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Measuring Organisational Performance A Case for Subjective Measures

Abstract

We review the organisational performance (OP) measurement literature highlighting the limitations of both objective and subjective measures of performance. We argue that, with careful planning, subjective measures can be successfully employed to assess OP. This is because often consistent, reliable and compatible objective data on OP measures—particularly across countries and sectors—is difficult to come by. Considering that an inflated OP measure can be cross-checked with the use of secondary data, managers have little incentive to report such figures. As a result, when quizzed over the stand-alone performance measures of their organisations or vis-à-vis their rivals, managers accurately assess and respond to questions on the performance of their organisations. An in-depth statistical exercise conducted on the subjective measures of OP as reported by managers of four sets of companies in four separate countries, show consistent results, thus lending support to this premise.

Keywords: Organisational performance, Objective measures, Subjective measures, Factor analysis, Correlations.

Introduction

Organisational Performance (OP) lies at the heart of a firm's survival. In business and management research, OP is recognised as a central outcome variable of interest, ranging from such disparate areas as HR and marketing to operations management, international business, strategy and information systems (Hult *et al.*, 2008; March and Sutton, 1997; Richard *et al.*, 2009). The ultimate aim of research across all of these areas is centred on explaining how OP can be enhanced, shaped and sustained so as to help businesses improve their profitability and long-term survival (Bititci *et al.*, 2012; March and Sutton, 1997). In very generic terms, OP has been defined as a set of both financial and non-financial indicators capable of assessing the degree to which organisational goals and objectives have been accomplished (Kaplan and Norton, 1992). Some authors have distinguished between OP and organisational effectiveness (OE) (Richard *et al.*, 2009). It is claimed that, whilst OP refers to financial performance, product market performance and shareholder return, OE represents a broader concept that, in

addition to financial performance, also includes wider indicators, including operations effectiveness, customer satisfaction, corporate social responsibility (CSR) and other outcomes that reach beyond financial quantification (Richard *et al.*, 2009). Operationally, for applied research purposes, OP may be defined in terms of financial ratios (e.g., return on assets (ROA) and return on equity (ROE)), market outcomes (Tobin's q, market share, stock price and growth), HR-related outcomes (job satisfaction, commitment and others) or organisational outcomes (productivity, service quality, new product development and others). Financial performance indicators can be measured with the help of published company statements or data from stock exchanges. Importantly, OP can also be measured based on subjective information gathered from managers or other key informants, asking them to rate their company's overall performance, such as their market share, profitability, innovation efforts, performance of HR practices, and such other attributes. It has been argued that objective measures are more robust than subjective ones as managers may be reluctant to draw attention to shortcomings and instead may seek to overstate performance of their organisations (Bjorkman and Budhwar, 2007; Dess and Robinson, 1984; Fey, Bjorkman, and Pavlovskaya, 2000, Powell, 1992; Razouk, 2011). Nonetheless, despite this apprehension surrounding subjective measures, they have been a popular method for assessing OP amongst researchers—particularly in the management field (Camps and Luna-Arocas, 2012; Ndofer and Priem, 2011). The reasons for this are various, including the inability to collect objective data in chosen countries or organisations, or otherwise owing to the lack of comparability of different objective performance indicators in the international context (Hult *et al.*, 2008). The main aim of this article is to summarise the key literature on the use of objective and subjective measures, paying particular attention to limitations in assessing the OP by means of both methods, and to provide empirical results of an exercise conducted on subjective measures of performance reported by the executive managers of four sets of companies in four different countries. Based on our

literature review and empirical findings, we conclude that subjective measures can be considered valid and reliable means of assessing OP.

Literature on the measure of organisational performance

In this section, the literature on objective and subjective measures of performance is integrated. We pay particular attention to those studies that have adopted both types of performance measure simultaneously owing to the belief that their findings could shed light on the validity of subjective measures relative to the objective ones. In our literature search, we followed Kaplan and Norton (1992) and Richard *et al.* (2009), and considered OP as a multidimensional construct covering financial performance indicators, customer-related outcomes, innovation and internal organisational processes. The criteria of our literature search were two-fold: first, we have reviewed those studies that focused on the measurement of performance in particular; and second, due to the high volume of research on organisational performance, we have restricted our literature search to recent studies published in top journals in business and management. This is aligned with the aim of this paper on clarifying the validity of subjective measures whereby a review of all organisational performance literature would span beyond the scope of this short piece.

Objective measures (OM)

In some areas of business and management, such as strategy, the focal point of attention has been almost completely directed towards financial measures of performance (Rowe, Morrow and Finch, 1995). For instance, Huselid (1995) evaluated the link between high performance work system (HPWS) and firm performance, and subsequently concluded that HPWS had an economically and statistically significant impact on both the intermediate outcomes (turnover

and productivity), and the short- and long-term measures of the financial and objective indicators of the company. Likewise, Delery and Doty (1996), who conducted a study measuring the impact of HRM on objective performance indicators in the context of US banks, found that some practices were significantly related to objective financial measures, which they measured in terms of ROA and ROE. Moreover, Collins and Clark (2003) examined the relationships between a set of network-building HR practices, aspects of the external and internal social networks of top management teams, and various objective performance indicators. In a study utilising a sample of 73 high-technology firms, relationships between the HR practices and firm performance (measured by sales growth and stock growth) were found to be mediated through their top managers' social networks (Collins and Clark, 2003). Ahmad and Schroeder (2003) examined the effects of people management practices, introduced by Pfeffer (1998), in objective operational performance measured in terms of cost, quality, delivery, flexibility and speed of new product introduction. They found support for Pfeffer's practices in their relation to operational performance, and empirically validate an ideal-type HRM system for manufacturing plants. Wright, Gardner and Moynihan (2003) also adopted six measures of performance tracked by the corporate headquarters as indicators of a business success (e.g., profits, operation expense, sales), subsequently establishing that both organisational commitment and HR practices are significantly related to operational measures of performance, as well as operating expenses and pre-tax profits. Snell and Youndt (1995) in their study also measured OP (by ROA) in its relation with HRM controls used by executives in a sample of 102 single product firms, and found that, when the approach to HRM was based on behaviour control, firm performance was higher when executives had complete knowledge of cause-effect relations; and when the approach to HRM was based on input control, performance was higher when standards of desirability were ambiguous. More recently, Darwish and Singh (2013) employed objective OP (ROA and ROE) to measure the

performance variation caused by several management practices in an emerging market setting, and found that the involvement of human resource functions within business and corporate strategy enhances financial performance captured by ROA and ROE.

There are some insights which can be concluded from our review of studies that focused on objective measures of performance. First, it can be noted from the existing literature that studies which focused on objective measures of performance are not comparable with the number and intensity of the studies that used subjective measures of performance. Again, this is because sometimes consistent and comparable data on the objective measures is difficult to obtain for several reasons as explained earlier in the paper. Second, there is no consistency in terms of the objective performance measures chosen by researchers in different studies which makes it more problematic when it comes to articulating the theory of organisational performance (see Paauwe & Boselie, 2005; Guest, 2011). There are additional problems of working with objective measures e.g. several objective data based studies employ cross-sectional design, the reliability and validity of which are different in different designs—post-predictive, retrospective, contemporaneous, or predictive, with each design having its own limitations (see Wright et. al. 2005). Thus far there is no consensus among researchers as to which design is most valid and reliable. Given the aforementioned issues with the use of objective data, we argue that subjective measures could be a reliable and valid alternative to measuring OP.

Subjective measures (SM)

Whether one employs objective or subjective measures of performance is a matter of researcher choice. The objective measures of performance, however, do have the advantage that they can reduce the probability of common method variance (Wall and Wood, 2005), and might avoid misleading normative and descriptive theory-building (Lumpkin and Dess, 1996). Nonetheless,

despite this advantage in favour of OM, often, consistent and comparable data on the objective measures of performance is difficult to obtain for the complete sample of firms under investigation. This can happen when, for instance, the company is not listed on the stock exchange, or if it is a private company not obliged to divulge its financial information. In addition, in cross-country studies, financial data may not be available on all companies under study; when available, they may not be strictly comparable if the companies are following different reporting and accounting standards (Hult *et al.*, 2008). As a result of these real and potential difficulties, researchers have successfully employed subjective measures of performance in their work. For instance, subjective measures of performance were successfully used in CRANET, the international survey of HRM practices (Tregaskis, Mahoney and Atterbury, 2004). A number of publications have been born from this survey, predominantly exploring the relationships between different HRM practices and indicators of firm performance. For instance, Rizov and Croucher (2009) operationalised firm performance in terms of composite index of subjective measures of service quality, level of productivity, profitability, product-to-market time and rate of innovation, and accordingly drew the conclusion that collaborative forms of HRM practices were related to higher firm performance. Similar relationships were explored by Gooderham, Parry and Ringdal (2008) using the same survey data but in consideration to differently operationalising firm performance with a single question regarding 'whether gross revenue over the past three years has been well in excess of costs or not' (p. 2047). These authors observed a different pattern of relationships whereby the majority of individual forms of HRM practices had a significant impact on firm performance whereas the collaborative forms did not. Although these studies, used the same HRM survey, neither employed the same subjective performance measures nor used the same design. This possibly could explain variations in their results on organisational performance.

Real, Roldán and Leal (2014), in their study on entrepreneurial orientation and business performance, applied a 10-item scale developed by Bontis, Crossan and Hlland (2002) with the objective to collect perceptions of business performance, arguing that this scale represents a ‘reasonable substitute for objective measures of business performance’ (p. 194). A subjective measure was also used in a study on HPWS by Camps and Luna-Arocas (2012), who employed a 6-item measure taken from Jashapara’s (2003) scale. They argued that this type of perceptual measure was the only option for collecting performance data when considering that the policy of the private companies making up their sample was not to share their confidential financial statements. Bradley *et al.* (2012) implemented a perceptual measure of firm performance in terms of profit relative to the previous year in their recent study on capital and performance in developing economies because objective financial data was not available. In actual fact, self-reported net profit and profit growth, as indicators of organisational performance, have been quite frequently used in past research (e.g., Ndofer and Priem, 2011).

A slightly different approach was adopted in the work of Kyrgidou and Spyropoulou (2013), who asked CEOs and managing directors to assess their business performance relative to their main competitors. More specifically, they collected perceptual ratings of sales, customer and financial performance (authors were not allowed access to the companies’ objective performance data). Kunze, Boehm and Bruch (2013) also assessed company performance using top managers’ perceptions of financial situations, company growth, employee productivity, and employee fluctuation and retention compared to their direct industry rivals. The authors acknowledged that the objective indicator of performance would have been employed; however, privately owned companies taking part in the study did not publish their financial performance results.

The use of both objective and subjective measures

Although much less common, some researchers employed both objective and subjective measures of performance in their studies (Hult *et al.*, 2008). Their findings suggest both are equally valid and reliable measures, and further establish that there are only limited biases associated with self-reported firm performance data (see Wall *et al.*, 2004; Bjorkman & Budhwar, 2007). The rationale behind this seems to be that subjective measures of OP enable managers to factor in the companies' objectives when evaluating their performance. In other words, some authors suggest that the results gathered through subjective and objective measures tend to be broadly comparable (see Dess and Robinson, 1984; Geringer and Hebert, 1991; Powell, 1992; Tzafrir, 2005). For example, Dess and Robinson (1984) posit that self-reported performance measures are acceptable and are reliable as objective measures, correlating the subjective measures of performance with self-reported objective measures (collected through surveys as opposed to the actual financial statements of the companies). In one of the earliest studies, Powell (1992) identified a number of positive connections between the subjective and objective measures of OP (sales growth and profitability). In a similar vein, Venkatraman and Ramanujam (1987) demonstrated that managers tend to be less biased in their OP evaluation than researchers have previously believed; they argue that managerially reported performance data can be used as acceptable criteria for performance measurement, and that multiple measures of objective and subjective criteria are actually to be preferred.

Moreover, subjective measures of performance were found to be positively correlated with the objective measures of OP (see Dollinger and Golden, 1992). McCracken, McIlwin and Fottler (2001) compared the subjective perceptions of hospital executives with the objective financial performance measures of 60 hospitals. Whilst the correlations between both measures vary, ROA and operating margin were recognised as the most valid subjective financial measures of hospital performance. Furthermore, McClure (2010) investigated both objective and subjective

measures of performance within a single sample, and identified that the common method bias was not present in the investigated data. Similarly, Homburg, Artz and Wieseke (2012) validated their subjective measure of return on sales (ROS) on a sub-sample of companies for which the objective ROS indicator was also available, observing a strong, positive correlation between both measures. Harris (2001) has also reported a significant correlation between the subjective and objective measure of firm performance measured in terms of ROI and sales growth. There are numerous other studies that have reported significant correlations between subjective and objective measures of OP (e.g., Collins and Smith, 2006; Coombs and Gilley, 2005; Flanagan and O'Shaughnessy, 2005). Although subjective measures have been largely validated in previous research, there are also some studies that suggest subjective measures might be problematic. Meier and O'Toole (2012), for example, have argued that managerially reported performance data can be prone to common source bias.

Taken together, there is a considerable amount of research that has employed subjective measures for assessing OP and its determinants. In their comprehensive review, Richard *et al.* (2009) reported that 26% of the studies on OP published in 5 top-tier business and management journals¹ between 2005 and 2007 applied some sort of subjective measure of performance. Most frequently, subjective measures in these studies comprised subjective perceptions of reputation (e.g., Arya and Lin, 2007), corporate social responsibility (CSR) (e.g., Luo, 2006) and subjective perceptions of financial indicators (e.g., Arend, 2006). In order to assess whether the performance measures reported by managers on a number of subjective parameters are internally consistent, we report empirical results of an exercise conducted on the reporting of subjective measures by four sets of managers from four different countries.

¹ Academy of Management Journal, Administrative Science Quarterly, Journal of International Business Studies, Journal of Management, and Strategic Management Journal.

An empirical exercise on subjective measures of OP, as reported by managers

In this section, we report results of studies in which questions on OP were posed to executive respondents of four separate sets of companies in four countries, namely Jordan, Saudi Arabia, Brunei and India. In the case of Jordan, almost all of the firms operating in the financial sector were included; in the case of Saudi Arabia, Brunei and India, data were collected from 147, 151 and 252 randomly selected firms operating across services, manufacturing and natural resources sectors, respectively. All firms in the Saudi sample and selected firms in the Jordanian, Bruneian and Indian samples had foreign equity participation.

In Jordan's case, being a small sample questionnaires were sent by post and completed questionnaires collected by hand (collection date agreed beforehand) to speed up the process. Postal surveys were conducted in other instances within which a small subset of firms had to be visited in person. This was either because the addresses turned out to be incorrect or replies were being delayed or in some instances answers to some questions were not clear to respondents. Firms were asked to rate their companies' performance in comparison to their rivals on the following attributes: (1) market share, (2) sales revenue, (3) innovation and (4) profitability. Respondents in the case of Jordan, Brunei and India were HR directors; in the case of Saudi Arabia, they were heads of subsidiaries. Data across all four instances were collected between 2009 and 2012. Data from the survey questionnaires has been analysed previously and found to be internally consistent and reliable (see Alharbi and Singh, 2013; Darwish and Singh, 2013; Darwish et al. 2013; Mohamed et al. 2013; Singh et al. 2013, Singh et al. 2012a).

Data analysis

All four data sets were subjected to factor analysis, and yielded one high overall dimension of performance for each country with high factor loadings. The factor loadings of each construct indicator were significant, ranging from .66 to .97, thus demonstrating a strong association between constructs and their respective factors as recorded in Table 1. The results of the Cronbach's alpha also indicate that the scales satisfy the reliability criterion with values ranging from .72 to .92. In the case of Jordan, the four performance measures yielded high factor loadings (.781, .958, .975 and .978) with a Cronbach's alpha value of .92. In the case of Brunei data, the factor loadings and alpha values were high as well (.702, .887, .889 and .926 $\alpha = .86$). In the case of Saudi Arabia, values were similarly high (.711, .796, .866 and .878 $\alpha = .82$). Finally, in the case of India, the factor loadings and alpha values were (.661, .723, .747 and .797 $\alpha = .72$). Correlations between the items are significant within and across countries, attesting to the validity of the applied measures as recorded in Table 2.

Table 1: Factor analysis for organisational performance for each country

Items	Factor loading
<i>Factor 1 – Organisational Performance-Jordan ($\alpha = .92$)</i>	
Profitability (after tax)	.978
Sales Revenue	.975
Market Share	.958
Innovation	.781
<i>Factor 2 – Organisational Performance-Brunei ($\alpha = .86$)</i>	
Sales Revenue	.926
Profitability (after tax)	.889
Market Share	.887
Innovation	.702
<i>Factor 3 – Organisational Performance-Saudi Arabia ($\alpha = .82$)</i>	
Profitability (after tax)	.878
Sales Revenue	.866
Market Share	.796
Innovation	.711
<i>Factor 4 – Organisational Performance-India ($\alpha = .72$)</i>	
Profitability (after tax)	.797
Sales Revenue	.747

Market Share	.723
Innovation	.661

Table 2 presents the means, standard deviations and zero-order correlations of all performance measures for Jordan, Brunei, Saudi Arabia and India, as rated by managers from four countries. It is imperative to note that, at the very outset, the relationships between performance measures are significant within the country. Furthermore, if we look at the results on a country-by-country basis, the correlations are, by and large, similar for all countries. It is also interesting to see that the results indicate various significant correlations of performance measures across countries, lending support to the convergent validity of subjective OP measure and further strengthening our central argument on the merits of managerially reported data. Our results are consistent with what Hult *et al.* (2008) argue: that subjective performance measures can be reliable in the context of emerging market setting. One variable indicating no contribution to OP was ‘innovation’. In most instances, innovation was either weakly or not significantly correlated with other performance indicators. The item also did not strongly load on the overall OP factor, along with other measures in the factor analysis. The explanation for this seems to be that innovation is a rather nebulous concept whose ultimate and eventual impact on OP is convoluted and, in most instances, it would perhaps be more appropriate to treat it as a mediating variable rather than as a direct indicator of the OP. In most instances, it take years—in some industries, such as pharmaceuticals, more than a decade—before its effect is realised. We suggest that, in future studies, this variable be treated as conceptually independent construct. If the researcher has the data for several years, perhaps a lag type structure then can be employed in order to capture its impact in a multivariate analysis.

Table 2. Mean, standard deviations, and zero-order correlations

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1. Market Share-JOR	2.56	1.06																	
2. Sales Revenue-JOR	2.43	1.13	.95*																
3. Profitability(after-tax)-JOR	2.45	1.09	.94*	.96*															
4. Innovation-JOR	3.26	1.29	0.16	-0.01	0.17														
5. Market Share-BR	3.73	.94	.45*	.95*	.94*	.12													
6. Sales Revenue-BR	3.83	.88	.73*	.51*	.96*	.11	.73*												
7. Profitability(after-tax)-BR	3.65	.96	.68*	.88*	.20*	.13	.68*	.88*											
8. Innovation-BR	2.09	1.40	.12	.12	.12	.06	.01	-.15	.01										
9. Market Share-SA	4.12	.91	.16	.16	.10	.02	.18	.09	.14	.01									
10. Sales Revenue-SA	3.86	1.14	.15	.25*	.11	.15	.04	.02	.05	.03	.55*								
11. Profitability(after-tax)-SA	4.01	1.02	.13	.13	.18	.07	.06	.02	.20*	.03	.79*	.61*							
12. Innovation-SA	3.33	.98	-.05	.08	-.09	.02	.04	-.01	.09	.06	.48*	.26*	.22*						

13	Market Share-IND	4.60	.62	.20*	.14	.14	-.07	.24*	.11	.14	-.15	.03	.09	.05	-.01				
14	Sales Revenue-IND	4.55	.65	.15	.20*	.16	-.12	.09	.06	.11	.04	.05	.03	-.05	.06	.35*			
15	Profitability(after-tax)-IND	4.50	.73	.14	.11	.18	-.01	.14	.09	.18	.05	.05	.10	-.02	.06	.38*	.56*		
16	Innovation-IND	4.51	.69	.10	.07	.06	-.06	.02	.11	.16	.02	.02	.06	.07	.01	.22*	.24*	.21*	--

Note: Coefficients are significant at .05 (*) or .01 (**) levels. *N* for Jordan (JOR) 99; for Brunei (BR) is 151; for Saudi Arabia (SA) 147; and for India (IND) 252.

Statistical results, as described above, support our central premise that managerially reported subjective measures of OP are trustworthy and can be employed to measure the stand-alone performance strength of enterprises or to measure an enterprise's performance vis-à-vis its rivals. Given the cultural differences amongst countries, we could also safely hypothesize that, when compared with each other, there should exist statistically significant differences in inter-country OP measures, which will indirectly support the statistical exercise reported earlier. In order to test this hypothesis, we ran another statistical test under the null hypothesis that there are no statistical significant differences in performance measures across the four countries under study. To do so, we created four performance constructs by taking the mean of every organisational performance scale for each country. We then ran The Kruskal-Wallis test, including the performance constructs and the country factor (see Kruskal & Wallis, 1952; Glass *et al.* 1972; Field, 2009). The test statistic indicates that, as predicted, there are statistically significant differences in organisational performance measures based on the country factor (χ^2 182.542, $p < 0.05$).

Concluding remarks

How OP can be measured has been one of the key issues in the management world. Researchers have adopted both objective and subjective measures for assessing OP: objective measures involve the use of some sort of accounting data, whilst subjective measures involve the perceptions of managers in terms of how well their firm is performing. Whichever route is adopted, the key goal is explaining what contributes to the superior performance of firms vis-à-vis their rivals. This is easier said than done. Applied research in this area reveals that, despite extensive studies, almost 40% of the variation in profit differentials remains unexplained (McGahan and Porter, 1997; Rumelt, 1991). This is because OP is influenced by a complex set of internal and external variables over which a firm has very little or no control. This important

premise has often been overlooked by researchers: if one begins with the acceptance of this premise, then it really remains a matter of personal choice of the researcher as to which method he or she adopts in an effort to understand OP. A portion of literature on OP is prone to concluding that subjective measures are less appropriate for assessing OP compared with objective measures owing to the fact that respondents may tend to overestimate the performance of their companies, thus leading to inaccurate performance assessment (Meier and O'Toole, 2013). They claim that the use of subjective measures can be problematic in studies in which the explanatory variables of performance are measured using the same informant, which can lead to a common-method bias (Podsakoff *et al.*, 2003). This, however, does not need to be the case, and carefully collected subjective data could be equally valid. Moreover, in many situations, researchers are not able to collect consistent and reliable objective measures on OP, and such perceptual measures may be the only feasible means of gathering performance data. For instance, some organisations may be reluctant to reveal their performance data to protect their competitive advantage (McCracken *et al.*, 2001). Moreover, objective performance measures of different companies across a variety of industries may not be directly comparable; in order to collect more generalizable data on a wide range of organisations, subjective measures of performance may be the only option (Meier and O'Toole, 2013; Shea *et al.*, 2012); therefore, we may ask ourselves whether those researchers resorting to the use of subjective measures of OP recognise the reliability and validity of such measures. This question—to explore the reliability and validity of subjective measures of OP—drove the main aim of this paper. We have argued in the paper that there is little incentive for managers to inflate their performance levels, and that the OP measures reported by managers would be reliable reference points for researchers.

In an effort to test this proposition, an in-depth analysis of the subjective measures of OP, as reported by managers from four sets of companies in four countries, was conducted. This data

was put to statistical testing, first in the form of factor analysis and then through follow-up tests in order to indirectly check the validity of collected data and results arrived earlier by factor analysis. Our findings reveal that the responses in all four countries loaded well on a single measure of performance, suggesting that the managers were rating the underlying construct of performance by means of four different indicators in a valid way. Furthermore, our results have also shown that the subjective measures of OP were reliable in each country. We also successfully extended our empirical work to test an allied proposition that, given the cultural differences, there would be inter-country differences in OP measures. Based on these findings we could suggest that, with careful planning, reliable subjective data on OP can be collected and put to statistical rigour to test prepositions related to OP of firms. As a limitation, however, future researchers should bear in mind that this approach to measurement may be inflated with recall bias (i.e., key informants have to recall past information regarding their companies' performance), rating inflation bias (i.e., key informants are inclined to rate the performance of their companies more leniently) or recency bias (i.e., key informants are more likely to rate the performance of their companies based on data that was observed close to the measurement point). In face-to-face meetings, precautions should be taken in an effort to minimise these biases, such as by clarifying the questions and restating the purpose of research.

In conclusion, it has to be reiterated that measuring OP is a complex task. Public limited companies all around the world prepare annual accounts which include the financial data on profits or losses, stocks and shares, assets and liabilities, and such other financial variables based on which the objective performance of companies is worked out. However, as literature and real life experience of scores of researchers show, given differences in accounting methods (and also standards) and the accessibility to reliable financial data (for the set of companies that are under investigation by the researchers), often inter- and intra-industry and country

comparisons are not possible. Given these difficulties, researchers have often successfully resorted to subjective assessment of objective performance measures to assess the OP of companies in their research. However, a central question that arises with regard to subjective assessment of performance measures is that, how far the reported assessment of objective measures is internally consistent? This paper makes a contribution in that it gives a balanced view of both objective and subjective methods of OP, highlighting the embedded difficulties in both the measures; the paper also then questions if subjective measures reported on a number of parameters are consistent in relation to company's performance, especially if they are reported across several industries and countries. In other words, are the self-reported subjective measures internally consistent, and can they be combined into a composite measure and used by researchers in their work. Based on data collected from a large mix of small, medium, and large companies across a number of industrial sectors and from four separate countries (one of which is a large BRIC country), this paper, for the first time shows that subjective measures of performance reported by managers are internally consistent and that they can be used in research after checks and balances. The results reported in this paper will lend confidence to future researchers in that subjective performance measures could provide a reliable and valid data which can be comparable across different countries.

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References

- Ahmad, S. and R. Schroeder (2003). 'The impact of human resource management practices on operational performance: Recognizing country and industry differences', *Journal of Operations Management*, **21**, pp. 19–43.
- Alharbi, J. and S. Singh (2013). 'Knowledge transfer, controls, and performance of MNE subsidiaries in the Kingdom of Saudi Arabia', *Foresight*, **15**, pp. 294-306.
- Arend, R. J. (2006). 'SME–supplier alliance activity in manufacturing: Contingent benefits and perceptions', *Strategic Management Journal*, **27**, pp. 741-763.

- Arya, B. and Z. Lin (2007). 'Understanding Collaboration Outcomes from an Extended Resource-Based View Perspective: The Roles of Organizational Characteristics, Partner Attributes, and Network Structures', *Journal of Management*, **33**, pp. 697-723.
- Bititci, U., P. Garengo, V. Dörfler, and S. Nudurupati (2012). 'Performance measurement: Challenges for tomorrow', *International Journal of Management Reviews*, **14**, pp. 305-327.
- Bjorkman, I. and P. Budhwar (2007). 'When in Rome? Human resource management and the performance of foreign firms operating in India', *Employee Relations*, **29**, pp. 595-610.
- Bontis, N., M. M. Crossan and J. Hulland (2002). 'Managing an organizational learning system by aligning stocks and flows', *Journal of Management Studies*, **39**, pp. 437-469.
- Bradley, S. W., J. S. McMullen, K. Artz and E. M. Simiyu (2012). 'Capital is not enough: innovation in developing economies', *Journal of Management Studies*, **49**, pp. 684-717.
- Camps, J. and R. Luna-Arocas (2012). 'A Matter of Learning: How Human Resources Affect Organizational Performance', *British Journal of Management*, **23**, pp. 1-21.
- Collins C. and K. Clark (2003). 'Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage', *Academy of Management Journal*, **46**, pp. 740 – 751.
- Collins C. and K. Clark (2003). 'Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage', *Academy of Management Journal*, **46**, pp. 740 – 751.
- Collins, C. J. and K. G. Smith (2006). 'Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms', *Academy of Management Journal*, **49**, pp. 544-560.
- Collins, C. J. and K. G. Smith (2006). 'Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms', *Academy of Management Journal*, **49**, pp. 544-560.
- Coombs, J. E., and M. Gilley (2005). 'Stakeholder management as a predictor of CEO compensation: Main effects and interactions with financial performance', *Strategic Management Journal*, **26**, pp. 827-840.
- Coombs, J. E., and M. Gilley (2005). 'Stakeholder management as a predictor of CEO compensation: Main effects and interactions with financial performance', *Strategic Management Journal*, **26**, pp. 827-840.
- Darwish, T. and S. Singh (2013). 'Does strategic human resource involvement and devolvement enhance organisational performance? Evidence from Jordan', *International Journal of Manpower*, **34**, pp. 674-692.
- Darwish, T., S. Singh and A. F. Mohamed (2013). 'The role of strategic HR practices in organisational effectiveness: An investigation in the country of Jordan', *International Journal of Human Resource Management*, **24**, pp. 3343-3362.
- Darwish, T., S. Singh and G. Wood (2015). 'The impact of human resource practices on actual and perceived organizational performance in a Middle-Eastern emerging market', *Human Resource Management* (in print).

- Delery, J. E. D. H. Doty (1996). 'Modes of theorizing in strategic human resource management: Tests of universalistic, contingency and configurational performance predictions', *Academy of Management Journal*, **39**, pp. 802–835.
- Dess, G. G. and R. B. Robinson (1984). 'Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit', *Strategic Management Journal*, **5**, pp. 265 – 279.
- Dollinger, M. J. and P. A. Golden (1992). 'Interorganizational and collective strategies in small firms: Environmental effects and performance', *Journal of Management*, **18**, pp. 695-715.
- Erturk, I., J. Froud, S. Johal, A. Leaver and K. Williams (2008). *Financialization at work: Key texts and commentary*. London: Routledge.
- Fey, C. F., I. Bjorkman and A. Pavlovskaya (2000). 'The effect of human resource management practices on firm performance in Russia', *The International Journal of Human Resource Management*, **11**, pp. 1–18.
- Field, A. (2009). *Discovering statistics using SPSS*. Sage publications.
- Flanagan, D. J. and K. C. O'Shaughnessy (2005). 'The effect of layoffs on firm reputation', *Journal of Management*, **31**, pp. 445-463.
- Flanagan, D. J. and K. C. O'Shaughnessy (2005). 'The effect of layoffs on firm reputation', *Journal of Management*, **31**, pp. 445-463.
- Froud, H., S. Johal, A. Leaver and K. Williams (2006). 'Introduction', in H. Froud, S. Johal, A. Leaver and K. Williams (eds.), *Financialization and strategy: Narrative and numbers*. London: Routledge.
- Geringer, M. J. and L. Hebert (1991). 'Measuring performance of international joint ventures', *Journal of International Business Studies*, **28**, pp. 249-263.
- Geringer, M. J. and L. Hebert (1991). 'Measuring performance of international joint ventures', *Journal of International Business Studies*, **28**, pp. 249-263.
- Glass, G. V., Peckham, P. D., & Sanders, J. R. (1972). Consequences of failure to meet assumptions underlying the fixed effects analyses of variance and covariance. *Review of Educational Research*, 42(3), 237–288.
- Gooderham, P., E. Parry and K. Ringdal (2008). 'The impact of bundles of strategic human resource management practices on the performance of European firms', *The International Journal of Human Resource Management*, **19**, pp. 2041-2056.
- Gooderham, P., E. Parry and K. Ringdal (2008). 'The impact of bundles of strategic human resource management practices on the performance of European firms', *The International Journal of Human Resource Management*, **19**, pp. 2041-2056.
- Guest, D. E. (2011), 'Human resource management and performance: Still searching for some answers', *Human Resource Management Journal*, **22**, pp. 3 – 13.
- Harris, L. C. (2001), 'Market orientation and performance: Objective and subjective empirical evidence from UK companies', *Journal of Management studies*, **38**, pp. 17-43.

- Harris, L. C. (2001), 'Market orientation and performance: Objective and subjective empirical evidence from UK companies', *Journal of Management studies*, **38**, pp. 17-43.
- Homburg, C., M, Artz and J. Wieseke (2012). 'Marketing performance measurement systems: Does comprehensiveness really improve performance?' *Journal of Marketing*, **76**, pp. 56-77.
- Homburg, C., M, Artz and J. Wieseke (2012). 'Marketing performance measurement systems: Does comprehensiveness really improve performance?' *Journal of Marketing*, **76**, pp. 56-77.
- Hult, G. T. M., D. J. Ketchen Jr, D. A. Griffith, B. R. Chabowski, M. K. Hamman, B.J. Dykes, W. A. Pollitte and S. T. Cavusgil (2008). 'An assessment of the measurement of performance in international business research', *Journal of International Business Studies*, **39**, pp. 1064–1080.
- Hult, G. T. M., D. J. Ketchen Jr, D. A. Griffith, B. R. Chabowski, M. K. Hamman, B.J. Dykes, W. A. Pollitte and S. T. Cavusgil (2008). 'An assessment of the measurement of performance in international business research', *Journal of International Business Studies*, **39**, pp. 1064–1080.
- Hult, G. T. M., Ketchen, D. J., Griffith, D. A., Chabowski, B. R., Hamman, M. K., Dykes, B. J. & Cavusgil, S. T. (2008). An assessment of the measurement of performance in international business research. *Journal of International Business Studies*, 39(6), 1064-1080.
- Huselid, M. (1995). 'The impact of human resource management practices on turnover, productivity, and corporate financial performance', *Academy of Management Journal*, **38**, pp. 635–670.
- Jashapara, A. (2003). 'Cognition, culture and competition: an empirical test of the learning organization', *The Learning Organization*, **10**, pp. 31–50.
- Kaplan, R. S. and D. P Norton (January-February, 1992). 'The balanced scorecard – Measures that drive performance', *Harvard Business Review*, pp. 71-79.
- Kruskal, W. H., & Wallis, W. A. (1952). Use of ranks in one criterion variance analysis. *Journal of the American Statistical Association*, **47**, 583–621.
- Kunze, F., S. Boehm and H. Bruch (2013). 'Organizational performance consequences of age diversity: Inspecting the role of diversity-friendly HR policies and top managers' negative age stereotypes', *Journal of Management Studies*, **50**, pp. 413-442.
- Kyrgidou, L. P. and S. Spyropoulou (2013). 'Drivers and performance outcomes of innovativeness: An empirical study', *British Journal of Management*, **24**, pp. 281-298.
- Lumpkin, G. T. and G. G. Dess (1996). 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review*, **21**, pp. 135-172.
- Luo, Y. (2006). 'Political behavior, social responsibility, and perceived corruption: A structuration perspective', *International Journal of Business Studies*, **37**, pp. 747-766.
- March, J. G. and R. I. Sutton (1997). 'Organizational performance as a dependent variable', *Organization Science*, **8**, pp. 698–706.

- McClure, R (2010). 'Response Bias in Self-Reported Measures of Organizational Performance: A Pilot Study', Paper presented at the Society for Marketing Advances Conference, Atlanta, US.
- McCracken, M. J., T. F. McIlwin and M. D. Fottler (2001). 'Measuring organizational performance in the hospital industry: An exploratory comparison of objective and subjective methods', *Health Services Management Research*, **14**, pp. 211-219.
- McGahan, A. M., and M. E. Porter. (1997). 'How Much Does Industry Matter, Really?' Special Issue on Organizational and Competitive Interactions. *Strategic Management Journal* **18** (Summer): pp15–30.
- Meier, K. J. and L. J. O'Toole (2013). 'Subjective organizational performance and measurement error: Common source bias and spurious relationships', *Journal of Public Administration Research and Theory*, **23**, pp. 429-456.
- Mohamed, A. F., S. Singh, Z. Irani and T. Darwish (2013). 'An analysis of recruitment, training and retention practices in domestic and multinational enterprises in the country of Brunei Darussalam', *International Journal of Human Resource Management*, **24**, pp. 2054- 2081.
- Ndofor, H.A. and R. Priem (2011). 'Immigrant entrepreneurs, the ethnic enclave strategy, and venture performance', *Journal of Management*, **37**, pp. 790–818.
- Paauwe, J. and P. Boselie (2005), 'HRM and performance: What next?', *Human Resource Management Journal*, **15**, pp. 68-83.
- Pfeffer, J. (1998). 'Seven practices of successful organizations', *California Management Review*, **40**, 2, 96–124.
- Podsakoff, P. M., S. B. MacKenzie, J. Y. Lee and N. P. Podsakoff (2003). 'Common method biases in behavioral research: A critical review of the literature and recommended remedies', *Journal of Applied Psychology*, **88**, pp. 879-903.
- Powell, T. C (1992). 'Organisational alignment as a competitive advantage'. *Strategic Management Journal*, **13**, pp. 119-134.
- Razouk, A. (2011). 'High performance work systems and performance of French small- and medium-sized enterprises: Examining causal order', *The International Journal of Human Resource Management*, **22**, pp. 311-330.
- Real, J. C., J. L. Roldán and A. Leal (2014). 'From Entrepreneurial Orientation and Learning Orientation to Business Performance: Analysing the Mediating Role of Organizational Learning and the Moderating Effects of Organizational Size', *British Journal of Management*, **25**, 186-208.
- Richard, P. J., T. M. Devinney, G. S. Yip and G. Johnson (2009). 'Measuring organisational performance: Towards methodological best practice', *Journal of Management*, **35**, pp. 718–804.
- Rizov, M. and R. Croucher (2009), 'Human resource management and performance in European firms', *Cambridge Journal of Economics*, **33**, pp. 253-272.
- Rizov, M. and R. Croucher (2009), 'Human resource management and performance in European firms', *Cambridge Journal of Economics*, **33**, pp. 253-272.

- Rowe, W. G., J. L. Morrow and J. F. Finch (1995). 'Accounting, market, and subjective measures of firm performance: Three sides of the same coin?' Paper presented at the Academy of Management Annual Conference, Vancouver.
- Rumelt, R.P. (1991). 'How much does industry matter?' *Strategic Management Journal*, **12**, pp.
- Shea, T., B. K. Cooper, H. De Cieri and C. Sheehan (2012). 'Evaluation of a perceived organisational performance scale using Rasch model analysis', *Australian Journal of Management*, **37**, pp. 507-522.
- Singh, S., A. F. Mohamed and T. Darwish (2013). 'A comparative study of performance appraisals, incentives and rewards practices in domestic and multinational enterprises in the country of Brunei Darussalam', *International Journal of Human Resource Management*, **24**, pp. 3577-3598.
- Singh, S., T. Darwish and N. Anderson (2012a). 'Strategic intent, high performance HRM, and the role of the HR director: An investigation into attitudes and practices in Jordan', *International Journal of Human Resource Management*, **23**, pp. 3027 – 3044.
- Singh, S., T. Darwish, A. C. Costa and N. Anderson (2012b). 'Measuring HRM and organizational performance: Concepts, issues, and framework', *Management Decision*, **50**, pp. 651-667.
- Snell, S., and Youndt, M. (1995), 'Human resource management and firm performance: Testing a contingency model of executive controls', *Journal of Management*, **21**, 4, 711-737.
- Tregaskis, O., C. Mahoney and S. Atterbury (2004). 'International survey methodology: Experiences from the Cranet network', in C. Brewster, W. Mayrhofer and M. Morley (eds), *Human Resource Management in Europe* (pp. 437–50), Amsterdam: Elsevier.
- Tregaskis, O., C. Mahoney and S. Atterbury (2004). 'International survey methodology: Experiences from the Cranet network', in C. Brewster, W. Mayrhofer and M. Morley (eds), *Human Resource Management in Europe* (pp. 437–50), Amsterdam: Elsevier.
- Tzafrir, S (2005). 'The relationship between trust, HRM, and firm performances', *International Journal of Human Resource Management*, **16**, pp. 1600-1622.
- Venkatraman, N. and V. Ramanujam (1987). 'Measurement of business economic performance: an examination of method convergence', *Journal of Management*, **13**, pp. 109–122.
- Wall, T. D. and S. Wood (2005). 'The romance of human resource management and business performance, and the case for big science', *Human Relations*, **58**, pp. 429-462.
- Wall, T., J. Michie, M. Patterson, S. Wood, M. Sheehan, C. Clegg et al (2004). 'On the validity of subjective measures of company performance', *Personnel Psychology*, **57**, pp. 95–118.
- Wilcox, R. R. (2005). *Introduction to robust estimation and hypothesis testing*. 2nd Edition, Burlington, MA: Elsevier.
- Wright, P.M., T.M. Gardner, L.M. Moynihan and M.R. Allen (2005). 'The relationship between HR practices and firm performance: Examining causal order', *Personnel Psychology*, **58**, pp. 409–446.

Wright, P.M., T. M. Gardner and L.M. Moynihan (2003). 'The impact of HR practices on the performance on business units', *Human Resource Management Journal*, **13**, pp. 21-36.
