IX SINGEP
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1. Introduction

Environmental, social, and governance (ESG) criteria have been consistently cited as an advantage for corporate performance owing to at least three separate dimensions. First, ESG has been empirically shown to be positively related to financial aspects, with longstanding, stable results stemming from decades of research (Friede et al., 2015). Secondly, these steady results backpropagate to decision-makers who concentrate power to implement and expand on the internal impacts of ESG on organizations (Amel-Zadeh, & Serafeim, 2018). Third, organizational results and internal validation push ESG disclosure to be externally understood as a token of legitimacy, influencing firm value and long-term performance (Al Fatemi et al., 2018). This threefold scenario points to ESG as a potential asset during fat years. On the other hand, lean years may cause a shift in the causes for and roles of ESG internally. While research on the interplay of ESG and crises has started to emerge, fueled by the past financial crises and the current Covid-19, its results are somewhat inconsistent, as results point to ESG as both shielding firms and not from crises (Demers et al., 2021; Broadstock et al., 2021). Thus, to shed light on this scenario, this paper looks at the relationship between internal strategic aspects (threat rigidity, exploration, exploitation) and ESG, anchored in market turbulence.

Firms use all sorts of resources beyond financial ones to function - including natural, social, human, and intellectual (Kotsantonis & Serafeim, 2019). This led to the emergence of a few frameworks that organize information in these dimensions - such as Socially-responsible investing (SRI), Impact Investing (II) and Environmental, Social, and Governance (ESG) (Caplan et al., 2013). While these three do not have the same goal or rationale underneath, ESG has surfaced in the last decade as the *de facto* indicator to tie such information to finances due to strong pressure from the United Nations' Principles for Responsible Investment (Galbreath, 2013), the development of an ESG-related assessment industry (Avetisyan & Hockerts, 2017) and consequent acceptance from firms and investors (Pollard et al., 2018). As such, whereas ESG is more of an investor guide, it is more often than not taken as a knowledge tool for valuation and a strong equity indicator (Breedt et al., 2019). This mostly unquestioned acceptance of ESG, thus, has made it a proxy to stability and legitimacy as well as a predictor of financial performance (from mimetic to normative pressures) (Leins, 2020). Yet since ESG does not deal specifically with core business finance, while hinting at some of the firm's capabilities, interests and investment portfolios, it ends up used in a speculative manner (Ferriani & Nattoli, 2020).

This points to a scenario of inconsistent results as ESG is suggested as both a key performance indicator while substantial research dismisses it as a proxy (Lanza et al., 2020). ESG is perceived as a fully integrated tool to communicate internal state of affairs to external shareholders, yet Kotsantonis et al. (2016) list several myths surrounding ESG and its role as a proxy for corporate and financial performance. Most of these myths work on the assumption of ESG as a forward mechanism (geared towards external stakeholders) and not from an inner standpoint. This can be figured out from inconsistencies in the available scoring solutions since some criteria such as investment and carbon credits can be measured, but many aspects - those that convey the gut of the business - are, arguably, subjective, fuzzy and prone to misinterpretation (Allen, 2018). In addition, since ESG relies on voluntary information, their disclosure is likely to be distorted (deliberately or not) by information providers and employed as a silver bullet to help firms' valuation (Lanza et al., 2020). On top of this, ESG scores may be biased since it is disproportionately employed by the largest firms, with many large ones being frequently neglected, along with the vast majority of SMEs, and is also concentrated in a few key industries (Hübel & Scholtz, 2020). However, more importantly, crises play an undefined role on ESG.

IX SINGEP

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Thus, we aim at looking inside the crisis blackbox and its relationship with ESG. We chose a single industry (information technology - IT) as a focal point for a few reasons. First, past studies demonstrate that industries have largely diverging sets of data with varying amounts of ESG-neglecting business (Kotsantonis et al. 2016), making comparisons difficult (Hübel & Scholtz, 2020). Second, IT is an industry with many incumbents but also with many startups quickly rising through the ranks, which may account for the overweight in the risk assessment of ESG in IT compared to other industries (Alessandrini & Jondeau, 2020). Third, the technology sector as a whole consistently ranks among the top five industries in commitment to ESG standards (Amel-Zadeh, & Serafeim, 2018). Then, we developed a survey to collect data including commercial and technological turbulence, threat rigidity and exploration/exploitation along with ESG from 120 IT companies in Brazil. In the data collection process, we were assisted by the board of the Brazilian Association of Software Companies (ABES). We later analyzed the data using partial least square structural equation modelling (PLS-SEM).

Results point to threat rigidity as the key construct in the model since it is significantly related to all others. It is positively related to exploration and negatively related to exploitation. Turbulence to threat rigidity is the most statistically significant relationship in the model. As for the duo exploitation/exploration, exploitation does not significantly affect ESG and exploration displays a complex relationship - it is affected by threat rigidity but not turbulence, and affects ESG. This points to both exploration and ESG being closely related to the strategic level of cognition and organizational sensemaking. These results imply that exogenous shocks are not the main source of change during the crisis, but the interpretation of these shocks by the upper levels of organizations. Therefore, turbulence displayed a minor role and threat rigidity was rather directly related to changes in exploration, exploitation and ESG. In addition, within the IT industry, ESG is positively affected by exploration, but the exploitation counterpart has no significant result. As such, this paper contributes to the development of the literature by exploring an internal perspective of ESG during crises, and analyzing its internal cognitive-strategic mechanisms.

2. Literature review and hypotheses development

Every market has its own intricacies and trends and organizations within them learn to interpret the environment and industry-wise risk assessment is at the core of behavioral strategy, being part of Cyert and March's (1963) model. Taking this model as a standpoint, decision makers are continuously tasked with gauging ratios between performance and aspiration while considering organizational risk tolerance (Gavetti et al., 2017). However, this model assumes normal industry conditions, in which the rate of change is gradual. This scenario is also built on the assumption that decision-makers employ refined strategic problem formulation procedures that allow them to monitor market conditions with minimal distortions in sensemaking (Baer et al., 2013).

These assumptions, however, fail in highly uncertain scenarios. Some markets naturally display higher degrees of volatility that foster compensation mechanisms, but these may not be enough to counterbalance conflicting information, lethargic reactions and general panic during crises, particularly at the strategic level of organizations (Christianson & Barton, 2021). As such, organizations tend to equate abnormal situations resulting from exogenous shocks as threats, impairing clear decisions and impacting both short- and long-term performance, a condition known as threat rigidity (Staw et al., 1981).

However, extant literature on threat rigidity offers no help in understanding the unlike case of a growing industry within a more generalized, widespread crisis - such as the case of IT

IX SINGEP
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during the current Covid-19 crisis. While on one hand, performance (particularly in the financial and corporate dimensions) has remained unscathed or even improved (Ntasis et al., 2021), the highly unstable environment still affects sensemaking and consequent decision-making processes. Threat rigidity assumes that external (or even internal) threats set the company in defense mode, increasing decision concentration at the top, decreasing/cutting the flow of top-down information, and muddling information processing and decision procedures (Sarkar & Osiyevskyy, 2018), yet what kind of 'defense mode' happens in this mixed scenario is unheard of.

Instability may, thus, force companies to reinforce their positioning and show stakeholders that they still are a viable option through unstable times. Consequently, they may seek out market signaling mechanisms that imply that they can withstand the crisis with normal levels of service, and that they do not intend to add uncertainty to the mix by suddenly changing strategic operationalization. Using this perspective, Martins et al. (2020) have found that during crises, organizations with high entrepreneurial orientation keep exploration-related procedures, while market orientation-focused organizations tend to switch to exploitation approaches. In addition, environmental turbulence tends to stimulate innovation and business performance in exploration-geared organizations (Turulja & Bajgoric, 2019). This makes ESG an ideal tool to signal markets of stability and continuity, since ESG is not a standardized valuation tool and is prone to being employed in a speculative fashion (Ferriani & Nattoli, 2020; Leins, 2020) and turbulent scenarios may push ESG as a compensation mechanism. Thus,

H1a: Environmental turbulence is positively related to threat rigidity
H1b: Environmental turbulence is positively related to exploration
H1c: Environmental turbulence is positively related to exploitation
H1d: Environmental turbulence is positively related to ESG

Threat rigidity makes companies more conservative and seek 'proven' strategies, which means they will see uncertain investments as undesirable during crises (Osiyevskyy et al., 2020). In addition, it sets the top management in a state of cognitive confusion, which means there is a severely diminished flow of information both on formal and informal channels, making them assume the most conservative state possible, which means going back to tried and tested 'recipes' (Tsai & Luan, 2016). This leads to conservativeness of resources and reinforcement of core capabilities, namely switching (partially or entirely) from exploration to exploitation (Martins et al., 2020). Specifically, for the IT sector, the Covid-19 crisis burdened IT services in levels not seen before (Carmine et al., 2021), which supports the argument that IT firms concentrated efforts on core capabilities. While we posit that turbulence leads to ESG disclosure efforts - due to ESG becoming part of bureaucratic responses, upper management may feel uneasy to show a firm's true colors during a crisis, in an attempt at controlling information flows (Staw et al., 1981; Barnett & Pratt, 2000; Ploeg et al., 2019). Thus,

H2a: Threat rigidity is negatively related to exploration
H2b: Threat rigidity is negatively related to ESG
H2c: Threat rigidity is positively related to exploitation

Exploration is closely related to innovative approaches, meaning organizations are pressured to communicate / disclose as much information as possible about their situation, to maintain investors engaged in their strategies (Manolopoulos et al., 2018). On the other hand, exploitation means organizations will restrain possible costs (Linhart et al., 2018), which points

IX SINGEP

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to impacts on ESG spending and disclosure. ESG is also affected by institutional inefficiencies, in that evidence points to organizations keeping their fair play in developed markets while behaving more irresponsibly in emerging markets (Salsbery, 2021). This corroborates what Martins et al. (2020) found about differences in behavior and reactions of multinational companies' subsidiaries in emerging markets as diverging from their home markets. Thus, we posit that:

H3: Exploration is positively related to ESG
H4: Exploitation is negatively related to ESG

3. Method

To test the proposed model, we employed partial least square structural equation modelling (PLS-SEM) as it is a consistent method for model proposition and testing, especially considering untried relationships in complex scenarios (Hair et al., 2016) among constructs (Matthews et al., 2017) and when verifying intertwined relationships is unachievable through conjoint traditional regressions (Henseler et al., 2016). PLS-SEM has also been shown to deal adequately with non-normal data when compared to other SEM methods (Hair et al., 2011) and its results are very close to covariance-based SEM methods when samples are large (Hair et al., 2017a). In addition, using PLS-SEM is an established trend in both management and IT literatures (Hair et al., 2017b; Mancha and Shankaranarayanan, 2020; Hair et al., 2020).

We developed a survey questionnaire to measure the constructs included in the model, built from validated scales: to measure turbulence (TUR) we used the scale from Miller (1987), we used the threat rigidity (THR) scale (Daly et al., 2011) adapted in Martins et al. (2020), the exploration (XPL) and exploitation (XPR) dimensions from the scale in Mom et al. (2007). To measure ESG, items were developed from an adaptation of the United Nations Principles for Responsible Investment (UN, 2021). These were collected using 5-point Likert scales and several detailed additional control variables were employed to qualify respondents, organization, crisis perception in the IT market, and ESG knowledge, and many others. Due to conference size limitations, the questionnaire is not included in this paper, but is available from authors upon request. The questionnaire was pre-tested among a group of researchers and practitioners, and feedback was incorporated in the final version.

Respondents were recruited online. The Brazilian Association of Software Companies (ABES) and other online professional communities were instrumental in distributing the questionnaire to their associates and making it available in their social media for the external community. The questionnaire provided information about the researchers and their institutional affiliations, confidentiality, anonymization, data protection and handling procedures, as well as informing them about legal protection under local legislation. Respondents available in the public list of ABES associated companies were reminded to complete the survey during a 6-week period. The questionnaire informed respondents of direct communication channels to each separate researcher and encouraged them to establish contact if any needs or doubts arise.

4. Results

Sampling

Out of 318 questionnaires sent, 198 responses were discarded for reasons such as incomplete answer, under or over 3 standard deviations of the average time for completion, or inadequate response in the final verification question. Thus, 120 were considered for subsequent analyses (37.74%), with an average time for completion of 10.2 minutes. Since we intended to

IX SINGEP

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understand the role of internal mechanisms on ESG efforts, a final question was proposed in which respondents were asked to tell the purpose of the questionnaire in their point of view. Answers ranged from generic crisis, perspectives for post crisis, crisis in IT, organization restructuring, to strategic planning, and a few answers that hinted on the relationship between crisis and ESG were discarded owing to possible social desirability. For the proposed model (maximum four arrows pointed at a construct - ESG), to obtain a minimum R^2 of 0.10 at 10% significance 111 responses are needed (Hair et al., 2016), which our sample covers. It should be noted that this is an ongoing research and data collection is still happening as of the time of submission of this paper and the sample is presented only for preliminary analyses.

Respondents are not balanced in terms of gender (males = 79.89%, females = 15.76%, others / non-response = 4.25%), with an average age of 44.72 years (s.d. = 13.74). They are concentrated on the upper management (58.70%) with significant minorities from middle management (26.63%) and operational personnel (14.67%). Experience (measured in years working in IT) was very high, with 20 or over years being 41.85% and 10 to 20 years 27.72% of the sample. Organizations are split between national (51.63%), international (19.03%) and regional (29.34%) operations. Respondents were asked about the impact of the crisis on their organizations (using a 5-point item from none to extreme) with an average of 2.9 (s.d = 1.4). The were also asked about the current perception of crisis within the organization in phases - unchanged (8.16%), worsening (10.88%), still in the peak of the crisis (25.17%), improving (46.26%) and back to normality (9.52%). Respondents were also asked to self-report knowledge on ESG (none = 8.62%; small = 28.45%; medium = 41.38%; high = 20.69% and specialist = 0.86%).

As for organizations' sizing, personnel were reported as follows: under 100 (66.30%), between 100 and 499 (17.39%) and 500 or over (16.31%). Net sales billed reported were of under R$ 2 million (36.47%), over 2 and under 10 million (24.40%), over 10 and under 50 million (24.46%), and 50 million or over (14.67%). They were classified in three main categories - service (49.33%), solutions (37.78%) and market (12.89%). In the service category, the main axes are consulting (29.70%), customized development (15.84%), and software/infrastructure as a service (SaaS/IaaS) (9.90%). In the solutions category, the largest groups are process automation (17.50%), enterprise resource planning (ERP) (12.50%), and business intelligence (BI) (6.25%). The largest groups in the market segment are development for education (22.22%), manufacturing (11.11%) and finance (11.11%).

PLS-SEM model

To perform the analysis of the proposed hypotheses, we employed SmartPLS 3. The first pieces of information needed to validate the model are those that provide evidence of the reliability of the *outer* model - i.e., the indicators and their composite constructs (Peterson and Kim, 2013). The model, as planned, is reflective, which means that the constructs are functions of the items measured (Peterson et al., 2017). The basic measurements employed in the model assessment are as follows - Average Variance Extracted (AVE), Composite Reliability (CR) and Cronbach's alpha, along with R^2 - see Table 1. The indices confirm the model reliability and that the constructs are both self-contained and stable.

	AVE	CR	R^2	CA
TUR	0.57	0.9		0.88

THR	0.68	0.94	0.38	0.92
XPR	0.77	0.96	0.31	0.95
XPT	0.61	0.92	0.33	0.90
ESG	0.79	0.96	0.29	0.95

Table 1. Model assessment measurements

In addition, to analyze convergent validity, we have used cross-loadings and comparison with each construct - see Table 2. Each item presents a higher correlation with its own construct than others, which is a sign of the reliability of the pairing between indicators and the constructs of which they comprise. Once the constructs are analyzed and considered reliable, the measurement model is deemed adequate for further analysis.

	TUR	THR	XPR	XPT	ESG
TUR1	**0.84**	0.66	-0.32	0.44	-0.08
TUR2	**0.84**	0.49	-0.29	0.31	0.05
TUR3	**0.81**	0.48	-0.22	0.24	0.13
TUR4	**0.60**	0.23	0.05	0.07	0.23
TUR5	**0.62**	0.28	0.08	0.16	0.18
TUR6	**0.49**	0.21	0.23	0.02	0.26
THR1	0.54	**0.80**	-0.51	0.54	-0.04
THR2	0.45	**0.76**	-0.38	0.37	-0.24
THR3	0.55	**0.75**	-0.34	0.41	-0.26
THR4	0.53	**0.79**	-0.31	0.37	-0.19
THR5	0.45	**0.84**	-0.44	0.52	-0.30
THR6	0.41	**0.82**	-0.50	0.49	-0.32
XPR1	-0.06	-0.30	**0.80**	-0.46	0.31
XPR2	-0.14	-0.39	**0.80**	-0.52	0.34
XPR3	-0.23	-0.53	**0.87**	-0.53	0.40
XPR4	-0.22	-0.50	**0.87**	-0.40	0.34
XPR5	-0.18	-0.46	**0.88**	-0.43	0.39
XPR6	-0.23	-0.49	**0.90**	-0.49	0.40
XPT1	0.46	0.68	-0.39	**0.71**	-0.19
XPT2	0.18	0.36	-0.37	**0.72**	-0.03
XPT3	0.19	0.39	-0.52	**0.83**	-0.14
XPT4	0.20	0.25	-0.38	**0.74**	-0.09
XPT5	0.24	0.31	-0.40	**0.74**	-0.14
XPT6	0.11	0.31	-0.40	**0.70**	-0.10
ESG1	-0.04	-0.31	0.43	-0.17	**0.82**
ESG2	0.18	-0.21	0.33	-0.05	**0.91**
ESG3	0.28	-0.06	0.21	-0.11	**0.81**
ESG4	0.11	-0.21	0.41	-0.14	**0.91**
ESG5	-0.01	-0.38	0.44	-0.26	**0.87**

Table 2. Model assessment measurements

IX SINGEP

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ISSN: 2317-8302

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Next in sequence, the inner model (i.e., the structural part of the model or the relationships among the constructs) is tested. This structural model comprises *paths* that test the hypotheses, which, in PLS-SEM are operationalized via T-tests using bootstrapped standard errors. According to Hair et al. (2016), values are assumed as follows - the critical *t*-value for significance levels of 5% is of 1.96. For other values such as 1 %, it is 2.57 and for 10% is 1.65, respectively. Cohen's indicator (f2), is used to evaluate the importance of each construct in the final model (i.e. how much it contributes to explaining the model), and the obtained levels are adequate (TUR = 0.34; THR = 0.37; XPL = 0.22; XPT = 0.11; ESG = 0.24).

The final model, after items dropped and all analyses performed is found in Figure 1. Dotted arrows mean non-significant hypotheses. Values accompanying the arrows mean *t*-values and betas, respectively. Three hypotheses were not considered significant in the final model. These are either related to turbulence, H1b (TUR-XPR), H1d (TUR-XPT), or exploitation, H4 (XPT - ESG). The hypothesis between turbulence and threat rigidity has the strongest relationship in the model (10.22) and threat rigidity, thus, plays a pivotal role in the model having all hypotheses related to this construct significant.
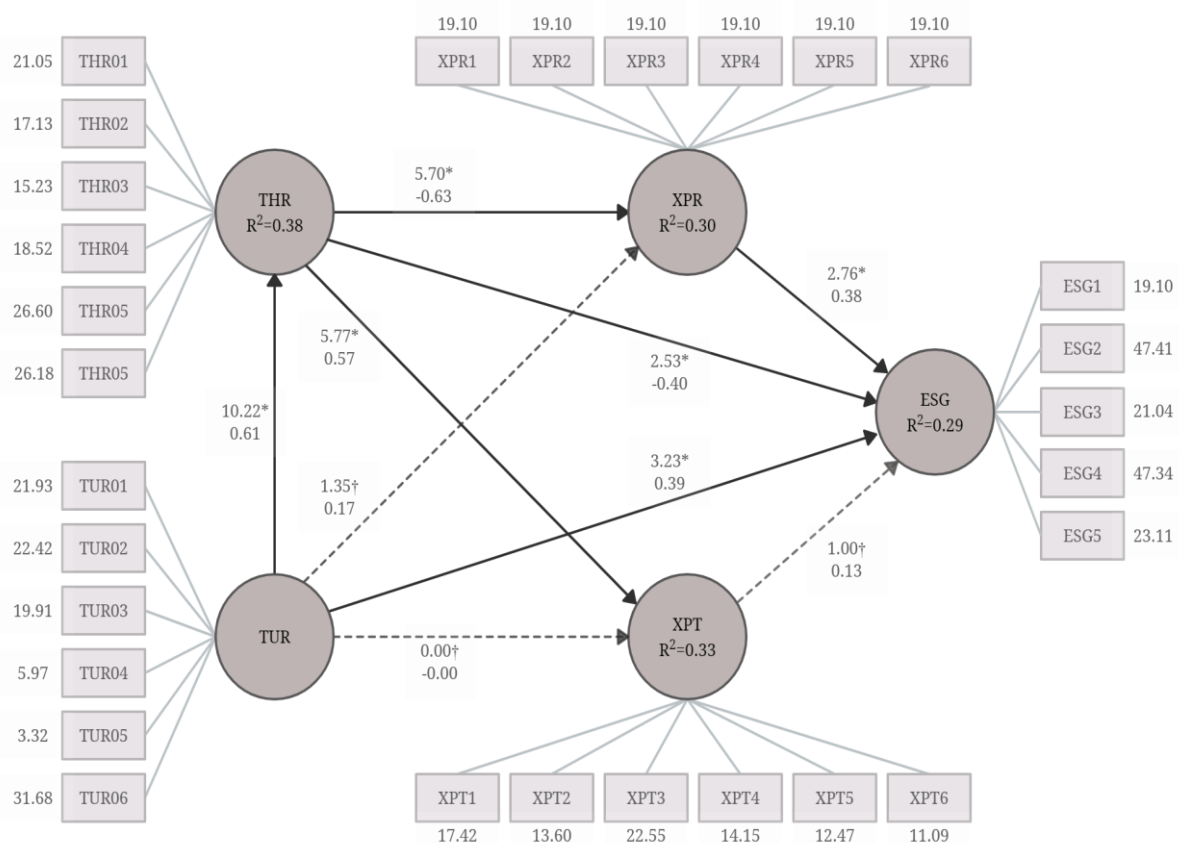

Figure 1. Final model

5. Discussion

Research on ESG focuses on its use as a tool for valuation, risk assessment and portfolio performance, leaving much to ask about the internal mechanisms that foster ESG disclosure

IX SINGEP

Simpósio Internacional de Gestão, Projetos, Inovação e Sustentabilidade
International Symposium on Management, Project, Innovation and Sustainability
ISSN: 2317-8302

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(Bizoumi et al., 2019). This raises the argument that ESG is neither an adequate proxy for internal assessment (being highly correlated with firm size-related variables) nor competent in yielding precise information for investors (Drempetic et al., 2019). As such, the main driver for ESG acceptance is risk assessment rather than business opportunity assessments (La Torre et al., 2021), being prone to market speculation (Ferriani & Nattoli, 2020), especially during crises when ESG may be (deliberately or not) distorted to fit valuation expectations (Leins, 2020).

This brings us to our study goal which is to look at ESG from the inside during a crisis. In this sense, the current Covid-19 crisis offers an inimitable situation to collect data on organizations' reactions to turbulent markets. Turbulence sets organizations on survival mode which causes them to react in an inadequate manner (Heyden et al., 2020). This turns on a 'red light' on decision-makers' minds, switching a normal sensemaking process into a continuous war room situation affecting quantity and quality of attention to the ongoing crisis, reconciling conflicting information, as well as constraints and delays in reaction to the uncertainty (Christianson & Barton, 2021). In addition, since crises always introduce unknown elements or dimensions, organizations tend to revert to past successful practices that may harm them due to poor forecasting (Martins et al., 2020), such as attempting to balance imposing harsh cuts inside and garnering support from the external environment (Giones, 2020).

Turbulent times change organizational perspective and shift priorities. This is the rationale behind most changes in the last two years, especially if the impacts of Covid-19 are considered. While technological or commercial instability in markets happens regularly, highly compounded, threatening situations such as the one in course are uncommon and go beyond previously studied paradigms. Our results provide evidence to previous theoretical propositions in that crises (more than mere threats) are directly responsible for high levels of rigidity (James et al. 2012). This is especially worth mentioning as most of the literature treat threats as particularly localized industry-level circumstances, and situations as the current Covid-19 crises provides a whole new level of stress-inducing mechanisms. Current literature suggests that during a crisis, an organization's strategic level reacts in a passive manner and is prone to decision constraints such as individual and collective reasoning of the scenario that leads to short-term, overconfident decisions (Merendino & Sarens, 2020). Extant literature posits that turbulence leads to overconservative behavior (Martins et al., 2020) but this claim has only found partial confirmation in our model.

Three main reasons for that emerge. The first one is obvious - for a significant part of the IT market, the current crisis was an opportunity for growth or, at least, consolidation of market shares. Also, many tech startups found a niche or have been exposed to larger markets due to the constraints imposed by lockdowns and local regulations. This, however, does not mean it was an easy period and that it does not take its toll on organizational sensemaking. Disproportionate demand brings on a plethora of its own consequent problems - 'all hands on deck' mentality (teams' overtime and crunch) (Cote et al., 2021) and demand continuity uncertainty (Gregurec et al., 2021) are examples that also induce stress on decision-makers. The second reason is endemic to the IT market - hypervigilant behavior. Hypervigilance may be considered a waste of resources and processes during normal times, but evidence suggests that a heightened, continuous assessment of the environment pays off during crises. For instance, technology organizations that suffered through past financial crises introduced continuous sensemaking mechanisms that allow them to speed up reactions (Day & Schoemaker, 2020).

The third rationale is related to the incorporated use of monitoring technology. IT-focused companies natively use data analysis pipelines (such as big data feeding artificial intelligence) in their business models which helps them have an edge on uncertain scenarios (Barlette & Baillette, 2020). It has also been shown that organizations that engaged in artificial

IX SINGEP

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intelligence prior to the Covid-19 crisis had growth during the crisis (Xu et al., 2021). These also come with limitations as continuous sensemaking and big data models feed on past situations and data which may lead organizations astray during off-the-chart situations. Technology giant consulting companies such as Gartner admonish switching to small data in this scenario (Gartner, 2021).

Thus, while crisis-related turbulence has a different impact on IT, the sector still suffered the exogenous shock as our data suggests - turbulence to threat rigidity accounts for the most significant hypothesis in the whole model. In addition the data points to turbulence leading to ESG, which reflects the need of signaling external stakeholders of internal stability, continuity and as a proxy for performance through critical periods. On the other hand, H1c and H2b are seemingly contradictory (turbulence leads to ESG, but threat rigidity refrains from ESG). This may be explained by the fact that one (H1c) is a company-geared decision (i.e., bureaucratic, established mechanism) while the other (H2b) stems from behavioural aspects (i.e., high echelon reaction, not necessarily implemented mechanisms).

In addition, the two most important hypotheses in this sense (turbulence leads to exploration / exploitation) were not significant yet turbulence leading to ESG focus was significant at a 1% level. This points to turbulence muddling internal mechanisms of sensemaking and decision (no clear connection between turbulence and internal actions) but fostering intention to engage in surface isomorphism (Zucker 1987:455) or "ceremonial conformity" (Greenwood et al., 2008:04). The items most correlated to the ESG construct are those linked to public disclosure of information, which may be an attempt at displaying orderliness or as a mechanism of assurance of confidence.

Second, while the idea that organizational-level constructs such as threat rigidity is related to organizational exploration/exploitation has been cited before (Martins et al., 2020), this idea has not been tested before. Our results point to a scenario where organizations have found themselves in frantic reactions, calling from primeval instincts of self-preservation, which can be observed by retrenching to cost-cutting - i.e, both positive exploitation intention and negative exploration intention significant at a 1% level. In the same sense, threat rigidity also affects ESG.

6. Conclusions, limitations and practical implications

Crisis literature points to threat rigidity as a key trigger during reaction to crisis, leading organizations to display impaired, inadequate responses to exogenous shocks. However, current literature does not offer a theoretical basis to understand how growing organizations will behave when they are not negatively implicated in the crisis but associated with. This presents a scenario to explore the interplay of threat rigidity as a partial trigger in positively performing firms. In parallel, ESG criteria have been long incorporated in strategic valuation of firms, yet this foundation still merits research, particularly from an internal perspective. The current crisis provides a unique opportunity to understand how information processing and reaction happen at an organizational level.

This paper approached the internal mechanisms of ESG by collecting data on behavioral reactions within IT firms during the current Covid-19 crisis. While the current research is still in the data collection phase, preliminary results point to threat rigidity being the central node in the model, corroborating past research on the restriction of information and constriction in control during crises, even in the case of a market sector that has largely been left unharmed by the crisis. In addition, it has also been shown that turbulence does not directly impact core strategies (exploration and exploitation), with this role relegated to upper management processes (through threat rigidity). Thus, exogenous shocks are filtered by the upper levels of

organizations. As such, this paper contributes to the development of the literature by exploring an internal perspective of ESG during crises, and analyzing its internal cognitive-strategic mechanisms.

While our goal was to analyze the ESG during crises *under the hood*, our approach was based on a behavioral perspective, specifically emanating from the threat rigidity paradigm. Many other behavioral concepts and approaches can still be employed to further refine the model proposed. In addition, other non-behavioral approaches also could provide answers to ESG being used as a strategic tool - for instance, using an institutional perspective as in Salsbery (2021).

It is also worth mentioning a few limitations. First, the current research is still ongoing, and data collection is still underway - whereas the tests performed provide adequate validation, further data may improve on the precision of the constructs, their importances and hypotheses. Several tests are still needed and subgroup comparisons will be done when the data collection phase is completed (for instance, using the categories provided by respondents, number of personnel, net sales billed, and so on). Finally, the research collected data from Brazilian IT firms, and behavior in home markets (in the case of multinationals) may differ as presented in past research (Martins et al., 2020, Salsbery, 2021).

As a managerial implication, we advise carefully analysing ESG as a strategic tool. ESG may be used to level expectations during crises and while evidence of this use still has not emerged, care must be taken as not to spoil future chances of success by using ESG in an exaggerated optimism. Raithel and Hock (2021:170) find intriguing results that "the most counterintuitive [...] is that overconforming strategies result in lower firm reputation and stock returns relative to conforming strategies. Thus, exceeding stakeholder expectations during a crisis can have unintended negative consequences". In this sense, putting too much emphasis on ESG during crises may be counterproductive to external stakeholder relations.

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