Holl et al., 2002; Bruton et al., 1994; Castrogiovanni and Bruton, 2000). In this context, the availability and deployment of a broader range of coordination mechanisms may enable acquirers to adopt a more formal approach whereby direct reporting relationships may enable them to track synergy realization (Lin, 2014; Park and Choi, 2014; Teerikangas et al., 2011), planning and control systems may help assign responsibility for the same (Pablo, 1994; Park and Choi, 2014), and synergy targets and associated incentives may enable them to introduce accountability for synergy realization (Cooke and Huang, 2011; Dessein et al., 2010; Yu et al., 2005). By facilitating a more formal approach to integration, these coordination mechanisms may mutually reinforce the processes of bilateral resource redeployment and mutual learning discussed earlier leading to an increase in realized cost synergy.

We submit that at high degrees of integration, the integration costs and realized cost synergy may both be greater than those at low and intermediate degrees of integration. In addition, we conjecture that as acquirers persist with high degrees of integration, realized

synergy is likely to increase up to the point where the target's synergy potential is fully exhausted (Barkema and Schijven, 2008; Karim and Mitchell, 2004; Karim, 2006). Alternatively, integration costs are likely to initially increase but may eventually level off due to two reasons. First, acquirers may incur idiosyncratic or 'one-off' integration costs related to consolidating and divesting the target's resources, recombining business units, and installing additional coordination mechanisms that may not be incurred repeatedly (Agrawal et al., 2019; Harrigan, 2012; McLetchie and West, 2010; Salsberg and Kaske, 2023). Second, as the degree of integration becomes very high, the integration process may approach culmination. This occurs when acquirers fully consolidate the target's resources, conclude the divestiture process, and meet operational efficiency targets (Bodner and Capron, 2018; Gates and Vary, 2003; Lajoux, 2006). At this point, managerial attention, time, and corporate resources may be redeployed away from the integration process leading to integration costs leveling off (Gates and Vary, 2003; Lajoux, 2006; Whitaker, 2012).

Panel 1b of Fig. 1 shows our hypothesized effects. At low degrees of integration, realized cost synergy and integration costs are predicted to be low (flat trend at the start of the blue and red curves in the top chart respectively). Thus, the mediating effect on acquirer performance is likely to be low (flat trend at the start of the green curve in the bottom chart). As acquirers transition to and persist with intermediate degrees of integration, realized synergy is predicted to increase (increasing trend in blue curve) and integration costs are predicted to initially increase and then decrease (increasing and then flattening trend in red curve) leading to a positive mediating effect (increasing trend in green curve).

Finally, as acquirers transition to and persist with high degrees of integration, realized synergy is predicted to increase further until the synergy potential of the target is exhausted (increasing and then flattening trends towards end of blue curve). The integration costs are predicted to initially increase and then level off as the integration process approaches culmination (increasing and then flattening trends towards end of red curve). As a result, the mediating effect is predicted to become more positive (shown by a further increase in green curve). Thus, we hypothesize that the degree of integration exerts a linear mediating effect on performance when acquirers place a higher relative emphasis on cost synergy.

Hypothesis 1 (H1). For acquisitions with a higher relative emphasis on cost synergy, the degree of post-acquisition integration will exert a positive and linear mediating effect on acquirer performance.

1.4. Higher relative emphasis on revenue synergy, degree of integration and acquirer performance

In acquisitions, revenue synergy may arise from four sources – i) when an acquirer employs a target's products or its geographical footprint in new markets for short term revenue growth (Brueller et al., 2014; Chatterjee and Brueller, 2015; Cording et al., 2008; Karim and Mitchell, 2000), ii) when an acquirer nurtures a target's new product development capability for long term revenue growth (Grimpe, 2007; Puranam et al., 2003, 2006; Schweizer, 2005), iii) when there is complementarity between the functional resources of an acquirer and target (Brueller and Capron, 2021; King et al., 2008; Larsson and Finkelstein, 1999; Zaheer et al., 2013), and iv) when there is complementarity between the products of an acquirer and target that leads to cross-selling, bundling, or umbrella branding opportunities (Castañer and Karim, 2013; Dranove and Shanley, 1995; Lambkin and Muzellec, 2010; Rahman et al., 2016).

A higher relative emphasis on revenue synergy mandates acquirers to increase the combined firm's revenue by adopting a more developmental or nurturing approach to integration (Austin and Leonard, 2008; Brueller and Capron, 2021; Sarason and Dean, 2019). This involves implementing a low magnitude of change in the combined firm's resources - *only* to the extent that enables acquirers to improve the target's capability for short- and long-term revenue generation. Such an outcome may be best realized by intermediate degrees of integration in contrast to low degrees of integration that may constrain acquirers from meaningfully improving the target's revenue generation capability (Brueller and Capron, 2021; Dattée et al., 2022; Zollo and Reuer, 2010) or high degrees of integration that may adversely impact the target's revenue generation capability (Puranam et al., 2006; Puranam and Srikanth, 2007; Schweizer, 2005). Thus, for acquisitions with a higher relative emphasis on revenue synergy, we hypothesize that the degree of integration exerts an inverted U-shaped mediating effect on acquirer performance. As the degree of integration increases, there will be a positive effect on performance up to a point after which, this effect will turn negative. We develop our theoretical arguments as follows,

At low degrees of integration, we predict that acquirers may realize revenue synergy to a limited extent due the target's need for autonomy that restricts acquirers to implement a low magnitude of change in the resources of the combined firm (Brueller and Capron, 2021; Dattée et al., 2022; Zollo and Reuer, 2010). Low degrees of integration enable acquirers to adopt a developmental or nurturing posture towards the target (Kale et al., 2009; Reeves et al., 2016; Zollo and Reuer, 2010). For instance, acquirers may grant autonomy to a target by establishing it as a 'bolt-on' business unit and only giving it specific revenue targets (Borot et al., 2016; Brueller et al., 2014; Chatterjee and Brueller, 2015). One example of this relates to when a target classifies as a 'growth platform' due to cutting edge product lines or being present in high growth product markets (Grimpe, 2007; Puranam et al., 2003, 2006). In this context, granting autonomy preserves the target's entrepreneurial spirit, R&D, and product development capabilities and helps retain key personnel (Austin and Leonard, 2008; Borot et al., 2016; Sarason and Dean, 2019). This may in turn preserve the continuity of the target's business model and its ability to generate revenue thus contributing to revenue synergy (Puranam et al., 2006; Schweizer, 2005). Even if acquirers interact with a 'bolt-on' target, it may be only to share resources that augment its revenue generation capability e.g., sharing branding and marketing resources, sales support, and providing access to distribution channels in new markets (Brueller et al., 2014; King et al., 2008; Zaheer et al., 2013).

From the above, we conjecture that at low degrees of integration, target autonomy and selective resource sharing may increase the target's revenue leading to revenue synergy. In addition, we predict that as acquirers persist with low degrees of integration, realized synergy may increase as long as acquirers grant the benefits of autonomy and selective interaction to the target to enhance its revenue generation potential. However, integration costs may not increase beyond a level as acquirers may only implement a low magnitude of

change in the combined firm's resources.

As acquirers transition to intermediate degrees of integration, we predict that they are likely to realize revenue synergy that is greater relative to low degrees of integration. This is because acquirers may overcome the restrictions related to the target's need for autonomy or selective resource sharing and instead may encourage the target to participate in the revenue synergy realization process by using various coordination mechanisms (Bresman et al., 1999; Graebner, 2004; Wei and Clegg, 2020). Thus, acquirers may be able to realize revenue synergy from additional sources apart from nurturing bolt-on and entrepreneurial targets. For instance, cross-functional and cross-organizational teams may enable acquirers to advance the development of an entrepreneurial target by 'rounding off' or 'completing' the latter's business model and providing it with a launching pad for revenue growth (Brueller et al., 2014; King et al., 2008; Zaheer et al., 2013). One example is when teams may leverage functional complementarity i.e., the target may possess novel products but may need the acquirer's complementary resources e.g., branding and advertising insights, distribution channels, and sales and service teams to effectively commercialize its products to increase revenue (Austin and Leonard, 2008; Brueller et al., 2014; Sarason and Dean, 2019; Zaheer et al., 2013).

In addition to cross-functional and cross-organizational teams, developing common ground and assigning boundary spanner roles may encourage the target to proactively contribute to the integration process (Bresman et al., 1999; Birkinshaw et al., 2000; Graebner, 2004). In this context, the target's participation may enable acquirers to ascertain the potential for product complementarity i.e., scope for bundling and cross-selling products (Bamford et al., 2017; Briscoe and Tsai, 2011; Rahman et al., 2016), or co-specializing products (Castañer and Karim, 2013; Li and Agarwal, 2017), or enhancing brand equity, aesthetics, and reputation via umbrella branding (Dranove and Shanley, 1995; Lambkin and Muzellec, 2010). Lastly, joint participation may also facilitate training and incentivizing sales teams to leverage such opportunities (Bamford et al., 2017; Bekier and Shelton, 2002; Chartier et al., 2020).

From the above, we submit that at intermediate degrees of integration, acquirers may realize revenue synergy to a greater level relative to low degrees of integration. In addition, we conjecture that as acquirers persist with intermediate degrees of integration, realized synergy is likely to increase given the availability of multiple avenues for revenue synergy as discussed above. In contrast, acquirers may initially incur integration costs for installing coordination mechanisms that may subsequently decrease *ex post* installation as discussed in the previous subsection.

However, as acquirers transition to high degrees of integration, we conjecture that realized revenue synergy is likely to decrease substantially compared to low and intermediate degrees of integration for three reasons. First, as high degrees of integration entail implementing a greater magnitude of change in the combined firm's resources, acquirers may abandon their developmental or nurturing approach to integration and adopt a more intrusive approach (Capron, 1999; Capron et al., 2001; Chatterjee and Brueller, 2015). This may involve consolidating and divesting target resources (Aktas et al., 2022; Capron et al., 2001; Maksimovic et al., 2011), requiring the target to adhere to reporting requirements and abide by mandates set by planning and control systems (Lin, 2014; Pablo, 1994; Yu et al., 2005), and inducing unfamiliarity and a loss of context for the target due to co-location requirements (Van Oorschot et al., 2023). These initiatives may significantly diminish the relative standing of the target's senior managers and curtail the autonomy of R&D and product development personnel who may exit (Ng and Stuart, 2022; Puranam and Srikanth, 2007; Ranft and Lord, 2002). This may deplete the target's organizational and functional capital and adversely impact its revenue generation capability, decreasing any prospect of revenue synergy (Ng and Stuart, 2022; Puranam et al., 2003, 2006).

Second, as high degrees of integration may be correlated with cost reduction, acquirers may reduce advertising budgets for the target, divest its product lines, and lay off its salespersons who possess tacit knowledge related to products (Capron and Hulland, 1999; Fee et al., 2012; Homburg and Bucerius, 2005). This may adversely impact the brand equity and appeal of the target's products and undermine customer service levels (Bekier and Shelton, 2002; Biraglia et al., 2023; Bommaraju et al., 2018). As a result, customers may switch to rival products and the target's revenue generation capability may be compromised (Kato and Schoenberg, 2014; Umashankar et al., 2022). Third, the loss of autonomy and relative standing along with intrusive changes linked to high degrees of integration may discourage the target's resources from participating in the integration process. Hence, the probability of revenue synergy arising from functional or product complementarity between the acquirer and target may be also be eliminated (Bamford et al., 2017; Bekier and Shelton, 2002; Chartier et al., 2020).

Thus, we submit that at high degrees of integration, the realized revenue synergy may decrease compared to low and intermediate degrees of integration. In addition, as acquirers persist with high degrees of integration, realized synergy is likely to decrease substantially due to the shortcomings discussed above. However, the integration costs may increase until the target is fully integrated after which they may level off as discussed in the previous subsection.

Our hypothesized effects are shown in panel 1c of Fig. 1. At low degrees of integration, realized revenue synergy is predicted to increase while integration costs are predicted to be low (the increasing and flat trends at the start of the blue and red curves in the top chart respectively). Thus, the mediating effect of the degree of integration on acquirer performance is predicted to be positive (the increasing trend at the start of the green curve in the bottom chart). As acquirers transition to and persist with intermediate degrees of integration, realized synergy is predicted to increase further (increasing trend in blue curve that peaks) and integration costs are predicted to increase and then decrease (increasing and then flattening trend in red curve). This leads to an increase in the positive mediating effect (the peak of the green curve). Lastly, as acquirers transition to and persist with high degrees of integration, realized synergy is predicted to decrease (decreasing trend in blue curve) while integration costs are predicted to increase and subsequently level off as the integration process approaches culmination (increasing and then flattening trend in red curve). This is predicted to lead to a negative mediating effect (decreasing trend towards the end of the green curve). Thus, we hypothesize that the degree of integration will exert an inverted U-shaped mediating effect on acquirer performance when acquirers place a higher relative emphasis on revenue synergy.

Hypothesis 2 (H2). For an acquisition with a higher relative emphasis on revenue synergy, the degree of post-acquisition integration will exert an inverted U-shaped mediating effect on acquirer performance i.e., the degree of integration will exert a positive effect on acquirer performance up to a point, after which this effect will turn negative.

2. Data, variables and econometric approach

2.1. Data

We gathered data on US-based acquirers and their domestic acquisitions over 2008–2019 from the Security Data Company (SDC) database. We chose this sample period as it represented the start of a new business cycle *ex post* the credit crunch crisis of 2008 wherein acquisition activity accelerated in the United States before slowing again in 2020 due to the onset of the COVID-19 pandemic that signaled the conclusion of the business cycle (Kengelbach et al., 2020). We obtained an initial sample of 2092 acquisitions. We only included an acquisition in our sample if it fulfilled the following four criteria – a) the acquisition was completed, b) the acquirer and target were both publicly traded companies (as we required data from their annual statements), c) the acquisition transaction value was greater than \$10 million, and d) the acquirer took a majority stake in the target and provided an explicit intention or plan to integrate the target. We followed this approach as per research on acquisitions. We could not obtain data for 533 acquisitions as the target was not a public company. We could not distinctly identify an operating synergy rationale in 107 acquisitions i.e., the acquirer did not place an emphasis on cost or revenue synergy. The final dataset had 1452 acquisitions by 448 acquirers aligned to 53 four-digit SIC codes in the manufacturing (Standard Industrial Classification [SIC] codes 2000–3999) and wholesale and retail industries (SIC codes 5000–5900 respectively). We gathered control variable and performance data from the SDC, COMPUSTAT, CRSP databases, and annual statements of the acquirers and targets. Table 1 shows the control variables. We controlled for fixed effects at the firm, industry, and year levels.

2.2. Independent variable (IV)

Relative emphasis on operating synergy in acquisition – We followed a five-step procedure to operationalize the IV.

- 1) First, we conducted a detailed literature review and listed all the different operating synergy rationales established in prior research on acquisitions. We list these rationales in table A1 in Appendix A. In table A1, cost synergy rationales are mentioned in entries 1 and 2 and revenue synergy rationales are mentioned in entries 3, 4, and 5.
- 2) Next, for each acquisition in our sample, we referred to three archival sources - press releases, conference call transcripts, and SEC EDGAR filings (S-4, 14-A, or 14-D). We listed all the operating synergy rationales announced by the acquirer in these sources as ‘pointers’. Thus, if the acquirer listed three operating synergy rationales, we listed them as three pointers. This approach is established in prior research on acquisitions (Filip et al., 2022; Hu et al., 2021; Kimbrough and Louis, 2011; Rabier, 2017).
- 3) For each acquisition, we manually categorized the synergy rationale in each pointer by comparing it to the synergy rationales listed in table A1 as per the approach of Rabier (2017). If a pointer mapped onto entries 1 and/or 2 in table A1, we categorized it as a cost synergy pointer. If a pointer mapped onto entries 3, 4, and/or 5 in table A1, we categorized it as a revenue synergy pointer.
- 4) For an acquisition, if there were a greater number of pointers related to cost synergy compared to revenue synergy, we concluded that the acquisition had a higher emphasis on cost synergy relative to revenue synergy. If there were a greater number of pointers related to revenue synergy compared to cost synergy, we concluded that the acquisition had a higher emphasis on revenue synergy relative to cost synergy. Of the 1452 acquisitions in our sample, in 535 acquisitions, acquirers placed a higher relative emphasis on cost synergy and in 917 acquisitions, acquirers placed a higher relative emphasis on revenue synergy.
- 5) Lastly, we developed two variables, one to capture the relative emphasis on cost synergy and the second to capture the relative emphasis on revenue synergy. To operationalize the relative emphasis on cost synergy in an acquisition, we divided the total number of pointers specific to realizing cost synergy by the total number of pointers for cost and revenue synergy. We followed a similar approach to operationalize the relative emphasis on revenue synergy in an acquisition. We standardized both variables to assume values between 0.01 and one, with values closer to one indicating a higher relative emphasis on one of the operating synergy rationales over the other.

For instance, for an acquisition X, if the acquirer reported four cost synergy pointers and one revenue synergy pointer, the value of the relative emphasis on cost synergy variable was 0.8 i.e., $[4/(4 + 1) = 0.8]$. Thus, in acquisition X, 80 percent of the acquirer’s emphasis was on realizing cost synergy and 20 percent on realizing revenue synergy. If two acquisitions, X and Y had values of 0.8 and 0.6 for the relative emphasis on cost synergy variable, it implies that the acquirer emphasized the realization of cost synergy to a

Table 1
Control variables, operationalization, and rationale for inclusion^a.

Variable name	Operationalization	Data source
Acquirer size	Natural log of acquirer revenue in year 't'.	COMPUSTAT
Corporate diversification	Natural log of the total number of four digit SIC codes for an acquirer for year 't'.	Mergent Online, Capital IQ, IBIS World
Business unit interdependence	Measured using resource dependence between a pair of NAICS codes that the acquirer was present in. We measured the dependence of NAICS code 'x' on NAICS code 'y' using the dollar value of goods sold by 'y' to 'x' and vice versa. We summed them to determine mutual dependence between both codes and repeated this process for all possible pairs of codes for the acquirer for year 't'.	Census Bureau (U.S. Department of Commerce)
Relative performance (acquirer/target)	Ratio of the ROA of acquirer and target in year 't'.	COMPUSTAT
Unabsorbed slack	(Cash + short term investments)/Revenue for acquirer in year 't'	COMPUSTAT
Acquirer experience (cost-based/revenue-based synergy acquisitions)	Cumulative number of acquisitions that had a higher relative emphasis on cost synergies from the start of the sample period till year 't-1'. The measure was 'decayed' by dividing the acquisition activity of year 't-1' by 1, 't-2' by 2 to adjust for the decrease in synergy potential of the acquisition over time. A similar approach was followed for acquisitions with a higher relative emphasis on revenue synergies.	SDC Platinum
Acquirer experience (industry specific)	Natural log of total number of SIC codes in which an acquirer made an acquisition till year 't-1'.	SDC Platinum
Prior alliance/divestiture experience	Natural log of the cumulative number of all the alliances/divestitures made by the acquirer from the start of the sample year till year 't-1' for year 't'.	SDC Platinum
Time between successive acquisitions	For a particular acquisition 'n', this measure is the natural log of the average time duration (in days) between the preceding acquisition (n-1) and the succeeding acquisition (n+1) for an acquirer.	COMPUSTAT
Position in acquisition sequence	We defined an acquisition sequence as all the acquisitions made by an acquirer over a rolling two-year window. For a particular acquisition 'n', this measure is the natural log of its numerical position (e.g., first, second etc.) in the sequence. (Barkema and Schijven, 2008)	SDC Platinum
Parallel post-acquisition integration instances	We defined parallel integration instances as the natural log of the sum of instances where an acquirer simultaneously integrated other acquisitions in addition to a focal acquisition over a rolling two-year window.	SDC Platinum
Prior post-acquisition integration costs	We took a natural log of the sum of the post-acquisition integration costs incurred by an acquirer over a period of five years prior to a focal acquisition.	Capital IQ, Company press announcements and conference calls, 10K and annual reports, Lexis Nexis
Target type (divested/non-divested)	Dummy variable coded '1' if the acquisition involved the purchase of divested assets; '0' otherwise.	SDC Platinum
Relative acquisition size	Acquisition purchase price/Market capitalization of acquirer for year 't'.	COMPUSTAT, SDC Platinum
Serial acquirer	Dummy variable coded '1' for an acquirer that made more than four acquisitions over the chosen sample period; '0' otherwise. (Laamanen and Keil, 2008)	Capital IQ, Company press announcements and conference calls, 10K and annual reports, Lexis Nexis
Prior goodwill impairment	Magnitude of goodwill impairment/Asset base of the acquirer until year 't-1' (Rabier, 2017)	COMPUSTAT
Relative degree of business relatedness (acquirer/target)	Natural log of the number of four digit SIC codes common to acquirer and target (i.e., one, two, three, or four) in year 't'	COMPUSTAT, SDC Platinum
New productivity enhancing initiatives	Natural log of the number of initiatives promoted by the acquirer or target to enhance operational efficiency between year 't' and year 't+2' (e.g., TQM/JIT programs, continuous improvement programs etc.).	Capital IQ, Company press announcements and conference calls, 10K and annual reports, Lexis Nexis
Prior restructuring experience	Natural log of the number of instances when the acquirer or target announced an organizational restructuring until year 't-1'. (Barkema and Schijven, 2008)	
New advertising/branding campaigns	Natural log of the number of new advertising or branding campaigns announced by the acquirer or target between year 't' and year 't+2'.	
Number of new products introduced	Natural log of the number of new product categories introduced by the acquirer or target between year 't' and year 't+2' (post-acquisition)	

^a In this table, year 't' refers to the year in which an acquisition is made. All controls were lagged by one year.

greater extent in acquisition X (80 percent) in comparison to acquisition Y (60 percent).² In Appendix A, we provide several examples of our operationalization approach for the IV.³

2.3. Dependent variable (DV)

Acquirer performance – We acknowledged that acquisitions that place a higher relative emphasis on cost or revenue synergy affect acquirer performance differently contingent depending on realized synergy and integration costs. Accordingly, we use two long term accounting-based measures of acquirer performance. First, we employed a profitability-based measure of acquirer performance - *change (δ) in EBITDA margin* (EBITDA margin is defined as the ratio of the earnings before interest, taxes, depreciation and amortization and total revenue). Second, we employed a growth-based measure of acquirer performance - *revenue growth*. We calculated both variables as per Cording et al. (2010) using a two-year period. In the equations below, the industry is defined as all firms in the same three-digit SIC code as the acquirer as per COMPUSTAT.

Degree of post-acquisition integration DPI_{acquirer, (t+n, t)} ('n' years post-acquisition; between years 't+n' and year 't') =

$$\left[\sum_{i=1}^n \frac{\ln(1 + \text{ARD}_{\text{acquirer}, t+i} + \text{ARR}_{\text{acquirer}, t+i}) + 1}{\ln(1 + \text{AR}_{\text{acquirer}, t+i}) + 1} \right] - \frac{\ln(1 + \text{TRD}_{(\text{acquirer} + \text{target}), t}) + 1}{\ln(1 + \text{TRB}_{(\text{acquirer} + \text{target}), t}) + 1} \left\} * \frac{\ln(X_k)}{\sum_j \ln(X_j)}$$

Subtracting resources as per Karim and Capron (2016)
Recombining or redeploying resources as per Karim and Capron (2016)

Adding resources as per Karim and Capron (2016)

post-acquisition ratio ('t+n' years)
pre-acquisition ratio (year 't')
target size adjustment

We followed this approach as prior work indicates that integration usually takes two to three years to complete and targeted synergies are ideally realized during this time (Cording et al., 2010; Oler et al., 2008; Zollo and Meier, 2008). We used a three-year period for both DVs as a robustness check.

Accounting measures reflect the actual performance of the acquirer as an outcome of integration over future periods (Cording et al., 2010; Oler et al., 2008; Zollo and Meier, 2008). In contrast, short term and long-term stock performance measures reflect expected performance in future periods (Cording et al., 2010; Zollo and Meier, 2008). For instance, changes in EBITDA margin capture the operating synergy accrued due to a change in the combined firm's resources due to integration. Using the δ EBITDA margin helped us eliminate non-operational sources of synergy such as tax shields due to greater debt capacity, greater financial slack due to increased cash reserves, coinsurance, and depreciation (Koller et al., 2010; Sirower and O'Byrne, 1998; Sirower and Sahni, 2006). The acquirers' revenue growth captures the revenue synergy arising as a result of integration. However, as several extraneous factors may affect our measures (Cording et al., 2010), we ran several robustness checks.

2.4. Mediator variable

Degree of post-acquisition integration – We defined the degree of post-acquisition integration as 'the magnitude of change in the resources of the combined acquirer and target firm relative to their resources prior to the acquisition'. We adopted this definition as per prior research on post-acquisition integration that employed the resource reconfiguration (RR) lens of the literature on dynamic capabilities (Capron et al., 1998, 2001; Capron, 1999; Chaturvedi and Prescott, 2022; Karim, 2006; Karim and Capron, 2016). As per this work, we examined three processes to measure the magnitude of change in the resources of the combined acquirer and target firm.

The three processes correspond to the four mechanisms mentioned in Karim and Capron (2016)'s definition i.e., *adding, subtracting, recombining, and redeploying*. The three processes refer to i) *increase* in the resources of the acquirer as a result of the acquisition - *adding*

² We thank an anonymous reviewer for suggesting this interpretation.

³ Cost and revenue synergies may not be mutually exclusive in an acquisition. That is, managers may present both cost and revenue synergy rationales in the same acquisition (Castañer and Karim, 2013; Dranove and Shanley, 1995; Homberg and Bucierius, 2005; Houston et al., 2001). However, one is likely to dominate the other (Capron, 1999; Capron and Hulland, 1999; Castañer and Karim, 2013; Dranove and Shanley, 1995; Houston et al., 2001). Thus, we counted the pointers for each synergy rationale for each acquisition to identify an acquisition as having a higher relative emphasis on cost or revenue synergy.

resources, ii) *divestiture of acquired resources* - the acquirer may eliminate redundancy and inefficiency by divesting some resources - *subtracting resources*, and iii) *recombination or redeployment of acquired resources* – the acquirer may *recombine* the target's resources with internal resources or *redeploy* them in the combined firm - *recombining or redeploying resources*.

We propose that the greater the magnitude of these RR processes i.e., changes to the combined firm's operating resources (addition), resource divestiture (subtraction), and resource recombination/redeployment, the greater is the magnitude of change in the resources of the combined firm relative to their resources prior to the acquisition and hence, the greater is the degree of integration.

Suppose that an acquirer made an acquisition in year 't' and initiated the integration of the target in year 't'. We posit that the degree of integration after a period of 'n' years ('t + n' years where 'n' takes values of one, two, or three years) is the difference between the *post-acquisition* (in year 't + n') and *pre-acquisition* ratios (in year 't') representing the changes made to the acquirer and target's resources during the process of integration. We define the post-acquisition ratio in year 't + n' as *the ratio of resource divestiture and resource recombination or redeployment in the combined acquirer and target firm over 'n' years after the year of acquisition 't' to the increase in the operating resource base of the acquirer as a result of the acquisition in year 't'*. Next, we define the pre-acquisition ratio in year 't' as *the ratio of resource divestiture for the acquirer and target to the operating resource bases of the acquirer and target prior to the acquisition in year 't'*.

It is notable that prior to the acquisition in year 't', the acquirer and target exist as independent firms and hence, their resource divestiture activities and standalone operating resource bases may not reflect any changes from post-acquisition integration. However, if we did not include the target's data in our calculation of the pre-acquisition ratio, the value of the difference between the post-acquisition and pre-acquisition ratios would be biased upward leading to the degree of integration variable being overestimated. Thus, the pre-acquisition ratio acts as a baseline at year 't' that when subtracted from the post-acquisition ratio at year 't + n' gives the magnitude of *change* in the combined acquirer and target firm due to integration up to year 't + n' ('n' years after the acquisition) vis-à-vis their status as independent firms in year 't' (prior to the acquisition). We submit that *the greater the value of the difference in pre- and post-acquisition ratios, the greater is the magnitude of change implemented in the combined firm's operating resources by the acquirer, and the greater is the degree of integration*.

First, we gathered data related to the three processes discussed above from COMPUSTAT and the acquirer and target's annual statements to calculate the pre- and post-acquisition ratios. Next, we subtracted the pre-acquisition ratio from the post-acquisition ratio. Finally, we multiplied the value obtained in the second step above by the ratio of the transaction value paid by the acquirer for the focal target for whom the degree of integration was calculated and the sum of the transaction values of all targets that were acquired in the given year. Most acquirers in our sample made more than one acquisition in several years of the sample period. However, the annual statements of an acquirer provide consolidated data for resource divestiture, recombination, redeployment, and changes to the operating resource base of the acquirer that result from the integration of multiple acquisitions. The multiplication approach discussed above enabled us to adjust for idiosyncrasies arising from the different sizes of multiple targets acquired in a year. The degree of post-acquisition integration is expressed as.

- 1) **ARD** refers to divestiture of acquired resources and is captured by proceeds (revenue) earned from the sale of the target's resources. This was operationalized either by taking the sale value directly if the acquirer reported it. If the acquirer did not report this value, we took the difference in the proceeds obtained from the acquirer's total resource divestiture and the acquirer's non-acquisition related resource divestiture. **Thus, this term corresponds to subtracting resources as per Karim and Capron (2016).**
- 2) **ARR** refers to the redeployment or recombination of acquired resources within the acquirer's organization. We operationalized ARR by taking the acquirer's integration costs as reported. Typically, integration costs referred to redesigning the combined organization, combining different business units or resources, organizing task forces for knowledge transfer, and transferring personnel from or to the target. **Thus, this term corresponds to recombining or redeploying resources as per Karim and Capron (2016).**
- 3) **AR** refers to the resources added to the acquirer's resource base via the acquisition i.e., the target's resources. We operationalized AR by taking the target's property, plant, and equipment or the target's fixed assets. **Thus, this term corresponds to adding resources as per Karim and Capron (2016).**
- 4) **TRD** refers to the total resource divestiture of the acquirer and target in year 't' prior to the acquisition.
- 5) **TRB** refers to the total operating resource base of the acquirer and target proxied by their PPE or fixed assets prior to the acquisition.
- 6) **'X_k'** refers to the transaction value that is the price paid by the acquirer for a focal target 'k' acquired in year 't' for which the degree of integration measure is calculated. X_j refers to the sum of the transaction values paid by the acquirer for all the 'j' targets acquired in year 't'.

The value of the degree of integration variable ranges from zero to one with higher values indicating higher degrees of integration and vice versa. For our main analyses, we used a two-year horizon for the post-acquisition integration for each target i.e., in the equation above, 'n' equals two and 'i' takes the value of 'one' and 'two'. We took the square of this variable to test for the curvilinear effect predicted in [hypothesis 2](#). We used a three-year horizon ('n' equal three) as a robustness check. In [Appendix B](#), we provide a working example of the operationalization of the degree of integration.

For our empirical analyses, we lagged our variables to ensure temporal precedence between the IV, mediators and DV and to avoid any sources of bias and measurement error in our mediation models ([Aguinis et al., 2017](#); [Preacher, 2015](#)). Specifically, we measured the IV (relative emphasis on cost or revenue synergy) at time 't-3' (lagging it by three years). We measured the mediator variable (degree of integration) at time 't-2' (lagging it by two years). We measured the DVs (δ EBITDA margin and revenue growth) at time 't'.

Table 2
Correlations and descriptive statistics.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
1. Cost synergy	1																												
2. Rev. synergy	0.00	1																											
3. Deg. of int.	0.01	-0.01	1																										
4. Deg. of int. ²	0.05	-0.08	0.02	1																									
5. Acquirer size	0.04	-0.06	0.08	0.02	1																								
6. Corp. Div.	0.02	0.02	0.02	0.00	0.17	1																							
7. Unit	0.05	0.03	-0.01	0.03	0.11	0.04	1																						
Interdependence																													
8. Rel. perf.	0.01	0.00	0.05	0.01	0.13	-0.03	0.03	1																					
9. Un. slack	0.00	0.00	0.03	0.03	0.05	0.05	0.00	0.04	1																				
10. Experience (cost)	0.13	-0.01	0.02	0.04	0.19	0.00	0.00	0.00	-0.01	1																			
11. Experience (revenue)	-0.01	0.15	-0.01	-0.01	0.08	0.00	0.00	0.00	-0.01	-0.01	1																		
12. Experience (industry)	0.03	0.06	-0.03	0.01	0.05	0.00	0.00	0.00	-0.02	0.02	0.03	1																	
13. Alliance exp.	0.01	0.03	-0.06	-0.03	0.13	0.06	0.00	0.01	-0.01	0.00	0.02	0.08	1																
14. Div. exp.	0.00	0.00	0.02	0.02	0.08	0.08	-0.01	0.02	0.02	0.06	-0.02	-0.03	-0.01	1															
15. Acqn. time	0.01	0.00	0.04	-0.01	0.09	-0.02	0.00	-0.02	-0.01	0.00	0.00	-0.01	-0.02	0.02	1														
16. Acqn. seq.	0.01	0.00	-0.03	0.02	-0.01	0.00	0.01	-0.03	-0.01	0.00	0.00	0.00	0.00	-0.03	0.08	1													
17. Parallel int.	0.00	0.00	-0.11	-0.14	0.08	0.05	0.01	-0.02	-0.07	0.01	0.01	0.04	-0.01	0.03	-0.01	-0.06	1												
18. Int. costs	0.00	0.00	0.15	0.18	0.09	0.07	0.11	-0.03	-0.06	-0.01	-0.00	-0.01	0.02	0.05	-0.01	-0.04	0.13	1											
19. Acqn. size	0.08	-0.04	0.06	0.02	-0.04	0.04	0.00	0.00	0.00	0.02	-0.01	0.01	0.00	-0.02	0.03	-0.01	0.02	-0.11	1										
20. Target type	-0.07	-0.05	0.08	0.03	0.08	0.03	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.02	1									
21. Serial acq.	0.00	0.00	-0.02	0.02	0.02	-0.05	0.00	-0.01	0.00	0.00	0.00	0.00	0.04	0.02	-0.07	0.00	0.17	0.08	0.00	0.00	1								
22. Goodwill	0.02	0.04	-0.01	0.00	0.07	0.03	-0.01	0.00	0.00	-0.01	0.01	0.00	0.00	0.02	-0.03	-0.02	0.09	0.02	-0.01	-0.01	-0.03	1							
23. Bus. relatedness	0.01	-0.02	0.07	0.01	0.01	-0.02	0.08	0.00	0.00	0.04	-0.01	-0.12	-0.02	-0.03	-0.04	0.00	-0.02	-0.05	0.08	0.04	0.00	-0.11	1						
24. Prod. initiatives	0.06	-0.01	0.00	0.02	0.14	0.01	0.01	-0.01	-0.01	0.00	-0.01	-0.00	0.00	0.00	0.00	0.00	-0.05	-0.08	0.00	0.00	0.00	0.00	0.06	1					
25. Restructuring	0.07	0.00	0.04	0.01	0.08	0.07	-0.03	-0.03	-0.00	0.00	-0.00	-0.01	0.00	0.06	-0.02	0.00	0.04	0.02	0.03	0.03	0.05	0.02	0.07	0.09	1				
26. Advertising	-0.02	0.05	-0.01	-0.01	0.11	0.03	0.01	-0.02	-0.01	0.00	0.04	0.04	0.00	0.00	0.00	0.00	-0.00	-0.01	0.00	0.00	0.02	0.00	0.00	-0.15	-0.12	1			
27. New products	-0.01	0.07	0.00	-0.02	0.09	0.02	0.00	-0.01	0.00	0.00	0.05	0.02	0.00	0.00	0.00	0.00	-0.01	-0.00	0.00	0.00	0.04	0.00	0.00	-0.09	-0.07	0.17	1		
28. δ EBITDA/sales	0.01	0.02	0.02	0.01	-0.02	-0.02	0.02	0.03	-0.01	0.02	0.00	-0.01	0.02	0.02	0.00	0.02	-0.09	-0.01	0.03	0.02	0.01	-0.04	0.05	0.03	-0.03	0.03	-0.02	1	
29. Revenue growth	0.00	0.05	0.00	0.02	-0.04	0.04	0.01	0.05	-0.01	-0.01	0.02	0.03	0.04	0.01	0.00	-0.04	-0.04	-0.00	0.01	0.01	0.02	-0.05	0.02	0.00	-0.05	0.08	0.05	0.02	1
Mean	0.37	0.26	0.61	0.31	8.16	1.42	0.15	13.47	8.68	0.62	0.40	0.74	3.17	2.02	1.23	1.45	0.74	1.45	0.53	0.47	0.27	13.17	0.34	0.69	2.63	0.48	0.57	-0.02	0.01
S.D.	0.45	0.39	0.28	0.17	3.24	0.35	0.08	5.25	6.13	0.81	0.49	0.55	1.53	1.77	1.91	0.26	1.37	3.02	0.37	0.29	0.18	4.67	0.28	0.14	0.78	0.34	0.80	0.18	0.09
Maximum	1	1	0.86	0.71	13.19	2.19	0.18	19.54	16.31	3.01	1.87	2.32	5.64	4.33	3.77	2.40	2.09	7.19	1	1	1	18.22	0.67	1.10	3.47	1.39	1.69	0.11	0.12
Minimum	0	0	0.11	0.00	2.47	0	0	0.23	3.09	0.31	0.14	0.55	1.07	0.64	0	0	0	0.16	0	0	0	10.18	0.13	0	0	0	0	-0.13	-0.22

N = 1452 acquisition-year observations. All values ≥ 0.1 and ≤ -0.1 are significant at $p < .05$.

This approach provides a temporal interval to account for acquirers choosing different degrees of integration and linking them to performance (Barkema and Schijven, 2008; Capron, 1999; Karim, 2006). We tested other lag structures as robustness checks.

2.5. Econometric approach

We employed the modified causal step approach to test for mediation (Kenny et al., 1998) as per recent research (Caner et al., 2018; Moeen, 2017). This approach is advantageous due to high statistical power and low type one error (Aguinis et al., 2017; Kenny et al., 1998; Preacher, 2015). After testing for the curvilinear effect predicted in hypothesis 2, we used the approach of Haans et al. (2016) to ensure empirical robustness. While we included several control variables, based on the dynamics underpinning our mediation model, we concomitantly addressed three empirical issues. First, there is likely to have been endogeneity in the IV and the mediator. That is, acquirers may self-select into emphasizing cost or revenue synergy relative to the other and into choosing a specific degree of integration in a subsequent acquisition particularly if they gained performance benefits related to these decisions in prior acquisitions. This may lead to reverse causality issues in our model when the error term is correlated with the IV and mediator. To address this, we controlled for lagged values (one- and two-year) of the mediator and DV in our models. However, this may lead to a second issue of omitted variable bias due to time-invariant fixed effects (e.g., geographical origin, culture, structure) (Shaver, 2005). Finally, OLS regression may not be advisable as the lagged DV values may be inflated at the expense of the IV and mediator (Keele and Kelly, 2006).

We addressed the above issues by assuming that each of our control variables along with the IV and mediator was potentially endogenous. Thus, we used the Arellano-Bond (AB) generalized method of moments (GMM) estimator that performs a first-differencing procedure for all variables and lags them appropriately (creating instruments) to eliminate the time-invariant fixed effects thus enhancing the efficiency of the estimated coefficients (Arellano and Bond, 1991; Roodman, 2009a, 2009b). This approach has been used in recent research on acquisitions as it addresses time-invariant fixed effects and lagged variables (Barkema and Schijven, 2008; Bertrand and Capron, 2015). We chose a difference-GMM estimator for our model as it relaxes the steady state assumption restriction imposed by a system-GMM estimator that requires changes in the instrument variables to be uncorrelated to the

Table 3
Arellano-Bond GMM panel regression analyses (endogeneity adjusted estimates) – degree of post-acquisition integration as DV.

	Model 1 (controls)	Model 2 (Cost synergy emphasis as IV)	Model 3 (Revenue synergy emphasis as IV)
Higher relative emphasis on cost synergy		0.769** (0.248)	
Higher relative emphasis on revenue synergy			0.438* (0.199)
DV (one-year lag)	0.499(0.374)	0.578(0.641)	0.620(0.409)
DV (two-year lag)	0.011(0.052)	0.042(0.056)	0.035(0.060)
Acquirer size	0.162**(0.060)	0.167**(0.059)	0.179**(0.063)
Corporate diversification	-0.723(0.765)	-0.403(0.600)	-0.813(0.898)
Business unit interdependence	0.045 ⁺ (0.024)	0.048*(0.021)	0.042*(0.018)
Relative performance	0.161*(0.077)	0.131 ⁺ (0.075)	0.169*(0.078)
Unabsorbed slack	0.079(0.063)	0.070(0.052)	0.088(0.075)
Acquirer experience (cost synergy acquisitions)	0.824(0.559)	0.471*(0.226)	0.310(0.595)
Acquirer experience (revenue synergy acquisitions)	-0.114*(0.055)	-0.111*(0.045)	-0.207*(0.088)
Acquirer experience (industry)	0.237**(0.082)	0.101*(0.040)	0.109*(0.051)
Prior alliance experience	0.075(0.061)	0.039(0.053)	0.035(0.029)
Prior divestiture experience	0.105 ⁺ (0.059)	0.087 ⁺ (0.046)	0.041(0.062)
Time between successive acquisitions	-0.343(0.496)	-0.458(0.503)	-0.432(0.475)
Position in acquisition sequence	-0.451(0.544)	-0.315(0.420)	-0.356(0.259)
Parallel post-acquisition integration instances	-0.353*(0.161)	-0.449**(0.156)	-0.267*(0.105)
Prior post-acquisition integration costs	-0.298(0.308)	-0.142**(0.054)	-0.096*(0.040)
Target type (divested/non-divested)	0.271(0.299)	0.203(0.367)	0.129(0.241)
Relative acquisition size	0.166(0.142)	0.257(0.480)	0.096 ⁺ (0.055)
Serial acquirer	0.240**(0.086)	0.202**(0.075)	0.120**(0.044)
Prior goodwill impairment	-0.771*(0.302)	-0.502 ⁺ (0.324)	-0.212 ⁺ (0.116)
Relative degree of business relatedness	0.422*(0.183)	0.197*(0.086)	0.151 ⁺ (0.082)
New productivity enhancing initiatives	0.170(0.287)	0.247(0.199)	0.159(0.239)
Prior restructuring experience	0.531(0.625)	0.397**(0.140)	0.292(0.408)
New advertising/branding campaigns	-0.181(0.203)	-0.188(0.251)	-0.143**(0.050)
Number of new products introduced	-0.085**(0.031)	-0.112*(0.052)	-0.102*(0.035)
Year/industry/acquirer fixed effects	Included	Included	Included
Number of groups (acquirers)	448	448	448
Number of instruments	202	204	204
Arellano-Bond test – AR (1) - 1st differences (p-value)	<0.001	0.001	0.001
Arellano-Bond test – AR (2) - 1st differences (p-value)	0.707	0.425	0.569
Overall Hansen test (p-value)	0.469	0.584	0.607
Difference-in-Hansen test - instrument exogeneity (p-value)	0.312	0.297	0.361
Wald χ^2	745.66	952.05	1006.98

Notes: a) +p< 0.1, *p < 0.05, **p < 0.01, ***p < 0.001. b) The value in the parentheses for each variable is the robust heteroscedasticity adjusted errors clustered at the acquirer level. c) Bold values refer to coefficients of hypotheses testing. d) Wald χ^2 values were significant at p < 0.001.

fixed effects (Roodman, 2009a). We chose this approach as acquirers in our sample emphasized cost and revenue synergies differently in their acquisitions and may also have had different integration capabilities (Barkema and Schijven, 2008; Brueller et al., 2014; Zollo and Singh, 2004) thus making a steady state assumption untenable. We employed other approaches as robustness checks.

3. Results

Table 2 shows the correlations and descriptive statistics for the study. Tables 3–5 show our results. Panels 2a-2d in Fig. 2 show the graphical representation of the results. Multi-collinearity was not an issue as the mean variance inflation factor was below 10 (considered appropriate) for our variables. The mean of the degree of post-acquisition integration variable was 0.611 (61.1 percent). That is, on average, acquirers in our sample integrated between half to two-thirds of their targets. The requirements of statistical robustness for the AB-GMM specification (Roodman, 2009a, 2009b) were met for each model (Appendix C). We report heteroscedasticity-adjusted robust standard errors clustered at the acquirer level in Tables 3–5 (Shaver, 2005; Windmeijer, 2005).

The controls in tables, 3, 4, and 5 offer important insights related to the rare, complex, and uncertain context of post-acquisition integration. In model 1 of Table 3, the cost synergy acquisition experience variable exerted a positive and non-significant on the degree of integration. The revenue synergy acquisition experience variable exerted a negative and significant on the degree of integration ($p < 0.05$). This implies acquirers were more likely to choose low or intermediate degrees of integration when they had prior experience with acquisitions emphasizing revenue synergy relative to cost synergy.

The time between successive acquisitions, acquisition sequence position, and prior integration costs variables exerted a negative and non-significant effect on the degree of integration. The parallel integration instances variable exerted a negative and significant effect on the degree of integration ($p < 0.05$). This indicates acquirers were likely to choose low or intermediate degrees of integration for a focal acquisition if they were simultaneously occupied with integrating prior acquisitions. The serial acquirer variable exerted a positive and significant effect on the degree of integration implying that serial acquirers were likely to choose high degrees of integration ($p < 0.01$). Finally, the restructuring experience variable exerted a positive but non-significant effect on the degree of integration.

In model 1 of Tables 4 and 5, the experience with cost synergy acquisitions variable had a positive but marginally significant effect on δ EBITDA margin ($p < 0.1$) and a positive but non-significant effect on revenue growth. The experience with revenue synergy acquisitions variable, time between successive acquisitions, acquisition sequence position, parallel integration instances, and prior integration costs variables each exerted a positive and non-significant effect on both DVs. The serial acquirer variable exerted a positive and significant effect on both DVs ($p < 0.05$). Finally, the restructuring experience variable exerted a positive but significant effect on δ EBITDA margin ($p < 0.05$) and a positive but non-significant effect on revenue growth.

Hypothesis 1 (H1) stated that for an acquisition with a higher relative emphasis on cost synergy, the degree of post-acquisition integration will exert a linear mediating effect on acquirer performance i.e., acquirer performance will increase with an increase in the degree of post-acquisition integration. For mediation to hold, the first condition of Kenny et al. (1998) is that the IV should have a significant effect on the DV. This condition was met - a higher relative emphasis on cost synergy in acquisitions had a *positive and significant* effect on δ EBITDA margin (model 2, Table 4: $\beta = 0.149$, $p < 0.01$) and on revenue growth (model 2, Table 5: $\beta = 0.272$, $p < 0.05$). The second condition of Kenny et al. (1998) is that the IV should have a significant effect on mediator. This condition was also met - a higher relative emphasis on cost synergy in acquisitions exerted a *positive and significant* effect on the degree of integration (model 2, Table 3: $\beta = 0.769$, $p < 0.01$). In material terms, if acquirers placed an exclusive emphasis on cost synergy in an acquisition and ignored revenue synergy, they were likely to integrate a little more than three-fourths (77 percent) of the target.

The third condition of Kenny et al. (1998) is that the mediator should exert a significant effect on the DV. This condition was also met. The degree of integration exerted a *positive and significant* effect on δ EBITDA margin (model 4, Table 4: $\beta = 0.171$, $p < 0.05$) and on revenue growth (model 4, Table 5: $\beta = 0.284$, $p < 0.01$). Thus, the mediator exerted a significant effect on the DV. As per the fourth criterion of Kenny et al. (1998), the IV should *not* exert a significant effect on the DV when the mediator is controlled for. As we controlled for the degree of integration, the main effect of the relative emphasis on cost synergy (IV) variable turned *non-significant* in its prediction of δ EBITDA margin and revenue growth respectively (model 5 in Tables 4 and 5). However, the degree of integration term remained *positive and significant* in its prediction of δ EBITDA margin (model 5, Table 4: $\beta = 0.313$, $p < 0.01$) and revenue growth (model 5, Table 5: $\beta = 0.307$, $p < 0.05$). These results strongly support H1 indicating that the degree of integration exerted a linear mediating effect on the relationship between the relative emphasis on cost synergy and performance.

We examined the marginal effects of mediation for different values of the degree of integration variable. The marginal effects were significant ($p < 0.05$) and are shown in panels 2a and 2b in Fig. 2. Panels 2a and 2b show that at low values of the degree of integration mediator (between 0.1 and 0.3 or when acquirers integrated 10 to 30 percent of the target), the change in EBITDA margin and revenue was negligible (nearly zero percent) as shown by the flat trend in each panel. However, as the degree of integration crossed 30 percent or when acquirers integrated about one-third of the target, the flat trend gave way to a sharp increase in EBITDA margin and revenue as seen in both panels. In material terms, if acquirers placed an exclusive emphasis on cost synergy in an acquisition (i.e., they did not target revenue synergy at all) and chose the degree of integration as 86 percent⁴ (i.e., they integrated more than three-fourths of the entire target), the EBITDA margin and revenue increased by 0.89 percent and 0.62 percent respectively. Thus, panels 2a and 2b show that when acquirers placed a higher relative emphasis on cost synergy in acquisitions, an increase in the degree of integration

⁴ We used 86 percent to interpret this result as the maximum value of the degree of integration variable in our dataset was 0.864 (86 percent).

Table 4
 –Arellano-Bond GMM panel regression analyses (endogeneity adjusted estimates) - δ EBITDA margin as DV.

	Model 1 (controls)	Model 2 (Cost synergy emphasis as IV)	Model 3 (Revenue synergy emphasis as IV)	Model 4 (mediator- > DV)	Model 5 (Full mediation model- cost synergy emphasis)	Model 6 (Full mediation model - revenue synergy emphasis)
Higher relative emphasis on cost synergy		0.149** (0.052)			0.084 (0.079)	
Higher relative emphasis on revenue synergy			0.302*(0.141)			0.251 (0.262)
Degree of post- acquisition integration				0.171* (0.074)	0.313** (0.108)	0.166** (0.063)
Degree of post- acquisition integration (squared)				-0.283* (0.125)	-0.108 (0.133)	-0.234** (0.080)
DV (one-year lag)	0.389** (0.132)	0.392**(0.133)	0.454**(0.156)	0.192*** (0.047)	0.409***(0.109)	0.480***(0.138)
DV (two-year lag)	0.106(0.184)	0.191(0.222)	0.273(0.240)	0.052(0.061)	0.204(0.290)	0.269(0.352)
Acquirer size	-0.569** (0.197)	0.540**(0.201)	0.776*(0.359)	0.751*(0.335)	0.258*(0.126)	0.304*(0.141)
Corporate diversification	-0.232(0.183)	-0.335(0.319)	-0.428(0.405)	-0.326(0.259)	-0.264(0.334)	-0.377(0.308)
Business unit interdependence	-0.384(0.425)	-0.447(0.509)	-0.361(0.462)	-0.134(0.151)	-0.128(0.175)	-0.076(0.121)
Relative performance	0.069*(0.028)	0.175*(0.078)	0.078*(0.031)	0.102+(0.056)	0.171*(0.082)	0.092*(0.039)
Unabsorbed slack	0.125(0.144)	0.234(0.257)	0.219(0.307)	0.155(0.194)	0.061(0.066)	0.138(0.201)
Acquirer experience (cost synergy acquisitions)	0.062+(0.036)	0.185***(0.070)	0.087+(0.052)	0.105(0.137)	0.161***(0.050)	0.044(0.032)
Acquirer experience (revenue synergy acquisitions)	0.043(0.071)	0.054(0.083)	0.062(0.095)	0.074(0.100)	0.072(0.084)	0.071*(0.030)
Acquirer experience (industry)	0.402(0.318)	0.156***(0.049)	0.281(0.322)	0.193(0.211)	0.130(0.110)	0.172(0.189)
Prior alliance experience	0.257(0.282)	0.273(0.295)	0.246(0.311)	0.165(0.214)	0.098(0.104)	0.280(0.322)
Prior divestiture experience	0.183(0.209)	0.151(0.123)	0.051(0.036)	0.103(0.282)	0.144(0.120)	0.132(0.187)
Time between successive acquisitions	-0.142(0.269)	-0.175(0.341)	-0.166(0.208)	-0.121(0.147)	-0.135(0.101)	-0.193(0.250)
Position in acquisition sequence	-0.203(0.284)	-0.125(0.179)	-0.158(0.202)	-0.340(0.345)	-0.146(0.108)	-0.160(0.167)
Parallel post- acquisition integration instances	-0.393(0.342)	-0.267*(0.130)	-0.302+(0.156)	-0.284(0.330)	-0.246*(0.111)	-0.357***(0.113)
Prior post-acquisition integration costs	-0.175(0.310)	-0.161(0.198)	-0.231(0.300)	-0.211(0.258)	-0.138(0.119)	-0.181(0.216)
Target type (divested/ non-divested)	0.113(0.174)	0.187(0.223)	0.174(0.279)	0.196(0.362)	0.102(0.183)	0.116(0.171)
Relative acquisition size	0.177(0.239)	0.153(0.209)	0.158(0.221)	0.252(0.289)	0.151(0.116)	0.234(0.188)
Serial acquirer Prior goodwill impairment	0.187*(0.071) -0.111** (0.037)	0.270*(0.126) -0.129*(0.058)	0.200*(0.082) -0.098*(0.044)	0.394*(0.169) -0.185** (0.069)	0.247*(0.112) -0.313***(0.097)	0.215*(0.100) -0.467***(0.123)
Relative degree of business relatedness	0.243** (0.098)	0.127*(0.058)	0.274+(0.156)	0.283*(0.139)	0.268*(0.121)	0.221***(0.064)
New productivity enhancing initiatives	0.349(0.401)	0.468(0.507)	0.403(0.391)	0.432(0.288)	0.102+(0.058)	0.071(0.145)
Prior restructuring experience	0.058*(0.023)	0.076*(0.033)	0.045+(0.027)	0.032+(0.017)	0.064***(0.024)	0.067(0.054)
New advertising/ branding campaigns	-0.332(0.270)	-0.149(0.256)	-0.093(0.101)	-0.157(0.135)	-0.161(0.155)	-0.106(0.127)

(continued on next page)

Table 4 (continued)

	Model 1 (controls)	Model 2 (Cost synergy emphasis as IV)	Model 3 (Revenue synergy emphasis as IV)	Model 4 (mediator- > DV)	Model 5 (Full mediation model- cost synergy emphasis)	Model 6 (Full mediation model - revenue synergy emphasis)
Number of new products introduced	0.085*(0.038)	0.043*(0.029)	0.105 ⁺ (0.057)	0.172*(0.074)	0.090 ⁺ (0.049)	0.053 ⁺ (0.026)
Year/industry/acquirer fixed effects	Included	Included	Included	Included	Included	Included
Number of groups (acquirers)	448	448	448	448	448	448
Number of instruments	158	160	160	162	162	164
Arellano-Bond test – AR (1) - 1st differences (p-value)	<0.001	<0.01	<0.01	<0.01	<0.01	<0.001
Arellano-Bond test – AR (2) - 1st differences (p-value)	0.390	0.336	0.491	0.345	0.447	0.276
Overall Hansen test (p- value)	0.441	0.702	0.407	0.282	0.350	0.434
Difference-in-Hansen test - instrument exogeneity (p- value)	0.412	0.492	0.563	0.492	0.575	0.382
Wald χ^2	1031.25	1270.41	1337.86	1797.38	1832.67	2116.61

Notes: a) $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. b) The value in the parentheses for each variable is the robust heteroscedasticity adjusted errors clustered at the acquirer level. c) Bold values refer to coefficients of hypotheses testing. d) Wald χ^2 values were significant at $p < 0.001$.

positively affected performance.

Hypothesis 2. (H2) stated that for an acquisition with a higher relative emphasis on revenue synergy, the degree of post-acquisition integration will exert an inverted U-shaped mediating effect on acquirer performance i.e., the degree of integration will exert a positive effect on acquirer performance up to a point, after which this effect will turn negative. In this case, the first condition of [Kenny et al. \(1998\)](#) was met - a higher relative emphasis on revenue synergy in acquisitions had a positive and significant effect on δ EBITDA margin (model 3, [Table 4](#): $\beta = 0.302$, $p < .05$) and on revenue growth (model 3, [Table 5](#): $\beta = 0.341$, $p < .01$). The second condition of [Kenny et al. \(1998\)](#) condition was met - a higher relative emphasis on revenue synergy in acquisitions exerted a positive and significant effect on the degree of integration (model 3, [Table 3](#): $\beta = 0.438$, $p < .05$). In material terms, if acquirers placed an exclusive emphasis on revenue synergy in an acquisition and ignored cost synergy, they were likely to integrate less than half (44 percent) of the target.

The third condition of [Kenny et al. \(1998\)](#) was met as discussed in the results for H1 above. The fourth condition of [Kenny et al. \(1998\)](#) was also met for H2. When we controlled for the degree of integration in model 6 of [Tables 4 and 5](#), the main effect of the relative emphasis on revenue synergy (IV) variable turned *non-significant* in its prediction of δ EBITDA margin and revenue growth respectively. The degree of integration term was *positive and significant* in its prediction of δ EBITDA margin (model 6, [Table 4](#): $\beta = 0.166$, $p < 0.01$) and revenue growth (model 5, [Table 5](#): $\beta = 0.211$, $p < 0.05$). Notably, the degree of integration squared term was *negative and significant* in its prediction of δ EBITDA margin (model 6, [Table 4](#): $\beta = -0.234$, $p < 0.01$) and revenue growth (model 6, [Table 5](#): $\beta = -0.406$, $p < 0.05$).

These results strongly support H2 indicating that the degree of integration exerted an inverted U-shaped mediating effect on the relationship between the relative emphasis on revenue synergy and performance.

To ensure that the result for H2 was robust, we followed the recommendations of [Haans et al. \(2016\)](#) to conduct a deeper examination of the inverted U-shaped trend. We estimated if the slopes at both ends of data corresponding to the mediator were sufficiently steep by performing a *t*-test on values at the low and high end of the data range for the degree of integration mediator variable ([Lind and Mehlum, 2010](#)). The *t*-tests examining the slopes at both ends of data range for the mediator were significant ($p < 0.05$) for both DVs indicating that the inverted U-shaped relationship was robust for both. We plotted the inverted U-shaped relationship for H2 in panels 2c and 2d of [Fig. 2](#). The mediating effect follows an inverted U-shaped trajectory as both halves of the concave shape are observed in both panels. The turnings point of the curves for δ EBITDA margin and revenue growth were calculated as 0.335 ([0.328, 0.360] - 95 percent Fieller CI) and 0.281 ([0.253, 0.292] - 95 percent Fieller CI) as seen in panels 2c and 2d respectively ([Lye and Hirschberg, 2018](#)). As the turning point and confidence intervals were *both* within the data range of the mediator (min. value = 0.109, max value = 0.864), H2 received strong support for both DVs ([Haans et al., 2016](#)).

Several interesting insights emerge from panels 2c and 2d. For instance, panel 2c shows acquisitions with a higher relative emphasis on revenue synergy led to an increase in δ EBITDA margin *only* up to the point where the acquirer had integrated a little more than one-thirds of the target (about 33.5 percent, the turning point, at which the EBITDA margin grew by about 2.32 percent). After this point, the δ EBITDA margin decreased steadily and turned negative at the point when the acquirer integrated about two-third of the target (64 percent) and decreased sharply if the acquirer persisted with increasing the degree of integration (e.g., it decreased by almost five percent if the acquirer integrated more than four-fifth or 80 percent of the target). Thus, the EBITDA margin increased only to the point

Table 5
 Arellano-Bond GMM panel regression analyses (endogeneity adjusted estimates) – Revenue growth as DV.

	Model 1 (controls)	Model 2 (Cost synergy emphasis as IV)	Model 3 (Revenue synergy emphasis as IV)	Model 4 (mediator- > DV)	Model 5 (Full mediation model- cost synergy emphasis)	Model 6 (Full mediation model - revenue synergy emphasis)
Higher relative emphasis on cost synergy		0.272* (0.116)			0.216 (0.234)	
Higher relative emphasis on revenue synergy			0.341** (0.127)			0.279 (0.311)
Degree of post- acquisition integration				0.284** (0.116)	0.307* (0.128)	0.211* (0.095)
Degree of post- acquisition integration (squared)				-0.492* (0.207)	-0.595 (0.511)	-0.406* (0.178)
DV (one-year lag)	0.105*** (0.012)	0.144** (0.038)	0.102*** (0.011)	0.107*** (0.012)	0.093** (0.033)	0.096*** (0.010)
DV (two-year lag)	0.093 (0.098)	0.044 (0.077)	0.105 (0.093)	0.121 (0.098)	0.024 (0.058)	0.146 (0.194)
Acquirer size	0.513** (0.188)	0.402* (0.179)	0.510* (0.219)	0.554* (0.230)	0.489** (0.152)	0.564*** (0.123)
Corporate diversification	0.295** (0.084)	0.249 (0.190)	0.157* (0.071)	0.277** (0.085)	0.108** (0.034)	0.215* (0.091)
Business unit interdependence	0.172 (0.143)	0.145 (0.121)	0.154 (0.185)	0.242 (0.198)	0.165 (0.107)	0.132 (0.150)
Relative performance	0.166** (0.054)	0.219* (0.097)	0.237** (0.074)	0.157** (0.053)	0.089* (0.036)	0.064** (0.022)
Unabsorbed slack	0.457 (0.312)	0.420 (0.408)	0.370 (0.311)	0.202 (0.147)	0.285 (0.354)	0.224 (0.258)
Acquirer experience (cost synergy acquisitions)	0.493 (0.325)	0.144* (0.064)	0.135 (0.160)	0.309 (0.356)	0.158* (0.072)	0.140* (0.061)
Acquirer experience (revenue synergy acquisitions)	0.248 (0.271)	0.028 (0.100)	-0.273 ⁺ (0.142)	0.212 (0.251)	0.087 (0.113)	0.104 (0.129)
Acquirer experience (industry)	0.570* (0.240)	0.159 ⁺ (0.082)	0.107 ⁺ (0.058)	0.702** (0.222)	0.183* (0.087)	0.135 ⁺ (0.071)
Prior alliance experience	0.125 (0.169)	0.101 (0.123)	0.173 (0.200)	0.177 (0.190)	0.199 (0.183)	0.155 (0.179)
Prior divestiture experience	-0.191 (0.282)	-0.282 (0.205)	-0.205 (0.223)	-0.203 (0.207)	-0.136 (0.162)	-0.182 (0.213)
Time between successive acquisitions	-0.143 (0.129)	-0.227 (0.184)	-0.220 (0.274)	-0.165 (0.188)	-0.149 (0.170)	-0.265 (0.369)
Position in acquisition sequence	-0.239 (0.271)	-0.115 (0.132)	-0.162 (0.187)	-0.225 (0.309)	-0.173 (0.205)	-0.133 (0.171)
Parallel post-acquisition integration instances	-0.282 (0.349)	-0.331 (0.398)	-0.327 (0.306)	-0.184 (0.256)	-0.361 (0.414)	-0.325 (0.288)
Prior post-acquisition integration costs	-0.307 (0.335)	-0.214 (0.263)	-0.203 (0.159)	-0.318 (0.425)	-0.109 (0.104)	-0.240 (0.295)
Target type (divested/ non-divested)	0.181 (0.209)	0.130 (0.119)	0.157 (0.212)	0.155 (0.201)	0.128 (0.155)	0.194 (0.228)
Relative acquisition size	-0.442 (0.389)	-0.221 (0.303)	-0.380 (0.319)	-0.241 (0.349)	-0.431 (0.388)	-0.404 (0.431)
Serial acquirer	0.370* (0.154)	0.272* (0.128)	0.333* (0.145)	0.297** (0.090)	0.405* (0.191)	0.426* (0.189)
Prior goodwill impairment	-0.179 ⁺ (0.093)	-0.263* (0.121)	-0.106 ⁺ (0.058)	-0.085* (0.041)	-0.151* (0.063)	-0.119 ⁺ (0.055)
Relative degree of business relatedness	0.126* (0.051)	0.169 ⁺ (0.085)	0.089* (0.041)	0.104* (0.048)	0.094* (0.044)	0.103* (0.047)
New productivity enhancing initiatives	0.079 ⁺ (0.046)	0.089* (0.037)	0.055 (0.040)	0.066 (0.059)	0.060 (0.065)	0.083 (0.103)
Prior restructuring experience	0.051 (0.064)	0.023 (0.016)	0.044 (0.043)	0.062 (0.049)	0.051 (0.084)	0.073 (0.079)

(continued on next page)

Table 5 (continued)

	Model 1 (controls)	Model 2 (Cost synergy emphasis as IV)	Model 3 (Revenue synergy emphasis as IV)	Model 4 (mediator- > DV)	Model 5 (Full mediation model- cost synergy emphasis)	Model 6 (Full mediation model - revenue synergy emphasis)
New advertising/ branding campaigns	0.103** (0.028)	0.085 (0.094)	0.075* (0.030)	0.039* (0.015)	0.071* (0.030)	0.056* (0.023)
Number of new products introduced	0.434 [†] (0.222)	0.164 (0.200)	0.139* (0.062)	0.493* (0.205)	0.161 (0.149)	0.148 (0.135)
Year/industry/acquirer fixed effects	Included	Included	Included	Included	Included	Included
Number of groups (acquirers)	448	448	448	448	448	448
Number of instruments	158	160	160	162	164	164
Arellano-Bond test – AR (1) - 1st differences (p-value)	0.001	<0.001	0.001	0.001	<0.001	0.001
Arellano-Bond test – AR (2) - 1st differences (p-value)	0.308	0.694	0.561	0.339	0.720	0.508
Overall Hansen test (p- value)	0.277	0.302	0.430	0.807	0.354	0.833
Difference-in-Hansen test - instrument exogeneity (p- value)	0.639	0.417	0.299	0.722	0.280	0.452
Wald χ^2 (p-value)	1146.18	1201.76	1388.54	1620.94	1756.68	2039.37

Notes: a) $+ p < 0.1$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$. b) The value in the parentheses for each variable is the robust heteroscedasticity adjusted errors clustered at the acquirer level. c) Bold values refer to coefficients of hypotheses testing. d) Wald χ^2 values were significant at $p < 0.001$.

when acquirers integrated a little more than one-third of the target and increasing the degree of integration beyond this point had a negative effect on the EBITDA margin.

A similar pattern is observed in panel 2d. Acquisitions with a higher relative emphasis on revenue synergy led to an increase in revenue *only* up to the point where the acquirer integrated a little more than one-fourth of the target (about 28.1 percent, the turning point at which revenue growth was about 2.60 percent). If the degree of integration increased beyond this point, revenue decreased. However, after acquirers had integrated a little more than half of the target (52 percent), revenue decreased sharply as the degree of integration increased (for e.g., revenue decreased by almost 13 percent as acquirers integrated more than four-fifth or 80 percent of the target). Thus, revenue increased only to the point when acquirers integrated one-fourth of the target and decreased sharply if they persisted with increasing the degree of integration. In sum, panels 2c and 2d show that an intermediate degree of integration positively affected acquirer performance when there was a higher relative emphasis on revenue synergy.

Our results withstood several robustness checks discussed in [Appendix C](#). We provided qualitative examples in support of our results in [Appendix D](#).

4. Discussion and conclusion

4.1. Theoretical contributions

Inspired by the foundational study of [Haspeslagh and Jemison \(1991\)](#), prior research on post-acquisition integration has burgeoned in recent years ([Schijven et al., 2024](#)). Yet, scholars have rarely examined how acquirers choose the degree of integration given the type of operating synergy they target in acquisitions and how this affects acquirer performance. We posit that this is an important line of inquiry as different principles underpin the realization of cost and revenue synergies ([Capron, 1999](#); [Castañer and Karim, 2013](#); [Feldman and Hernandez, 2022](#); [Rabier, 2017](#)). Thus, acquirers may need different approaches to integration to realize cost and revenue synergies and if they choose the degree of integration in accordance with their relative emphasis on cost or revenue synergy in an acquisition, they may record superior performance.

In this study, we advance research on post-acquisition-integration by developing theoretical and empirical insights on how acquirers choose the degree of integration given their relative emphasis on cost or revenue synergy in acquisitions and how this affects their performance. First, a central implication of our study is that developing theory on the performance effect of the degree of integration should be carried out in *conjunction* with the type of synergy that acquirers emphasize in their acquisitions. Our theoretical conjectures and empirical results demonstrate that examining the performance effect of the degree of integration in conjunction with the type of synergy that acquirers emphasize may enable scholars to tease out the finer nuances of how integration affects performance. In addition, adopting this approach may also help develop novel insights related to how integration affects performance.

Second, our study provides a resolution for what seem to be conflicting findings in research on post-acquisition integration. Our

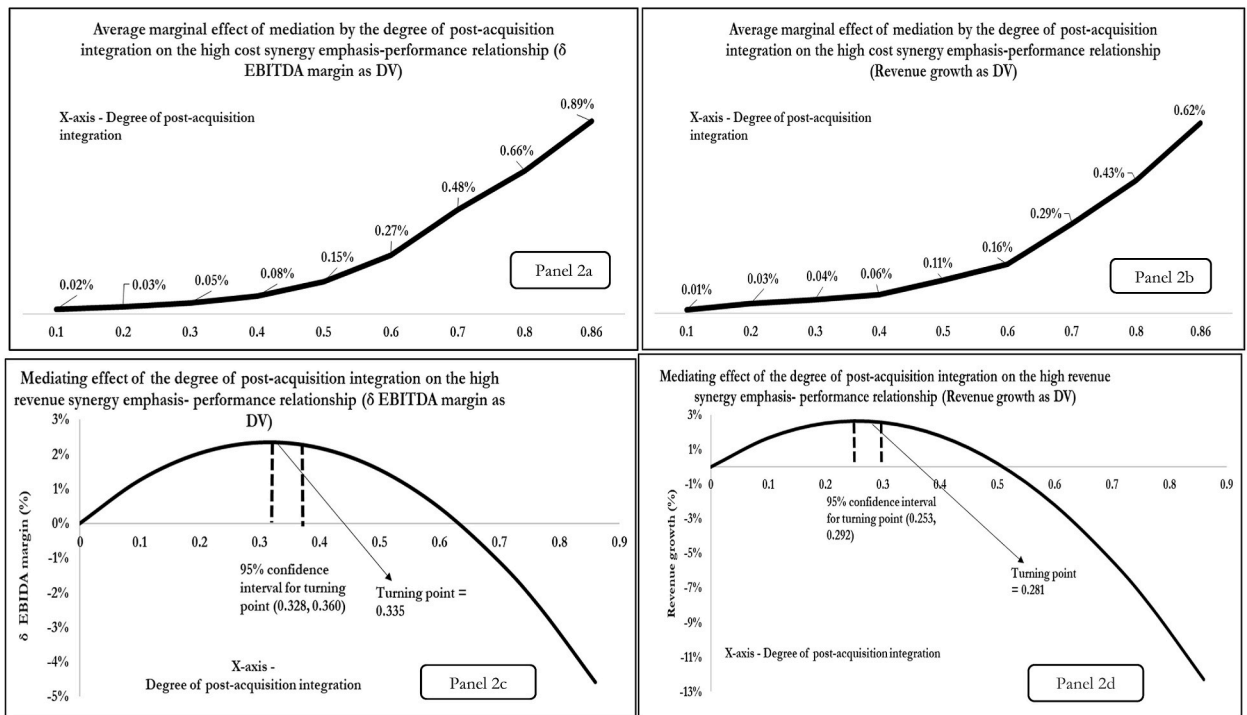


Fig. 2. Panels 2a and 2b show the graphical representation of the average marginal effects of mediation by the degree of post-acquisition integration on the cost synergy emphasis - performance relationship for both DVs (i.e., δ EBITDA margin and revenue growth). It is observed that the marginal effects indicate a flat trend for low values of the degree of integration (<0.3 or 30 percent) that increase at intermediate and high values of the degree of integration. The marginal effects in panels 2a and 2b were significant at $p < 0.05$. Panels 2c and 2d show the graphical representation of the mediating effect of the degree of integration on the revenue synergy emphasis-performance relationship for both DVs (i.e., δ EBITDA margin and revenue growth). The mediating effect on performance changes from positive to negative at the turning points shown on both curves indicating a curvilinear relationship that is concave (inverted U-shaped) in nature.

findings lead us to conjecture that the conflicting findings may be an outcome of scholars examining the effect of integration on performance *without* factoring in the synergy rationale behind an acquisition and the magnitude of change required in the combined firm's resources in terms of integration. For instance, in the first set of studies discussed at the start of the introduction, it is plausible that scholars did not sufficiently distinguish the synergy rationales (e.g., cost, revenue, and financial synergy) in their sample acquisitions. This may have led to the above studies finding an overall positive effect of the degree of integration on performance. Likewise, the second and third sets of studies examined acquisitions in a technological context. Hence, it may be the context-specific nature of these acquisitions e.g., specialized human capital and location or firm-specific knowledge that led to empirical support for low degrees of integration or target autonomy positively affecting performance.

We adopted a different approach to the above-mentioned studies. We disaggregated the type of operating synergy linked to the acquisitions in our sample by focusing on whether acquirers placed a higher relative emphasis on cost or revenue synergy. We then theoretically linked the same to the magnitude of change required to be implemented in the combined firm's resources as part of integration. Our results substantiate and justify our theoretical approach. For example, from panels 2a and 2b in Fig. 1, when acquirers placed a greater relative emphasis on cost synergy, as the degree of integration increased, it exerted a positive mediating effect on both measures of acquirer performance. Thus, the research finding corresponding to the first set of studies that high degrees of integration positively affect performance may be more applicable to acquisitions with a greater relative emphasis on cost synergy.

In contrast, from panels 2c and 2d, when acquirers placed a greater relative emphasis on revenue synergy, as long as the degree of integration was less than 33 percent and 28 percent, it exerted a positive mediating effect on δ EBITDA margin and revenue growth respectively. However, as the degree of integration exceeded 33 percent and 28 percent, the mediating effect turned negative. Thus, the respective research findings aligned to the second and third set of studies that autonomy or 'blended' integration positively affect performance may be more applicable to acquisitions with a greater relative emphasis on revenue synergy.

Third, we demonstrate that choosing the appropriate degree of post-acquisition integration is likely to be a complicated and nuanced decision for acquirers due to the rare, complex, and uncertain nature of the post-acquisition integration context. The results related to control variables and hypotheses testing in Tables 3–5 bear testimony to our assertion. For instance, the signs and statistical significance of control variables capturing the integration context i.e., acquisition experience, time between acquisitions, parallel instances of integration, position in acquisition sequence, prior integration costs, and restructuring experience showed variations across different models. The patterns in control variable results indicate that challenges related to rarity, complexity, uncertainty are

endemic to the integration context as the integration process may be affected by decisions taken by acquirers in prior periods. In tandem, our results indicate that acquirers neither seemed to adhere to the simplistic prescription of choosing a uniformly ‘high’ or ‘low’ degree of integration nor to the dichotomy of integration-autonomy as purported by the first and second set of studies discussed in the introduction respectively (if they did, the trends in panels 2a-2d may have been perfectly linear). Instead, acquirers likely viewed the integration decision as one that determined the magnitude of change to be made in the combined firm’s resources so that the type of synergy they emphasized would be effectively realized.

Lastly, we employed the resource reconfiguration (RR) lens of the literature on dynamic capabilities to develop our definition and operationalization for the degree of post-acquisition integration. In doing so, we demonstrate the utility of the RR lens in developing novel insights on how phenomena such as integration affect performance. Thus, our study responds to [Bodner and Capron \(2018\)](#) and [Graebner et al. \(2017\)](#) who in their reviews encouraged future researchers to adopt the RR lens as an alternative for uncovering novel insights related to the integration-performance relationship.

Our study also contributes to research on the resource reconfiguration (RR) lens aligned to the literature on dynamic capabilities ([Helfat et al., 2007](#); [Karim and Capron, 2016](#); [Teece, 2007](#)). In their review, [Karim and Capron \(2016\)](#) expatiate on the role of RR as a dynamic capability that includes in its purview the addition, subtraction, recombination, and redeployment of resources for value creation. We extend prior work on the RR lens by showing how the alignment between the *magnitude* of reconfiguration (high or low reconfiguration) and the *source* of value creation (cost reduction or revenue growth) affects firm performance. Prior work has found that cost reduction and revenue growth are fundamentally different drivers of firm value ([Lee et al., 2021](#); [Jones and Butler, 1988](#); [Rust et al., 2002](#)).

In this context, to the best of our knowledge, our study is the first that theorizes on and finds support for the proposition that due to the differences in how firms achieve cost reduction and revenue growth, the reconfiguration requirements for achieving both outcomes may be different. Furthermore, we depart from prior work by demonstrating that RR approaches are nuanced in their effect on firm performance as indicated by our findings that imply the presence of a linear and a curvilinear effect when firms target cost reduction and revenue growth respectively. Our hypothesized effects arise from RR-related benefits (e.g., realized synergy in acquisitions) and costs (e.g., related to post-acquisition integration) that exerted a positive or negative effect on performance. We found that this effect was contingent on whether the benefits realized via RR and the related costs of RR increased or decreased for different RR approaches.

Thus, our study responds to [Karim and Capron \(2016\)](#)’s call for research that examines how firms can improve the likelihood of success in their RR-related initiatives (p. 5). Our theory development and findings indicate that the essence of reconfiguration as a dynamic capability may lie in the extent to which managers are mindful of the importance of aligning cost reduction initiatives with a high level of reconfiguration and revenue growth initiatives with an intermediate level of reconfiguration. For instance, while we examined operating synergy acquisitions, the theoretical arguments we developed may be applicable to several cost reduction and revenue growth initiatives such as manufacturing excellence, quality management, process innovation, new product development, advertising, customer service, and salesforce training. We propose that further theoretical and empirical investigation into this issue is warranted to develop greater insight on how reconfiguration may serve as a dynamic capability.

4.2. Methodological contribution

Our study offers a novel approach to operationalizing post-acquisition integration wherein we measure the magnitude of change in the combined firm’s resources occurring as a result of the chosen degree of integration with respect to the acquirer and target resources prior to the acquisition. In contrast to prior approaches that have employed patent data ([Arora et al., 2014](#); [Puranam and Srikanth, 2007](#)), categorical variables ([Chaturvedi and Prescott, 2022](#); [Puranam et al., 2006, 2009](#)), or surveys to operationalize the degree of integration ([Capron et al., 1998, 2001](#); [Capron, 1999](#); [Rabier, 2017](#); [Zaheer et al., 2013](#)), we re-conceptualized the degree of integration as the magnitude of change in the combined firm’s resources that may be measured by employing the acquirer and target’s annual statements. A firm’s annual statements are legitimized artifacts for examining the annual change in a firm’s resources ([Koller et al., 2010](#); [Sirower and O’Byrne, 1998](#); [Sirower and Sahni, 2006](#)).

Our measure is also motivated by accounting research that demonstrates the utility of annual statements in examining changes arising from integration ([Puhakka, 2017](#)). An acquirer’s balance sheet, income statement, and statement of cash flows provide insights related to the annual change in the resource stock for the combined firm *ex post* acquisition that may be compared to the acquirer’s and target’s resource stocks *ex ante* to the acquisition (i.e., when they were standalone entities). The annual statements also constitute the realized synergy and integration costs that in turn affect the acquirer’s EBITDA margin and revenue ([Sirower and O’Byrne, 1998](#); [Sirower and Sahni, 2006](#)). Thus, employing annual statements enabled us to closely examine how integration affected acquirer performance.

Our proposed measure relaxes some of the limitations posed by prior approaches to operationalizing the degree of integration i.e., limitations of patent data in terms of their exclusive applicability to technology contexts, coarseness or lack of granularity due to lack of gradations in the case of categorical variables, and self-serving biases in the context of survey data. As annual statements are publicly available, our measure is tractable as it is not limited by survey response rates, self-serving biases, or the lack of gradation inherent to categorical variables. Our measure is also replicable as future researchers can recreate and refine it ([Bettis et al., 2016](#); [Rabier, 2017](#)). Thus, our approach to operationalizing the degree of integration represents an initial step towards encouraging scholars to develop empirically tractable and replicable instruments that can enable a deeper examination of post-acquisition integration.

4.3. Managerial implications

First, our study exhorts managers to note the importance of ‘tailoring’ their approach to post-acquisition integration by factoring in the type of synergy they intend to realize from an acquisition. When they intend to realize cost synergy to a greater extent, managers may want to develop integration plans that enable them to substantially change the target’s resources via consolidation, divestiture and systematic interventions that improve the operational efficiency of the combined firm. From an implementation standpoint, managers may need to integrate at least one-third of the target before any tangible performance benefits are achieved (as seen in panels 2a and 2b of Fig. 2). These performance benefits may consistently increase after this point until the entire target is integrated.

In contrast, when managers are primarily concerned with realizing revenue synergy from an acquisition, they may want to adopt a more developmental and nurturing attitude and make selective changes to the target’s resources. Our study has an important message for managers - ‘over-integrating’ the target in the anticipation of revenue synergy may lead to a deleterious ‘domino effect’ – there may be an unwarranted (and needless!) rise in integration costs and a disruption to the revenue generation capability of the target that may jointly harm performance. Thus, acquiring managers may want to improvise on the degree of integration by keeping track of the ‘sweet spot’, or the turning points in panels 2c and 2d of Fig. 2 up till which performance may be optimal and beyond which, performance may begin to decline eventually giving way to the domino effect discussed above.

Second, it is feasible that a single acquisition may simultaneously provide opportunities for cost and revenue synergy i.e., both cost and revenue synergy may be targeted in an acquisition.⁵ In this context, we suggest that managers may need to partition the post-acquisition integration plan into two separate workstreams and delegate the responsibility for realizing cost synergy to one workstream and revenue synergy to the other. Managers part of the cost synergy workstream may need to design cost synergy initiatives meticulously so that consolidation, divestiture, and efficiency-enhancing interventions do not adversely impact resources that were earmarked for realizing revenue synergy. Likewise, managers responsible for realizing revenue synergy may need to proceed with caution as well as selective changes made to the target in the spirit of being developmental should not lead to redundancies or operational inefficiencies within the combined firm. Lastly, conflicts may arise between both workstreams in terms of how integration budgets, timelines, corporate and business unit resources and top management attention are allocated. In this context, top management may establish an integration management office that mediates such conflicts so that the integration process may proceed smoothly in the interest of timely synergy realization (Lajoux, 2006; Teerikangas et al., 2011; Whitaker, 2012).

Third, our proposed measure for the degree of integration may be of interest to managers as it provides them with a novel alternative to track the integration process. Scholars and practitioners have developed several tools, techniques, and frameworks for tracking the progress of integration by measuring realized synergies, integration costs, setting milestones and targets, and monitoring performance (Gates and Very, 2003; Lajoux, 2006; Whitaker, 2012). Our measure complements these artifacts by enabling managers to track the actual change in the combined acquirer and target resources. While we operationalized our measure on an annual basis, we encourage managers to customize it to a duration of their choice so that they can track the integration process as desired.

4.4. Limitations and future research

The limitations of our study provide interesting avenues for future research on post-acquisition integration. First, while our empirical context included operating synergy acquisitions, how integration affects acquirer performance in acquisitions with other synergy rationales is an interesting area for theoretical and empirical inquiry. Recent research has found that acquirers are moving beyond seeking operating synergies and shifting their focus on deriving institutional, network, and relational synergies (Bettinazzi and Zollo, 2022; Feldman and Hernandez, 2022; Hernandez and Shaver, 2019). In such contexts, the degree of integration may not necessarily be grounded in the principles of resource reconfiguration as proposed by Karim and Capron (2016). In addition, the ontological and epistemological underpinnings of the integration process may be different as targeted synergies may assume new meanings. For instance, terminologies related to cost and revenue synergies such as consolidation, cross-selling, bundling etc. may not be relevant and a new set of terminologies may need to be conceptualized.

Second, the unfolding context of post-acquisition integration may be significantly complex and challenging in terms of structural and relational issues that abound within the combined acquirer and target firm. While we employed a quantitative approach to operationalizing the degree of integration construct, we appreciate that the theoretical richness of the said structural and relational issues may not be captured via quantitative approaches but may require more qualitative approaches (Colman and Lunnan, 2024; Graebner et al., 2017; Safavi, 2021; van Oorschot et al., 2023).

Third, our sample consisted of acquirers from manufacturing, wholesale, and retail industries in the US and we employed data from acquirers’ and targets’ annual statements to operationalize the degree of post-acquisition integration. These aspects of our sample represent a potential boundary condition to our study. Scholars may need to be circumspect in applying the results of our study to contexts involving the post-acquisition integration of intangible resources such as human capital (Ng and Stuart, 2022), patents and licenses (Arora et al., 2014; Puranam and Srikanth, 2007; Klueter et al., 2023), reputational resources such as brands and trademarks (Biraglia et al., 2023; Umashankar et al., 2022), and relational resources such as strategic alliances (Tandon et al., 2023). Prior research has found that firms may not be able to appropriately and adequately record the stock and flow of intangible resources in their annual statements (Govindarajan et al., 2018; Lev, 2000). Thus, we suggest that a promising area for future research is to examine how the

⁵ We thank an anonymous reviewer for raising this insightful point. In our sample, in 1279 of the 1452 (88 percent) of the acquisitions, the acquirer listed pointers for realizing both cost and revenue synergies. Please also see footnote 3.

degree of integration may be conceptualized and operationalized when synergy realization is based on the above-mentioned intangible resources.

Finally, our sample comprised US-based acquirers that made domestic acquisitions. That is, the external validity of our findings may warrant further investigation in alternative contexts such as acquisitions by firms from emerging markets. For instance, emerging markets acquirers have been found to practice ‘light-touch’ integration especially when they acquire firms in developed countries. In their acquisitions, emerging market acquirers choose not to make significant changes to the target’s resources due to the liability of foreignness arising from a poor (and often undeserved) image of their country of origin and due to significant capability gaps vis-à-vis the target (Kale et al., 2009; Kale and Singh, 2017; Kumar, 2009; Liu and Woywode, 2013; Torres de Oliveira and Rottig, 2018).

In such contexts, integration usually involves employing relational mechanisms such as informal networks, board representation, expatriation of managers, and a supportive posture towards the target (Figueira et al., 2021; Kale et al., 2009; Liu and Woywode, 2013). As a result, in terms of operationalizing the degree of integration, our proposed approach may need to be revisited in subsequent research as the above-mentioned relational mechanisms may not be accounted for in annual statements. In addition, emerging market acquirers may not necessarily focus on deriving cost or revenue synergy and may instead prioritize learning about the superior capabilities of the target and internalizing them (i.e., upgrading) (Kale and Singh, 2017; Kumar, 2009; Torres de Oliveira et al., 2020). We invite scholars to examine the nuances inherent to integration in acquisitions made by emerging market firms.

In conclusion, our study emphasizes that research on acquisitions may consider examining synergy and integration (two central drivers of acquirer performance) in conjunction to better understand how they affect acquirers. For practitioners, our message is simple – if they choose the degree of integration in consideration of the type of synergy they intend to realize and refrain from the inefficiency of ‘under-integrating’ and the temptation of ‘over-integrating’, they may have a greater likelihood of recording superior performance.

CRedit authorship contribution statement

Tuhin Chaturvedi: Writing – original draft, Visualization, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Carmen Weigelt:** Writing – review & editing, Validation, Methodology, Conceptualization.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.lrp.2024.102428>.

References

- Agarwal, A., Engert, O., Mittal, A., 2018. One-size-rarely-fits-all: Tailoring Procurement Synergies to the Deal. *The McKinsey Quarterly*. McKinsey & Company.
- Agrawal, R.K., Kaur, B., Jerry, D., 2019. Are You Giving M&A Integration Costs the Attention They Deserve? *Ernst & Young M&A Insights*. Ernst & Young.
- Aguinis, H., Edwards, J.R., Bradley, K.J., 2017. Improving our understanding of moderation and mediation in strategic management research. *Organ. Res. Methods* 20 (4), 665–685.
- Aktas, N., Baros, A., Croci, E., 2022. Corporate divestitures around acquisitions. *J. Corp. Finance* 73, 102189.
- Anand, J., Singh, H., 1997. Asset redeployment, acquisitions and corporate strategy in declining industries. *Strat. Manag. J.* 18 (S1), 99–118.
- Arellano, M., Bond, S., 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Rev. Econ. Stud.* 58 (2), 277–297.
- Arora, A., Belenzon, S., Rios, L.A., 2014. Make, buy, organize: the interplay between research, external knowledge, and firm structure. *Strat. Manag. J.* 35 (3), 317–337.
- Austin, J.E., Leonard, H.B.D., 2008. Can the virtuous mouse and the wealthy elephant live happily ever after? *Calif. Manag. Rev.* 51 (1), 77–102.
- Bamford, I., Chickermane, N., Nandy, R., 2017. Revenue synergies in acquisitions. In: *In Search of the Holy Grail*. Deloitte Institute.
- Banaszak-Holl, J., Berta, W.B., Bowman, D.M., Baum, J.A., Mitchell, W., 2002. The rise of human service chains: antecedents to acquisitions and their effects on the quality of care in US nursing homes. *Manag. Decis. Econ.* 23 (4-5), 261–282.
- Barkema, H.G., Schijven, M., 2008. Toward unlocking the full potential of acquisitions: the role of organizational restructuring. *Acad. Manag. J.* 51 (4), 696–722.
- Bauer, F., Matzler, K., 2014. Antecedents of M&A success: the role of strategic complementarity, cultural fit, and degree and speed of integration. *Strat. Manag. J.* 35 (2), 269–291.
- Bekier, M.M., Shelton, M.J., 2002. Merging? Watch your sales force. *McKinsey Q.* 38 (4), 106–116.
- Berchicci, L., Dowell, G., King, A.A., 2012. Environmental capabilities and corporate strategy: exploring acquisitions among US manufacturing firms. *Strat. Manag. J.* 33 (4), 257–261.
- Bertrand, O., Capron, L., 2015. Productivity enhancement at home via cross-border acquisitions: the roles of learning and contemporaneous domestic investments. *Strat. Manag. J.* 36 (5), 640–658.
- Bettinazzi, E.L., Zollo, M., 2022. Stakeholder orientation and experiential learning: evidence from corporate acquisitions. *J. Manag. Stud.* 59 (6), 1422–1459.
- Bettis, R.A., Ethiraj, S., Gambardella, A., Helfat, C., Mitchell, W., 2016. Creating repeatable cumulative knowledge in strategic management. *Strat. Manag. J.* 37 (3), 317–337.
- Bimbo Bakeries, U.S.A., 2014. Quarterly Earning Call Transcripts. Retrieved from Standard & Poor’s Capital IQ online database.
- Biraglia, A., Fuchs, C., Maira, E., Puntoni, S., 2023. When and why consumers react negatively to brand acquisitions: a values authenticity account. *J. Market.* 87 (4), 601–617.

- Birkinshaw, J., Bresman, H., Håkanson, L., 2000. Managing the post-acquisition integration process: how the human integration and task integration processes interact to foster value creation. *J. Manag. Stud.* 37 (3), 395–425.
- Bodner, J., Capron, L., 2018. Post-merger integration. *J. Organ. Dysfunct.* 7 (1), 1–20.
- Bommaraju, R., Ahearne, M., Hall, Z.R., Tirunillai, S., Lam, S.K., 2018. The impact of mergers and acquisitions on the sales force. *J. Market. Res.* 55 (2), 254–264.
- Borot, J., Engert, O., O'Connell, S., Salazar, P., 2016. Integration agility: tailoring the integration approach to deal rationale and sources of value. In: McKinsey Institute (Ed.), *Perspectives on Merger Management*. McKinsey & Company.
- Braguinsky, S., Ohyama, A., Okazaki, T., Syverson, C., 2015. Acquisitions, productivity, and profitability: evidence from the Japanese cotton spinning industry. *Am. Econ. Rev.* 105 (7), 2086–2119.
- Bresman, H., Birkinshaw, J., Nobel, R., 1999. Knowledge transfer in international acquisitions. *J. Int. Bus. Stud.* 30, 439–462.
- Briscoe, F., Tsai, W., 2011. Overcoming relational inertia: how organizational members respond to acquisition events in a law firm. *Adm. Sci. Q.* 56 (3), 408–440.
- Brueller, N.N., Capron, L., 2021. Acquisitions of startups by incumbents: the 3 Cs of Co-specialization from startup inception to post-merger integration. *Calif. Manag. Rev.* 63 (3), 70–93.
- Brueller, N.N., Carmeli, A., Drori, I., 2014. How do different types of mergers and acquisitions facilitate strategic agility? *Calif. Manag. Rev.* 56 (3), 39–57.
- Bruno, G.D., Oviatt, B.M., White, M.A., 1994. Performance of acquisitions of distressed firms. *Acad. Manag. J.* 37 (4), 972–989.
- Caner, T., Buiyaka, O., Prescott, J.E., 2018. Flow signals: evidence from patent and alliance portfolios in the US biopharmaceutical industry. *J. Manag. Stud.* 55 (2), 232–264.
- Capron, L., 1999. The long-term performance of horizontal acquisitions. *Strat. Manag. J.* 20 (11), 987–1018.
- Capron, L., Hulland, J., 1999. Redeployment of brands, sales forces, and general marketing management expertise following horizontal acquisitions: a resource-based view. *J. Market.* 63 (2), 41–54.
- Capron, L., Dussauge, P., Mitchell, W., 1998. Resource redeployment following horizontal acquisitions in Europe and North America, 1988–1992. *Strat. Manag. J.* 19 (7), 631–661.
- Capron, L., Mitchell, W., Swaminathan, A., 2001. Asset divestiture following horizontal acquisitions: a dynamic view. *Strat. Manag. J.* 22 (9), 817–844.
- Castañer, X., Karim, S., 2013. Implementing acquirers' synergistic intent: cost reduction, revenue enhancement and bilateral interactions with the target. In: Perrault, E. (Ed.), *Mergers and Acquisitions: Practices, Performance and Perspectives*. Nova Inc, pp. 75–108.
- Castrogiovanni, G.J., Bruno, G.D., 2000. Business turnaround processes following acquisitions: reconsidering the role of retrenchment. *J. Bus. Res.* 48 (1), 25–34.
- Chartier, J., Liu, A., Lyon, S., 2020. Capturing Cross-Selling Synergies in M&A. McKinsey & Company.
- Chatterjee, S., Brueller, N.N., 2015. A new M & A methodology: five lessons in anticipating post-merger resource interactions and challenges. *Strat. Leader.* 43 (4), 26–37.
- Chaturvedi, T., Prescott, J.E., 2022. Resource reconfiguration during technological change. *Strat. Sci.* 7 (3), 240–265.
- Cho, S.H., Wang, X., 2017. Newsvendor mergers. *Manag. Sci.* 63 (2), 298–316.
- Colman, H.L., Lunnan, R., 2024. Pulling together while falling apart: a relational view on integration in serial acquirers. *J.* <https://doi.org/10.1177/01492063221121788>.
- Cooke, F.L., Huang, K., 2011. Postacquisition evolution of the appraisal and reward systems: a study of Chinese IT firms acquired by US firms. *Hum. Resour. Manag.* 50 (6), 839–858.
- Cording, M., Christmann, P., King, D.R., 2008. Reducing causal ambiguity in acquisition integration: intermediate goals as mediators of integration decisions and acquisition performance. *Acad. Manag. J.* 51 (4), 744–767.
- Cording, M., Christmann, P., Weigelt, C., 2010. Measuring theoretically complex constructs: the case of acquisition performance. *Strat. Organ.* 8 (1), 11–41.
- Dattée, B., Arrégle, J.L., Barbieri, P., Lawton, T.C., Angwin, D.N., 2022. The dynamics of organizational autonomy: oscillations at Automobili Lamborghini. *Adm. Sci. Q.* 67 (3), 721–768.
- Dessein, W., Garicano, L., Gertner, R., 2010. Organizing for synergies. *American Economic Journal* 2 (4), 77–114.
- Dranove, D., Shanley, M., 1995. Cost reductions or reputation enhancement as motives for mergers: the logic of multihospital systems. *Strat. Manag. J.* 16 (1), 55–74.
- Fee, C.E., Hadlock, C.J., Pierce, J.R., 2012. What happens in acquisitions?: evidence from brand ownership changes and advertising investment. *J. Corp. Finance* 18 (3), 584–597.
- Feldman, E.R., Hernandez, E., 2022. Synergy in mergers and acquisitions: typology, life cycles, and value. *Acad. Manag. Rev.* 47 (4), 549–578.
- Figueira, S., Torres de Oliveira, R., Rottig, D., Spigarelli, F., 2021. Lessons on a novel integration approach of emerging market acquisitions in developed countries. *Int. J. Emerg. Mark.* 16 (4), 645–673.
- Filip, A., Lobo, G.J., Paugam, L., Stolowy, H., 2022. Disclosures about key value drivers in M&A announcement press releases: an exploratory study. *Abacus* 58 (1), 62–104.
- Gates, S., Very, P., 2003. Measuring performance during M&A integration. *Long. Range Plan.* 36 (2), 167–185.
- General Mills Inc, 2018, February 23. Blue Buffalo Pet Products Inc. M&A Call. Retrieved from Standard & Poor's Capital IQ online database.
- Govindarajan, V., Rajgopal, S., Srivastava, A., 2018. Why financial statements don't work for digital companies. *Harv. Bus. Rev.* 2, 2–6.
- Graebner, M.E., 2004. Momentum and serendipity: how acquired leaders create value in the integration of technology firms. *Strat. Manag. J.* 25 (8-9), 751–777.
- Graebner, M.E., Heimeriks, K.H., Huy, Q.N., Vaara, E., 2017. The process of postmerger integration: a review and agenda for future research. *Acad. Manag. Ann.* 11 (1), 1–32.
- Grimpe, C., 2007. Successful product development after firm acquisitions: the role of research and development. *J. Prod. Innovat. Manag.* 24 (6), 614–628.
- Haans, R.F., Pieters, C., He, Z.L., 2016. Thinking about U: theorizing and testing U-and inverted U-shaped relationships in strategy research. *Strat. Manag. J.* 37 (7), 1177–1195.
- Harrigan, K.R., 2012. The Synergy Limitation Paradox. Columbia Business School Research Paper, 15-15.
- Haspeslagh, P.C., Jemison, D.B., 1991. *Managing Acquisitions: Creating Value through Corporate Renewal*. Free Press, New York.
- Hébert, L., Very, P., Beamish, P.W., 2005. Expatriation as a bridge over troubled water: a knowledge-based perspective applied to cross-border acquisitions. *Organ. Stud.* 26 (10), 1455–1476.
- Helfat, C.E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., Winter, S.G., 2007. *Dynamic Capabilities: Understanding Strategic Change in Organizations*. John Wiley & Sons.
- Hernandez, E., Shaver, J.M., 2019. Network synergy. *Adm. Sci. Q.* 64 (1), 171–202.
- Homburg, C., Bucerius, M., 2005. A marketing perspective on mergers and acquisitions: how marketing integration affects postmerger performance. *J. Market.* 69 (1), 95–113.
- Houston, J.F., James, C.M., Ryngaert, M.D., 2001. Where do merger gains come from? Bank mergers from the perspective of insiders and outsiders. *J. Financ. Econ.* 60 (2–3), 285–331.
- Hu, W., Shohfi, T., Wang, R., 2021. What's really in a deal? Evidence from textual analysis of M&A conference calls. *Financ. Econ.* 39 (4), 500–521.
- Jones, G.R., Butler, J.E., 1988. Costs, revenue, and business-level strategy. *Acad. Manag. Rev.* 13 (2), 202–213.
- Kale, P., Singh, H., 2017. Management of overseas acquisitions by developing country multinationals and its performance implications: the Indian example. *Thunderbird Int. Bus. Rev.* 59 (2), 153–172.
- Kale, P., Singh, H., Raman, A.P., 2009. Don't integrate your acquisitions, partner with them. *Harv. Bus. Rev.* 87 (12), 109–115.
- Karim, S., 2006. Modularity in organizational structure: the reconfiguration of internally developed and acquired business units. *Strat. Manag. J.* 27 (9), 799–823.
- Karim, S., Capron, L., 2016. Reconfiguration: adding, redeploying, recombining and divesting resources and business units. *Strat. Manag. J.* 37 (13), E54–E62.
- Karim, S., Mitchell, W., 2000. Path-dependent and path-breaking change: reconfiguring business resources following acquisitions in the US medical sector, 1978–1995. *Strat. Manag. J.* 21 (10-11), 1061–1081.
- Karim, S., Mitchell, W., 2004. Innovating through acquisition and internal development: a quarter-century of boundary evolution at Johnson & Johnson. *Long. Range Plan.* 37 (6), 525–547.

- Karim, S., Williams, C., 2012. Structural knowledge: how executive experience with structural composition affects intrafirm mobility and unit reconfiguration. *Strat. Manag. J.* 33 (6), 681–709.
- Kato, J., Schoenberg, R., 2014. The impact of post-merger integration on the customer-supplier relationship. *Ind. Market. Manag.* 43 (2), 335–345.
- Keele, L., Kelly, N.J., 2006. Dynamic models for dynamic theories: the ins and outs of lagged dependent variables. *Polit. Anal.* 14 (2), 186–205.
- Kengelbach, J., Gell, J., Keienburg, G., Degen, D., Kim, D., 2020. COVID-19's Impact of Global M&A. Boston Consulting Group.
- Kenny, D.A., Kashy, D.A., Bolger, N., 1998. Data analysis in social psychology. In: Gilbert, D., Fiske, S., Lindzey, G. (Eds.), *The Handbook of Social Psychology*. McGraw-Hill, Boston, MA, pp. 233–265.
- Kimbrough, M.D., Louis, H., 2011. Voluntary disclosure to influence investor reactions to merger announcements: an examination of conference calls. *Account. Rev.* 86 (2), 637–667.
- King, D.R., Slotegraaf, R.J., Kesner, I., 2008. Performance implications of firm resource interactions in the acquisition of R&D-intensive firms. *Organ. Sci.* 19 (2), 327–340.
- Klueter, T.M., Moreira, S., Ofoedu, C., 2023. Understanding the link between post-acquisition resource reconfiguration and technology out-licensing. *J. Manag. Stud.* <https://doi.org/10.1111/joms.12968>.
- Koller, T., Goedhart, M., Wessels, D., 2010. *Valuation: Measuring and Managing the Value of Companies*. John Wiley & Sons.
- Kretschmer, T., Puranam, P., 2008. Integration through incentives within differentiated organizations. *Organ. Sci.* 19 (6), 860–875.
- Krishnan, H.A., Hitt, M.A., Park, D., 2007. Acquisition premiums, subsequent workforce reductions and post-acquisition performance. *J. Manag. Stud.* 44 (5), 709–732.
- Kroon, D.P., Noorderhaven, N.G., Corley, K.G., Vaara, E., 2022. Hard and soft integration: towards a dynamic model of post-acquisition integration. *J. Manag. Stud.* 59 (5), 1132–1161.
- Kumar, N., 2009. How emerging giants are rewriting the rules of M&A. *Harv. Bus. Rev.* 87 (5), 115.
- Laamanen, T., Keil, T., 2008. Performance of serial acquirers: toward an acquisition program perspective. *Strat. Manag. J.* 29 (6), 663–672.
- Lajoux, A.R., 2006. *The Art of M&A Integration*. McGraw-Hill, New York.
- Lambkin, M.C., Muzellec, L., 2010. Leveraging brand equity in business-to-business mergers and acquisitions. *Ind. Market. Manag.* 39 (8), 1234–1239.
- Larsson, R., Finkelstein, S., 1999. Integrating strategic, organizational, and human resource perspectives on mergers and acquisitions: a case survey of synergy realization. *Organ. Sci.* 10 (1), 1–26.
- Lee, C.H., Hoehn-Weiss, M.N., Karim, S., 2021. Competing both ways: how combining Porter's low-cost and focus strategies hurts firm performance. *Strat. Manag. J.* 42 (12), 2218–2244.
- Lev, B., 2000. *Intangibles: Management, Measurement, and Reporting*. Rowman & Littlefield.
- Li, Z., Agarwal, A., 2017. Platform integration and demand spillovers in complementary markets: evidence from Facebook's integration of Instagram. *Manag. Sci.* 63 (10), 3438–3458.
- Li, K., Qiu, B., Shen, R., 2018. Organization capital and mergers and acquisitions. *J. Financ. Quant. Anal.* 53 (4), 1871–1909.
- Lin, L.H., 2014. Organizational structure and acculturation in acquisitions: perspectives of congruence theory and task interdependence. *J. Manag.* 40 (7), 1831–1856.
- Lind, J.T., Mehlum, H., 2010. With or without U? The appropriate test for a U-shaped relationship. *Oxf. Bull. Econ. Stat.* 72 (1), 109–118.
- Liu, Y., Woywode, M., 2013. Light-touch integration of Chinese cross-border M&A: the influences of culture and absorptive capacity. *Thunderbird Int. Bus. Rev.* 55 (4), 469–483.
- Lye, J.N., Hirschberg, J., 2018. Confidence Intervals for Ratios: Econometric Examples with Stata. Retrieved from. <https://www.researchgate.net/profile/Joseph-Hirschberg>.
- Maksimovic, V., Phillips, G., Prabhala, N.R., 2011. Post-merger restructuring and the boundaries of the firm. *J. Financ. Econ.* 102 (2), 317–343.
- McLetchie, J., West, A., 2010. Beyond Risk Avoidance: A McKinsey Perspective on Creating Transformational Value from Mergers. *Perspectives On Merger Integration*. McKinsey & Company.
- Moeen, M., 2017. Entry into nascent industries: disentangling a firm's capability portfolio at the time of investment versus market entry. *Strat. Manag. J.* 38 (10), 1986–2004.
- Ng, W., Stuart, T.E., 2022. Acquired employees versus hired employees: retained or turned over? *Strat. Manag. J.* 43 (5), 1025–1045.
- Oler, D.K., Harrison, J.S., Allen, M.R., 2008. The danger of misinterpreting short-window event study findings in strategic management research: an empirical illustration using horizontal acquisitions. *Strat. Organ.* 6 (2), 151–184.
- Pablo, A.L., 1994. Determinants of acquisition integration level: a decision-making perspective. *Acad. Manag. J.* 37 (4), 803–836.
- Park, B.I., Choi, J., 2014. Control mechanisms of MNEs and absorption of foreign technology in cross-border acquisitions. *Int. Bus. Rev.* 23 (1), 130–144.
- Pitariu, A.H., Ployhart, R.E., 2010. Explaining change: theorizing and testing dynamic mediated longitudinal relationships. *J. Manag.* 36 (2), 405–429.
- Praecher, K.J., 2015. Advances in mediation analysis: a survey and synthesis of new developments. *Annu. Rev. Psychol.* 66, 825–852.
- Puhakka, H., 2017. The role of accounting in making sense of post-acquisition integration. *Scand. J. Manag.* 33 (1), 12–22.
- Puranam, P., Srikanth, K., 2007. What they know vs. what they do: how acquirers leverage technology acquisitions. *Strat. Manag. J.* 28 (8), 805–825.
- Puranam, P., Singh, H., Zollo, M., 2003. A bird in the hand or two in the bush?: integration trade-offs in technology-grafting acquisitions. *Eur. Manag. J.* 21 (2), 179–184.
- Puranam, P., Singh, H., Zollo, M., 2006. Organizing for innovation: managing the coordination-autonomy dilemma in technology acquisitions. *Acad. Manag. J.* 49 (2), 263–280.
- Puranam, P., Singh, H., Chaudhuri, S., 2009. Integrating acquired capabilities: when structural integration is (un) necessary. *Organ. Sci.* 20 (2), 313–328.
- Rabier, M.R., 2017. Acquisition motives and the distribution of acquisition performance. *Strat. Manag. J.* 38 (13), 2666–2681.
- Rahman, M., Lambkin, M., Hussain, D., 2016. Value creation and appropriation following M&A: a data envelopment analysis. *J. Bus. Res.* 69 (12), 5628–5635.
- Ranft, A.L., Lord, M.D., 2002. Acquiring new technologies and capabilities: a grounded model of acquisition implementation. *Organ. Sci.* 13 (4), 420–441.
- Reeves, M., Reinaud, A., Harnoss, J., Bergman, R., 2016. *Postmerger Integration Rejuvenation*. Boston Consulting Group.
- Reus, T.H., Lamont, B.T., Ellis, K.M., 2016. A darker side of knowledge transfer following international acquisitions. *Strat. Manag. J.* 37 (5), 932–944.
- Roodman, D., 2009a. How to do xtabond2: an introduction to difference and system GMM in Stata. *STATA J.* 9 (1), 86–136.
- Roodman, D., 2009b. A note on the theme of too many instruments. *Oxf. Bull. Econ. Stat.* 71 (1), 135–158.
- Rust, R.T., Moorman, C., Dickson, P.R., 2002. Getting return on quality: revenue expansion, cost reduction, or both? *J. Market.* 66 (4), 7–24.
- Safavi, M., 2021. Advancing post-merger integration studies: a study of a persistent organizational routine and embeddedness in broader societal context. *Long. Range Plan.* 54 (6), 102071.
- Salsberg, B., Kaske, E., 2023. What Drives One-Time M&A Integration Costs and How to Estimate Them. *Ernst & Young M&A Insights*. Ernst & Young.
- Sarason, Y., Dean, T.J., 2019. Lost battles, Trojan horses, open gates, and wars won: how entrepreneurial firms co-create structures to expand and infuse their sustainability missions in the acquisition process. *Acad. Manag. Perspect.* 33 (4), 469–490.
- Schijven, M., Heimeriks, K.H., Graebner, M.E., Haspeslagh, P., Mitchell, W., 2024. Thirty-three years after “managing acquisitions”: reflections, insights, and research directions. In: *Forthcoming in Strategic Management Review*. <https://www.strategicmanagementreview.net/assets/articles/Schijven%20et%20al.pdf>.
- Schweizer, L., 2005. Organizational integration of acquired biotechnology companies into pharmaceutical companies: the need for a hybrid approach. *Acad. Manag. J.* 48 (6), 1051–1074.
- Shaver, J.M., 2005. Testing for mediating variables in management research: concerns, implications, and alternative strategies. *J. Manag.* 31 (3), 330–353.
- Shaver, J.M., 2006. A paradox of synergy: contagion and capacity effects in mergers and acquisitions. *Acad. Manag. Rev.* 31 (4), 962–976.
- Sriower, M.L., O'Byrne, S.F., 1998. The measurement of post-acquisition performance: toward a value-based benchmarking methodology. *Bank Am. J. Appl. Corp. Finance* 11 (2), 107–121.
- Sriower, M.L., Sahni, S., 2006. Avoiding the “synergy trap”: practical guidance on M&A decisions for CEOs and boards. *Bank Am. J. Appl. Corp. Finance* 18 (3), 83–95.

- Tandon, V., Asgari, N., Ranganathan, R., 2023. Divestment of relational assets following acquisitions: evidence from the biopharmaceutical industry. *Strat. Manag. J.* 44 (4), 1013–1052.
- Tanriverdi, H., Uysal, V., 2015. When IT capabilities are not scale-free in merger and acquisition integrations: how do capital markets react to IT capability asymmetries between acquirer and target? *Eur. J. Inf. Syst.* 24, 145–158.
- Teece, D.J., 2007. Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strat. Manag. J.* 28 (13), 1319–1350.
- Teerikangas, S., Véry, P., Pisano, V., 2011. Integration managers' value-capturing roles and acquisition performance. *Hum. Resour. Manag.* 50 (5), 651–683.
- Torres de Oliveira, R., Rottig, D., 2018. Chinese acquisitions of developed market firms: home semi-formal institutions and a supportive partnering approach. *J. Bus. Res.* 93, 230–241.
- Torres de Oliveira, R., Sahasranamam, S., Figueira, S., Paul, J., 2020. Upgrading without formal integration in M&A: the role of social integration. *Global Strategy Journal* 10 (3), 619–652.
- Umashankar, N., Bahadir, S.C., Bharadwaj, S., 2022. Despite efficiencies, mergers and acquisitions reduce firm value by hurting customer satisfaction. *J. Market.* 86 (2), 66–86.
- Vaara, E., Sarala, R., Stahl, G.K., Björkman, L., 2012. The impact of organizational and national cultural differences on social conflict and knowledge transfer in international acquisitions. *J. Manag. Stud.* 49 (1), 1–27.
- van Oorschot, K.E., Nujen, B.B., Solli-Sæther, H., Mwesumo, D.E., 2023. The complexity of post-mergers and acquisitions reorganization: integration and differentiation. *Global Strategy Journal* 13 (3), 673–699.
- Wei, T., Clegg, J., 2020. Untangling the integration–performance link: levels of integration and functional integration strategies in post-acquisition integration. *J. Manag. Stud.* 57 (8), 1643–1689.
- Whitaker, S.C., 2012. *Mergers & Acquisitions Integration Handbook: Helping Companies Realize the Full Value of Acquisitions*. John Wiley & Sons.
- Windmeijer, F., 2005. A finite sample correction for the variance of linear efficient two-step GMM estimators. *J. Econom.* 126 (1), 25–51.
- Wood, A., 2009. Capacity rationalization and exit strategies. *Strat. Manag. J.* 30 (1), 25–44.
- Yu, J., Engleman, R.M., Van de Ven, A.H., 2005. The integration journey: an attention-based view of the merger and acquisition integration process. *Organ. Stud.* 26 (10), 1501–1528.
- Zaheer, A., Castañer, X., Souder, D., 2013. Synergy sources, target autonomy, and integration in acquisitions. *J. Manag.* 39 (3), 604–632.
- Zollo, M., Meier, D., 2008. What is M&A performance? *Acad. Manag. Perspect.* 22 (3), 55–77.
- Zollo, M., Reuer, J.J., 2010. Experience spillovers across corporate development activities. *Organ. Sci.* 21 (6), 1195–1212.
- Zollo, M., Singh, H., 2004. Deliberate learning in corporate acquisitions: post-acquisition strategies and integration capability in US bank mergers. *Strat. Manag. J.* 25 (13), 1233–1256.

Tuhin Chaturvedi is an assistant professor in International Business at the Brunel Business School at Brunel University London, United Kingdom. His research interests include examining different types of corporate development activities such as alliances, acquisitions, divestitures, and post-acquisition integration and how they affect firm performance in different technological and social environments. Tuhin's research has been published in *Research Policy*, *Journal of Business Research*, and *Strategy Science*. He serves on the editorial review boards of *Strategic Management Journal* and *Journal of Management Studies*. Tuhin received his PhD. from the Joseph M. Katz Graduate School of Business at the University of Pittsburgh.

Carmen Weigel is an associate professor at the A.B. Freeman School of Business at Tulane University in New Orleans, LA. Her research interests focus on innovation, outsourcing, firm capabilities, and acquisition performance. In particular, she studies the role of outsourcing in enabling firms to adopt new technologies, and the impact of outsourcing on subsequent firm performance outcomes and firm competencies. Another line of her research focuses on measurement issues in strategy research related to acquisition performance. Her papers were finalists for the McKinsey/Strategic Management Society Best Paper Award in 2001 and 2006.