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Aligning Performance Metrics with Business Strategy

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Aligning Performance Metrics with Business Strategy

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INTRODUCTION

The business strategy provides the direction and guidelines which are useful in designing and deploying a suitable performance management system (PMS) to gain a competitive advantage. A PMS provides an overview of performance by selecting and using financial and non-financial measures, also called metrics, which guide the organisational decision-making processes (Taylor and Taylor, 2014; Glas et al., 2018). The corporate governance of companies helps understand the importance of identifying suitable measures that influence the decision-making processes within an organisation (Hristov *et al.*, 2022). Regularly refreshing a PMS is essential as the environment and the organisation evolve (Schleicher et al., 2018). Moreover, a PMS must remain flexible to accommodate strategic changes that can impact performance and overall success (Lewandowski and Cirella, 2023). Different purposes require distinct PMS designs, and using a PMS for the wrong purpose may diminish its value and negatively affect performance (e.g., Zimmerman, 2020; Hansen, 2021).

The performance measurement should theoretically align with business strategy to increase organisational performance or competitiveness (Birhanu *et al.*, 2018; Elgazzar *et al.*, 2019; Hansen, 2021; Kadak and Laitinen, 2021). If the conditions or organizational components are poorly aligned, performance may deteriorate (Haniff and Galloway, 2022). Despite the general theoretical agreement, the specific role of business strategy in this relationship is found to be inconsistent or ambiguous, as noted in comprehensive literature reviews and studies such as Choong (2013) and Amhalhal *et al.* (2022). Their observations corroborate the findings of earlier

studies (Ho *et al.*, 2014) which noted contradictory or inconclusive evidence that alignment leads to better performance.

Underscoring the inconsistency of results, Amhalhal *et al.* (2022) noted “there is a need for further investigation of how PMS can be designed and implemented with different strategies to achieve better performance” (p. 2217). Managers also need a clear direction on the right type of performance metrics for a particular business strategy. With such guidance, managers can direct resources towards designing and deploying appropriate performance metrics to optimise organisational performance. Further, as any field of research matures, and for a consensus to emerge on a premise, cumulative research is necessary to abandon weak models or theories and refine the surviving ones (Hempel, 1966).

Considering the above-mentioned needs of both academics and practitioners, this study attempts to bring clarity to this allegedly ambiguous and inconsistent relationship and to provide managerial guidance for the design and deployment of the right type of performance metrics. Specifically, the research question is: Does business strategy moderate the effect of performance metrics on organisational performance as an organisation attempts to align these metrics with its strategic priorities? Further, how broadly and in what instances does business strategy influence the relationship between performance metrics and organisational performance?

Using a large-scale empirical study, we find differences in the choice of performance metrics based on the strategy pursued. When companies deploy the ‘right’ type of performance metrics that are consistent with the business strategy then the firm performance in corresponding areas is enhanced. This is consistent with the anticipated contingent relationship between

performance metrics and strategy which enhances organisational performance, in general. The results, however, differ for various archetypes.

The study supports the underlying premise of the *Contingency Theory* that there is no single best performance metric that is equally effective in all organisations. Thus, there is a need to consider strategy and alignment simultaneously. These findings add to the limited number of studies on this topic and underscore the need for further research on why the contingent relationship works only in certain archetypes. Managers can benefit from these findings by selecting the performance metrics that align with their business strategies to improve organisational performance. This knowledge can benefit managers in directing resources and effort towards an appropriate PMS design. Managers should also note that omitting certain metrics sends a signal too and can drive efforts in an undesirable direction.

The remainder of this paper is structured as follows. Next, we review the literature on performance measurement, business strategy, and organisational performance. Then, we propose a conceptual framework for analysing the moderating role of business strategy followed by the hypotheses. Next, the methodology and data analysis are presented followed by the results and discussion of the findings. The paper ends with its implications for research and practice and the conclusions.

LITERATURE PREMISES ON PERFORMANCE MEASUREMENT

The performance measurement aids the implementation of strategy and enhancement of organisational performance (cf., Cao *et al.*, 2015, Dubey *et al.*, 2017). Organisations select certain types of performance measures to achieve a fit at different levels within the organisation

(Garengo and Bititci, 2007; Jusoh and Parnell, 2008). The traditional ‘financial’ performance measures alone are unable to satisfactorily reflect a firm’s performance in today’s business environment (Hoque (2005). Since ‘non-financial’ performance measures focus on a firm’s long-term success factors, such as customer satisfaction, innovation, and employee satisfaction, they should also be utilised (van Veen-Dirks and Wijn, 2002). Specifically for this study, the ‘financial’ measures are objective/quantitative, called *Operational/Financial* metrics. These include short-term financial metrics, quality performance metrics, lead times and productivity, etc. The ‘non-financial’ metrics are qualitative, called *Relational* metrics. These focus on the extent and quality of relationships with customers, suppliers, community, employees, alliance partners, and even the environment.

Operations strategy research has long emphasised the need to match performance measurement with the strategies of a firm (Hayes and Wheelwright, 1984; Kathuria, 2000; Santos, 2000). However, this isn’t always the case, as reported by Kennerley and Neely (2003), Braam and Nijssen (2004), Evans (2004), and Pavlov *et al.* (2017), among others. The relationship can be contradictory at times, with no conclusive evidence that alignment between strategy and performance measurement leads to better or worse company performance (Choong, 2013; Ho *et al.*, 2014).

In the following paragraphs, we identify some factors that seemingly contribute to the ambiguity in this relationship and hence point to potential research gaps. First, many studies that deal with the fit or alignment of performance measurement and strategy are conceptual or theoretical (Ferreira and Otley, 2009; Fleming *et al.*, 2009; Wadongo and Abdel-Kader 2014), which underscores the need for more empirical studies such as this one. Second, the empirical

studies in this area, few and far between, test alignment or fit as a mediating effect, an indirect effect (Teeratansirikool *et al.*, 2012; Amhalhal *et al.*, 2022), or using the sub-group analysis (Taylor and Taylor, 2014). Thus, there is a need for studies that use a moderation approach.

Third, in the extant literature, the strategy variable is based either on Miles and Snow typology or Porter's cost leadership and differentiation strategies. Those who utilize the Miles and Snow typology do not include all four archetypes: Prospectors, Defenders, Analysers, and Reactors. For example, Jukka (2023) and Al-Surmi *et al.* (2020) used the Miles and Snow (1978) typology, but they used only three of the four archetypes to assess the strategic orientation of their sample. Jukka (2023), however, used archival accounting and top management team data as proxies for management control systems archetypes and business strategies. Amhalhal *et al.* (2022) defined the strategy variable as a continuum of two extremes: namely the "defender" and "prospector" types. Latifah *et al.* (2021) used only the differentiation strategy based on Porter's framework to study its impact on organisational performance, with innovation as a mediating variable. The Miles and Snow typology seems more comprehensive with four archetypes, as opposed to two in Porter's, but not including all four archetypes in a study leaves out an important segment of the population, thus leaving a gap in the literature that the present study attempts to fill.

Fourth, most studies are conducted in the West, with some exceptions, such as in Libya (Amhalhal *et al.*, 2022), Malaysia (Jusoh, 2010), Estonia (Haldma and Laats, 2002), and some in Europe. For example, Ven der Stede *et al.* (2006) used a combined sample of Belgium and the USA, and Hristov *et al.* (2022) used data from Italy. The studies from Italy are in the general domain of PMS, but they do not address the contingent role of business strategy. Further,

cumulative research is important to garner support for a theory or to refute it (Hempel, 1966), hence the need for more studies from Italy.

Fifth, most studies are based on data from manufacturing organisations, except for Amhalhal *et al.*, (2022). With the increasing role of services in today's world, there is a need to include services in the study samples. This study fills these above-mentioned voids by using a large, combined sample of 372 manufacturing and service organisations.

HYPOTHESES DEVELOPMENT

Theoretical Underpinning: The Contingency Theory

The underlying premise of the *Contingency Theory* is that there is no single best way to manage or lead, and any one way is not equally effective in all situations (Galbraith, 1973). Hence, contingency theorists emphasise the need for identifying organisational and environmental characteristics, which, when matched, would lead to superior organisational performance (Zaefarian et al., 2013). This match leads to higher performance—the better the fit, the higher the performance (Dubin, 1976). The way the 'fit' is defined and operationalised influences the development of hypotheses, collection of data, and statistical testing of the hypotheses (Drazin and Van de Ven, 1985). The implication of contingency theory for our study is that the choice of performance metrics depends upon the strategy of the organisation and if both are aligned then the organisational performance is higher. For further reviews, please see Fisher (1995), Langfield-Smith (1997), Chenhall (2003), and Garengo and Sharma (2012).

The Conceptual Model

The conceptual model of this study is inspired by Ferreira and Otley's (2009) PMS framework. It is related to three questions in their framework and their interrelationship: performance measures (question #5), strategy (question #4), and performance evaluation (question #7). The focus of their framework is to provide a descriptive tool, which they say could be developed into a prescriptive model by using a contingency approach. In this study, we look at the contingent relationships among these three variables to develop a prescriptive model for managers to select key performance measures that are compatible with their business strategy such that their organisational performance is enhanced as per their chosen evaluation criteria, be it financial or customer-focused. The conceptual model in Figure 1 shows the linkage among three constructs of the study—Performance Metrics, Business Strategy, and Organisational Performance.

Take in Figure 1 Here

The contingency variable—the business strategy of a company, which influences the choice of performance metrics—is characterised using the Miles and Snow (1978) typology of *Prospector*, *Defender*, *Analyser*, and *Reactor*. This typology is widely used across industries (Desarbo *et al.*, 2005). The fit between the business strategy and performance metrics is expected to improve overall performance on both quantitative and qualitative measures—*Financial* and *Customer-focused* indicators respectively.

Hypotheses

Performance metrics are considered essential for converting a firm's strategy into realistic goals

and objectives (Malina and Selto, 2015), and they help the organisation stay aligned with its mission (Melnyk *et al.*, 2014). Some researchers suggest that the choice of performance metrics is affected by business strategy (Ittner *et al.*, 2003; Van der Stede *et al.*, 2006; Fleming *et al.*, 2009; Jusoh, 2010; and Birhanu *et al.*, 2018). When carefully chosen, performance metrics can help pursue a certain strategy (Lisi, 2015).

Per the Miles and Snow typology of business strategies, *Defenders* are characterised as offering a low variety of outputs with high volume and hence competing on price, quality, and shorter lead times. They have an internal orientation as they stress efficiency and little or no product/market development. They excel in a restricted area and overlook fluctuations in the external environment that do not directly influence current areas of operations. They react fast to any competitors' moves (Bamford and West, 2010). They focus narrowly on securing their position in their domain (Camillus and Lederer, 1985) and emphasise operational efficiency (Chan *et al.*, 2006). Hence, we contend that managers in *Defender* firms will place a higher emphasis on utilising operational and short-term financial metrics to support their focus on efficiency and fast reaction to defend their market position.

Prospectors are the opposite of *Defenders* as they focus on market opportunities and developing new products/services (Bamford and West, 2010). They have an external and relational orientation as they deal with a broad product-market area that gets periodically redefined (Chan *et al.*, 2006). They are the first to target new product/market areas and respond quickly to opportunities (Slater and Olson, 2001). Hence, managers in such organisations are more likely to emphasise 'relational' performance related to customer relations, environmental

concerns, community relations, supplier integration, etc., to gain market share based on these actions by being ahead of the competition.

Analysers stand somewhere in between *Prospectors* and *Defenders* as they share the characteristics of both. They attempt to strike a balance between core product offerings and seeking new product and marketing opportunities (Vorhies and Morgan, 2003). They do not necessarily engage in developing new products but often introduce better products (Chan *et al.*, 2006). Hence, we expect their managers to emphasise a mix of short-term *Operational/Financial* metrics to keep track of improvements in products and processes as well as *Relational* metrics to tap new opportunities in the market.

Reactors lack a clear focus and react to the actions of other firms (Miles *et al.*, 1978). They simply respond to environmental pressures to remain in business. Hence, the managers in such firms will have neither a clear direction nor a greater emphasis on either set of performance metrics (Chan *et al.*, 2006).

Thus, considering the business strategy as a contingency factor, we posit:

H1: Different strategy archetypes emphasise different performance metrics that are consistent with their strategic orientation.

Specifically,

- a) *Defender firms will emphasise Operational/Financial metrics more than the Prospector, Analyser, and Reactor firms.*
- b) *Prospector firms will emphasise Relational metrics more than the Defender, Analyser, and Reactor firms.*
- c) *Analyser firms will emphasise Operational/Financial metrics more than the Prospector and Reactor firms.*
- d) *Reactor firms will emphasise both Operational/Financial and Relational metrics less than the Defender, Prospector, and Analyser firms.*

The contingency perspective on strategy-performance alignment suggests that when performance metrics are aligned with the strategy, the organisational performance improves. The alignment helps minimise the ‘measurement gaps’ between strategic objectives and performance measurement (Ittner *et al.*, 2003), which in turn improves organisational performance.

We posit that performance is higher when managers emphasise the right type of performance measures which are congruent with the strategic orientation of the organisation. In support of our contention, Kathuria (2000) found his four strategic clusters—*Do All*, *Efficient Conformers*, *Speedy Conformers*, and *Starters*—performed better on those performance measures that were compatible with their respective strategies. Extending the underlying implications of those findings to business strategy, we surmise that when managers emphasise certain performance metrics (*Operational/Financial* or *Relational*) that are compatible with the firm’s strategic orientation (*Defender* or *Prospector*), the synergy between the metrics and strategy pursued will enhance organisational performance. Further, the synergy will enhance organisational performance on those indicators—*Financial* or *Customer-focused*, that are compatible with the strategic posture and performance metrics deployed (Hsieh and Chen, 2011).

For example, managers in *Prospector* firms value being the first in newer product and market domains so they can continually innovate new products and enter new markets (Miles *et al.*, 1978). Hence, they are quick to exploit early signs of opportunity and strive to meet their customers’ needs (Slater *et al.*, 2010). As reasoned above in support of H1, the use of *Relational* metrics that focus on innovation and learning would be more appropriate to facilitate their efforts. *Operational/Financial* metrics related to productivity and operating income, etc., would not be consistent with their efforts and strategic focus on innovation. Hence, we contend that for

Prospectors the synergy between their innovative outlook to serve their customers before their competitors and the *Relational* metrics used by their managers to inspire and support such efforts would enhance their organisational performance on *Customer-focused* indicators, such as the acquisition of new customers, increase in market share, etc., rather than the *Financial* indicators—the rate of profit growth, profit to sales ratio, etc. Thus, when *Prospector* firms deploy *Relational* metrics, they will perform better on *Customer-focused* indicators of organisational performance.

Defenders focus on reducing costs and maximizing the efficiency of production (Miles *et al.*, 1978). To defend their competitive positions, they focus on reducing costs (Bamford and West, 2010). Thus, as reasoned in H1, the *Defender* firms will emphasise *Operational/Financial* metrics to support their focus on cost reduction and efficiency. The effect of such synergy on the organisational performance will be better reflected and captured in their *Financial* performance indicators rather than in *Customer-focused* performance indicators.

Analysers intensely monitor customer reactions and spend significant resources analysing customer data and competitive activities (Olson *et al.*, 2005). They focus on maintaining a stable offering of core products, while closely monitoring competitors' moves (Miles *et al.*, 1978). Thus, for the *Analyser* types, their focus is more on maintaining their competitive position, which is like that of the *Defenders*. Hence, for *Analysers* we expect a directional relationship that is similar to the *Defender* relationships, but of a different magnitude.

Finally, for the *Reactor* types, we do not expect any synergistic effect of strategy-metric alignment on organisational performance since such firms lack a clear strategy and tend to react

to changes in the market (Miles *et al.*, 1978). Hence, we do not put forth any hypothesis regarding the *Reactor* group of firms.

Thus, pursuing the notion of ‘the better the fit, the better the performance,’ as per the contingency theory, we posit:

H2: Alignment between strategy and the type of performance metrics emphasised will enhance firm performance on certain compatible indicators.

Specifically,

H2(a): Prospector firms will perform better on Customer-focused indicators of organisational performance when they emphasise Relational metrics.

H2(b): Defender and Analyser firms will both perform better on Financial indicators of organisational performance when they emphasise Operational/Financial metrics.

METHODOLOGY

Sample and Data Collection

As a first step, we selected the largest 10,000 Italian firms, defined by the number of employees, from Amadeus (Bureau Van Dijk), an extensive database of public and private companies across Europe. The Amadeus database allows users to download company data directly in SPSS format and assign an ID number to each company. We used the ID number to randomly select 1,000 firms in the SPSS environment through the following command procedures: "data" -->"select cases" --> "random example of cases" --> exactly 1,000 cases from the first 10,000 cases.

Thereafter, we contacted the management of these 1,000 firms to elicit their interest and to collect the names and e-mails of targeted respondents, who would be knowledgeable and qualified to complete the questionnaire. These included high-ranking officials, such as CEOs, CFOs, managing directors, controllers, etc., who are believed to be more reliable sources of information (Philips, 1981). A similar approach was used by Miller and Roth (1994) and

Kathuria (2000). To increase the likelihood of response, we phoned them to check their availability. Before sending the survey, we explained the purpose via a letter. We also offered a comparative report of their responses vis-à-vis others. After three follow-ups, we received 386 usable responses of which 14 were construction and mining firms, 126 services, and 246 manufacturers. Since this study is focused on manufacturing and service firms, we retained 372 organisations, which resulted in an effective response rate of 37.2%.

Operationalisation of Constructs

The three constructs used are Performance Metrics, Business Strategy, and Organisational Performance Indicators. The Performance Metrics span all five basic classifications suggested by Armstrong and Baron (2005). These include costs, outputs, impacts such as attainment of quality and level of service, reaction of customers, and speed of response such as delivery times. The ten items in Panel A, Appendix I, were part of the questionnaire. We asked respondents to rate the degree to which each measure is emphasised on a scale of 1-6, with '1' representing 'to a very great extent.' These ten items are inspired by the works of Ferreira and Otley (2009) and Armstrong and Baron (2005), and these items mirror the measures developed by Ittner *et al.* (2003). The items range from customer relations to environmental compliance, and from short-term financial metrics to quality, etc.

The Business Strategy construct was operationalised by one of the four archetypes described in Appendix II: *Defender*, *Prospector*, *Analyser*, and *Reactor*. We operationalised the Organisational Performance Indicators construct using eight organisational performance items, which draw on the works of Rosenzweig *et al.* (2003), among others. These items, furnished in

Panel B, Appendix I, range from ‘increase in the market share’ to ‘rate of sales growth.’ The respondents rated these items on a scale of 1-7, with 7 being ‘well below average’ relative to the industry average. Relative performance evaluations are extensively used (Ferreira and Otley, 2009) as they eliminate the effects of extraneous factors (Dye, 1992) and solve the ‘fixed performance contract’ problem (Hope and Fraser, 2003).

Statistical Tools Used

We used factor analysis on Performance Metrics and Organisational Performance to identify the underlying factors that explain the common variance. Next, to test our hypotheses, we used the multivariate analysis of variance (MANOVA) test. MANOVA is preferred over separate univariate analysis of variance (ANOVA) tests, for the following reasons: a) to control the overall Type I error; b) to evaluate the mean differences on both dependent variables simultaneously, while controlling for the intercorrelation between them; c) to increase the probability of rejecting a false null hypothesis and thus providing for a more powerful test by examining two dependent variables simultaneously; and d) enhanced interpretation of results by considering multiple dependent variables simultaneously (Bray and Maxwell, 1985). We then conducted subgroup analyses for the four strategy groups. Specifically, post hoc Scheffé tests and paired T-tests were conducted for further comparisons. A similar approach has been used in earlier studies (Kathuria *et al.*, 2010; Al-Surmi *et al.*, 2020).

DATA ANALYSIS

Sample Statistics

A frequency analysis of the sample shows a well-represented and diverse dataset. The

respondents included mostly top management with about 20% CEOs and CFOs, 47% Controllers, and 9% Managing Directors. Over 20% were managers, primarily in operations, human resources, and finance functions. The percentage of organisations pursuing four different strategies ranges widely, with *Prospectors* being the largest proportion of the sample at 47% followed by 29% *Analysers*. The *Reactors* are the smallest group with only 7% of the sample and the *Defenders* are close to one-fifth of the sample at 17%.

In the sample of 372 respondents, we had 66% manufacturing and 34% service organisations, of which 53% were domestic and 47% multinationals. In terms of size, 57% had fewer than 500 employees and 43% had 500 or more. These sample statistics, presented in Table 1, are representative of the general Italian context and hence the sample doesn't seem to be biased *prima facie*. We also tested the non-response bias by comparing the industry classification (i.e., service or manufacturing) between the firms that responded and those that didn't respond. We found no statistically significant differences at $p \leq 0.05$ between these two groups, which suggests minimal potential for non-response bias.

Take in Table I Here

Validity and Reliability

The study measures are well-grounded, which ensures content validity. The survey items loaded on the factors as expected. Items with a unique loading of at least 0.50 were included in a factor. In the case of dual loading, an item was deleted if the weight difference across factors was less than 0.10. The scales retained all the items as expected, except for 'customer relations' that

loaded on both factors and hence dropped. The factor loadings for all other items were between 0.594 and 0.895, as provided in Appendix I.

The internal consistency (*Cronbach's Alpha*) was 0.629 for the three-item *Operational/Financial* metrics scale and 0.871 for the seven-item *Relational* metrics scale. The variances explained were 13% and 48% respectively. The Organisational Performance variable also resulted in two factors. The first factor, *Financial Performance*, explained 61% of the variance with a *Cronbach alpha* 0.927. The second factor, *Customer-focused Performance*, had four items with a 15% variance explained with a *Cronbach alpha* 0.851. Such high estimates for all scales, except for the *Operational/Financial* metric, suggest that the indicators are reliable. When we drop the financial measure from the *Operational/Financial* metric scale, it yields a higher alpha of 0.751. We, however, chose to retain the three-item scale with an alpha lower than the 0.70 threshold (Nunnally, 1978) as it makes more sense theoretically.

Common Method Variance (CMV)

The CMV problem due to knowledge deficiency can be moderated by high-ranking informants, who are sources of reliable information (Miller and Roth, 1994; Kathuria, 2000). Our respondents are high-ranking officials, who are involved in formulating business strategy. To mitigate the potential for CMV due to social desirability and consistency, respondents' anonymity was maintained, and they were informed that their responses would not be adjudged right or wrong. We also physically separated the items representing the same variable. Further, we used the one-factor test of Harman (1967) to statistically examine the incidence of CMV. The 18 items yielded four factors, with eigenvalues ranging between 1.3 - 6.4 and variances

explained between 7% - 36%, which ruled out the potential for CMV.

RESULTS

The results of Hypothesis 1 testing are given in Table II. The overall MANOVA model in Panel A is significant (*Wilks' lambda* = 0.92, $F = 4.82$, $p < 0.001$), which supports Hypothesis 1. The results in Panel B further support our contention that the four strategy archetypes place a varying degree of emphasis on the *Operational/Financial* metrics ($F = 4.64$, $p < 0.001$) as well as *Relational* metrics ($F = 9.1$, $p < 0.001$).

Take in Table II Here

The post hoc Scheffe tests in Panel C help us understand the directional differences among strategy archetypes. *Defenders'* emphasis on both the *Operational/Financial* and *Relational* metrics is significantly greater than the *Reactors'* at $p < 0.05$ and $p < 0.01$ respectively. These results partially support Hypothesis H1a, as the emphasis of *Defender* firms on *Operational/Financial* metrics was higher than that of *Reactor* firms, but not when compared to the other two—*Prospector* and *Analysers*.

Hypothesis H1b was partially supported as the emphasis of *Prospector* firms on *Relational* metrics was higher than that of *Reactor* firms ($p < 0.0001$), but not as compared to the other two—*Defender* or *Analysers*. Hypothesis H1c was also partially supported as the emphasis of *Analysers* on *Operational /Financial* metrics was higher ($p < 0.01$) than that of *Reactors*, but not compared to *Prospectors*. Hypothesis H1d was fully supported as the emphasis of *Reactors*

on both *Operational/Financial* and *Relational* metrics was lower than the other three archetypes at *p-values* ranging between <0.01 - <0.001 .

Hypothesis H2 is supported as the overall MANOVA is significant in Panel A, Table III, which suggests that the alignment between strategy and performance metrics positively impacts organisational performance. Specifically, of the two interaction terms, only one—Strategy Types*Rel—that represented the interaction of *Relational* (Rel) performance metrics with the strategy pursued, was significant in the *Overall Effects* ($F=3.00_{<8,660>}$, $p\text{-value}<0.001$). Upon further examination in Panel B, the models for both outcome variables were found to be significant—*Financial* ($F=9.12_{<8,331>}$, $p\text{-value}<0.0001$) and *Customer-focused* ($F=7.89_{<8,331>}$, $p\text{-value}<0.0001$).

Take in Table III Here

Further examination in Panel B of Table III revealed that the interaction of Strategy Types with *Relational* metrics was significant for the *Customer-focused* ($F=3.85$, $p\text{-value}<0.001$) indicator. The interaction term was also significant for the *Financial* ($F=4.73$, $p\text{-value}<0.0001$) indicator, which was unexpected and is examined later in the paper.

We further tested the moderation effect in H2(a) using subgroup analyses. For *Prospectors* ($n=159$), we used the *Customer-focused* performance indicator as the dependent variable. As predicted, the *beta* coefficient for *Relational* metrics was significant ($\beta=0.155$, $t\text{-stat}=1.854$, one-tailed $p\text{-value}<0.05$). Thus, H2(a) is supported. Hypothesis H2(b) was tested separately for the two subgroups—*Analysers* (99) and *Defenders* (58). With the *Financial* performance indicator as the dependent variable, the predictors used were *Operational/Financial*

metrics. For both subgroups, the *beta* coefficients for *Operational/Financial* metrics were not significant at $p < 0.05$. Thus, H2(b) was not supported.

DISCUSSION

The results for H1 reveal differences in the emphases on the two types of performance metrics based on the strategy pursued. Using the *Paired Samples T-Tests*, we found that *Defender* firms emphasised *Operational/Financial* metrics more so than the *Relational* metrics ($t = 10.16, p < 0.0001$). This finding is in line with the observations of Chan *et al.* (2006) who noted that *Defenders* emphasize operational efficiency. It is also consistent with Olson and Slater (2002), who noted that better-performing defenders placed a high emphasis on financial perspectives and less on customer-related perspectives and growth. The results also suggest that *Reactors* placed lower emphasis on both types of metrics compared to the other three archetypes (*p-values* < 0.01 to < 0.0001). Compatible with their focus, they, however, emphasised *Operational/Financial* metrics more than the *Relational* metrics ($t = 6.10, p < 0.0001$).

Further, *Prospectors* emphasised *Operational/Financial* metrics more than *Relational*. This finding may be due to the geographical context of Italy and is in line with Teeratansirikool *et al.* (2012), who found firms in Thailand also used financial measures with both strategies—low cost or differentiation. Further, the *Analysers* emphasised *Operational/Financial* metrics compared to *Relational* ($t\text{-stat}=11.85, p\text{-value} < 0.0001$). This result is quite intriguing and is discussed later.

Regarding H2, overall results support the notion that when managers emphasise the ‘right’ type of performance metrics—for example, *Relational* metrics (employee relations,

innovativeness, community, alliances across functions, and environmental performance, etc.)—that are consistent with the business strategy pursued by their companies (for example, *Prospectors*), then the firm performance in certain areas, such as customer acquisition, satisfaction, and retention resulting in increased market share, is enhanced.

The interaction of Strategy Types with *Operational/Financial* metrics was not significant for either organisational performance indicator—*Financial or Customer-focused*. Hence, the alignment between strategy and the *Operational/Financial* metrics didn't yield higher performance. The synergy between strategy and the *Operational/Financial* metrics deployed, such as defect rates, quality performance, productivity, lead times, operating income, etc., did not seem to further enhance organisational performance. This result is contrary to our a priori expectation for the *Defenders* and *Analysers* under H2(b), and is examined below. Al-Surmi *et al.* (2020) also had mixed results for *Defenders*. For instance, when their *Defenders* had an 'ideal alignment' they performed better than those with 'medium alignment', but those with 'low alignment' performed better than both with 'ideal' and 'medium' alignments.

The result of H2(a) is consistent with Amhalhal *et al.* (2022) who found that the fit (tested as a mediation effect) between the use of multiple performance measures and the *Prospector* strategy (measured on a continuum) led to enhanced organisational performance. Despite the differences in the measurements and testing methodology, it is noteworthy that both studies support the notion of fit and its resultant impact on performance. Al-Surmi *et al.* (2020) also found support for the generic notion of fit—that is, it is advantageous for *Prospectors* to align their information and decision support systems with their strategic orientation.

Though not hypothesised, we also tested the model with *Financial* performance indicators as the dependent variable. The *beta* coefficient for *Relational* metrics was not significant for that model, which further supports our argument that the fit between strategy pursued and performance metrics enhances organisational performance but only on relevant indicators. Thus, the alignment between strategy and performance metrics is critical.

The lack of support for H2(b) may be explained as follows. We observe that about 93% of the firms in our sample, representing *Defenders*, *Prospectors*, and *Analysers*, greatly emphasised the use of *Operational/Financial* performance metrics, with their averages ranging from 2.09 to 2.16 on a scale of 1 to 5, where 1 is labelled ‘To a very great extent.’ Hence, the lack of variability in the data might be a reason for the absence of the hypothesised interaction effect for this set of metrics.

Though not hypothesised, we tested the above model with *Relational* metrics as the predictor. The *beta* coefficient was not significant for the *Defenders* subgroup, but it was significant for the *Analysers* subgroup ($\beta=0.222$, $t\text{-stat}=2.191$, one-tailed $p\text{-value} < 0.05$). At first glance, this might seem inconsistent with our reasoning earlier in the paper, but it seems plausible when we examine the characteristics of *Analysers* vis-à-vis *Prospectors*. By definition, *Analysers* are closer to *Prospectors* than to *Defenders*. For example, *Analysers* and *Prospectors* both follow promising industry developments. Thus, they would both emphasise *Relational* metrics—focusing on customer relations, community involvement, alliances, etc. *Analysers* would, however, do it more carefully and selectively and with a more cost-efficient focus. Thus, when *Analysers* emphasise *Relational* metrics, which, on closer examination, seem consistent

with their strategic orientation, their organisational performance on *Financial* performance indicators seems to improve.

If *Analysers* are more akin to *Prospectors* than any other group—as explained above—then would they also perform better on *Customer-focused* indicators when their emphasis on *Relational* metrics increased? When tested, the *beta* coefficient for the *Relational* metrics predictor was significant at $p < 0.05$, with *Customer-focused* organisational performance as the dependent variable. These additional analyses lend further support to our hypothesis that when firms choose the right kind of performance metrics, which are consistent with their strategic orientation, their organisational performance improves on the corresponding indicators. Thus, alignment between performance metrics and strategy does matter.

IMPLICATIONS

Academic Implications

Over the past few decades, the area of performance measurement has progressed from *what to measure* and *how to measure* to the management of measures themselves to enhance organisational performance (Bititci *et al.*, 2015) and the manager's role clarity and well-being (Cäker and Siverbo, 2018). The empirical research in this area, however, has been sparse (cf., Neely, 2005; Choong, 2013). Based on a sample of 372 firms, we observed overall compatibility between the strategy pursued and the metrics emphasised. This study makes a few significant contributions. First, it is a rare study that utilises a large, combined sample of both manufacturing and service companies. Second, it utilises financial, non-financial, and qualitative organisational performance indicators, which, according to a recent literature review, have been relatively

neglected in the studies despite their importance (Otley, 2016). Third, it examined the contingency effect—more specifically, the moderating role of strategy type on two dependent variables simultaneously with the help of General Linear Models using MANOVA. According to Otley’s (2016) literature review, such studies that examine the ‘effect of the fit of multiple independent variables on several dependent variables, as ours does, are at the third [highest] level of analysis and relatively rare’ (p. 48). Finally, the study couched in the *Contingency Theory* perspective adds further evidence to the general area of study on alignment and performance, and the specific area of strategy—performance metrics alignment.

These findings support the underlying premise of the *Contingency Theory* that there is no single best performance metric, and any one way of measuring performance is not equally effective in all types of organisations. The research focus thus should be on identifying and matching the performance metrics to the context, which in this study is exemplified by the type of business strategy. When there is the right match, there is higher performance on those performance indicators that match the context, and the better the fit, the higher the performance. Thus, there is a need to consider strategy and alignment simultaneously, as also emphasized by Al-Surmi *et al.* (2020). The findings of our study add to the limited number of studies that examine alignment using a business strategy or strategic orientation (cf., Sabherwal and Chan, 2001; Al-Surmi *et al.*, 2020; Amhalhal *et al.*, 2022).

Managerial Implications

Managers can benefit from the key finding of this study that when firms pursue a certain strategy and emphasise corresponding performance metrics, they experience a significant improvement in

their organisational performance. For example, when managers of firms that are the ‘first-in’ or ‘second-in’ in new products and new markets place an increasing emphasis on *Relational* metrics, such as employee relations, innovativeness, community, and environmental performance, etc., they experience enhanced organisational performance in customer acquisition, satisfaction, and retention resulting in increased market share.

Specifically, managers who value the ‘first-in’ in new products or services, *Prospectors*, or ‘second-in’, *Analysers*, and even those who conscientiously attempt to maintain a secure niche by protecting their domain, *Defenders*, can benefit from a higher emphasis on both *Operational/Financial* and *Relational* metrics in comparison to other managers who are risk-averse and not as aggressive in maintaining their offerings and markets. The risk-averse *Reactors* can seemingly survive even if they place low or no emphasis on maintaining relationships with the community, suppliers, customers, or even employees. Consistent with their outlook, they may also care little about environmental compliances, promoting joint marketing or product designs, or innovation and learning metrics.

Knowing which types of metrics are suitable for its strategic orientation, managers can direct resources and effort towards designing and deploying the right type of performance metrics to optimise the overall organisational performance. While managers should undoubtedly exercise care in selecting the metrics compatible with their strategies, they should also be wary of areas where metrics are absent or limited in scope, because omitting certain metrics also sends a signal and drives efforts in a particular direction.

Limitations and Future Research Perspectives

This study has some limitations, which could provide a fertile ground for future research as well as potentially influence the interpretation of results. First, the results may not be fully generalisable to other geographical contexts due to differences in economic, social, and political environments. Future research might benefit from including cultural factors that Hofstede (1983) examined across nations, such as uncertainty avoidance, individualism, etc. Second, even though we tried ways to rule out the potential for mono-respondent bias in this study, future research should consider data collection from multiple respondents from each organisation and the use of published secondary performance data, if available. Third, this study didn't examine if managerial and organisational characteristics have a bearing on the choice of metrics as well as the strategy pursued, which may be worthy of exploration in future studies. Finally, this study used all four strategy archetypes, and it categorized an entire organisation as one of the four archetypes. It is plausible that a company might use different strategies for its different products, or their strategies might shift over time. Future research would benefit from incorporating multiple strategies within a firm and observing the interactions over time.

CONCLUSION

This study provides empirical evidence for the contingency theory that there are no universally applicable performance metrics that work equally well for all organisations, but rather they need to be picked carefully to suit the strategic orientation of a firm. When firms take the time to develop and utilise performance metrics that are compatible with their strategic orientation, the resultant synergy improves performance on the corresponding organisational performance measures. This is especially true in the case of *Prospectors*, who respond rapidly to market

opportunities to be the *first-in*. The *Analysers*, who are seldom first-in but frequently second-in, are more akin to *Prospectors* than *Defenders*, who strive to maintain a secure market position in a relatively steady product or service domain. The rigorous hypothesis-testing and the resultant findings provide evidence that it is not merely ‘what you measure is what you get,’ but the alignment between strategy and performance metrics does matter and helps to improve organisational performance.

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APPENDIX I. Factor Loadings

Factors	Factor Loadings	
	1	2
PANEL A: Performance Metrics		
Relational Metrics (Eigenvalue=4.77, % Variance=47.677)		
Community - public image, community involvement, etc.	.821	.016
Environmental performance - environmental compliances, etc.	.792	.242
Innovation and learning - number of new products and/or services launched, training, etc.	.750	.255
Alliances - joint marketing, joint product designs, etc.	.734	-.009
Employee relations - employee satisfaction, safety, etc.	.606	.422
Supplier relations - on-time delivery, suppliers' integration, etc.	.594	.499
Customer relations - market share, customer satisfaction, etc.	.553	.529
Operational and Financial Metrics (Eigenvalue=1.28, % Variance=12.8)		
Operational performance - productivity, lead times, etc.	.238	.794
Short term financial results - operating income, sales growth, etc.	.147	.670
Quality - quality performance, defect rates, etc.	.432	.666
PANEL B: Organisational Performance Measures		
Financial Performance (Eigen value= 4.88, % Variance Explained=60.97)		
Rate of profit growth	.895	.241
Profit/sales ratio	.893	.249
Return on investment (ROI)	.886	.244
Rate of sales growth	.765	.386
Customer-focused Performance (Eigen value= 1.23, % Variance Explained=15.35)		
Customer retention	.221	.828
Customer satisfaction	.167	.806
Acquisition of new customers	.288	.788
Increase in market share	.440	.706

Appendix by authors.

APPENDIX II. Strategy Types

Which one of the following descriptions most closely fits your Organisation compared to other companies in the industry?

- Type 1:** This type of organisation attempts to locate and maintain a secure niche in a relatively stable product or service area. The organisation tends to offer a more limited range of products or services than its competitors, and it tries to protect its domain by offering higher quality, superior service, lower prices, and so forth. Often an organisation with this type of strategy is not at the forefront of developments in the industry - it tends to ignore industry changes that have no direct influence on current areas of operations and concentrates instead on doing the best job possible in a limited area.
- Type 2:** This type of organisation typically operates within a broad product-market domain that undergoes periodic redefinition. The organisation values "first in" in new product and market areas even if some of these efforts prove not to be highly profitable. The organisation responds rapidly to early signals concerning areas of opportunity, and these responses often lead to a new round of competitive actions. However, this type of organisation may not maintain market strength in all areas it enters.
- Type 3:** This type of organisation attempts to maintain a stable, limited line of products or services, while at the same time moving out quickly to follow a carefully selected set of the more promising new developments in the industry. The organisation is seldom "first in" with new products or services. However, by carefully monitoring the actions of major competitors in areas compatible with its stable product-market base, the organisation can frequently be "second-in" with a more cost-efficient product or service.
- Type 4:** This type of organisation does not appear to have a consistent product-market orientation. The organisation is usually not as aggressive in maintaining established products and markets as some of its competitors, nor is it willing to take as many risks as other competitors. Rather, the organisation responds in those areas where it is forced to by environmental pressures.

Appendix by authors; adapted from Miles et al. (1978).