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PRODUCT-MARKET PLANNING CAPABILITY AND PROFITABILITY

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PRODUCT-MARKET PLANNING CAPABILITY AND PROFITABILITY

Abstract

We test the profit implication of product-market planning as a dynamic capability, from a contingency theory perspective. Among a sample of high-technology industrial organizations, we find that product-market planning capability is significantly and positively related to profits under marketing differentiation, but negative implications ensue for those adopting cost efficiency strategies. Pursuing hybrid strategies has no significant effect, while technological turbulence also has no moderating effect. Additional analysis establishes the temporal effects of product-market planning capability on 3-year lagged profits. These differential results are considered within a contingency framework. Implications are identified and discussed for industrial marketing management theory and practice.

Keywords: product-market planning; dynamic capability; profits; marketing differentiation; hybrid; cost efficiency.

Introduction

For industrial business, product-market planning defines the strategies and tactics adopted to align the firm with external and internal environment factors for the achievement of its strategic objectives (Lee et al., 2013). Since strategizing is deemed a core capability for realizing competitive advantages, studying the role of product-market planning from a capability-based lens is necessary to help determine industrial marketing success (Hughes et al., 2019). However, the adoption of a capabilities perspective to examine organizational-level phenomena remains sparse in the industrial marketing management literature (Kaleka and Morgan, 2019). Under industrial market conditions of fast-paced change, the strategic dilemma facing industrial businesses is how to unlock the benefits of product-market planning for financial success? To address this question, we conceptualize product-market planning as a dynamic capability and examine the nature of the planning–profit relationship under internal (strategy type) and external (technological turbulence) contingencies.

Through product-market planning, firms systematically collect intelligence, objectively use that intelligence to formulate clear plans of action and develop products in response to market intelligence (Hughes et al., 2019; Kaleka and Morgan, 2019). The industrial marketing management literature contends that the effectiveness of this approach will be influenced by firms' business strategy, i.e., what matters to organizations and how they seek to realize this (Fenema and Keers, 2019). In industrial firms, the content of business strategy manifests in the form of intentions defined "as a firm's direction when deploying its resources and capabilities in response to (or pre-empting) market cues such as competitive price moves or new product introductions" (Kaleka and Morgan, 2019: 1). Occurring at the product-market level, strategic intentions are framed as a focus on either cost efficiency or marketing differentiation, or indeed a hybrid combination of both (Kaleka and Morgan, 2019). It is expected that such intentions will,

therefore, influence the relationship between product-market planning and performance in industrial markets. Yet, strategy as an internal contingency continues to be overlooked, despite its obvious importance to product-market planning effectiveness (Kaleka and Morgan, 2019; Song et al., 2015).

The relationship between product-market planning capability and profitability will also likely be affected by external contingencies (Slater et al., 2006; Teece, 2014; Wilden et al., 2013), yet evidence as to how this happens remains inconclusive (Rudd et al., 2008). There have been numerous challenges to the performance effects of planning, its appropriateness under conditions of high market turbulence (Atuahene-Gima and Murray, 2004; Bouncken et al., 2016), and its role in contemporary strategic management (Thomas and Ambrosini, 2015). The contention that building only on planned strategies hinders adaptability and deviation from the plan (Sirén and Kohtamäki, 2016) has been challenged, however, by the framing of planning as a continual activity (Dameron et al., 2015), which can serve to increase flexibility (Song et al., 2015). Consequently, the role of environmental contingencies remains contradictory (Rudd et al., 2008; Thomas and Ambrosini, 2015),

In addressing these knowledge voids, three contributions to the industrial marketing management literature are made. First, we address the enduring question of whether strategic planning matters for industrial businesses, as highlighted recently by Kaleka and Morgan (2019). Through our conceptualization of product-market planning as dynamic capability, we focus on the potential performance role of this decision-making approach within a contingency framework, as called for by Hughes et al. (2019). Second, we draw finer insights into the profit returns of product-market planning capability by acknowledging strategy as a moderator of the profit relationship, addressing the neglect of strategy type as an essential internal contingency for planning (Rogers et al., 1999; Slater et al., 2006; Su et al., 2017; Wolf and Floyd, 2017). In doing

so, we theorize and empirically evidence necessary internal boundary conditions to the product-market planning capability–profit relationship. Third, although planning is thought to be ineffective in turbulent contexts, we contribute to a more thorough understanding of the role of environmental contingencies in the planning–profit relationship, revealing conditions when product-market planning capability is most valuable. This enables theory to make better predictions about the role of planning under specific circumstances. Collectively, our contributions advance theoretical and empirical knowledge about planning and demonstrate how industrial businesses can unlock its performance potential.

Product-market planning: A dynamic capability

Product-market planning reflects an ability to anticipate and respond to the market environment to direct organizational resources and actions. It is constructed from collections of behaviors that are learned, patterned, repetitious (or quasi-repetitious), and based in part on tacit knowledge (Slotegraaf and Dickson, 2004). The treatment of planning activities as an organizational capability is not new (e.g. Morgan and Turnell, 2003; Slotegraaf and Dickson, 2004), and with the recent distinction between capabilities that are ordinary and those that are dynamic (Teece, 2014), current thinking has framed planning as a dynamic capability (e.g., Hughes and Hodgkinson, 2020; Hughes et al., 2019). Rather than viewing dynamic capabilities and strategizing as related but separate constructs that require coupling (Teece, 2014), this body of work has positioned effective strategizing as a dynamic planning capability to bring about competitive advantage. Product-market planning routines of search, analysis, and assessment (Bailey et al., 2000) align with the sense, seize, and reconfigure features of dynamic capability (Teece, 2014) and represent a deliberate process to learn and change in line with the environment of the firm (Winter, 2003). Therefore, product-market planning goes beyond administrative,

operational, and governance-related functions deemed threshold features for competitiveness, as the capability involves 'higher-level activities that can enable an enterprise to direct its ordinary activities toward high-payoff endeavors (Teece, 2014); marking the conceptual distinction of product-market planning as dynamic capability.

A notable body of research investigates the process of planning from the view that 'planning as activity' is what is important, not the actual plan devised. This body of work is consistent with Eisenhower's 'plans are nothing, planning is everything' historical statement. While there are several valuable studies that have demonstrated the significance of planning as an activity, the treatment of planning is typically as an *ordinary capability* (Bengtsson and Lindkvist, 2017; Dvir and Lechler, 2004; Hughes et al., 2008, 2018; Petit, 2012). The development of operational or functional planning techniques such as speedy strategy, rolling planning, road-mapping, project-level planning, portfolio management, blitzscaling, and pivoting episodes are evidence to this effect (e.g., Bengtsson and Lindkvist, 2017; Dvir and Lechler, 2004; Petit, 2012). In examining the value of planning against the requirements of specific tasks, such as project delivery, these studies are invaluable in ascertaining best practices. However, according to Teece (2014: 330), 'best practices alone are generally insufficient to undergird sustainable competitive advantage', owing to their replicability and imitability when compared to dynamic capabilities. In contrast, product-market planning as dynamic capability achieves alignment with customer needs and technological and business opportunities to create a sustainable advantage (Teece, 2014).

As Gumusluoglu and Acur (2016) note, the dynamic capability literature claims that a firm's competitive advantage is informed by the way the firm exploits its assets, resources and competences in a systematic way. Product-market planning enables firms to avoid misfit that occurs after contingent circumstances change by adopting strategies that fit new conditions

(Hughes et al., 2019). A product-market planning capability emphasizes the search for solutions, the assessment of many alternatives/scenarios, the evaluation of potential strategic options, and systematic analysis of the business environment (Bailey et al., 2000). This requires 'managing, or "orchestrating," the firm's resources to address and shape rapidly changing business environments' (Teece, 2014: 328). It is these features of product-market planning that are directly aligned to the conceptual characteristics of dynamic capabilities; enabling firms to (1) *sense* and shape opportunities; (2) *seize* opportunities; and (3) redeploy and *reconfigure* (create, extend and modify) their resource base (Schilke, 2014; Teece, 2007, 2014; Wilden et al., 2013).

The ability to reconfigure and leverage resources in different ways is an inherent feature of product-market planning capability conceptualization. While product-market planning is rigorous, systematic and comprises a set of procedures, this does not create a contradiction between the construct and dynamic capabilities theory. In contrast, our conceptualization represents a decision-making approach to sensing, seizing, and reconfiguring, which is labelled Type II processing: it is reflective, rational, analytic, intentional, effortful, logical, changes rapidly and easily, and requires justification via logic, discussed in detail by Hodgkinson and Sadler-Smith (2018). The conceptualization does not ignore the emergent aspects of adjustment of plans and reconfiguration of resources. Rather, it capture these elements from a Type II processing logic consistent with Teece's dynamic capabilities framework. Indeed, the belief that the dynamic capabilities perspective captures 'nonconscious processes', or intuitive strategy development, in other words, is strongly challenged by Hodgkinson and Sadler-Smith (2018).

Hypotheses Development

Product-market planning capability and profits

The planning approach has endured sustained criticism as a mechanism for improving profits, led by arguments that the role of planning has been eroded by the ever-increasing turbulence of the modern world (Whittington et al., 2016). Due to the thoroughness associated with product-market planning, 'there is an underlying concern of subsequent rigidity or inflexibility' (Slotegraaf and Dickson, 2004: 371) that may compromise firm profitability (Sirén and Kohtamäki, 2016). However, where demonstrable effort is applied to the processes that underlie product-market planning, greater rigor, and discipline in going to market is achieved. Brews and Hunt (1999) argue that persistence in planning is crucial to the realization of any performance enhancements such that profitability can increase as planning strengthens (Miller and Cardinal, 1994; Song et al., 2015).

Product-market planning capability requires firms to make use of knowledge to develop multiple strategic options to allow effective responses to customers and competitors and to make the best use of resources. As Slotegraaf and Dickson (2004) note, product-market planning emphasizes the importance of anticipating changes in the firm's environment and the need to respond to those changes. In doing so, it is expected that profitability will increase as the firm is better able to position market offerings effectively relative to competitors (Menon et al., 1999). A product-market planning capability does not reflect the highly bureaucratized, top-down, classical approach that has dominated planning research, but rather provides a platform for achieving profits based on rigorous environmental analyses, search and evaluation, and scrutiny as ongoing, continual activities (Song et al., 2015). Therefore:

H1. *Product-market planning capability has a positive effect on profits.*

Environmental and strategy-level interactions

A product-market planning capability develops within multiple contingencies, and it is within this context that it is deployed for performance advantages. For example, strong dynamic capabilities enable firms to produce unique and exceptional value propositions, which requires that organizations continually adjust to changes in the business environment (Teece, 2014). Thus, the value (Wilden et al., 2013) and effectiveness (Schilke, 2014) of a product-market planning capability is context-dependent. The role of contingencies becomes exacerbated in the industrial business context because of the complexity of functional interdependence, product complexity, and buyer-seller interdependence (Lee et al., 2013).

Concerning external contingencies, research often finds equivocal results due, in part, to the confounding effects of the environment and the tendency to consider this in aggregate form: either measuring general environmental turbulence or aggregating market, competitive, technological, and regulatory intensity. We focus on technological turbulence as salient to high technology industrial organizations. Technological turbulence refers to the perceived speed of change and unpredictability of technology faced by firms (Atuahene-Gima and Li, 2004). Eisenhardt (1989) suggests that information and planning will be of greater importance under these circumstances, but excessive planning may create inertia to change and inflexibility (Slotegraaf and Dickson, 2004). The ambiguity concerning the value of planning under external contingencies serves to highlight the (mis)treatment of the product-market planning construct. Existing planning research is largely influenced by the classical approach of the 1970s and 1980s, reflecting old-fashioned formal planning at a time when competitive environments had greater stability compared to modern-day marketplaces (Whittington et al., 2016). Plans were usually created using quantitative analytical techniques (Thomas and Ambrosini, 2015), and the perceived inflexibility led to the conclusion that increased environmental volatility makes planning more difficult (Grant, 2003).

Despite the planning context having changed dramatically since the traditional perspective of planning was conceived and championed (Whittington et al., 2016), the classical approach to planning has remained in the collective psyche. In the classical approach, senior managers regularly adopt annual planning cycles and the formulation of grand strategic plans regardless of the environment being faced (Jarzabkoski and Kaplan, 2015; Mankins and Steele, 2006; Reeves et al., 2012). Planning in practice has subsequently become habitual and driven by affordability (Martin, 2014), rather than as a means for real-time information collection, interpretation, and adaptation (Thomas and Ambrosini, 2015).

When planning routines reflect the classical approach of planning that exemplifies formality, inertia can emerge as planning practices adhere to a rigid logic and culturally learned patterns of response. This is particularly symptomatic of the treatment of planning as an ordinary capability, where 'best practices' become routinized resulting in the pursuit of efficiency at the expense of responsiveness to change, creating rigidity in firms' planning processes (Teece, 2014). Conversely, a dynamic product-market planning capability embeds formal decision-making practices alongside flexibility in adapting to environmental change (Thomas and Ambrosini, 2015). As Brews and Hunt (1999) contend, unstable environments may force the development of dynamic planning capabilities to counter turbulence, as firms require a strong planning approach to develop a strategy with a clear direction to reduce uncertainty and deliver profits (Menon et al., 1999). Given the need for more information under such conditions, planning may enable greater flexibility owing to contingency plans, faster coordination, faster communication, greater awareness through environmental scanning for changes, and less internal conflict (Song et al., 2015).

Product-market planning efforts that provide managers with the necessary information and options to maintain fit when environmental changes occur, positions planning as being

dynamic and capable of developing new approaches (Whittington et al., 2016). Instead of slowing decision-making when planning serves as an ordinary capability, firms may have the necessary real-time information to make relatively rapid changes in response to technological turbulence for enhanced profits. Thus:

H2. *Product-market planning capability has a more positive effect on profits when technological turbulence is higher than when it is lower.*

Firm-specific differences can also influence the effectiveness of dynamic capabilities (Schilke, 2014), and strategy can have a substantial bearing on planning and performance (Brews and Hunt, 1999; Rogers et al., 1999; Slater et al., 2006). Strategy concerns the basis by which firms will compete in chosen markets, be it through differentiation or cost efficiency, or a hybrid of the two (Hughes, Martin et al., 2010; Pertusa-Ortega et al., 2009; Thornhill and White, 2007). In the industrial marketing literature,

> Cost efficiency refers to a coherent set of actions, systems, procedures, and arrangements designed to reduce costs of production and operation with the aim of eventually achieving lower cost of goods sold relative to competition. Marketing differentiation refers to a set of firm-controlled purposive and coherent actions mainly along market facing, value-creating components, aiming at convincing channels and customers of the unique ness of the firm's value offering vis-à-vis those of competitors. (Kaleka and Morgan, 2019: 109).

Organizations engaging in marketing differentiation-based competition will require an ability to anticipate and respond to customer needs and competitor actions effectively. Differentiated firms are likely to require significant amounts of information and a robust product-market planning capability to achieve desired profitability. Through systematic and comprehensive scanning and analysis, information garnered becomes critical in providing

evidence of customer needs, exposing new technologies, or shedding light on future market or technological trends, which are fundamental to innovation and value creation (Dibrell et al., 2014). Without a product-market planning capability to generate creative strategic ideas for renewal and competitive advantage (Sirén and Kohtamäki, 2016), the ability of firms to distinguish themselves as valuable to customers is reduced. This then would undermine the performance of firms pursuing marketing differentiation, as 'to succeed, strategies characterized by differentiation must rely on broad scanning of the environment and creative search for new methods to meet customer demand' (Lumpkin and Dess, 2006: 1588). In sum, organizations can capitalize on the information and strategic ideas generated through a product-market planning capability by leveraging marketing differentiation to secure higher profits.

Firms that emphasize cost efficiency are likely to face a paradox. While planning may be necessary for cost-based thinking, cost-control planning is very different from a product-market planning capability. The former can be considered an ordinary capability that requires some combination of skilled personnel, facilities and equipment, processes and routines, and the administrative coordination needed to drive down the organizational cost base (Teece, 2014). In contrast, the latter more broadly emphasizes alignment between the internal characteristics of the firm and the environment. Product-market planning capability will, thus, become increasingly redundant as the strategy becomes self-sustaining (Porter, 1980). Indeed, developing a product-market planning capability to respond to the market environment (Slotegraaf and Dickson, 2004) becomes superfluous and may even have negative consequences (cost burden) for firms seeking cost reductions. Searching for solutions, systematic analysis, evaluating options, and meticulous assessment that are central to a product-market planning capability can be time-consuming and costly at the highest levels (Sirén and Kohtamäki, 2016). As a product-market planning capability develops, the cost burden that this entails is likely to lead to negative performance outcomes

under cost efficiency, as ‘firms must restrict their activities to a narrow domain and place their primary emphasis on attaining production economies’ (Lumpkin and Dess, 2006: 1587).

The consequences of hybrid strategy are uncertain. Pertusa-Ortega et al. (2009) found evidence that hybrid strategy associates with higher firm performance, and Spanos et al. (2004) report that hybrid strategies are more profitable than pure ones. Two theoretical assumptions are at play. First, strategic specialization may leave serious gaps or weaknesses in product offerings and ignore important customer needs. Second, a hybrid strategy makes it harder for competitors to pinpoint the source of a firm’s competitive advantage and the properties of its strategies. A hybrid strategy is, therefore, more complex in its characteristics and more resilient to competitors’ actions. Thornhill and White (2007), however, provide competing evidence, finding that across manufacturing, construction, retail, and business services, pure strategies often did better than hybrid strategies. Moreover, Hughes, Martin et al. (2010) found that hybrid strategy diminishes differentiation-based positional advantage (but not cost-based positional advantage); though these studies do not consider planning.

A product-market planning capability steers the firm to systematically develop, validate, and fine-tune conjectures about the evolution of consumer preferences, business problems, and technology and act on them by realigning assets and activities to maintain a closer fit with its external environment (Bailey et al., 2000; Slotegraaf and Dickson, 2004; Teece, 2014). The power of this product-market planning capability to generate profits should be positively moderated when the firm pursues a hybrid strategy. A hybrid strategy is internally complex and may augment the resilience of a product-market planning capability to competitor actions by improving its application in fine-tuning and directing the distribution and redistribution of firm assets and activities to market opportunities and threats. Accordingly:

H3a. *Product-market planning capability has a positive effect on profits when the organization pursues marketing differentiation.*

H3b. *Product-market planning capability has a negative effect on profits when the organization pursues a cost efficiency strategy.*

H3c. *Product-market planning capability has a positive effect on profits when the organization pursues a hybrid strategy.*

Research Method

Data Collection

A mail survey was sent to 1,000 high technology industrial firms randomly sampled from the Kompass Directory of UK businesses. Firms were sampled at the SBU level, given the focus on planning, and were required to be operating for more than five years and employ a minimum of 100 full-time employees. High-technology firms tend to experience greater environmental uncertainty and dynamism, and so we expect this domain to provide an appropriate setting to examine product-market planning. Sampled firms operate in the following industrial sectors: advanced engineering; computer and electronic; telecommunications; chemical and oil-related; automobile, heavy industry, and advanced transportation plant and equipment. Senior executives were targeted as key informants to provide reliable information on the variables in the survey.

Approximately 8% of surveys were either undeliverable, policy inhibited participation, or completed by unqualified individuals. Responses were received from 215 firms with 139 being eligible. Examination of a random sample of 50 non-respondents and 50 respondents on profit data and firm size reveal no significant differences between the two groups. Respondent firms have on average US$144 million sales turnover in the last year (standard deviation [S.D.] = US$410 million); trading for an average of 52 years (S.D. = 41); and competing in their current

market for on average 44 years (S.D. = 36). With the focus on planning, respondents include C-suite Executives (58%), Directors (25%) or Specialist Senior Managers (17%). Respondents had 22 years of working experience (S.D. = 9.80) and tenures of 11 years (S.D. = 9.04) on average, suggesting familiarity and experience with the strategies of their firms.

Measures and Confirmatory Factor Analysis (CFA)

Respondents were asked to consider the *current* business strategy pursued by their firm when completing the survey. For product-market planning capability, measures by Bailey et al. (2000) were used as these capture planning as requiring anticipation and responsiveness based on routines and tacit knowledge (Slotegraaf and Dickson, 2004), which are theoretical characteristics of dynamic capabilities (Teece, 2007, 2014). Technological turbulence items were sourced from Jaworski and Kohli (1993) and strategy type measures were adapted from Dess and Davis (1984). Hybrid strategy was computed through the standard multiplication method. We measured performance using objective net profit data rather than relying on subjective performance data common among past studies (Whittington et al., 2016). Objective 'net profit after tax' data was sourced from the FAME archival database. This data was standardized for analysis purposes. Several control variables are included: firms endowed with flexibility (Krohmer et al., 2002) are less likely to suffer from inertia sometimes associated with planning capabilities; centralization (Jaworski and Kohli, 1993) is controlled for as planning processes may foster a climate of centralized decision-making; and, firm size, represented by the natural logarithm of the number of full-time employees (Elbanna, 2012), was used to control for economies of scale in larger firms. Measures and their properties are presented in Table 1.

Table 1 here

To examine the consistency of the measurement items, all items are subjected to CFA. As profits and firm size are single-item variables based on objective data, the error variance for these constructs are calculated by $(1 - \rho).\sigma^2$; where ρ is the composite reliability and σ is the standard deviation. A reliability of .80 is assumed for both constructs and standard deviation is 1 as the scores for both constructs are standardized. The CFA model reveals acceptable fit (Table 1): χ^2 (d.f.) = 587.95 (372); χ^2/d.f. = 1.58; RMSEA = .07; CFI = .95; NNFI = .94; IFI = .95; SRMR = .07. All *t*-values load significantly on the specified constructs indicating convergent validity.

Composite reliability (CR) and average variance extracted (AVE) are presented in Table 2. All CR and AVE values are above acceptable minimum thresholds (Bagozzi and Yi, 1988), implying both convergent validity and model reliability. The square root of AVE for each construct rest on the diagonal of the correlation matrix. These values exceed the correlations and demonstrate discriminant validity.

Table 2 here

Common Method Variance (CMV)

We use objective data for the dependent variable, and others, to mitigate possible CMV. Still, this bias was proactively addressed in questionnaire development by placing the measurement scales in random order, not implying any idealized responses, minimizing questionnaire length, and providing detailed instructions for respondents. CMV is examined using a marker variable test (Lindell and Whitney 2001). Respondent knowledge represents the theoretically-unrelated marker as this is not correlated ($p > .05$) to any of the variables in the model. Following Lindell and Whitney's (2001) guidance, a CMV-adjusted covariance matrix is calculated and is used to compute a CMV-adjusted CFA in LISREL 8.80. There are no meaningful differences between

the model fit statistics for the original CFA and the CMV-adjusted CFA. $\Delta\chi^2$ (d.f.) = 26.65 (0); ΔRMSEA = .004; ΔCFI = .02; ΔNNFI = .02; ΔIFI = .02; ΔSRMR = .0013; ΔModel AIC = 26.66. Overall, we conclude that CMV does not threaten the data and the original CFA is used as the basis for hypothesis testing.

Analysis and Results

Structural equation modelling is performed using maximum likelihood estimation and Ping's (1995) protocol for estimating and evaluating structural models with interaction terms. Single scores are created for latent variables involved in interaction terms by averaging across the item sets. These are mean-centered to avoid multicollinearity. Estimates for the factor loadings, error variances, and factor variances of each interaction term are generated using Ping's (1995) equations. Factor loadings are set at 1 and the error variance of each single indicator determined through $(1 - \rho).\sigma^2$. The interaction terms are created multiplicatively and the factor loading, error variance, and factor variance estimates obtained previously are used in Ping's (1995) equations to generate estimates of the error variances and factor loadings for each interaction.

Two models are specified: a *restricted model* and an *unrestricted model*. The models differ in that the γ parameters linking the interaction terms to performance are fixed at zero and the remaining γ parameters are freely estimated in the restricted model (χ^2 [d.f.] = 735.34 (460); χ^2/d.f. = 1.60; RMSEA = .07; CFI = .93; NNFI = .91; IFI = .93; SRMR = .06; Model AIC = 1005.34; Squared Multiple Correlations for Reduced Form = .28), while all γ parameters are freely estimated in the unrestricted model (χ^2 [d.f.] = 702.09 [456]; χ^2/d.f. = 1.54; RMSEA = .06; CFI = .93; NNFI = .92; IFI = .93; SRMR = .06; Model AIC = 980.09; Squared Multiple Correlations for Reduced Form = .43). Moving to the unrestricted model leads to a decrease in

χ^2, degrees of freedom, and Model AIC: $\Delta\chi^2$ (d.f.) = 33.25 (4); ΔModel AIC = 25.25. This change in χ^2 is a significant improvement in fit at $p < .01$ and the lower Model AIC confirms the unrestricted model is superior. Furthermore, the variance in profits explained by the model variables increases from 28% to 43% with the inclusion of the interaction effects. The unrestricted model, inclusive of the interaction effects, is therefore superior to the restricted model. We conclude that the moderators contribute significantly to the model and results.

Table 3 here

The results (Table 3) appear robust as 43% of the variance in firm profits is accounted for by the variables in the structural model with a corresponding model power effect size (Cohen's f^2) of .75. Hypothesis 1 is not supported: product-market planning capability does not directly enhance profits ($\gamma = .04$, *n.s.*). Hypothesis 2, that technological turbulence would positively moderate this relationship, is not supported either ($\gamma = -.09$, *n.s.*).

Hypothesis 3a expected a positive effect on profits when the firm pursues marketing differentiation. This effect is positive and significant ($\gamma = .39$, $p < .01$), supporting H3c. Hypothesis 3b is supported as effect of product-market planning capability on profits becomes negative for firms pursuing cost efficiency ($\gamma = -.49$, $p < .01$). Hypothesis 3c on the moderating effect of a hybrid strategy is not supported ($\gamma = .08$, *n.s.*). The effect sizes for the relationships show medium strength effect sizes for the moderating influence of marketing differentiation (.39) and cost efficiency strategy (-.49). Interaction plots for both marketing differentiation and cost efficiency are shown in Figures 1 and 2, respectively. Consistent with expectations, a clear change is observed in the slope gradient as the moderators vary in strength, confirming the interpretation made from the SEM results: profits derived from product-market planning capability increase with marketing differentiation but decrease from cost efficiency strategy.

Figures 1 and 2 here

Additional Analysis: 3-Year Lagged Profit

As profits may be a function of prior and not current planning (Falshaw et al., 2006) and research into dynamic capabilities frequently associate it with long-run business performance (e.g., Teece, 2007), we follow Schilke (2014) and collect net profit after tax data three years forward from the original time of data collection to examine this issue further. We substitute the three-year lagged profit data into the original structural model: χ^2 = 707.57; d.f. = 456; RMSEA = .06; CFI = .93; IFI = .93; NNFI = .91; SRMR = .06; Model AIC = 985.57. The results (Table 4) remain consistent. Product-market planning capability has no direct effect on profits, and all moderator relationships stay in the same direction and are statistically significant as per the original results. Size, however, now has a positive impact on 3-year lagged profit while neither marketing differentiation nor cost efficiency has any direct effect on 3-year lagged profit. This analysis extends our original findings and provides insight into some of the temporal aspects of the findings.

Table 4 here

Discussion

We investigate the relationship between product-market planning capability and firm profit, within a contingency framework. The fact that so many firms have been unsuccessful in capturing the benefits of planning, and that research has been inconsistent in connecting planning to profitability (Miller and Cardinal, 1994; Rudd et al., 2008; Wolf and Floyd, 2017), demonstrates that our collective understanding of the boundary conditions surrounding planning and its contribution to firm profits is inadequate. Our findings offer new insights into the role and

value of product-market planning capability to industrial businesses and reveal external and internal moderators of its relationship with profitability. We also demonstrate from our additional analysis that the results hold when a time lag effect is taken into consideration. That being said, we focus our discussion on the original model results, as presented in Table 3. Our study makes three contributions to industrial marketing management theory.

First, few studies embrace a capability-based view of planning (cf. Hughes et al., 2019), despite this line of research being important to theoretically ground this decision-making approach to competitive advantage (Wolf and Floyd, 2017). Given the shared definitional and conceptual similarities, we view product-market planning as a dynamic capability addressing calls for the adoption of a capabilities perspective to examine organizational-level phenomena in industrial contexts (Kaleka and Morgan, 2019). Adopting a dynamic capability lens and using objective profit data to determine the impacts of external and internal moderators differentiates our study and enables stronger conclusions to be drawn regarding the real-world value of a product-market planning capability for high-technology firms—something that is lacking in both the industrial marketing literature (e.g. Hughes et al., 2019) and current planning research (Wolf and Floyd, 2017). Our finding that a product-market planning capability does not directly enhance profitability is typical of the mixed-effects observed in recent planning research (e.g., Sirén and Kohtamäki; 2016; Song et al., 2015). Rather than viewing planning as either 'good' or 'bad', as is commonly the case (Miller and Cardinal, 1994), the non-significant finding for the direct path between planning and profitability illustrates that to understand the value of product-market planning in industrial sectors, one must position this dynamic capability within context (Wilden et al., 2013). In other words, industrial businesses must not expect improved profitability from developing a product-market planning capability alone since the effects are dependent upon

contingencies. This emphasizes the importance of examining external and internal moderation effects on the product-market planning–profit relationship.

Second, a significant stream of literature argues that planning is an 'irrelevance' in dynamic markets and should be superseded by emergent strategy-making processes (Bouncken et al., 2016; Mintzberg, 1994). While there is merit in this view, it is not wholly possible to agree with that conclusion here. Rather than analyze how planning should be designed to fit conditions in the organization's external environment, as addressed in extant planning research (Wolf and Floyd, 2017), we examine how product-market planning as a dynamic capability might influence profits under technological turbulence. Menon et al. (1999) note that executives stress the importance of developing multiple strategic options and contingency plans for responding to market environment changes and delivering superior performance. Yet, they find no subsequent statistical evidence to support their contention, and neither do we. Thus, while it is intuitive to believe a product-market planning capability would be beneficial in such circumstances, we cannot ignore the fact that the study findings do not support such intuition.

It was somewhat surprising to see no effects identified in relation to the technological turbulence moderating effect as it would be expected to be positive significant as per theory around dynamic capabilities (e.g., Wilden et al., 2013; Schilke, 2014). Indeed, our motivation to examine lagged effects was strengthened as a result, yet, we once again found no effect even when accounting for a lag in profit returns. Technological turbulence refers to the perceived speed of change and unpredictability of technology faced by firms (Atuahene-Gima and Li, 2004) and the planning literature itself is ambiguous in its clarity on a dynamic planning capability's effects under differing levels of turbulence. We speculated that planning, or a dynamic planning capability, may enable greater flexibility owing to contingency plans, faster coordination, faster communication, greater awareness through environmental scanning for changes, and less internal

conflict (Song et al., 2015). This would be intuitive when viewing through the lens of dynamic capability theory, but we are given to wonder if dynamic capability theory needs expanding upon here, or at least some alternative works be considered. We concluded while hypothesizing that being a dynamic capability would enable adaptations and reconfigurations when conditions are turbulent so that profits are raised. However, it may be that while a dynamic planning capability enables *sensing* and *seizing*, the *reconfiguration* may come from an alternate dynamic capability, such as an adaptability capability or flexibility capability, and not just a planning capability. Indeed, such a premise is in line with Luo's (2000) characterization of dynamic capabilities in firm expansion in technologically turbulent situations. Furthermore, it is apparent from the works of Helfat et al. (2007) and Teece (2013) among others that dynamic *capabilities*, rather than dynamic *capability*, are ultimately the key to economic rent. Indeed, Teece (2013) indicates that some dynamic capabilities enable firms to shape the environment and not just adapt to it (so-called entrepreneurial fitness).It could be the case then that it is a combination of dynamic capabilities, and not just a singular, that unlocks the ability to generate greater and greater returns (Teece, 2013).

As an initial examination of this proposal, we respecified the SEM model to examine a three-way interaction effect between planning × flexibility × technological turbulence and the dependent variable of net profit after tax. The model fit statistics were as follows: (χ^2 [d.f.] = 348.50 [212]; χ^2/d.f. = 1.64; RMSEA = .07; CFI = .96; NNFI = .95; IFI = .96; SRMR = .06; Model AIC = 476.51; Squared Multiple Correlations for Reduced Form = .12). The three-way interaction effect is significant and positive in its effect on profits (γ = .13, p < .05). We note though that the effect weakens in the additional tests for 3-year lagged profits (γ = .14, p < .10) implying faster profitability returns form the interactions between dynamic capabilities in

turbulent conditions. We can only conclude from this that urgent investigation is needed in this research stream to unpack the interaction effects between dynamic capabilities and how these may drive firm performance across different contexts.

Third, research on the planning–performance relationship has long-ignored the significance of strategy as an important internal contingency (cf. Kaleka and Morgan, 2019). Wolf and Floyd (2017) note from extant planning research that there seems to be value for organizations regardless of their strategic orientation. However, Rogers et al. (1999) stress there is reason to suspect that failure to control for different business strategies has led to mis-specified and misleading models of planning, resulting in conflicting and confusing results. The assertion that strategy is an important internal contingency on the product-market planning–profit relationship appears to hold here, with strategic intention explaining both positive and negative effects of product-market planning capability for firm profitability.

As expected, based on dynamic capability theory, for differentiators a product-market planning capability challenges the value of existing resources and the status quo by sensing changing customer needs, seizing these opportunities by empowering change and reconfiguring plans and resource deployment for innovation (Teece, 2014). Indeed, Kaleka and Morgan (2019) note the ability to systematically generate market intelligence and develop stronger value propositions, necessary for marketing differentiation, is likely to generate greater market responsiveness and performance in turn. These features of product-market planning capability enable differentiators to sustain their value offerings over time for profitability, as demonstrated in the significant positive moderation effect on both short-term and long-term profitability. While a product-market planning capability is shown to have demonstrable benefits for the profitability of differentiators, it may create performance difficulties for firms pursuing cost efficiency. This highlights limitations to the performance contributions of a product-market planning capability

under certain strategy types, which again underscores why internal contingencies matter for the product-market planning–profit relationship.

On the other hand, developing a product-market planning capability appears inconsistent with the goals of cost efficiency. Firms focusing on cost control will experience significantly worse profit performance from a product-market planning capability as the necessary focus on production economies and best practices that are central to cost-leaders' performance are stifled (Lumpkin and Dess, 2006). In such instances, an ordinary cost-control capability may provide a stronger basis for performance advantages rather than a product-market planning capability. For instance, by providing focus on best practices to control cost and achieve technical efficiency in and across business functions (Teece, 2014). Such activities or practices are fundamentally aligned to the conceptual and theoretical features of cost efficiency that emphasize experience curves, tight cost and overhead control, and cost minimization in areas like research and development, service, and advertising (Porter, 1980). Therefore, a product-market planning capability is not appropriate for the achievement of sustainable performance advantages under this internal contingency.

Finally, we found no evidence that hybrid strategy is an internal contingency acting on the relationship between product-market capability and firm profit. Product-market planning capability suggest significant time investments in systematically and thoroughly engaging in scanning the business environment continually. This would appear to be commensurate with the internal complexity of a hybrid strategy and intuitively may increase the resilience of both the product-market planning capability and the hybrid strategy to affect profits. Hybrid strategies may confuse strategic positioning in ways that compromise the firm's ability to generate profits. The internal complexities of hybrid strategies suggest that a wider array of simultaneous contingencies may be at play.

Limitations and Future Research

Our study has limitations. First, by employing a cross-sectional design, it is not possible to fully observe the effects of product-market planning capability on profits across time, despite our additional analysis using 3-year lagged profitability. Second, while key informants are well-qualified to provide data, adopting a multiple informant approach is desirable from a robustness perspective and to overcome potential for method bias. As an attempt to compensate for this we relied upon objective data for the dependent variable and some control variables. Third, the sample is of high technology industrial firms in the UK. Competitive and environmental differences between industries and countries suggest caution in generalizing the results to markedly different populations.

Four essential avenues for future research arise. First, a product-market planning capability may have diminishing performance benefits at high levels of the capability over time, due to competency traps that can arise from strong capabilities (e.g., Hughes et al., 2019). A longitudinal study of product-market planning capability can better understand the dynamism at play and threats to that dynamism. Second, research suggests that managerial reactions to environmental inputs might be influenced by managers' mindset. For instance, Ringberg, Reihlen and Rydén (2019) emphasize how different managerial mindsets and cognitive frameworks lead to divergent sensemaking and strategic orientation. While these matters are beyond the scope our paper, we suggest they provide further indication as to why a dynamic planning capability is necessary. The interplay between cognition, mindset, and decision-making approach is an interesting future research avenue. For example, future research can (a) explore how managers' mindsets might mediate managers’ dynamic reactions to environmental inputs during dynamic planning processes; (b) develop a new dynamic planning typology be reflecting on mindsets; and

(c) examine the moderating effect of adherence/lack of change in strategy on the planning–profitability relationship (cf. Hughes and Morgan, 2007; Hughes, Hughes, and Morgan, 2010). Third, Kaleka and Morgan (2019: 110) highlight how as capabilities evolve over time 'they can also become ingrained "rigidities" in the organizational fabric', which would disengage the firm from adequately exploiting a product-market planning capability to respond effectively as markets change. Future research must examine this further and study whether rigidity from product-market planning capability might arise and how to counter these rigidities. Fourth, rigidity itself should also be considered from different perspectives. For instance, there can arise rigidity in strategy as associated with literatures around commitment to the strategic status quo (e.g., Hambrick et al., 1993; McClelland et al., 2010) and adherence to strategy (Covin et al., 1997; Hughes and Morgan, 2007; Hughes, Hughes, and Morgan, 2010). There is also organizational-level rigidity as implied by the structural inertia (e.g., Schwarz, 2012), resource weakness (e.g., West and DeCastro, 2001), and core rigidities literatures (Leonard-Barton, 1992). There may be a tipping point in relation to planning capability where beyond which rigidity can set in, but it is not possible to accurately judge in our current data if there is a tipping point unless we work on the assumption that beyond a certain amount of planning capability, rigidity would certainly set in. While it is possible to examine for an inverted u-shape with profitability, this is not theoretically robust as it provides a very blunt way of looking at the rigidity issue, especially as rigidity can manifest itself in different ways (e.g., in strategy, structure or organization), for different reasons (e.g., resource unavailability), or at different times (e.g., crisis versus stable times). Indeed, the works of Covin et al. (1997), Hughes, Hughes, and Morgan (2010), and Schwarz (2012), among others, would certainly lead to such a conclusion. This presents an exciting opportunity for focused research in this area.

Conclusion

Planning is the most dominant and widely used strategy tool in business (Wolf and Floyd, 2017). A product-market planning capability is defined as 'the ability to anticipate and respond to the market environment in order to direct a firm's resources and actions in ways that align the firm with the environment' (Slotegraaf and Dickson, 2004: 373). Conceptualized as a dynamic capability that enables 'the enterprise and its top management to develop conjectures about the evolution of consumer preferences, business problems, and technology; validate and fine-tune them; and then act on them by realigning assets and activities to enable continuous innovation and change' (Teece, 2014: 332), the study sought to address how industrial businesses can unlock the benefits of product-market planning for financial success? In doing so, we address a call from the industrial marketing and management literature to focus on the potential performance role of this decision-making approach within a contingency framework (Hughes et al., 2019).

Examining the product-planning capability–profit relationship, we circumscribe the internal (strategy) and external (technological turbulence) boundary conditions acting as contingencies on profit effects. In response to the enduring question of whether planning matters for industrial businesses (e.g., Kaleka and Morgan 2019), we find that for high-technology industrial organizations, product-market planning capability is significantly and positively related to profits under marketing differentiation; negative implications ensue for those adopting cost efficiency strategies; while hybrid strategy has no significant moderating effect and neither does technological turbulence. While planning studies have reduced significantly in frequency since the early 1990s, it is misleading to interpret this as the end of planning (Wolf and Floyd, 2017). The findings of the study remedy the dispassionate view of planning that has prematurely dismissed its value to senior managers of contemporary industrial organizations.

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Table 1 Measurement item properties

Construct[a]	Measurement Item	Standardised Factor Loading	*t*-value
Product-market planning capability	Our strategy is made explicit in the form of precise plans	.77	10.61
	When we formulate a strategy it is planned in detail	.86	12.57
	We have precise procedures for achieving strategic objectives	.78	10.73
	We have well-defined planning procedures to search for solutions to strategic problems	.79	11.03
	We meticulously assess many alternatives when deciding on a strategy	.84	12.03
	We evaluate potential strategic options against explicit strategic objectives	.85	12.14
	We have definite and precise strategic objectives	.77	10.48
	We make strategic decisions based on a systematic analysis of our business environment	.73	9.83
Technological turbulence	The technology in our industry is changing rapidly	.78	10.49
	Technological changes provide big opportunities in our industry	.74	9.77
	A large number of new product ideas have been made possible through technological breakthroughs in our industry	.91	13.21
	Technological developments in our industry are rather minor (r)	.79	10.65
Marketing differentiation[b]	…to provide unique products?	.76	10.84
	…to offer highly differentiated products?	.77	10.96
	…to offer a high degree of value in your products?	.65	8.87
	…to offer products/services with distinctly different features from those of competing products?	.72	10.10
Cost efficiency[b]	…to invest in cost saving technology?	.72	10.00
	…to emphasize efficiency?	.67	9.16
	…to redesign products to reduce costs?	.73	10.09
Flexibility	Adapting your strategy adequately to changes in the business environment of your organization?	.65	7.95
	Adapting your strategy adequately to changes in competitors' strategies?	.70	8.76
	Adapting your strategy quickly to the changing needs of customers?	.78	10.15
	Reacting quickly to new threats?	.82	10.78
Centralization	There can be little action taken in the organization until a superior makes a decision	.82	11.27
	A person who wants to make his or her own decisions would be quickly discouraged in the organization	.72	9.30
	Even small matters have to be referred to someone with more authority for a final decision	.84	11.52
	Any decision a person in the organization makes has to have his or her boss's approval (r)	.82	11.15
Size	Number of full-time employees	–[c]	–[c]
Profits	Net profit after tax	–[c]	–[c]

[a] All items anchored by 7-point agreement scales (1 = "Strongly disagree" to 7 = "Strongly agree") with the exception of strategy (1 = "Not at all" to 7 "To a great extent") and flexibility (1 = "Very poor" to 7 = "Excellent").
[b] Scale anchor: *To what extent is your strategy…*
[c] Single item variable.
(r) Item reverse-coded for analysis.

	1	2	3	4	5	6	7	8 ($'000)
1 Product-market planning capability	*.80*[a]							
2 Technological turbulence	.20*	*.81*						
3 Marketing differentiation	.32**	.32**	*.73*					
4 Cost efficiency	.22**	.05	.23**	*.71*				
5 Flexibility	.38**	.13	.33**	.24**	*.74*			
6 Centralization	-.17*	.04	-.11	.13	-.15	*.80*		
7 Size	.20*	.23**	-.01	.01	-.03	-.06	–	
8 Profits	.23**	.11	.22**	-.11	.11	-.02	.14	–
CR	.93	.88	.82	.75	.83	.88	n/a	n/a
AVE	.64	.65	.53	.50	.55	.64	n/a	n/a
Mean	4.04	4.76	4.70	4.98	4.82	3.12	1215	4921
SD	1.14	1.36	1.19	1.10	.89	1.32	6280	31084

Table 2 Construct properties and correlations

[a] Figures on the diagonal represent square root of AVE.

Table 3 Results

Variables	Dependent Variable Net Profit After Tax		
	Standardized path estimate[a]	***t*-value**[b]	**Effect size**
Controls			
Flexibility	.10 (-.13, .33)	.87	.10
Centralization	.12 (-.07, .31)	1.20	.12
Size	.18 (-.05, .41)	1.50	.18
Direct Effects			
Product-market planning capability	.04 (-.19, .28)	.38	.05
Marketing differentiation	.32 (.08, .55)	2.67**	.32
Cost efficiency	-.26 (-.47, -.06)	-2.58**	-.26
Hybrid strategy	.05 (-.05, .15)	1.00	.05
Technological turbulence	-.16 (-.39, .08)	-1.30	-.16
Interaction Effects			
Product-market planning capability × marketing differentiation	.39 (.13, .65)	2.98**	.39
Product-market planning capability × cost efficiency	-.49 (-.43, -.16)	-4.28**	-.49
Product-market planning capability × hybrid strategy	.08 (-.01, .03)	.57	.08
Product-market planning capability × technological turbulence	-.09 (-.20, .09)	-.78	-.10
Squared Multiple Correlations for Reduced Form		.43	
Cohen's f^2 effect size		.75	

[a] Figures in parentheses represent 95% confidence interval values for unstandardized path estimates.
[b] Critical t-values (one-tailed): ** $p = .01$, critical t-value = 2.326; * $p = .05$, critical t-value = 1.645.

Table 4 3-year lagged profits results

Variables	Dependent Variable Net Profit After Tax		
	Standardized path estimate[a]	***t*-value[b]**	**Effect size**
Controls			
Flexibility	.09 (-.14, .31)	.75	.09
centralization	.13 (-.06, .32)	1.39	.14
Size	.20 (-.02, .43)	1.75*	.20
Direct Effects			
Product-market planning capability	.08 (-.15, .31)	.66	.08
Marketing differentiation	.08 (-.15, .31)	.68	.08
Cost efficiency	-.16 (-.36, .03)	-1.62	-.16
Hybrid strategy	.04 (-.06, .13)	.81	.04
Technological turbulence	.03 (-.20, .26)	.24	.03
Interaction Effects			
Product-market planning capability × marketing differentiation	.33 (.05, .36)	2.59**	.33
Product-market planning capability × cost efficiency	-.21 (-.43, -.01)	-1.88*	-.21
Product-market planning capability × hybrid strategy	-.14 (-.03, .01)	-.97	-.14
Product-market planning capability × technological turbulence	-.01 (-.15, .14)	-.07	-.01
Squared Multiple Correlations for Reduced Form		.26	
Cohen's f^2 effect size		.35	

[a] Figures in parentheses represent 95% confidence interval values for unstandardized path estimates.
[b] Critical t-values (one-tailed): ** p = .01, critical t-value = 2.326; * p = .05, critical t-value = 1.645.

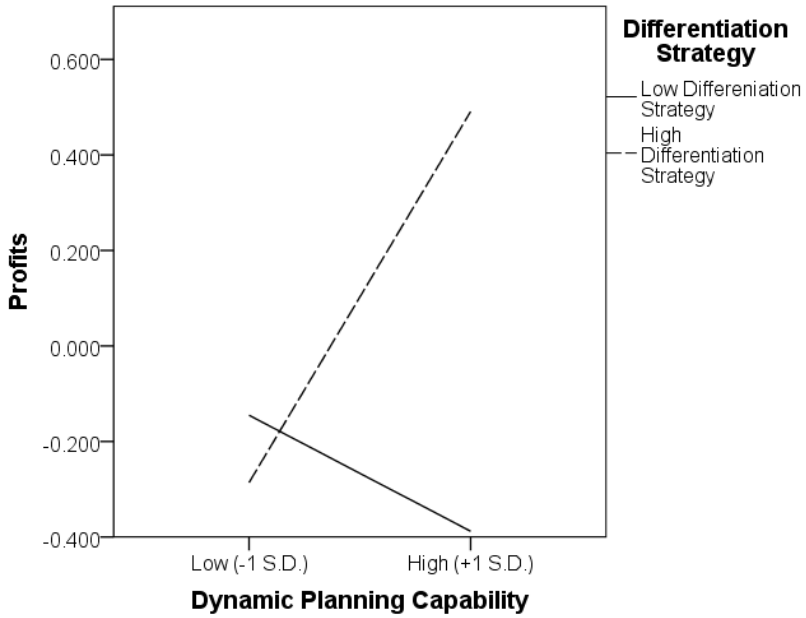


Figure 1: Interaction plot of the moderating effect of marketing differentiation

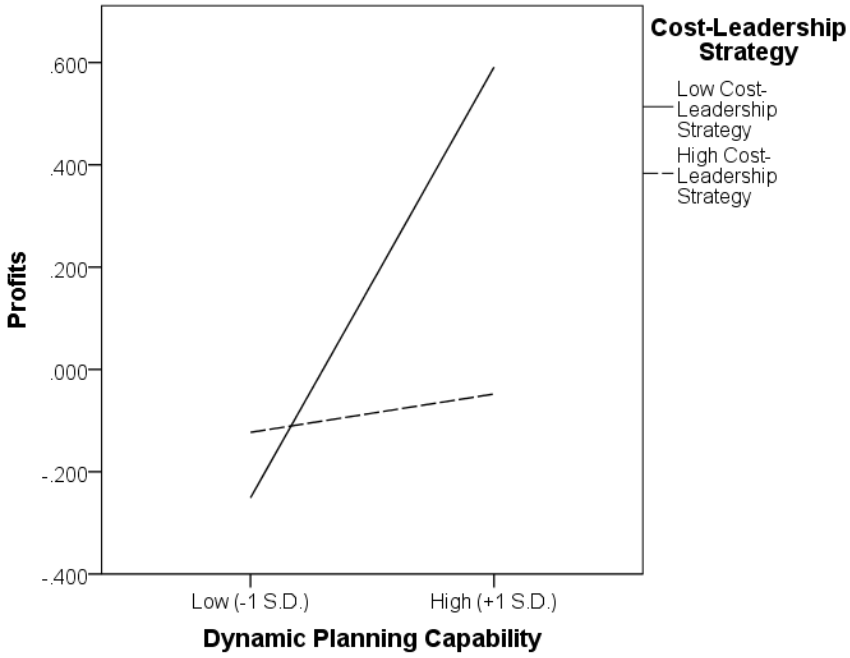


Figure 2: Interaction plot of the moderating effect of Cost efficiency