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Management Control Practices as Performance Facilitators in a Crisis Context

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Abstract: In modern times, disruptive contexts have challenged the functioning of organisations, as shown by recent events, such as the COVID-19 pandemic and the current war in Europe. The literature highlights the role of management control practices (MCP) as resources that help to improve decision-making processes and organisational performance and competitiveness in a crisis context. In response to stakeholders' pressures, companies are integrating Corporate Social Responsibility (CSR) issues into their measurement and control systems. The aim of this research is to examine whether companies perceive MCP as a resource to support the decision-making process and contribute to organisational performance and competitiveness in a crisis environment, as well as to ascertain the perceived role of CSR in MC. A survey by questionnaire was conducted among the 250 major exporting companies in Portugal. Results show that in a crisis context of uncertainty and unpredictability such as the COVID-19 pandemic organisations perceive MCP as having (1) a significant influence on organisational performance and on leveraging organisational competitiveness; (2) a significant link with CSR. In general terms, this study provides new insights into the perceptions of the role of MCP as a valuable resource to achieve organisational competitiveness and performance in disruptive social and economic contexts.

Keywords: management control practices; organisational performance; organisational competitiveness; corporate social responsibility; crisis context

1. Introduction

Management control practices (MCP) may be conceptualised as a system or a package of different tools and procedures that enable a firm's goals to be under control (Bedford et al. 2016; Mouritsen et al. 2022). The literature highlights the need to look at MCP in a holistic and broad way (e.g., Barros and Ferreira 2021; Ferreira and Otley 2009; Malmi and Brown 2008; Vale et al. 2022) as opposed to focusing only on specific practices. MCP are oriented toward certain domains, such as risk and performance (Mouritsen et al. 2022), including a wide range of practices, such as a Balanced Scorecard (BSC), Enterprise Resource Planning, Activity-Based Costing/Management, Value-Based Management, Target Costing, Strategic Decisions, Budget Planning, Budget Control, Contingency Planning, and corrective measures definitions (Ahrens and Chapman 2007; Barros and Ferreira 2021; Malmi and Brown 2008; Melgarejo et al. 2021; Pavlatos and Kostakis 2022).

Economic shocks put significant pressure on the functioning of management accounting systems (Hopwood 2009) and are an important lever for management control (Endenich 2014). In line with this, strategic information systems are essential for organisations' survival and performance in disruptive contexts (Yoshikuni and Albertin 2018). Organisational crises are understood as "event[s] perceived by managers and stakeholders as highly salient, unexpected, and potentially disruptive" (Bundy et al. 2017, p. 1662). They are

considered: (a) sources of uncertainty, disruption, and change; (b) harmful or threatening to organisations and their stakeholders; (c) socially constructed by the actors involved; and (d) parts of larger processes, rather than discrete events (ibid.).

Management control enables managers to ensure that resources are effectively and efficiently allocated (Anthony 1965). In the wake of Simons (1990, p. 128), we view management control systems as "formalized procedures and systems that use information to maintain or alter patterns in organizational activity" and consider them important not only for "strategy implementation, but also for strategy formation".

Some recent studies relate it broadly to those financial and non-financial, formal, and informal information systems employed by organisations to establish objectives and work towards meeting them (e.g., Agyemang and Broadbent 2015; Broadbent and Laughlin 2009; Chenhall 2003; Ferreira and Otley 2009). Existing literature provides evidence that organisations use MCP to "formulate and implement strategies by planning and controlling inputs, persuading the conversion process, and monitoring the outcomes" (Wijethilake et al. 2018, p. 1143). The literature also suggests that to cope with external turbulences, organisations should align their business strategy with certain MCP to achieve good performance (Jukka 2021).

Organisations turn to sophisticated MCP when facing environmental unpredictability to reduce uncertainty and improve decision making (Pondeville et al. 2013). Environmental unpredictability refers to the "inability to anticipate variations among elements of the environment and assess the effect of material changes on the organisation" (Bedford and Malmi 2015, p. 9). In this context, organisations face multiple conflicting objectives related to strategic and operational issues, such as managing costs, pivoting to new markets and products, managing revenue decline, and redesigning operating models (Kober and Thambar 2021). MCP play a critical role in shaping anticipatory and coping capacities (Bracci and Tallaki 2021). Informational needs become greater and more diverse (Henri and Wouters 2020). Decision-makers in times of crisis face the challenge of gathering the needed information, which is frequently complex, very sensitive, and difficult to locate" (König et al. 2020). Henri and Wouters (2020) suggest that under environmental unpredictability the benefit of having more information in the form of both cost information and nonfinancial performance indicators is particularly relevant. These MCP are configured as a package across organisations (Malmi and Brown 2008) and both formal and informal MCP have been recognised as important (Ferreira and Otley 2009; Chen et al. 2022; Sandelin 2008). However, the literature emphasises the importance of formal MCP in times of uncertainty (Chen et al. 2022; Chenhall 2003; Müller-Stewens et al. 2020). Formal control practices provide information on how to modify organisational strategies (Chen et al. 2022). Chenhall (2003, p. 138) stresses that "hostile and turbulent conditions seem, in general, to be better served by reliance on formal controls".

There is also a growing interest in the issues of Corporate Social Responsibility (CSR)/ corporate sustainability performance management and measurement systems (Hansen and Schaltegger 2016; Searcy 2012). Customers, suppliers, regulators, non-governmental organisations, and other stakeholders (Baker and Schaltegger 2015; Bansal and Roth 2000; Schaltegger et al. 2015; Wijethilake et al. 2017) exert pressure on companies to engage in different aspects of CSR/sustainability and reward companies that do so (Manuel and Herron 2020; Robinson et al. 2011).

Integration of CSR/sustainability issues may be a strategic task (Baumgartner 2014). A CSR/sustainability strategy integrates the social and environmental dimensions into the strategic management process of a company (Baumgartner 2014; Baumgartner and Ebner 2010). The banner "doing well by doing good" is turning out to be a management strategy (Ahmad and Ramayah 2012; Maqbool 2019, p. 220) to bring in a competitive advantage (Porter and Kramer 2006) and "inspires organizations to employ social and environmental agendas in their control systems" (Asiaei et al. 2023, p. 585; Endrikat et al. 2017; Feder and Weißenberger 2019). Treating community stakeholder interests as externalities is a risky business, creating a fragile system vulnerable to sudden shifts, such as social movements

or environmental crises (Gibson et al. 2021; Kaplan 2020). If standards of environmental and social responsibility are not addressed in an appropriate and timely manner, these issues could result in financial, physical, and reputational risks (Hansen and Schaltegger 2018). CSR is an organisational lever that supports resource implementation (Asiaei et al. 2023), and a higher company social performance seems to protect companies from the negative effects of crises (Braune et al. 2019). The implementation of social responsibility strategies can therefore be regarded as insurance to limit sensitivity to systematic risk and preserve the value of the shareholders against the adverse effects of a crisis or bad economic conditions (Braune et al. 2019), but MCP are needed to integrate sustainable strategies into operational activities (e.g., Corsi and Arru 2020).

The pandemic crisis has fundamentally changed society's expectations, making stakeholders more aware of which organisations are serving all stakeholders (Kaplan 2020). Companies have seen increased demand for CSR activities in response to the pandemic (Ciruela-Lorenzo et al. 2020; Donthu and Gustafsson 2020; He and Harris 2020) and have been under scrutiny for their environmental and social commitments and ethical business behaviour (He and Harris 2020; Martins et al. 2020; Oliveira et al. 2021). The business sector is expected to place employee safety over profits and use their resources to assist stakeholders with challenges arising from the pandemic, in particular, maintaining cash flow to pay debts and employees is paramount (Manuel and Herron 2020).

Grounded on the resource-based view (RBV), we examine the managers' perceptions on the use of MCP as resources to support the decision-making process and contribute to organisational performance and competitiveness in a crisis context (the COVID-19 pandemic). We also examine the perceived role of CSR on MCP. Engaging with this lacuna in the literature and seeking to inform practice, this study addresses the following questions, in a crisis context:

Q1   Do managers perceive that MCP have an influence on organisational performance and competitiveness?

Q2   Do managers perceive that CSR influences MCP?

The perceived usefulness of MCP and systems is of "paramount importance for researching management control and management accounting more generally" (Ahrens and Chapman 2007, p. 10). Our study is a response to calls for further research in management control and accounting practice (e.g., Delfino and van der Kolk 2021; Leoni et al. 2021; Passetti et al. 2021) in a context of environmental unpredictability (Henri and Wouters 2020). Few empirical studies have been conducted linking economic crises to MCP (Bundy et al. 2017; Kober and Thambar 2021). The COVID-19 crisis involved more complexities than an economic crisis (Kober and Thambar 2021), given the health, social, and economic challenges.

The results presented in this paper are based upon responses to a questionnaire survey sent to the 250 major exporting Portuguese companies. Data were collected between December 2020 and March 2021 during the COVID-19 pandemic. Taken together, the results provide robust evidence that organisations perceived that MCP provide companies guidance on organisational performance and competitiveness in a crisis environment, and that CSR influences MCP.

This paper contributes to the literature in different ways. First, we expand our current understanding of the perceived role of management control in helping companies in a context of environmental uncertainty and unpredictability in a single country setting, Portugal. Scholars argue that differences in institutional contexts are expected to result in divergence in MCP (Bhimani 1999). Even across developed Western societies, variations seem to exist in the design and use of MCP (Malmi et al. 2022). Second, grounded on the resource-based view, this study highlights the perceived role of MCP as a valuable capability and resource by supporting managers in achieving organisational performance and competitiveness in turbulent environments. Third, it contributes to current research on sustainable development issues by providing evidence that organisations perceived that corporate social and environmental strategies are translated into MCP. The relationship

between CSR and MCP is an emerging research theme in the accounting literature (Cheffi et al. 2021).

The structure of the paper is as follows: Section 2 presents the theoretical background and the development of hypotheses; Section 3 describes the sample as well as the research design; the empirical results are summarised in Section 4; and finally, Section 5 presents the discussion and the main conclusions.

2. Theory and Hypotheses

Our research is grounded in the RBV. This economic-based theoretical approach was initially developed on the basis of the work of Edith Penrose (1959). Its subsequent development, however, has occurred within the field of strategic management, in which it has become one of the dominant theories (Barney 1991; Barney et al. 2011, 2021). It has also become a popular theory in numerous management studies fields, ranging from operations management (Chahal et al. 2020; Hitt et al. 2016) to corporate sustainability (Lozano et al. 2015). Despite not becoming as popular, the RBV has also been used in the management accounting and control field (Epstein and Wisner 2005; Henri 2006).

The RVB "begins by supposing that firms are bundles of resources and capabilities" (Barney et al. 2021, p. 1939). What is more, it views a firm's profits and the potential to generate them as dependent upon the resources and capabilities that it has under its control. To be such a source of profit and competitive advantage, resources have to be valuable, rare, costly/difficult to imitate, and non-substitutable (Barney et al. 2011). A widely cited definition of resources is offered by Barney et al. (2011, p. 1300), who present them as "bundles of tangible and intangible assets, including a firm's management skills, its organisational processes and routines, and the information and knowledge it controls that can be used by firms to help choose and implement strategies."

Lozano et al. (2015, p. 436) depict the RBV as affording a "unique perspective to corporate leaders by providing an explanation of how internal resources can lead to proactive changes in the company". This perspective has been widely used in research on CSR/corporate sustainability practices to examine the usefulness of such practices in the creation of certain resources and capabilities. Such practices are viewed as strategies to enhance financial performance by way of their assistance in the development of intangibles such as corporate reputation, innovation, culture, and human resources (Surroca et al. 2010). In particular, corporate reputation and human capital are considered as having great strategic importance and CSR/corporate sustainability are viewed as important means through which they can be created.

Acknowledging that one of the basic sources of advantage in competition is "privately held knowledge", Conner and Prahalad (1996, p. 477) uphold that at the core of the RBV is "a knowledge-based view". We suggest that knowledge-based resources are inextricably linked to how the other resources, both tangible and intangible, are developed and used to add value. As argued by Branco and Rodrigues (2006, p. 118), "knowledge is something which must be put to work" and knowledge-based resources are probably those which are more difficult to control by management. As maintained by Asiaei and Bontis (2019), robust MCP and systems are crucial for an organisation to successfully address the difficulties of managing such resources.

Grounded in RBV, Henri (2006) supports the perspective of control systems as tools contributing to the implementation of intended strategies, but also as tools stimulating the emergence of new strategies. According to this author, the use of MCP represents capabilities that are "valuable, distinctive and imperfectly imitable" impacting the organisations and influencing organisational performance (p. 539). An important and positive connection between the use of management and accounting tools and organisational performance has to do with managers being able, with the assistance of such tools, to anticipate and minimise risks making the entire organisational process more transparent and efficient (Munck et al. 2020). Melgarejo et al. (2021) confirm that the adoption of MCP improves performance in several core areas, being related to higher levels of financial performance

(Bourne et al. 2018). Organisations that adopt MCP are better prepared to overcome the challenges they regularly face, as well as those that are unexpected, such as those associated with the COVID 19 pandemic.

Beyond the regular challenges, performance measurement tools that consider complexity and uncertainty as regular characteristics of organisational environments, instead of considering them as exceptions, denote considerable advantages in interpretation and implementation (Bourne et al. 2018). MCP are capable of playing an effective role, namely, in synchronising and aligning the several knowledge areas of an organisation and its resources, thus triggering a higher level of performance (Asiaei et al. 2021a; Nartey et al. 2021). MCP influence organisational performance, in its financial and non-financial aspects (Monteiro et al. 2021), but in order to ensure resilient growth, organisational innovation must be fostered (Sabahi and Parast 2020).

In challenging contexts, managers seek to interconnect to MCP to operate in a corporate environment of innovation (Barros and Ferreira 2021). MCP and management indicators allow managers to better monitor the firm's performance (Dimes and de Villiers 2020). Employment and work information have assumed an extraordinary role in the post-COVID-19 era, with MCP allowing one to monitor, align and guide in order to achieve higher organisational performance results (Rigby 2001). They play a fundamental role in leveraging organisational performance due to their role in aligning and forecasting (Bourne et al. 2018; Erokhin et al. 2019). Sageder and Feldbauer-Durstmüller (2019) present a comprehensive overview of control mechanisms at multinational companies and influencing factors. They found that (1) output controls, specifically financial measures, are widely accepted across countries and industries; (2) non-financial indicators enable adaptations to local requirements; (3) the significance of non-financial indicators increases with environmental uncertainty.

The current COVID-19 crisis has confirmed the capabilities of MCP in contexts of global emergency, in which ordinary activities are tested. Noting that most organisations were not prepared to deal with pandemic circumstances, maintaining reactive and adaptive responses rather than anticipatory or transformational ones. The environment has a positive impact on the use of MCP, along with a positive impact on economic performance (Petera et al. 2021). The need to use remote work has led MCP to adapt, as the entire work context has changed, with online meetings and the implementation of digital technologies, for example (Leoni et al. 2021).

Bearing this in mind, MCP played a leading role in organisational decision support during the COVID-19 pandemic period (Passetti et al. 2021).

Based on the above, we develop the following hypothesis:

H1. *Managers perceive that MCP influence organisational performance.*

Organisations that foster competitiveness are able to identify strengths and weaknesses so as to develop further improvement actions to boost organisational performance (Shaulska et al. 2021). Bearing in mind the need to leverage competitiveness to reach higher performance outcomes, MCP assume, especially in emergency contexts such as pandemic crisis situations, an organisational facilitating and adaptation role to mitigate the intrinsic pandemic effects (Hu et al. 2017; Lebas 1994; Leoni et al. 2021; Lodhia et al. 2021). Furthermore, MCP have the power to effectively enable the leverage of competitiveness, by aggregating information to maintain control of a very unpredictable scenario (Hu et al. 2017; Lebas 1994; Leoni et al. 2021; Lodhia et al. 2021). Some organisations face difficulties in generating profit due to several issues, such as for instance barriers to entry, negotiating power of customers and suppliers (Porter 1980). Moreover, MCP show in an integrated way the increase in complexity generated by the crisis, as all the information is integrated and interconnected, allowing for not only a retrospective view, but also the projection of a more resilient organisation (Passetti et al. 2021). The impact on organisational competitors is indirect and dependent upon how MCP are employed under different degrees of environmental uncertainty (Laguir et al. 2022). Wu and Kong (2021) found that at the beginning

of the outbreak several Chinese companies, in order to keep their workers, gave money to frontline employees. Based on their strong CSR they were able to align their resources to assist the community. Bearing this in mind, MCP are an additional critical factor as they enable managers to control and respond to organisational needs. Despite the leading role of MCP, the relationship between control practices and innovation is not yet completely clear as several managers still disregard the information provided by MCP (Henri and Wouters 2020).

Through the faculties of MCP, which are also oriented toward outside the organisation by allowing communication and response opportunities, the harmful effects of the pandemic are thus mitigated (Passetti et al. 2021). Farhikhteh et al. (2020) argue that micro-competitiveness factors make a greater contribution to competitive advantage than macro factors.

Based on the above, we put forward the following hypothesis:

H2. *Managers perceive that MCP influence and leverage organisational competitiveness.*

Environmental uncertainty may demand broad scope information (i.e., more than financial information) to give a multifaceted picture of reality to support decision-making (Malmi and Brown 2008; Sageder and Feldbauer-Durstmüller 2019). The increasing strategic importance of CSR/sustainability issues, as well as related performance measures, have stimulated the interest in organisational management systems and CSR/sustainability performance measurement (Hansen and Schaltegger 2016).

The management control literature posits that organisations need to adapt MCP in line with strategic objectives and priorities (Henri 2006; Langfield-Smith 1997; Asiaei et al. 2021a). A number of authors argue that organisational strategic practices, such as CSR/sustainability initiatives, "can influence the formulation and implementation of management control mechanisms" (Asiaei et al. 2023, p. 585; see also Ittner and Larcker 2001). The inclusion of social and environmental agendas in MCP is essential for organisations that "struggle to take advantage of their CSR initiatives and measure the real value of such activities" (Asiaei et al. 2023, p. 578). According to previous studies, integrating CSR aspects into MCP in general and performance measurement in particular can produce positive organisational outcomes (Asiaei et al. 2021b; Gond et al. 2012). For example, Traxler et al. (2020) and Rahi et al. (2022) performed systematic literature reviews to examine the linkage between sustainability reporting and management control. The findings of Traxler et al. (2020) revealed the use of sustainability reporting within management control that can be assigned to the different management control elements: (i) it serves as a tool to raise the understanding of sustainability issues or to shape corporate vision or culture; (ii) it is used for goal setting in planning processes; (iii) sustainability-related measures are used as a performance measurement tool; (iv) sustainability reporting influences collaboration and communication across teams and the organisational structure; and (v) key performance indicators from the companies sustainability report can be used for performance-based rewards. Rahi et al. (2022) findings suggest that research on the relationships between sustainability reporting and management control is very scarce, with researchers focusing on one of them and neglecting the relationship. They also found that research investigating such relationships is still in its infancy and uses predominantly in-depth qualitative analyses. Moreover, research has shown also that CSR can function as an MCP, i.e., when it influences internal dynamics by encouraging people to adhere to certain ideas, norms, and values in line with the organisational ones (Costas and Kärreman 2013; Mio et al. 2020).

The literature suggests that environmental and social strategic objectives can be taken into account in performance measurement and management tools by integrating them into existing performance perspectives or by creating specific perspectives (Bedford et al. 2008; Hansen and Schaltegger 2016; Joshi and Li 2016). The importance of greater integration in uncertain environments is strengthened (Pondeville et al. 2013). Moreover, in a big data environment, the set of performance measures available expands exponentially (Humphreys and Trotman 2022). Organisations increasingly have to recognise how MCP assist in measur-

ing resources and their sustainable performance (Rehman et al. 2020). Several publications have specifically focused on a BSC approach to sustainability performance measurement (Searcy 2012). Hansen and Schaltegger (2016) conducted a systematic literature review on modifications to the original BSC, which explicitly consider environmental, social, or ethical issues, and found that sustainability-oriented modifications of the BSC architecture are motivated by instrumental, social/political, or normative theoretical perspectives.

According to Hahn and Figge (2018), a tool for the strategic management of corporate sustainability should help companies to move towards more economic, environmental, and social performance. However, traditional MCP are seen to be limited in incorporating the interests of a broad range of stakeholders other than shareholders, in addressing environmental and social issues, as well as in their interrelationships with financial issues (Gond et al. 2012). There is a need to integrate specific sustainability control systems with the more traditional MCP to ensure that business operations are carried out in accordance with sustainable development goals (Ditillo and Lisi 2016).

Based on a survey data set from Chief Financial Officers of publicly listed companies on the Tehran Stock Exchange, Asiaei et al. (2023) explore how companies rely on the balanced use of diagnostic and interactive performance measurement systems to translate CSR into superior performance. Their findings show that CSR is positively associated with performance measurement systems and organisational performance. However, the literature suggests that performance measurement and MCP for CSR issues may "remain marginal, unconnected to organizational business activities, and without influence on strategy" (Cheffi et al. 2021, p. 337; see also Lueg and Radlach 2016).

Based on the above, we develop the following hypothesis:

H3. *Managers perceive that CSR has an influence on MCP.*

3. Research Design

To examine whether managers perceive MCP as a resource to support the decision-making process and contribute to organisational performance and competitiveness in a crisis environment, and to ascertain the perceived role of CSR on MCP, a survey by questionnaire was conducted from January to May 2021. Data were obtained from the Instituto Nacional de Estatística (INE) (Instituto Nacional de Estatística 2019) (National Institute of Statistics). The questionnaire used scales validated in previous studies, which allowed one to measure the four dimensions in our model. Organisational performance (OPER) is measured through seven variables, mentioned below, resulting from previous studies (e.g., Grafton et al. 2010; Kaplan and Norton 1993, 2005, 2007; Micheli and Mura 2017; Sarker et al. 2021; Zizlavsky 2014). Leveraging organisational competitiveness (LOCO) mentioned is measured using variables resulting from Endenich (2014) study. The measurement of CSR is based on 13 variables derived from the studies of Braune et al. (2019) and Maqbool (2019), as mentioned below. Finally, the dependent variable—MCP—is measured using four variables that resulted from the adaptation of the scales used in several existing studies (e.g., Bollinger 2020; Hu et al. 2017; Kaplan and Norton 1993, 1996, 2001; Lebas 1994; Leoni et al. 2021) (Appendix A).

Robustness was tested using Exploratory Factorial Analysis (EFA) to examine the factorial charges of each item and its adequacy to use in the Confirmatory Factorial Analysis (CFA) (Byrne 2010). Besides questioning them on the four dimensions presented above, the questionnaire also included questions on sociodemographic aspects. The questionnaire was developed using a 5-point Likert scale, varying from totally disagree (1) to totally agree (5).

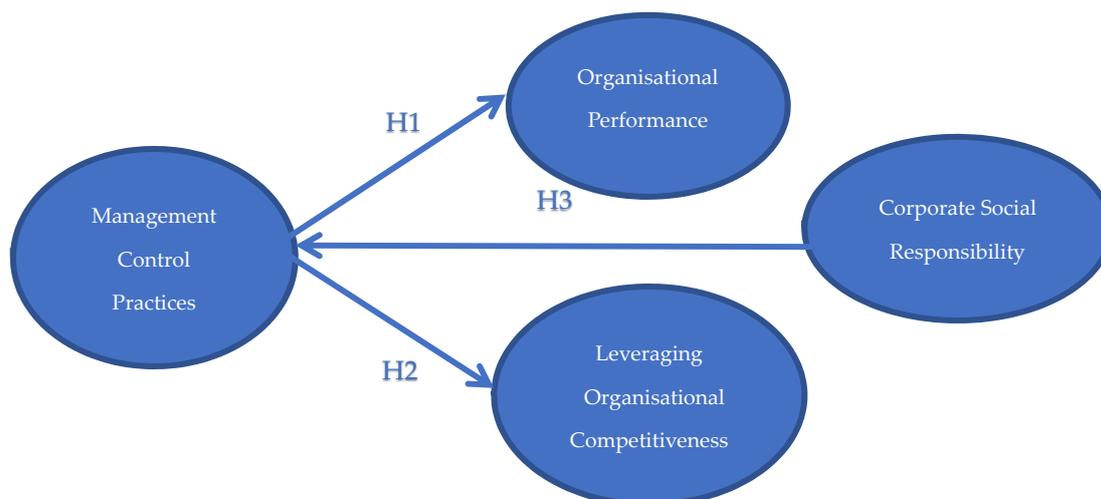The model used is presented in Figure 1.

Figure 1. Research model.

The questionnaire aims at understanding the perceived influence of MCP on the OPER and LOCO variables, and the perceived influence of CSR on MCP in a crisis environment. Respondents are members of the management of the companies under analysis and may occupy top management, middle management, or operational management positions. The questionnaire was administered by sending a link that allowed access to the set of questions. Confidentiality and anonymity were ensured.

We began by selecting the 250 major exporting companies in Portugal, given that these firms correspond mostly to large companies (in our sample, 72% of them are large companies). Large organisations usually have greater capacities to undertake very strategic practices such as CSR activities and also advanced management control systems (Asiaei et al. 2021a). As a result, they are required to have more integrated management control. Of the 250 questionnaires distributed, only 87 were returned, with a response rate of 34.8%. The data were then subjected to data screening to remove any problems regarding outliers and missing data. The basic test for this removal included testing for normality, homogeneity, and linearity of the data. The data screening process indicated that there were five unusable questionnaires as a result of missing data, leaving the total number of questionnaires with usable data at 82. Table 1 presents a summary of the sociodemographic data of the companies whose managers were the target of our questionnaire.

Table 1. Firms' data.

Variables		Frequency	%
Type of management	State-owned	1	1%
	Private	81	99%
Type of company	Public Limited Company	62	76%
	Private Limited Company	19	23%
	Sole Proprietorship	0	0%
	Other	1	1%
Average number of employees	<5	1	1%
	5 to 9	1	1%
	10 to 49	8	10%
	50 to 249	13	16%
	>249	59	72%

Table 1. *Cont.*

	Variables	Frequency	%
	Balanced Scorecard	42	51%
	Tableau de Bord	17	29%
MCP used	Business Model Canvas	4	7%
	Pyramid Prism	0	0%
	Other	19	32%

Table 2 presents a summary of the sociodemographic data of the respondents.

Table 2. Respondent's sociodemographic data.

	Variables	Frequency	%
Gender	Male	46	56%
	Female	36	44%
	<30	0	0%
	30 to 39	12	15%
Age (years)	40 to 49	31	38%
	50 to 59	29	35%
	>59	10	12%
	Middle school	5	6%
	Undergraduate	54	66%
Education	Master's	17	21%
	PhD	6	7%
Educational background in the management area	Yes	61	74%
	No	21	26%
	<5	1	1%
Years of experience in the management area	5 to 15	15	18%
	>15	66	81%
	Top management	52	63%
Job	Middle management	22	27%
	Operational management	8	10%

4. Data Analysis and Findings

4.1. Exploratory Factorial Analysis

Using SPSS 27, we began by examining the validity of the data and identifying the loading of the components through an Exploratory Factorial Analysis (EFA). The EFA sought to identify the structure of the variables that explain each of the dimensions. Factor analysis was performed using the principal components method with Varimax rotation as it best explained the factor loading of each variable, as well as the proper grouping of factors. In factor analysis, the calculation of Cronbach's Alpha (α) and the Kaiser–Meyer–Oklin (KMO) measurement are the two most used statistical procedures within the EFA to examine the items underlying the structure of the components extracted from the measured variables. According to the statistics literature, the value of the standardised loading factor KMO should be greater than 0.50, while it is recommended that Cronbach Alpha be greater than 0.70 (Taber 2018). Our data obtained an extracted measure of suitable KMO that was situated at the value of 0.820, which means that principal component analysis can be

performed (Bonett and Wright 2015). Bartlett's sphericity was statistically significant with $\chi^2 = 1466.728$, DF = 325, $p < 0.001$. The factor loading of each of the 29 variables used in the questionnaire and the robustness presented by the various dimensions under study can be seen in Table 3.

Table 3. Factor loadings and robustness tests (EFA).

Items	Loadings	Label	(α)
OPER1	0.571		
OPER2	0.639		
OPER3	−0.034		
OPER4	0.326	Organisational Performance	0.738
OPER5	0.309		
OPER6	0.474		
OPER7	0.791		
LOCO1	0.883		
LOCO2	0.876		
LOCO3	0.710	Leveraging Organisational Competitiveness	0.902
LOCO4	0.743		
LOCO5	0.812		
CSRE1	0.546		
CSRE2	0.579		
CSRE3	0.669		
CSRE4	0.682		
CSRE5	0.691		
CSRE6	0.771		
CSRE7	0.706	Corporate Social Responsibility	0.934
CSRE8	0.877		
CSRE9	0.811		
CSRE10	0.847		
CSRE11	0.664		
CSRE12	0.781		
CSRE13	0.744		
MCP1	0.640		
MCP2	0.700	Management Control Practices	0.860
MCP3	0.860		
MCP4	0.840		

Keys: OPER (Organisational Performance); LOCO (Leveraging Organisational Competitiveness); CSRE (Corporate Social Responsibility); and MCP (Management Control Practices). These variables were removed from the final estimated model for having loadings below 0.500. Variables with these results are considered unable to explain the reality studied and should therefore be removed (Hair et al. 2010).

The factor loading ranged between 0.546 and 0.883, with all (except four, OPER3, OPER4, OPER5, and OPER6, which were removed from the analysis) being above the threshold of the recommended 0.5 (Brown 2006, 2015; Hair et al. 2010; Marôco 2010). It should also be noted that the values of Cronbach's Alpha (α) of the four dimensions were situated at 0.738 in the OPER dimension (after removing the variables OPER3, OPER4, and OPER5 with loadings lower than 0.500): 0.902 at LOCO; 0.934 at CSR; and 0.860 at MCP. In

addition, all variables' robustness was simultaneously situated at Cronbach's Alpha (α) 0.936. We can say that the individual dimensions have good or very good robustness, and the questionnaire generally has very good robustness.

4.2. Confirmatory Factorial Analysis

In the second stage, using AMOS 27, a CFA was conducted to test the structural validity of the proposed model and to analyse the results pertaining to the research hypotheses. The CFA was used to validate the perceived influence of MCP on OPER and LOCO and the perceived influence of CSR on the MCP used by companies in a crisis context. The convergent and discriminant validity of the scales was analysed to identify the components obtained in the first phase of statistical analysis carried out using the EFA (Byrne 2010; Byrne and Ragin 2009).

The use of discriminant validity is a justification for the existence or not of cross-loadings within and between the variance construction error term (Hair et al. 2010). The lack of cross-loading shows that the evidence of discriminant validity is justified. The research model tested was subject to validation by calculating various suitability indices, such as (χ^2 = 541.506, p = 0.001, df = 272, χ^2/df = 1.660, RMSEA = 0.059, SRMR = 0.0191, NFI = 0.919, GFI = 0.912, AGFI = 0.944 and CFI = 0.958) (Hair et al. 1999; Schumacker and Lomax 2016; Yuan and Bentler 2001). The CFA result shows that the loading of standardised parameters using AMOS 27 ranged from 0.571 to 0.791 for OPER, 0.710 to 0.883 for the LOCO dimension, 0.546 to 0.877 for the CSR dimension and 0.639 to 0.857 for the MCP dimension. Regarding the convergent validity of the model (Table 4), it was evaluated in three metrics: Average Variance Extracted (AVE), Composite Reliability (CR) and Cronbach's Alpha (α). All convergent validity metrics clearly surpassed what the literature refers to as relevant (the AVE must be greater than 0.5; the CR greater than 0.7; and α must be above 0.8 (Hair et al. 2010; Marôco 2010)). The requirements of validity and convergent reliability were obtained. The discriminant validity was evaluated by comparing the square root of the AVE of each construct and the correlation of these constructs with the others, verifying a discriminant validity and acceptable reliability for the research model presented.

Table 4. Convergent and discriminant validity.

	CR	AVE	α	LOCO	OPER	CSR
LOCO	0.872	0.652	0.903	0.764		
OPER	0.709	0.453	0.738	0.804	0.718	
CSR	0.934	0.528	0.934	0.487	0.472	0.710

In Table 4 the values in the diagonal represent the square root of AVE for each corresponding construct. Outside the diagonal, one can observe the correlations between constructs. The CR, AVE, and α obtained reveal the robustness of the model tested.

4.3. Final Research Model and Hypotheses Results

The research model was tested using an estimation method based on structural equations. Results suggest that managers do perceive that a relationship exists between MCP and both OPER and LOCO. This is also the case with CSR and the use of MCP by companies. The effective result of the multidimensional construction measures tested allowed for the validation of the three research hypotheses.

In Table 5, we can see the summary of the results pertaining to the tested hypotheses using the best possible investigation model (we removed the variables OPER3, OPER4, OPER5, and OPER6, given that they presented factor loadings below 0.5). The results obtained allow us to conclude that the variation in the OPER and LOCO dimensions of companies is explained by the MCPO dimension. Regarding the first variable, β = 0.555 and $p < 0.001$, while for the second variable, β = 0.939 and $p < 0.001$. There is also a statistically significant influence of CSR on MCP (β = 0.644, $p < 0.0001$). Hence, H1, H2, and H3 are

validated (Figure 2). The structural results indicate that the MCP dimension has a direct and positive statistically significant influence on the OPER and LOCO, validating H1 and H2, and that the CSR dimension has a statistically significant, direct, and positive influence on MCP, structurally validating H3.

Table 5. Hypotheses testing results.

Hypotheses	Relationship	Coefficient	Standard Error	t	*p*-Value
H1	MCP → OPER	0.555	0.119	4.649	<0.001
H2	MCP → LOCO	0.939	0.131	7.142	<0.001
H3	CSR → MCP	0.644	0.185	3.481	<0.001
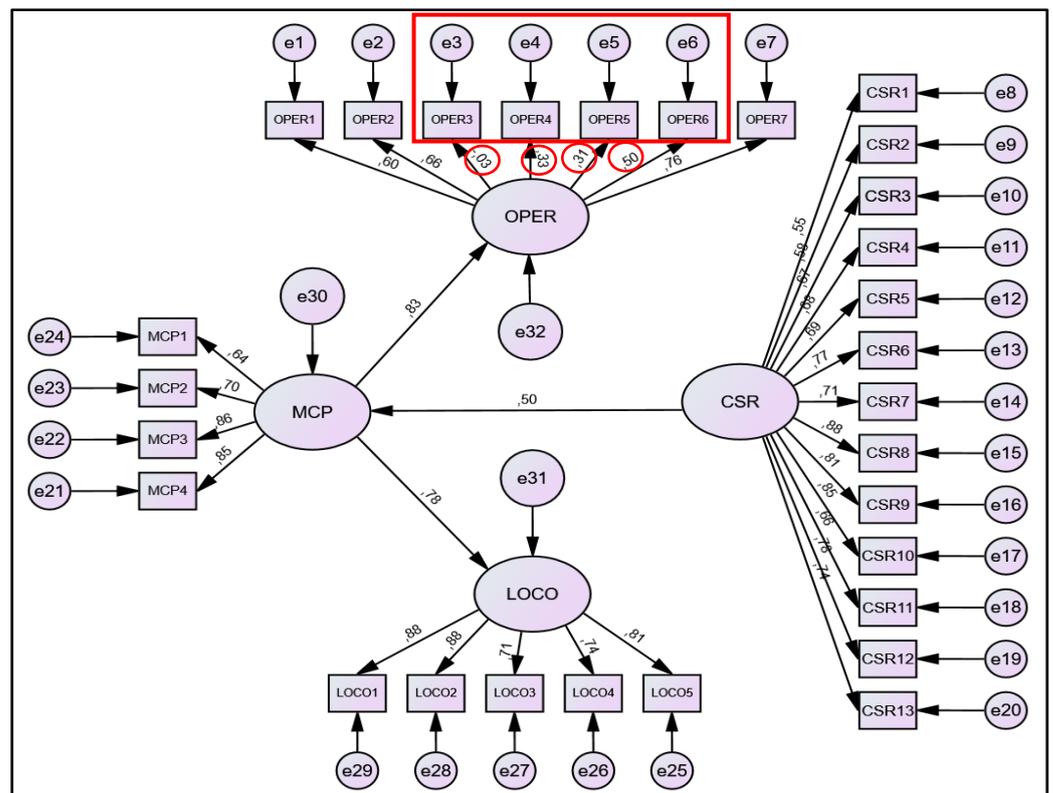
Figure 2. Initial model.

After analysing the validity and reliability of the initial model (Figure 2), we tested a new model (Figure 3) in which we removed some variables whose scores were below 0.5, obtaining better internal consistency than in the first model tested.
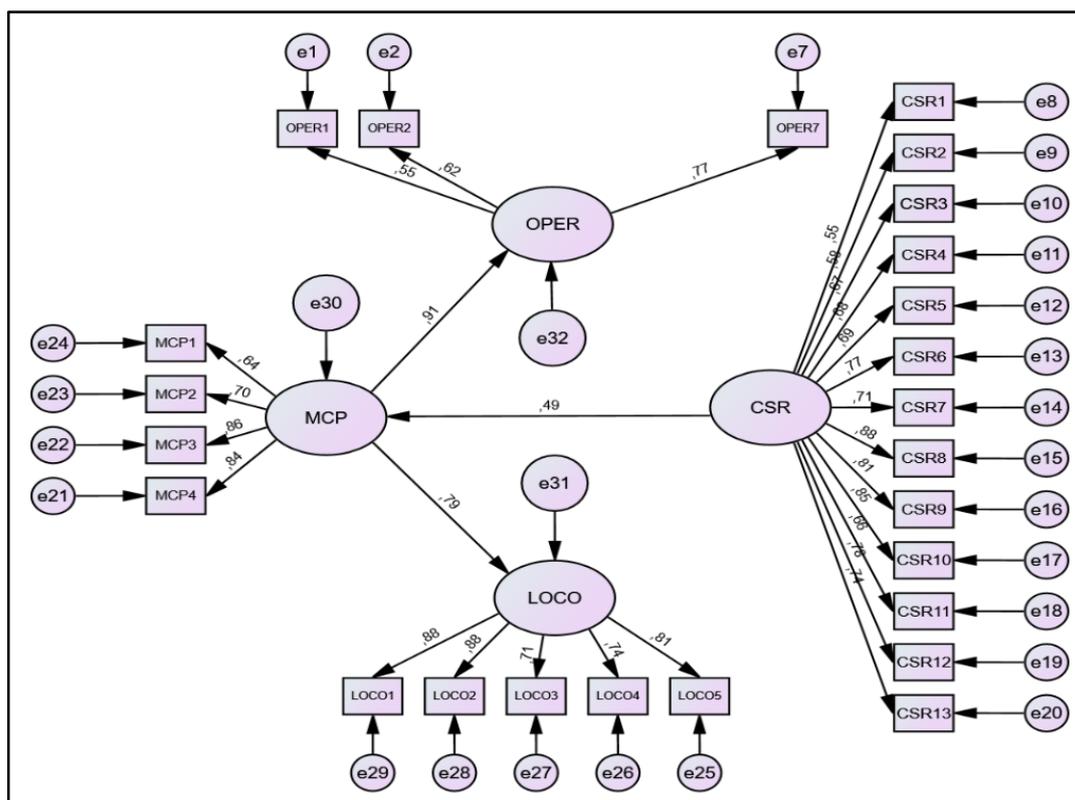
Figure 3. Final model.

5. Discussion and Conclusions

The literature has shown that organisations are mostly unprepared to cope with global disruptions and that business responses are reactive, rather than anticipatory (Bundy et al. 2017). In the midst of the COVID-19 crisis, a particularly turbulent period with severe consequences for organisations both in terms of their performance and the difficulty of managing their performance, and requiring from them increased support to their employees and society in general, we deemed it important, based on a review of the literature, to examine whether managers perceive MCP as a resource to support the decision-making process and contributing to organisational performance and competitiveness in a crisis environment, and to ascertain the perceived role of CSR in MCP.

To do so, Portuguese companies considered the most successful exporters were investigated with the aim of analysing the perceived influence of MCP both on organisational performance and on leveraging organisational competitiveness. Furthermore, the perceived influence of CSR on the use of MCP was also tested. Grounded on a resource-based view, three research hypotheses that allowed for the analysis of the relationship between the dimensions under analysis were developed. A structural equation model for data analysis applied to data obtained from a questionnaire survey was used to test these hypotheses.

We found that companies perceived that MCP do influence organisational performance and leverage organisational competitiveness in a Covid-19 context. MCP do seem to amount to important resources that allow a firm to be competitive and perform well. We also verified that companies perceived that CSR seems to be an important factor influencing MCP. Beyond being able to guide managers in permanent organisational adaptations, MCP seem to offer guidance to managers on addressing the consequences of a pandemic crisis so as to maintain performance, productivity, and management capabilities (Passetti et al. 2021).

Our findings are consistent with existing research that shows that the efficient use of MCP allows managers to adequately monitor and measure organisational performance. This is the case both from an internal point of view (assisting in the establishment of

adequate technical and operational policies) as well as from an external point of view, namely, by ensuring the satisfaction of those who have dealings with the firm, which allows for the improvement of corporate performance (Nartey et al. 2021). Our results confirm previous research suggesting that companies perceived that MCP represent a vital organisational resource for achieving sustainable organisational performance (Henri 2006; Rehman et al. 2020). In view of these results, managers may rely on MCP and their features to foster organisational performance, especially in adverse contexts such as COVID-19 (Nartey et al. 2021).

The result pertaining to the perceived influence of MCP on leveraging organisational competitiveness in a COVID-19 context corroborates previous studies which showed that MCP have the capacity to leverage the competitiveness of companies that, in times of crisis, face challenges and opportunities to be overcome in a sustainable way in order to remain competitive and capable of generating value (Lodhia et al. 2021). In unpredictable scenarios that cause business contexts of great organisational emergency, the ability revealed by MCP to leverage competitiveness, maintain technical and operational control of companies, and facilitate organisational adaptation allows managers to face these scenarios with greater confidence (Leoni et al. 2021). MCP do seem to allow companies with greater control and organisational management to maintain market value in contexts of extraordinarily difficult business resilience (Nartey et al. 2021).

Furthermore, managers perceived that CSR activities influence the use of MCP. This result suggests that social and environmental responsibility activities have an increasingly growing and decisive importance in business management. Environmental and social issues have gained increasing strategic relevance for businesses and have led to a growing interest in corporate sustainability performance measurement and MCP.

Our results corroborate previous literature that stated that managers perceived that environmental and social objectives are an integral part of their way of doing business, and firms should take them into account in performance measurement and management tools, integrating them into a performance framework (e.g., Hansen and Schaltegger 2016). A large body of research shows that stakeholders are soliciting information on measures to benchmark corporate social and environmental performance (e.g., Joshi and Li 2016). MCP seem to hold particular value for those seeking to measure the environmental and social impacts caused by their business activities (e.g., Rehman et al. 2020).

From an empirical point of view, this research provides evidence that managers perceived that environmental and social strategies need to be translated into performance measures and decision criteria, which, for some firms, comprise sustainability balanced scorecards and strategy maps (e.g., Hansen and Schaltegger 2018; Humphreys and Trotman 2022; Joshi and Li 2016). Our results are in line with previous research suggesting that MCP are perceived as a vital organisational resource that is associated with sustainable organisational performance (Barney et al. 2011; Henri 2006; Rehman et al. 2020).

This study has important managerial implications. It provides important insights for managers and accountants by highlighting the perceived potential of MCP as capabilities and resources to enhance sustainable organisational performance. These insights are particularly valuable given the pressures firms are facing with respect to the sustainability agenda (e.g., Ditillo and Lisi 2016; Rehman et al. 2020). Based on our study, we must agree with Joshi and Li's (2016, p. 1) assertion that "the accounting profession is being called upon to expand its traditional role to incorporate environmental and social performance into the financial reporting and management control systems".

The context of the study within the Portuguese setting limits the general applicability of the findings, as does the focus on the most successful exporting companies. MCP are affected by national and cultural settings, as evidenced in previous literature (e.g., Malmi et al. 2022; Van der Stede 2003). Further studies could focus on other countries and offer international comparative studies. Given that the survey was undertaken at a specific point in time, further understanding of the same relationships could potentially benefit from a longitudinal investigation.

A crisis context, such as the COVID-19 pandemic, corresponds, on the one hand, to a threat; however, on the other hand, it can also be seen as an opportunity in terms of value creation and emerging opportunities. Disruptive contexts may become increasingly recurrent in the future. An analysis of the impact of tensions in delivering positive corporate social and environmental outcomes across multiple performance areas is therefore worth exploring further (Humphreys and Trotman 2022). In thinking about future research opportunities, we note that Ditillo and Lisi (2016, p. 127) claim that the "sustainability orientation of managers represents the condition that motivates organisational actors to integrate sustainable and traditional control systems", so how managers implement MCP to manage sustainably is another possible avenue of research. Qualitative approaches would be particularly useful to provide further explanations and new insights into these issues.

Appendix A

Dimensions	Items	Questions	Authors
Organisational Performance	OPER1	Management control tools make it possible to measure and monitor the company's performance;	(Grafton et al. 2010; Kaplan and Norton 1993, 2005, 2007; Micheli and Mura 2017; Sarker et al. 2021; Zizlavsky 2014)
	OPER2	To achieve the desired success, it is essential that managers can rely on an efficient measurement system;	
	OPER3	Our organisation is still only guided by financial indicators;	
	OPER4	Financial indicators alone are insufficient to monitor the performance of the organisation;	
	OPER5	Currently, non-financial indicators, namely, intangible indicators, are the basis for organisational differentiation;	
	OPER6	The search for competitiveness forces managers to identify the needs of consumers quickly and at the lowest possible cost while maintaining the objective of achieving success;	
	OPER7	Management control systems are essential in shaping risk management processes.	

Dimensions	Items	Questions	Authors
Leveraging Organisational Competitiveness	LOCO1	Management control tools improve the decision-making process in a crisis context;	(Endenich 2014)
	LOCO2	Management control tools play an important role in a crisis context;	
	LOCO3	The integration and interconnection of indicators is fundamental for effective management control;	
	LOCO4	The monitoring, guidance and control of strategic decisions depend on using appropriate management tools in a crisis context;	
	LOCO5	The management control tools increase our capacity for learning and continuous improvement in a crisis context.	
Corporate Social Responsibility	CSRE1	A company's social performance significantly reduces the systemic risk to which the company is exposed;	(Braune et al. 2019; Maqbool 2019)
	CSRE2	At a time of crisis and uncertainty, companies with a social performance assume upward attractiveness towards multiple stakeholders;	
	CSRE3	Corporate social responsibility has a positive impact on financial performance;	
	CSRE4	Companies able to communicate social responsibility policies achieve the higher social performance of the company;	
	CSRE5	The benefits derived from corporate social responsibility outweigh the costs of its implementation;	
	CSRE6	As a valuable and rare resource, corporate social responsibility can be exploited to gain a competitive advantage for the company;	
	CSRE7	Business entities should integrate social and environmental issues into their business strategy to gain a competitive advantage and improve long-term profitability;	
	CSRE8	Corporate social responsibility produces substantial benefits related to the company's business;	
	CSRE9	Corporate social responsibility allows returns to the company in the form of tangible and intangible benefits over an extended period;	
	CSRE10	Corporate social responsibility improves the performance of the company;	
	CSRE11	Management control systems are essential to creating quality corporate environmental reporting in response to external pressures or disturbances;	
	CSRE12	Involvement in corporate social responsibility activities generates favourable attitudes in its stakeholders that better supportive behaviour;	
	CSRE13	Corporate social responsibility builds the company's image, reinforces stakeholders' attitudes, and improves advocacy behaviours.	
Management Control Practices	MCP1	The management tools we use allow us to manage our company better strategically;	(Bollinger 2020; Hu et al. 2017; Kaplan and Norton 1993, 1996, 2001; Lebas 1994; Leoni et al. 2021)
	MCP1	Management Control tools are implemented because of the interconnection they allow between indicators and strategy;	
	MCP1	Strategic performance is improved through the complete integration of a strategic map;	
	MCP1	The Management Control tools allow us to keep the focus on the strategy previously defined.	

References

Agyemang, Gloria, and Jane Broadbent. 2015. Management control systems and research management in universities: An empirical and conceptual exploration. *Accounting, Auditing & Accountability Journal* 28: 1018–46.

Ahmad, Noor Hazlina, and T. Ramayah. 2012. Does the notion of 'doing well by doing good prevail among entrepreneurial ventures in a developing nation? *Journal of Business Ethics* 106: 479–90. [CrossRef]

Ahrens, Thomas, and Christopher S. Chapman. 2007. Management accounting as practice. *Accounting, Organizations and Society* 32: 1–27. [CrossRef]

Anthony, Robert N. 1965. *Planning and Control Systems: A Framework for Analysis*. Cambridge: Division of Research, Graduate School of Business Administration, Harvard University.

Asiaei, Kaveh, and Nick Bontis. 2019. Translating knowledge management into performance: The role of performance measurement systems. *Management Research Review* 43: 113–32. [CrossRef]

Asiaei, Kaveh, Neale G. O'Connor, Majid Moghaddam, Nick Bontis, and Jasvinder Sidhu. 2023. Corporate social responsibility and performance measurement systems in Iran: A levers of control perspective. *Corporate Social Responsibility and Environmental Management* 30: 574–88. [CrossRef]

Asiaei, Kaveh, Nick Bontis, Omid Barani, and Ruzita Jusoh. 2021a. Corporate social responsibility and sustainability performance measurement systems: Implications for organizational performance. *Journal of Management Control* 32: 85–126. [CrossRef]

Asiaei, Kaveh, Zabihollah Rezaee, Nick Bontis, Omid Barani, and Noor Sharoja Sapiei. 2021b. Knowledge assets, capabilities and performance measurement systems: A resource orchestration theory approach. *Journal of Knowledge Management* 25: 1947–76. [CrossRef]

Baker, Max, and Stefan Schaltegger. 2015. Pragmatism and new directions in social and environmental accountability research. *Accounting, Auditing & Accountability Journal* 28: 263–94.

Bansal, Pratima, and Kendall Roth. 2000. Why companies go green: A model of ecological responsiveness. *Academy of Management Journal* 43: 717–36. [CrossRef]

Barney, Jay B. 1991. Firm Resources and Sustained Competitive Advantage. *Journal of Management* 17: 99–120. [CrossRef]

Barney, Jay B., David J. Ketchen Jr., and Mike Wright. 2011. The future of resource-based theory: Revitalization or decline? *Journal of Management* 37: 1299–315. [CrossRef]

Barney, Jay B., David J. Ketchen Jr., and Mike Wright. 2021. Bold voices and new opportunities: An expanded research agenda for the resource-based view. *Journal of Management* 47: 1677–83. [CrossRef]

Barros, Rúben Silva, and Ana Maria Dias Simões da Costa Ferreira. 2021. Management Control Systems and Innovation: A levers of control analysis in an innovative company. *Journal of Accounting and Organizational Change* 18: 571–91. [CrossRef]

Baumgartner, Rupert J. 2014. Managing corporate sustainability and CSR: A conceptual framework combining values, strategies and instruments contributing to sustainable development. *Corporate Social Responsibility and Environmental Management* 21: 258–71. [CrossRef]

Baumgartner, Rupert J., and Daniela Ebner. 2010. Corporate sustainability strategies: Sustainability profiles and maturity levels. *Sustainable Development* 18: 76–89. [CrossRef]

Bedford, David, and Teemu Malmi. 2015. Configurations of control: An exploratory analysis. *Management Accounting Research* 27: 2–26. [CrossRef]

Bedford, David, David A. Brown, Teemu Malmi, and Prabhu Sivabalan. 2008. Balanced scorecard design and performance impacts: Some Australian evidence. *Journal of Applied Management Accounting Research* 6: 17–36.

Bedford, David, Teemu Malmi, and Mikko Sandelin. 2016. Management control effectiveness and strategy: An empirical analysis of packages and systems. *Accounting, Organizations and Society* 51: 12–28. [CrossRef]

Bhimani, Alnoor. 1999. Mapping methodological frontiers in cross-national management control research. *Accounting, Organizations and Society* 24: 413–40. [CrossRef]

Bollinger, Sophie Raedersdorf. 2020. Creativity and forms of managerial control in innovation pro-cesses: Tools, viewpoints and practices. *European Journal of Innovation Management* 23: 214–29. [CrossRef]

Bonett, Douglas G., and Thomas A. Wright. 2015. Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior* 36: 3–15. [CrossRef]

Bourne, Mike, Monica Franco-Santos, Pietro Micheli, and Andrey Pavlov. 2018. Performance measurement and management: A system of systems perspective. *International Journal of Production Research* 56: 2788–99. [CrossRef]

Bracci, Enrico, and Mouhcine Tallaki. 2021. Resilience capacities and management control systems in public sector organisations. *Journal of Accounting and Organizational Change* 17: 332–51. [CrossRef]

Branco, Manuel Castelo, and Lucia Lima Rodrigues. 2006. Corporate social responsibility and resource-based perspectives. *Journal of Business Ethics* 69: 111–32. [CrossRef]

Braune, Eric, Pablo Charosky, and Lubica Hikkerova. 2019. Corporate social responsibility, financial performance and risk in times of economic instability. *Journal of Management and Governance* 23: 1007–21. [CrossRef]

Broadbent, Jane, and Richard Laughlin. 2009. Performance management systems: A conceptual model. *Management Accounting Research* 20: 283–95. [CrossRef]

Brown, Timothy A. 2006. *Confirmatory Factor Analysis for Applied Research*. New York: Guilford.

Brown, Timothy A. 2015. *Confirmatory Factor Analysis for Applied Research*. New York: Guilford Publications.

Bundy, Jonathan, Michael D. Pfarrer, Cole E. Short, and W. Timothy Coombs. 2017. Crises and crisis management: Integration, interpretation, and research development. *Journal of Management* 43: 1661–92. [CrossRef]

Byrne, Barbara M. 2010. *Structural Equation Modeling with AMOS: Basic Concepts, Applications, and Programming (Multivariate Applications Series)*. New York: Taylor & Francis Group, pp. 396, 7384.

Byrne, David, and Charles Ragin. 2009. *The Sage Handbook of Case-Based Methods*. Los Angeles: Sage Publications.

Chahal, Hardeep, Mahesh Gupta, Namrita Bhan, and T. C. E. Cheng. 2020. Operations management research grounded in the resource-based view: A meta-analysis. *International Journal of Production Economics* 230: 107805. [CrossRef]

Cheffi, Walid, Ahmed Abdel-Maksoud, and Muhammad Omer Farooq. 2021. CSR initiatives, organizational performance and the mediating role of integrating CSR into management control systems: Testing an inclusive model within SMEs in an emerging economy. *Journal of Management Control* 32: 333–67. [CrossRef]

Chen, Jinhua, Lu Jiao, and Graeme Harrison. 2022. Transformational leadership and management control systems in human service not-for-profit organizations. *Financial Accountability & Management*, 1–19. [CrossRef]

Chenhall, Robert H. 2003. Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society* 28: 127–68. [CrossRef]

Ciruela-Lorenzo, Antonio Manuel, Ana González-Sánchez, and Juan José Plaza-Angulo. 2020. An exploratory study on social entrepreneurship, empowerment and peace process. The case of Colombian women victims of the armed conflict. *Sustainability* 12: 10425. [CrossRef]

Conner, Kathleen, and Coimbatore K. Prahalad. 1996. A Resource-Based Theory of the Firm: Knowledge Versus Opportunism. *Organization Science* 7: 477–501. [CrossRef]

Corsi, Katia, and Brunella Arru. 2020. Role and implementation of sustainability management control tools: Critical aspects in the Italian context. *Accounting, Auditing & Accountability Journal* 34: 29–56.

Costas, Jana, and Dan Kärreman. 2013. Conscience as control–managing employees through CSR. *Organization* 20: 394–415. [CrossRef]

Delfino, Gianluca F., and Berend van der Kolk. 2021. Remote working, management control changes and employee responses during the COVID-19 crisis. *Accounting, Auditing & Accountability Journal* 34: 1376–87.

Dimes, Ruth, and Charl de Villiers. 2020. How management control systems enable and con-strain integrated thinking. *Meditari Accountancy Research* 29: 851–72. [CrossRef]

Ditillo, Angelo, and Irene Eleonora Lisi. 2016. Exploring Sustainability Control Systems' Integration: The Relevance of Sustainability Orientation. *Journal of Management Accounting Research* 28: 125–48. [CrossRef]

Donthu, Naveen, and Anders Gustafsson. 2020. Effects of COVID-19 on business and research. *Journal of Business Research* 117: 284–89. [CrossRef]

Endenich, Christoph. 2014. Economic crisis as a driver of management accounting change: Comparative evidence from Germany and Spain. *Journal of Applied Accounting Research* 15: 123–49. [CrossRef]

Endrikat, Jan, Frank Hartmann, and Philipp Schreck. 2017. Social and ethical issues in management accounting and control: An editorial. *Journal of Management Control* 28: 245–49. [CrossRef]

Epstein, Marc J., and Priscilla S. Wisner. 2005. Managing and controlling environmental performance: Evidence from Mexico. In *Advances in Management Accounting*. Edited by Marc J. Epstein and John Y. Lee. Bingley: Emerald Group Publishing Limited, vol. 14, pp. 115–37.

Erokhin, Vasilii, Dmitry Endovitsky, Alexey Bobryshev, Natalia Kulagina, and Anna Ivolga. 2019. Management accounting change as a sustainable economic development strategy during pre-recession and recession periods: Evidence from Russia. *Sustainability* 11: 3139. [CrossRef]

Farhikhteh, Shirzad, Ali Kazemi, Arash Shahin, and Majid Mohammad Shafiee. 2020. How competitiveness factors propel SMEs to achieve competitive advantage? *Competitiveness Review* 30: 315–38. [CrossRef]

Feder, Madeleine, and Barbara E. Weißenberger. 2019. Understanding the behavioral gap: Why would managers (not) engage in CSR-related activities? *Journal of Management Control* 30: 95–126. [CrossRef]

Ferreira, Aldónio, and David Otley. 2009. The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research* 20: 263–82. [CrossRef]

Gibson, Cristina B., Stephen C. Gibson, and Quinn Webster. 2021. Expanding our resources: Including community in the resource-based view of the firm. *Journal of Management* 47: 1878–98.

Gond, Jean-Pascal, Suzana Grubnic, Christian Herzig, and Jeremy Moon. 2012. Configuring management control systems: Theorizing the integration of strategy and sustainability. *Management Accounting Research* 23: 205–23.

Grafton, Jennifer, Anne M. Lillis, and Sally K. Widener. 2010. The role of performance measurement and evaluation in building organizational capabilities and performance. *Accounting, Organizations and Society* 35: 689–706. [CrossRef]

Hahn, Tobias, and Frank Figge. 2018. Why architecture does not matter: On the fallacy of sustainability balanced scorecards. *Journal of Business Ethics* 150: 919–35.

Hair, Joseph F., Rolph E. Anderson, Ronald L. Tatham, and William C. Black. 1999. *Análisis Multivariante*. Madrid: Prentice Hall Madrid, vol. 491.

Hair, Joseph F., William C. Black, Barry Babin, Rolph E. Anderson, and Ronald L. Tatham. 2010. *Multivariate Data Analysis*. Upper Sadd: Pearson Prentice Hall.

Hansen, Erik G., and Stefan Schaltegger. 2016. The Sustainability Balanced Scorecard: A Systematic Review of Architectures. *Journal of Business Ethics* 133: 193–221. [CrossRef]

Hansen, Erik G., and Stefan Schaltegger. 2018. Sustainability balanced scorecards and their architectures: Irrelevant or misunderstood? *Journal of Business Ethics* 150: 937–52. [CrossRef]

He, Hongwei, and Lloyd Harris. 2020. The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of Business Research* 116: 176–82. [CrossRef]

Henri, Jean-François. 2006. Management control systems and strategy: A resource-based perspective. *Accounting, Organizations and Society* 31: 529–58. [CrossRef]

Henri, Jean-François, and Marc Wouters. 2020. Interdependence of management control practices for product innovation: The influence of environmental unpredictability. *Accounting, Organizations and Society* 86: 101073. [CrossRef]

Hitt, Michael A., Kai Xu, and Christina Matz Carnes. 2016. Resource-based theory in operations management research. *Journal of Operations Management* 41: 77–94. [CrossRef]

Hopwood, Anthony G. 2009. The economic crisis and accounting: Implications for the research community. *Accounting, Organizations and Society* 34: 797–802. [CrossRef]

Hu, Bo, Ulrike Leopold-Wildburger, and Jürgen Strohhecker. 2017. Strategy Map Concepts in a Balanced Scorecard Cockpit Improve Performance. *European Journal of Operational Research* 258: 664–76. [CrossRef]

Humphreys, Kerry A., and Ken T. Trotman. 2022. Judgment and decision making research on CSR reporting in the COVID-19 pandemic environment. *Accounting & Finance* 62: 739–65.

Instituto Nacional de Estatística. 2019. 250 Maiores Empresas Exportadoras. Available online: https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_base_dados (accessed on 15 October 2020).

Ittner, Christopher D., and David F. Larcker. 2001. Assessing empirical research in managerial accounting: A value-based management perspective. *Journal of Accounting and Economics* 32: 349–410. [CrossRef]

Joshi, Satish, and Yue Li. 2016. What is corporate sustainability and how do firms practice it? A management accounting research perspective. *Journal of Management Accounting Research* 28: 1–11. [CrossRef]

Jukka, Tapio. 2021. Does business strategy and management control system fit determine performance? *International Journal of Productivity and Performance Management* 72: 659–78. [CrossRef]

Kaplan, Robert S., and David P. Norton. 1993. Putting the Balanced Scorecard to Work. *Harvard Business Review* 71: 134–47.

Kaplan, Rober. S., and David P. Norton. 1996. *The Balanced Scorecard: Translating Strategy into Action*. Boston: Harvard Business School Publishing.

Kaplan, Robert S., and David P. Norton. 2001. Leading change with the balanced scorecard. *Financial Executive* 17: 64–66.

Kaplan, Robert S., and David P. Norton. 2005. The balanced scorecard: Measures that drive performance. *Harvard Business Review* 83: 172–80.

Kaplan, Robert S., and David P. Norton. 2007. Using the Balanced Scorecard as a strategic management system. *Harvard Business Review* 85: 150–61.

Kaplan, Sarah. 2020. Why Social Responsibility Produces More Resilient Organizations. *MIT Sloan Management Review* 62: 85–90.

Kober, Ralph, and Paul J. Thambar. 2021. Coping with COVID-19: The role of accounting in shaping charities' financial resilience. *Accounting, Auditing & Accountability Journal* 34: 1416–29.

König, Andreas, Lorenz L. Graf-Vlachy, Jonathan Bundy, and Laura M. Little. 2020. A blessing and a curse: How CEOs' trait empathy affects their management of organisational crises. *Academy of Management Review* 45: 130–53. [CrossRef]

Laguir, Issam, Shivam Gupta, Indranil Bose, Rebecca Stekelorum, and Lamia Laguir. 2022. Analytics capabilities and organizational competitiveness: Unveiling the impact of management control systems and environmental uncertainty. *Decision Support Systems* 156: 113744. [CrossRef]

Langfield-Smith, Kim. 1997. Management control systems and strategy: A critical review. *Accounting, Organizations and Society* 22: 207–32. [CrossRef]

Lebas, Michel. 1994. Managerial accounting in France Overview of past tradition and current practice. *European Accounting Review* 3: 471–88. [CrossRef]

Leoni, Giulia, Alessandro Lai, Riccardo Stacchezzini, Ileana Steccolini, Stephen Brammer, Martina Linnenluecke, and Istemi Demirag. 2021. Accounting, management and accountability in times of crisis: Lessons from the COVID-19 pandemic. *Accounting, Auditing and Accountability Journal* 34: 1305–19. [CrossRef]

Lodhia, Sumit, Umesh Sharma, and Mary Low. 2021. Creating value: Sustainability and accounting for non-financial matters in the pre- and post-corona environment. *Meditari Accountancy Research* 29: 185–96. [CrossRef]

Lozano, Rodrigo, Angela Carpenter, and Donald Huisingh. 2015. A review of 'theories of the firm' and their contributions to Corporate Sustainability. *Journal of Cleaner Production* 106: 430–42. [CrossRef]

Lueg, Rainer, and Ronny Radlach. 2016. Managing sustainable development with management control systems: A literature review. *European Management Journal* 34: 158–71. [CrossRef]

Malmi, Teemu, and David A. Brown. 2008. Management control systems as a package: Opportunities, challenges and research directions. *Management Accounting Research* 19: 287–300. [CrossRef]

Malmi, Teemu, David S. Bedford, Rolf Brühl, Johan Dergård, Sophie Hoozée, Otto Janschek, and Jeanette Willert. 2022. The use of management controls in different cultural regions: An empirical study of Anglo-Saxon, Germanic and Nordic practices. *Journal of Management Control* 33: 273–334. [CrossRef]

Manuel, Timothy, and Terri L. Herron. 2020. An ethical perspective of business CSR and the COVID-19 pandemic. *Society and Business Review* 15: 235–53. [CrossRef]

Maqbool, Shafat. 2019. Does corporate social responsibility lead to superior financial performance? Evidence from BSE 100 index. *Decision* 46: 219–31.

Marôco, João. 2010. *Structural Equation Analysis: Theoretical Fundamentals, Software & Applications*. Pêro Pinheiro: ReportNumber, Lda.

Martins, Adelaide, Delfina Gomes, and Manuel Castelo Branco. 2020. Managing corporate social and environmental disclosure: An accountability vs. impression management framework. *Sustainability* 13: 296. [CrossRef]

Melgarejo, Mauricio, Carlos Rodríguez, and Jose Torres. 2021. Effects of the adoption of management control practices on profitability: Evidence from Latin America. *Revista Espanola de Financiacion y Contabilidad* 51: 1–20. [CrossRef]

Micheli, Pietro, and Matteo Mura. 2017. Executing strategy through comprehensive performance measurement systems. *International Journal of Operations and Production Management* 37: 423–43. [CrossRef]

Mio, Chiara, Sonia Baggio, Silvia Panfilo, and Antonio Costantini. 2020. CSR and management control integration. Evidence from an employee welfare plan implementation. *Management Control* S1: 151–75. [CrossRef]

Monteiro, Albertina Paula, Joana Vale, and Amélia Silva. 2021. Factors determining the success of decision making and performance of Portuguese companies. *Administrative Sciences* 11: 108. [CrossRef]

Mouritsen, Jan, Isabel Pedraza-Acosta, and Sof Thrane. 2022. Performance, risk, and overflows: When are multiple management control practices related? *Management Accounting Research* 55: 100796. [CrossRef]

Müller-Stewens, Benedikt, Sally K. Widener, Klaus Möller, and Jan-Christoph Steinmann. 2020. The role of diagnostic and interactive control uses in innovation. *Accounting, Organizations and Society* 80: 101078. [CrossRef]

Munck, Jan Christoph, Alexander Tkotz, Sven Heidenreich, and Andreas Wald. 2020. The performance effects of management control instruments in different stages of new product development. *Journal of Accounting & Organizational Change* 16: 259–84.

Nartey, Edward, Francis K. Aboagye-Otchere, and Samuel Nana Y. Simpson. 2021. Management control and supply chain operational performance of public health emergency to pandemic control. *Management Research Review* 45: 398–435. [CrossRef]

Oliveira, Cidália, Adelaide Martins, Mark Anthony Camilleri, and Shital Jayantilal. 2021. Using the balanced scorecard for strategic communication and performance management. In *Strategic Corporate Communication in the Digital Age*, 1st ed. Edited by Mark Anthony Camilleri. Bingley: Emerald Publishing Limited, pp. 73–88. [CrossRef]

Passetti, Emilio, Massimo Battaglia, Lara Bianchi, and Nora Annesi. 2021. Coping with the COVID-19 pandemic: The technical, moral and facilitating role of management control. *Accounting, Auditing and Accountability Journal* 34: 1430–44. [CrossRef]

Pavlatos, Odysseas, and Hara Kostakis. 2022. Exploring the Relationship between Target Costing Functionality and Product Innovation: The Role of Information Systems. *Australian Accounting Review* 32: 124–40. [CrossRef]

Penrose, Edith. 1959. *The Theory of the Growth of the Firm*. New York: John Wiley.

Petera, Petr, Jaroslav Wagner, and Renáta Pakšiová. 2021. The influence of environmental strategy, environmental reporting and environmental management control system on environmental and economic performance. *Energies* 14: 4637. [CrossRef]

Pondeville, Sophie, Valérie Swaen, and Yves De Rongé. 2013. Environmental management control systems: The role of contextual and strategic factors. *Management Accounting Research* 24: 317–32. [CrossRef]

Porter, Michael E. 1980. *Competitive Strategy: Techniques for Analyzing Industries and Companies*. New York: The Free Press.

Porter, Michael E., and Mark R. Kramer. 2006. The link between competitive advantage and corporate social responsibility. *Harvard Business Review* 84: 78–92. [PubMed]

Rahi, ABM Fazle, Jeaneth Johansson, Arne Fagerström, and Marita Blomkvist. 2022. Sustainability Reporting and Management Control System: A Structured Literature Review. *Journal of Risk and Financial Management* 15: 562.

Rehman, Shafique Ur, Anam Bhatti, Sascha Kraus, and João J. M. Ferreira. 2020. The role of environmental management control systems for ecological sustainability and sustainable performance. *Management Decision* 59: 2217–37. [CrossRef]

Rigby, Darrell. 2001. Management Tools and Techniques: A survey. *California Management Review* 43: 139–60. [CrossRef]

Robinson, Michael, Anne Kleffner, and Stephanie Bertels. 2011. Signaling sustainability leadership: Empirical evidence of the value of DJSI membership. *Journal of Business Ethics* 101: 493–505. [CrossRef]

Sabahi, Sima, and Mahour M. Parast. 2020. Firm innovation and supply chain resilience: A dynamic capability perspective. *International Journal of Logistics Research and Applications* 23: 254–69. [CrossRef]

Sageder, Martina, and Birgit Feldbauer-Durstmüller. 2019. Management control in multinational companies: A systematic literature review. *Review of Managerial Science* 13: 875–918. [CrossRef]

Sandelin, Mikko. 2008. Operation of management control practices as a package—A case study on control system variety in a growth firm context. *Management Accounting Research* 19: 324–43. [CrossRef]

Sarker, Md Rayhan, Syed Mithun Ali, Sanjoy Kumar Paul, and Ziaul Haque Munim. 2021. Measuring sustainability performance using an integrated model. *Measurement* 184: 109931. [CrossRef]

Schaltegger, Stefan, Roger Burritt, Dimitar Zvezdov, Jacob Hörisch, and Joanne Tingey-Holyoak. 2015. Management roles and sustainability information. Exploring corporate practice. *Australian Accounting Review* 25: 328–45. [CrossRef]

Schumacker, Randall Richard, and Richard G. Lomax. 2016. A Beginner's Guide to Structural Equation Modeling, 4th ed.New York: Routledge.

Searcy, Cory. 2012. Corporate sustainability performance measurement systems: A review and research agenda. *Journal of Business Ethics* 107: 239–53. [CrossRef]

Shaulska, Larysa, Sergey Kovalenko, Shamsiddin Allayarov, Oleksii Sydorenko, and Alla Sukhanova. 2021. Strategic enterprise competitiveness management under global challenges. *Academy of Strategic Management Journal* 20: 1–7.

Simons, Robert. 1990. The role of management control systems in creating competitive advantage: New perspectives. *Accounting, Organizations and Society* 15: 127–43. [CrossRef]

Surroca, Jordi, Josep A. Tribó, and Sandra Waddock. 2010. Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal* 31: 463–90. [CrossRef]

Taber, Keith S. 2018. The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education* 48: 1273–96. [CrossRef]

Traxler, Albert Anton, Daniela Schrack, and Dorothea Greiling. 2020. Sustainability reporting and management control—A systematic exploratory literature review. *Journal of Cleaner Production* 276: 122725. [CrossRef]

Vale, José, Joanaa Amaral, Luis Abrantes, Carmen Leal, and Rui Silva. 2022. Management accounting and control in higher education institutions: A systematic literature review. *Administrative Sciences* 12: 14. [CrossRef]

Van der Stede, Wim. A. 2003. The effect of national culture on management control and incentive system design in multi-business firms: Evidence of intracorporate isomorphism. *European Accounting Review* 12: 263–85. [CrossRef]

Wijethilake, Chaminda, Rahat Munir, and Ranjith Appuhami. 2017. Strategic responses to institutional pressures for sustainability: The role of management control systems. *Accounting, Auditing & Accountability Journal* 30: 1677–710.

Wijethilake, Chaminda, Rahat Munir, and Ranjith Appuhami. 2018. Environmental innovation strategy and organizational performance: Enabling and controlling uses of management control systems. *Journal of Business Ethics* 151: 1139–60. [CrossRef]

Wu, Minyu, and Kun Kong. 2021. Business strategies responding to COVID-19: Experience of Chinese corporations. *Corporate Governance* 21: 1072–99. [CrossRef]

Yoshikuni, Adilson Carlos, and Alberto Luiz Albertin. 2018. Effects of strategic information systems on competitive strategy and performance. *International Journal of Productivity and Performance Management* 67: 2018–45. [CrossRef]

Yuan, Ke-Hai, and Peter M. Bentler. 2001. Effect of outliers on estimators and tests in co-variance structure analysis. *British Journal of Mathematical and Statistical Psychology* 54: 161–75. [CrossRef] [PubMed]

Zizlavsky, Ondrej. 2014. The Balanced Scorecard: Innovative Performance Measurement and Management Control System. *Journal of Technology Management & Innovation* 9: 210–22.