

Sustainability and short-term profitability in the agri-food sector, a cross-sectional time-series investigation on global corporations

Sustainable development and agri-food sector

317

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Abstract

Purpose – This paper aims to investigate whether being sustainable is also profitable for agri-food companies in the short-term.

Design/methodology/approach – The study analysed the impacts of sustainability multiple issues on one-year lagged return on assets, developing a longitudinal analysis focused on best and worst companies' samples for a timeframe of ten years. Notably, we performed OLS regressions on unbalanced panels data collecting overall 1,760 annual observations from 318 companies. Moreover, we examined the moderating effects of slack resources on the relationship between sustainability and the short-term firms' profitability.

Findings – The results show that the best sustainable companies usually improve future profitability. Conversely, the worst ones should prioritize efforts in specific initiatives (i.e. responsible products, eco-innovation, management and governance commitment to sustainability), which positively affect their profitability and compensate possible short-term financial losses due to CSR strategy execution and sustainable production/supply chain management. Finally, the study found mixed results regarding the moderating effects of slack resources on the scrutinized relationships.

Practical implications – The paper highlights the key environmental, social and governance aspects to be addressed for consolidating and enhancing the virtuous relationship between non-financial and financial performance, distinguishing between best and worst sustainability performers.

Originality/value – This study is among the first that decomposed sustainability in multiple micro aspects (i.e. sustainable strategy, products and processes) investigating the effects of each of them on the short-term agri-food firms' profitability.

Keywords Agri-food sustainability, Firms' short-term profitability, Slack resources, OLS, Moderation effects analysis

Paper type Research paper

1. Introduction

Agri-food and beverages (AF&B) industry clusters anthropogenic activities that strongly affect ecosystem dynamics, economic growth, and social wellbeing (Gangi *et al.*, 2020). However, food systems are facing interconnected challenges in the last decades. The increase in food demand due to world population growth is causing, in turn, severe environmental stress and health diseases (FAO, 2017). Unsustainable food practices affect biodiversity and climate change. Concurrently, the AF&B industry suffers from inefficiencies due to food losses along supply chains and environmental degradation.

Given this background, it is even more urgent to change the current paradigm on which global food systems are based. To this end, the launch of Agenda 2030 and some recent



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international political programs (e.g. EU-Green Deal; EU-Farm to Fork) are fostering a sustainable AF&B sector transition to address the aforementioned challenges. However, the full business shift towards sustainability is still weak due to the short-term firms' profitability losses. Indeed, integrating environmental, social and governance (ESG) factors to boost sustainability in business activities needs to rethink corporate purpose, redesign the management system, and allocate financial resources. Accordingly, such a corporate change could penalize firms' profitability shortly, leading managers to find trade-offs that minimize tensions between financial and non-financial performance. The interaction between ESG issues and corporate financial performance (CFP) is a long-standing debated topic in management literature. Scholars have long questioned how much it pays to be sustainable, even though studies have produced conflicting evidence so far. A stream of literature (e.g. Fisher and Sawczyn, 2013; Orlitzky *et al.*, 2003; Waddock and Graves, 1997), embracing the Good Management Theory, argued that being sustainable induces higher future CFP. Conversely, other scholars (e.g. Brammer *et al.*, 2006; Hillman and Keim, 2001; López *et al.*, 2007) following Shareholders Theory insights found that sustainability is detrimental for subsequent CFP. Moreover, despite such a flourishing debate, the relationship between sustainability and CFP is still under-investigated in the AF&B context which distinguishes for critical ESG issues (Nirino *et al.*, 2019; Gangi *et al.*, 2020). Therefore, the present study, considering a period of ten years, performed a cross-sectional time-series analysis to deepen whether and how prior ESG performance (ESGP) affect future CFP. We used a sample of 318 global AF&B companies, distinguishing it between top and bottom ESG performers according to Eikon Refinitiv's overall sustainability score. Furthermore, since sustainability goes through several aspects, we focused on AF&B ESG specific topics (i.e. corporate strategy, products, and processes) investigating the ESGP-CFP link. Notably, we correlated peculiar ESGP to these identified nonfinancial issues assessing their impacts on CFP, demonstrating which of them affect shortly the firms' profitability. Contextually, we tested whether slack resources produce moderating effects on the investigated relationships. The paper is structured as follow: Section-2 Theoretical Background; Section-3 Data and Method; Section-4 Results and Discussions; Section-5 Conclusions.

2. Theoretical background and research hypotheses

Does it pay to be sustainable? This dilemma has been challenging management researchers (e.g. Orlitzky *et al.*, 2003; Waddock and Graves, 1997) for at least 30 years, but no univocal evidence has been found regarding the impact of sustainability performance on firms' profitability (Morioka and Carvalho, 2016). The literature on the relationship between sustainability and CFP is mainly divided between scholars who supported a positive impact of sustainability issues on firms' profitability (e.g. Fisher and Sawczyn, 2013; Orlitzky *et al.*, 2003; Waddock and Graves, 1997) and scholars who found a negative relationship (e.g. Brammer *et al.*, 2006; Hillman and Keim, 2001; López *et al.*, 2007). The conflicting results found in the literature suggest that the link between sustainability and firms' profitability is far from being fully understood and it needs to be further investigated. The AF&B sector is undoubtedly bound to sustainability, given its significant impacts on both social and environmental issues (Gangi *et al.*, 2020). Considering this, it becomes even more relevant to understand the effect that sustainability issues can have on future AF&B companies' profitability. Despite this, the topic of "*how much it pays being sustainable in the AF&B sector*" has only recently received the attention of scholars which also found mixed results (e.g. Gangi *et al.*, 2020; Nirino *et al.*, 2019). Accordingly, Gangi *et al.* (2020) found that food companies' engagement in corporate social and environmental responsibility is a positive predictor of improved profitability. Similarly, Acar *et al.* (2019) found that social and environmental sustainability issues increase operational performance. Broccardo and Zicari (2020), considering a sample of 794 Italian wine firms, found that firms implementing sustainable

activities presented better economic indicators. Despite this, [Broccardo and Zicari \(2020\)](#) also found that firms that are sustainability-oriented may be reluctant to reduce costs. On the other hand, [Wiek and Weber \(2014\)](#), referring to the USA context, pointed out that sustainability-oriented food companies are less able to attract financial capitals than other businesses (such as fast-food and large-scale industrial food production) that are more profitable but also tend to produce detrimental social and environmental effects. Lastly, [Nirino et al. \(2019\)](#) found mixed results showing that social outcomes positively impact firms' performance, while environmental outcomes showed insignificant or non-positive effects. Considering this background, we aim to shed lights on the possible effects that sustainability can have on future AF&B companies' financial performance, focusing on a short-term perspective. Accordingly, we formulate the following hypothesis:

H1a/b. Sustainability positively/negatively affects AF&B firms' performance in the short-term.

Focusing on the relationship at [H1](#), several studies found that slack resources can play a key role in enhancing both CFP (e.g. [Agusti-Perez et al., 2020](#)) and ESGP (e.g. [Xu et al., 2015](#)). Slack resources represent the cushion of actual or potential resources which allows an organization to adapt to internal and external environment changes fostering strategic adjustments to achieve organizational goals ([Bourgeois, 1981](#); [Li et al., 2017](#)). Scholars widely focused on the potential effects of slack resources on both CFP and ESGP, nevertheless few studies considered slack resources as moderating variables of the relationship between sustainability and financial performance, finding mixing results. Accordingly, [Li et al. \(2017\)](#) found that slack resources negatively moderated the relationship between corporate environmental responsibility and CFP. Conversely, [Lin et al. \(2019\)](#) found that financial slack resources positively moderated the financial and non-financial performance interaction. Considering the above background, we aim to deepen the moderating role of slack resources on the link between AF&B companies' ESGP and CFP. Therefore, we propose the following hypothesis:

H2a/b. Slack resources positively/negatively moderate the relation between corporate sustainability and financial performance in AF&B companies.

The above theoretical assumptions are about the general impact of sustainability on CFP. Nevertheless, sustainability is a complex topic that encompasses numerous business aspects. Therefore, in analysing the impact of sustainability on firms' profitability, it is appropriate to consider its several components and analyse the impact of each of them on firms' CFP. This is what we put forward in the following paragraph.

2.1 Translating sustainability in the AF&B sector

In the AF&B sector, sustainability goes through several aspects such as the execution of sustainable strategies ([Coppola and Ianuario, 2017](#)), the production of sustainable products ([Ingenbleek, 2015](#)), the implementation of sustainable processes ([Augustin et al., 2016](#)), and the responsible management of the supply chain ([Maloni and Brown, 2006](#)). In the following lines, these aspects will be deepened, formulating the appropriate hypotheses. For AF&B companies, producing healthy foods is a key driver to improve human health ([FAO, 2017](#)). Nevertheless, producing healthy food is costly and, often, the consumers are not willing to pay premium prices for sustainable food thus preferring the cheaper mainstream alternatives ([Ingenbleek, 2015](#)). This could lead companies that offer sustainable products to lower earnings since the market may not reward the choice to invest in sustainable products. This prompted us to formulate the following hypothesis.

H3a/b. Sustainable products have positive/negative impacts on AF&B companies' profitability in the short-term.

One of the most debated topics in the management literature is whether sustainability-oriented strategies improve or weaken firms' profitability especially in the short-term. Following [Friedman \(1970\)](#) doctrine, some scholars (e.g. [Boyle et al., 1997](#); [Folajin et al., 2014](#)) found that sustainability-oriented strategies can harm CFP. Conversely, other studies emphasised the positive effects that sustainable strategies can have on the future firms' profitability and growth (e.g. [Bodhanwala and Bodhanwala, 2018](#); [Freeman, 1984](#); [McWilliams et al., 2006](#)). Anyhow, there is no doubt that sustainable strategies have an impact on CFP. Accordingly, we deepen such impact in AF&B companies (in which little evidence has been found on this topic) formulating the following hypothesis.

H4a/b. Sustainable strategies have positive/negative impacts on AF&B companies' profitability in the short-term.

Food production and supply processes have direct and strong impacts on the ecosystems and thus they must undertake significant changes to become more sustainable ([Flores-Garcia and Mainar, 2009](#); [Maloni and Brown, 2006](#)). Nevertheless, making the AF&B business processes sustainable could imply additional costs for the rearrangement of business activities ([Guzmán et al., 2011](#)) or it may lead to an increase in efficiency (in terms of resource use and water and energy consumptions), thus inducing costs savings ([Chkanikova and Mont, 2015](#)). Moreover, environmental issues cannot be met by single firms, but they require coordinated actions that need to be implemented at the level of supply chains ([Fritz and Schiefer, 2008](#)). Indeed, the collaborative relationships ensure an economically sustainable supply chain management that is also fundamental to address the food system's challenges and to achieve better financial performance ([Caiazza et al., 2016](#); [Maloni and Brown, 2006](#)).

In the light of this background, we investigate the impact of sustainable business processes on AF&B companies' short-term profitability through the following hypothesis.

H5a/b. Sustainable business processes have positive/negative impacts on AF&B companies' profitability in the short-term.

3. Data and method

We developed a cross-sectional time-series analysis on financial and non-financial data of AF&B global companies, considering a span of ten years. We adopted the panel data analytical approach to account for cultural factors or differences in practices across companies, checking also for those variables that may evolve during the time but not across firms. We limited the study to the 2010–2019 period, analysing the correlations between financial and ESG scrutinized performance in the short-term. Accordingly, we based the sample composition, scanning the Refinitiv Eikon Asset4[®] database which is one of the rigorous and reliable ESG data providers that collects nonfinancial data for a set of 9,400 listed companies worldwide. Secondly, we obtained annual firm-level financial data from Refinitiv Eikon Datastream-Worldscope widely used in academic studies and market analysis. Therefore, we elaborated an unbalanced panel data, covering 1,760 annual observations from 318 companies net of entities with missing financial data. Notably, the examined companies operate in different countries (cf., [Table 1](#)), and they have a market value on average upper than 4 billion Euros.

The following [Tables 2](#) and [3](#) show respectively the sampling process and the industry distribution of the database used.

Finally, we identified those companies which distinguished as the best and worst sustainability performers annually in the 2010–2019 period. We created such a ranking, focusing on the Refinitiv Eikon Asset4[®]'s equally weighted ESG overall score annual data series. This score is defined according to companies' self-reported information in the ESG issues identified in [Refinitiv \(2021\)](#). We clustered then each best sustainable company that

Country	AF&B companies	%	Sustainable development and agri-food sector
Argentina	5	1.57	
Australia	18	5.66	
Belgium	2	0.63	
Brazil	6	1.89	
Canada	9	2.83	
Chile	5	1.57	
China	12	3.77	
Colombia	2	0.63	
Denmark	2	0.63	
Finland	1	0.31	
France	8	2.52	
Germany	2	0.63	
Hong Kong	15	4.72	
India	2	0.63	
Indonesia	4	1.26	
Ireland	2	0.63	
Italy	1	0.31	
Japan	24	7.55	
Malaysia	7	2.2	
Mexico	7	2.2	
Netherlands	4	1.26	
New Zealand	6	1.89	
Norway	4	1.26	
Peru	5	1.57	
Philippines	2	0.63	
Poland	3	0.94	
Portugal	2	0.63	
Russia	1	0.31	
Saudi Arabia	1	0.31	
Singapore	6	1.89	
South Africa	12	3.77	
South Korea	9	2.83	
Spain	3	0.94	
Sweden	2	0.63	
Switzerland	6	1.89	
Taiwan	3	0.94	
Thailand	3	0.94	
Turkey	4	1.26	
United Kingdom	25	7.86	
United States	83	26.1	
Total	318	100	

321

Table 1.
Sample geographical distribution

Sampling process	Companies	
Refinitiv Eikon Asset 4 Universe AF&B companies	411	
AF&B companies with missing ESG data	-49	
AF&B companies with missing financial data	-44	
<i>Final sample</i>	318	

Table 2.
Data collection process

presents an annual sustainability global score equal to/upper than 50%, creating the “*Top*” dataset. Differently, we sampled as the worst sustainable companies those firms that present annual overall ESG scores lesser than 50%, creating the “*Bottom*” dataset. In so doing, we

minimized possible biases related to heterogeneities between the best and worst in class companies at the level of sustainability implementation. Moreover, the analysis performed using two sub-panel data may find different evidence for the same research hypotheses, considering the grade of sustainability principles execution in the study of the ESGP-CFP link. Therefore, the following Table 4 shows the sample distribution per year relating to those companies categorized as best and worst ESG performers.

We designed the analysis, firstly, winsoring each data series at 1 and 99% levels for every year to eliminate outliers in line with Greene (2003). Secondly, we considered linear associations highlighted by the Pearson test between variables that supposedly may better explain the investigated relationships between ESGP and CFP. Thirdly, we controlled for collinearities to avoid possible biases. Finally, we defined the analytical models to develop our study, finding evidence for assumptions described in Section-2. Accordingly, we performed ordinary least square (OLS) regressions on both predefined panels data, comparing the results produced for “Top” and “Bottom” sampled companies. Each statistical analysis has been performed using STATA software. The present study followed Good Management Theory postulates (Donaldson and Preston, 1995; Preston and O’Bannon, 1997), supposing that if a company efficiently executes sustainability principles, then it achieves higher ESGP which, in turn, may enhance future CFP. In this view, the analysis included in each model the dependent variable (DV) Return on Assets (ROA) such as an accounting-based overall proxy mostly used in prior studies to estimate firms’ profitability (e.g. Fischer and Sawczyn, 2013). Moreover, we used well-known Refinitiv Eikon Asset4[®] scores as independent variables (IVs) that measure how firms perform on multiple macro and micro dimensions characterizing corporate sustainability. Therefore, we used Environmental (ENV_Score), Social (SOC_Score) and Governance (CGV_Score) scores, as independent variables (IVs) that represent macro-categories proxies of sustainability performance. Furthermore, we included as other explanatory variables innovative micro ESG scores (i.e. ProductResp_Score, CSRStrategy_Score, EnvInnovation_Score, Management_Score, ResourceUse_Score) recently released by Refinitiv Eikon which assess specific sustainability corporate issues.

Table 3.
Sample industry
distribution

Industry	AF&B companies	%
Beverages	58	18.24
Restaurants, bars and catering	46	14.47
Food producers	156	49.06
Food retail and wholesale	58	18.24
<i>Total</i>	<i>318</i>	<i>100</i>

Table 4.
Sample of best/worst
examined sustainable
companies distributed
per years

Time	“Top” panel data Best ESG performers	“Bottom” panel data Worst ESG performers	Companies yearly observed
2010–2011	68	87	155
2011–2012	66	101	167
2012–2013	83	97	180
2013–2014	84	104	188
2014–2015	88	101	189
2015–2016	97	124	221
2016–2017	110	147	257
2017–2018	131	159	290
2018–2019	56	57	113
<i>Total obs.</i>	<i>783</i>	<i>977</i>	<i>1,760</i>

The inclusion of these proxies in the analysis also supported us in coherently modelling every equation to investigate the ESGP-CFP relationships along the following dimensions: (1) contribution to healthy and sustainable dietary patterns through products and strategies; (2) socio-environmental sustainability of corporate processes.

Further, we assumed that the ESGP-CFP link works properly if companies own slack resources to activate core business activities and implement sustainability initiatives. Therefore, suitable proxies to estimate absorbed and unabsorbed slack resources (Singh, 1986) have been included in the analysis. Following Bourgeois and Singh (1983), we used accounting metrics that assess different categories of slack resources as control variables (CVs). Notably, we used Overhead Expenses to Net Sales (*Overhead_Ratio*) measuring absorbed slack resources, while Cash flow to Net Sales (*CashFlowSales_Ratio*) and Quick ratio (*Quick_Ratio*) were included in models to assess available slack resources. Further, we assumed that slack resources may moderate the ESGP-CFP interaction as previous studies underscored (e.g. Li *et al.*, 2017; Lin *et al.*, 2019). Finally, we assumed that firm size could affect the ESGP-CFP relationship as previous findings in the literature highlighted (e.g. Callan and Thomas, 2009). We supposed that the largest companies have a high ability to acquire/use slack resources and to innovate their businesses improving sustainability. Contextually, we believe that the bigger is the firm stronger is the stakeholders' call for high standards of ESG and future profitability. Accordingly, we included in the analysis the natural logarithm of Total Assets (*lnTA*) that is the CV for firm size (Dang *et al.*, 2018). Furthermore, we used industry dummies (Industry) CVs to check for unobservable time-invariant firm/industry-specific features effects (e.g. firm culture, managerial capabilities, the technology used, competitiveness intensity, etc.) that may affect ESGP-CFP relationships as suggested by previous studies (e.g. Andersen and Dejoy, 2011). Moreover, the analysis used other dummies CVs (i.e. *Time*) to check also for possible timing effects. Lastly, lagged DV was included in models as another explanatory variable to minimize possible endogeneity effects as suggested by Li (2016). Tables 5 and 6 below respectively describe and report descriptive statistics of variables used in our analysis.

The covariance matrices in Table 7 reports linear association analysis results found using "Top" and "Bottom" panels data which showed dependencies between variables, signs, and intensities. To develop the Pearson correlation test, we considered three levels of statistical significance (i.e. $z < 0.01$; $z < 0.05$; $z < 0.1$) and no time lags within the investigated variables.

As for the multicollinearity biases we performed collinearity diagnostics on the group of variables used in models and included them in both "Top" and "Bottom" panels data. We developed this analysis, testing separately macro and micro ESG scores due to their obvious collinearity and ignoring composed variables used to check for moderating effects. Such a test highlighted no multicollinearity effects because all mean Variance Inflation Factors (VIFs) are lesser than two (Allison, 1999). In Table 8 below, we present our analysis models designed in line with what assumed in Section 2, considering the results of both the Pearson correlation and multicollinearity performed tests.

Model-1 checks whether the findings of previous studies are confirmed in our analysis. To this end, we used *ENV_Score*, *SOC_Score*, and *CGV_Score* as IVs, breaking down the ESG overall score. Contextually, *Model-1* was defined also to test whether slack resources may moderate the ESGP-CFP link. *Models 2-6*, instead, analyse the impact of change in peculiar ESGP on firms' profitability. Possible moderating effects produced by slack resources on each interaction between micro-ESGP and firms' profitability were still analysed. Finally, every equation considered one-year lag (i.e. $n = 1$ year) between the predictor and the other explanatory variables to better appreciate possible short-term impacts in the scrutinized relationships, also minimizing possible endogeneity effects (Li, 2016). The following section presents and discusses the study's main results.

Variables	Description
<i>ROA</i>	It is an accounting profitability ratio largely used to assess how a company efficiently manages its assets to generate earnings
<i>ENV_Score</i>	It measures the company's impacts on ecosystems, reflecting how well a company uses management practices minimizing environmental risks and generating long-term stakeholder value
<i>SOC_Score</i>	It reflects a company's capacity to generate trust and loyalty with its stakeholders implementing best management practices
<i>CGV_Score</i>	It assesses how management and governance systems act in the best interests of long-term stakeholders' expectations
<i>ProductResp._Score</i>	It reflects a company's capacity to produce quality goods and services integrating the customer's health and safety, integrity, and data privacy
<i>CSRStrategy_Score</i>	It estimates how companies integrate both the financial and ESG factors into their decision-making processes
<i>EnvInnovation_Score</i>	It assesses the corporate capacity to reduce the environmental costs and burdens, creating new market opportunities through innovative technologies and processes or eco-designed products
<i>Management_Score</i>	It measures the commitment and effectiveness of the company to following best sustainability practices and good corporate governance principles
<i>ResourceUse_Score</i>	It reflects the corporate performance and capacity to reduce the resources use and to find more eco-efficient solutions in production and supply chain management processes
<i>Overhead_Ratio</i>	It evaluates the operating costs of doing business compared to the company's revenues, and those slack resources that have already been absorbed as excess costs (Bourgeois and Singh, 1983)
<i>CashFlowSales_Ratio</i>	It measures the corporate capacity to generate cash flow from its sales volume, and the company's attitude to generate operational slack resources suitable to the business development (Bourgeois and Singh, 1983)
<i>Quick_Ratio</i>	This liquidity ratio measures those current assets available to cover current liabilities, as well as the company's capacity to produce financial available slack resources to implement business activities (Bourgeois and Singh, 1983)
<i>lnTA</i>	Total assets is an accounting-based firms' size measure computed in the logarithmic form to normalize data

Table 5.
Description of
variables used in the
analysis

4. Results and discussions

Empirical results of our analysis performed using annual observations in “*Top*” and “*Bottom*” panels data are shown in the following Tables 9 and 10.

The first regressions performed using *Model-1* showed positive relationships between corporate sustainability and firms' profitability in the short-term, mostly when the analysis considered companies included in the best ESG performers' sample. This evidence supports what assumed in H1a and prior studies' findings (e.g. Acar *et al.*, 2019; Fisher and Sawczyn, 2013; Orlitzky *et al.*, 2003). Notably, we found that both ENV_Score_{t-1} , SOC_Score_{t-1} , and CGV_Score_{t-1} are in positive correlation with ROA_t , using “*Top*” panel data. Accordingly, we may assume that companies with average-highest sustainability standards may enhance future CFP in the short-run. On the other hand, the analysis highlighted that eco-friendly corporate activities and the management commitment to sustainability affect negatively the one-year lagged ROA , especially for those companies with lesser ESGP. These findings are in line with those of Nirino *et al.* (2019) and support H1b. We presume that the negative correlation between environmental sustainability and firms' profitability is due to the following reasons. Firstly, lesser sustainable companies need to invest in eco-friendly technologies and improve their ESGP, but this approach penalizes short-term profitability. Notably, sustainability investments produce their financial and non-financial effects in the

Variable	Min.	Max.	Mean	Median	SD	Variance	Skewness	Kurtosis
ROA_t	-227.92	252.28	8.30871	6.95	10.20943	104.2324	0.9981804	349.6451
ENV_Score_t	0.00	96.99	42.25726	43.835	29.05746	844.336	0.0058454	1.739755
SOC_Score_t	0.36	97.63	46.1619	45.295	25.00959	625.4794	0.0960151	1.965269
CGV_Score_t	0.21	98.26	49.07882	49.455	22.75647	517.857	-0.0585202	2.128945
$ProductResp_Score_t$	0.00	99.73	52.16953	56.40	31.45479	989.404	-0.1889339	1.72684
$CSRStrategy_Score_t$	0.00	99.88	41.61576	41.065	32.77231	1074.024	0.1559109	1.688747
$EnInnovation_Score_t$	0.00	95.45	25.3019	15.79	31.28884	978.9599	0.9265373	2.391629
$Management_Score_t$	0.14	99.85	50.27339	50.00	27.90968	778.9502	0.0085482	1.839214
$ResourceUse_Score_t$	0.00	99.69	45.37889	46.235	32.47269	1054.476	0.0263787	1.684334
$Overhead_Ratio_t$	0.2866485	2.042245	0.903343	0.918	0.1012691	0.0102554	1.876356	27.44626
$CashFlowSales_Ratio_t$	-75.94	242.05	10.88164	9.60	9.398998	88.34117	8.713574	216.8649
$Quick_Ratio_t$	0.06	43.49	1.053381	0.79	1.789742	3.203175	15.1006	304.5855
$\ln TA_t$	9.965288	19.31165	14.99381	14.96878	1.415224	2.00286	-0.033762	2.966059

Table 6.
Descriptive statistics

Table 7.
Pearson correlation
and collinearity
diagnostics results
using the “top” and
“bottom” panels data

Variable	ROA _t	ENV Score _t	SOC Score _t	CGV Score _t	ProductResp Score _t	CSR-Strategy Score _t	Enthmon. Score _t	Management Score _t	ResourceUse Score _t	Overhead Ratio _t	CashFlowSales Ratio _t	Quick Ratio _t	lnTA _t
<i>Top</i>													
ROA _t	1												
ENV Score _t	-0.022	1											
SOC Score _t	0.141***	0.427***	1										
CGV Score _t	-0.015	-0.073**	-0.108***	1									
ProductResp Score _t	-0.026	0.341***	0.594***	-0.055	1								
CSRStrategy Score _t	0.006	0.316***	0.290***	0.220***	0.021	1							
Enthmonation Score _t	-0.128***	0.406***	0.113***	0.159***	0.100***	0.238***	1						
Management Score _t	-0.002	-0.091**	-0.129***	0.945***	-0.041	0.055	0.091**	1					
ResourceUse Score _t	0.095***	0.764***	0.491***	-0.151***	0.367***	0.196***	0.079**	-0.124***	1				
Overhead Ratio _t	-0.423***	-0.045	-0.093**	0.115***	-0.002	-0.092**	0.169***	0.128***	-0.124***	1			
CashFlowSales Ratio _t	0.403***	0.023	0.111***	-0.068***	-0.021	0.164***	-0.171***	-0.121***	0.081**	-0.852***	1		
Quick Ratio _t	0.207***	-0.034	-0.109***	-0.034	-0.078**	-0.026	-0.028	-0.03	-0.017	-0.235***	0.266***	1	
lnTA _t	-0.272***	0.300***	0.294***	0.076**	0.169***	0.287***	0.362***	0.038	0.257***	-0.061*	0.009	-0.258***	1
<i>Bottom</i>													
ROA _t	1												
ENV Score _t	-0.095***	1											
SOC Score _t	0.023	0.525***	1										
CGV Score _t	-0.041	0.060*	0.153***	1									
ProductResp Score _t	0.004	0.392***	0.748***	0.109***	1								
CSRStrategy Score _t	-0.092***	0.587***	0.450***	0.229***	0.261***	1							
Enthmonation Score _t	-0.054*	0.430***	0.229***	0.001	0.249***	0.211***	1						
Management Score _t	-0.029	-0.037	0.068**	0.950***	0.077**	0.056*	-0.042	1					
ResourceUse Score _t	-0.082**	0.894***	0.545***	0.045	0.399***	0.536***	0.253***	-0.035	1				
Overhead Ratio _t	-0.429***	-0.042	-0.038	0.043	0.015	0.006	0.001	0.037	-0.049	1			
CashFlowSales Ratio _t	0.704***	-0.028	-0.055*	-0.087***	-0.084***	-0.037	-0.03	-0.082**	-0.025	-0.538***	1		
Quick Ratio _t	0.037	-0.13***	-0.185***	-0.127***	-0.090***	-0.116***	0.001	-0.119***	-0.139***	-0.127***	0.256***	1	
lnTA _t	-0.137***	0.189***	0.003	0.082**	0.008	0.224***	0.161***	0.052*	0.129***	0.029	-0.077**	-0.071**	1

Model	Equation settings used with "top" and "bottom" panels data	Hypotheses
(1)	$ROA_t = \alpha_0 + \alpha_1(ROA)_{i,t-n} + \alpha_2(ENV_Score)_{i,t-n} + \alpha_3(SOC_Score)_{i,t-n} + \alpha_4(CGV_Score)_{i,t-n} + \alpha_5(Overhead_Ratio)_{i,t-n} + \alpha_6(CahsFlowSales)_{i,t-n} + \alpha_7(Quick_Ratio)_{i,t-n} + \alpha_8(ENV_Score * Overhead_Ratio)_{i,t-n} + \alpha_9(ENV_Score * CahsFlowSales)_{i,t-n} + \alpha_{10}(ENV_Score * Quick_Ratio)_{i,t-n} + \alpha_{11}(SOC_Score * Overhead_Ratio)_{i,t-n} + \alpha_{12}(SOC_Score * CahsFlowSales)_{i,t-n} + \alpha_{13}(SOC_Score * Quick_Ratio)_{i,t-n} + \alpha_{14}(CGV_Score * Overhead_Ratio)_{i,t-n} + \alpha_{15}(CGV_Score * CahsFlowSales)_{i,t-n} + \alpha_{16}(CGV_Score * Quick_Ratio)_{i,t-n} + \alpha_{17} \ln(TA)_{i,t} + \alpha_{18} \sum_{k=1}^9 Industry_{i,t} + \alpha_{19} \sum_{j=1}^9 Time_j + \epsilon_{i,t-n}$	H1a/b, H2a/b
(2)	$ROA_t = \beta_0 + \beta_1(ROA)_{i,t-n} + \beta_2(ProductResp_Score)_{i,t-n} + \beta_3(Overhead_Ratio)_{i,t-n} + \beta_4(CahsFlowSales)_{i,t-n} + \beta_5(Quick_Ratio)_{i,t-n} + \beta_6(ProductResp_Score * Overhead_Ratio)_{i,t-n} + \beta_7(ProductResp_Score * CahsFlowSales)_{i,t-n} + \beta_8(ProductResp_Score * Quick_Ratio)_{i,t-n} + \beta_9 \ln(TA)_{i,t} + \beta_{10} \sum_{k=1}^9 Industry_{i,t} + \beta_{11} \sum_{j=1}^9 Time_j + \epsilon_{i,t-n}$	H2a/b, H3a/b
(3)	$ROA_t = \gamma_0 + \gamma_1(ROA)_{i,t-n} + \gamma_2(CSRStrategy_Score)_{i,t-n} + \gamma_3(Overhead_Ratio)_{i,t-n} + \gamma_4(CahsFlowSales)_{i,t-n} + \gamma_5(Quick_Ratio)_{i,t-n} + \gamma_6(CSRStrategy_Score * Overhead_Ratio)_{i,t-n} + \gamma_7(CSRStrategy_Score * CahsFlowSales)_{i,t-n} + \gamma_8(CSRStrategy_Score * Quick_Ratio)_{i,t-n} + \gamma_9 \ln(TA)_{i,t} + \gamma_{10} \sum_{k=1}^9 Industry_{i,t} + \gamma_{11} \sum_{j=1}^9 Time_j + \epsilon_{i,t-n}$	H2a/b, H4a/b
(4)	$ROA_t = \delta_0 + \delta_1(ROA)_{i,t-n} + \delta_2(Envhmmovation_Score)_{i,t-n} + \delta_3(Overhead_Ratio)_{i,t-n} + \delta_4(CahsFlowSales)_{i,t-n} + \delta_5(Quick_Ratio)_{i,t-n} + \delta_6(Envhmmovation_Score * Overhead_Ratio)_{i,t-n} + \delta_7(Envhmmovation_Score * CahsFlowSales)_{i,t-n} + \delta_8(Envhmmovation_Score * Quick_Ratio)_{i,t-n} + \delta_9 \ln(TA)_{i,t} + \delta_{10} \sum_{k=1}^9 Industry_{i,t} + \delta_{11} \sum_{j=1}^9 Time_j + \epsilon_{i,t-n}$	H2a/b, H3a/b, H5a/b

(continued)

Table 8. Analytical models

Table 8.

Model	Equation settings used with “top” and “bottom” panels data	Hypotheses
(5)	$ROA_t = \eta_0 + \eta_1(ROA)_{i,t-n} + \eta_2(Management_Score)_{i,t-n} + \eta_3(Overhead_Ratio)_{i,t-n} + \eta_4(CashFlowSales)_{i,t-n} + \eta_5(Quick_Ratio)_{i,t-n} + \eta_6(Management_Score * Overhead_Ratio)_{i,t-n} + \eta_7(Management_Score * CashFlowSales)_{i,t-n} + \eta_8(Management_Score * Quick_Ratio)_{i,t-n} + \eta_9 \ln(TA)_{i,t} + \eta_{10} \sum_{k=1}^9 Industry_{i,t} + \eta_{11} \sum_{j=1}^9 Time_i + \varepsilon_{i,t-n}$	H2a/b, H5a/b
(6)	$ROA_t = \theta_0 + \theta_1(ROA)_{i,t-n} + \theta_2(ResourceUse_Score)_{i,t-n} + \theta_3(Overhead_Ratio)_{i,t-n} + \theta_4(CashFlowSales)_{i,t-n} + \theta_5(Quick_Ratio)_{i,t-n} + \theta_6(ResourceUse_Score * Overhead_Ratio)_{i,t-n} + \theta_7(ResourceUse_Score * CashFlowSales)_{i,t-n} + \theta_8(ResourceUse_Score * Quick_Ratio)_{i,t-n} + \theta_9 \ln(TA)_{i,t} + \theta_{10} \sum_{k=1}^9 Industry_{i,t} + \theta_{11} \sum_{j=1}^9 Time_i + \varepsilon_{i,t-n}$	H2a/b, H5a/b

ROA_t (DV) vs IVs and CVs	“Top”	Model-1	“Bottom”
ROA_{t-1}	0.620*** (-0.0364)		-0.581*** (-0.0638)
ENV_Score_{t-1}	0.360* (-0.212)		-4.107*** (-0.605)
SOC_Score_{t-1}	0.657** (-0.329)		5.684*** (-0.735)
CGV_Score_{t-1}	0.464** (-0.199)		-0.878*** (-0.254)
$Overhead_Ratio_{t-1}$	77.93*** (-23.05)		0.48 (-9.85)
$CahsFlowSales_Ratio_{t-1}$	0.900*** (-0.305)		0.477*** (-0.0995)
$Quick_Ratio_{t-1}$	2.106 (-2.441)		-1.091* (-0.569)
$ENV_Score*Overhead_Ratio_{t-1}$	-0.325 (-0.207)		4.431*** (-0.607)
$ENV_Score*CahsFlowSales_Ratio_{t-1}$	-0.00345 (-0.00279)		0.0104 (-0.00678)
$ENV_Score*Quick_Ratio_{t-1}$	-0.0487* (-0.0261)		-0.0328 (-0.0382)
$SOC_Score*Overhead_Ratio_{t-1}$	-0.625* (-0.321)		-5.957*** (-0.733)
$SOC_Score*CahsFlowSales_Ratio_{t-1}$	-0.00577 (-0.00398)		-0.0314*** (-0.0081)
$SOC_Score*Quick_Ratio_{t-1}$	0.00708 (-0.0251)		0.0523 (-0.0478)
$CGV_Score*Overhead_Ratio_{t-1}$	-0.453** (-0.193)		0.841*** (-0.253)
$CGV_Score*CahsFlowSales_Ratio_{t-1}$	-0.00498** (-0.00248)		0.0125*** (-0.00351)
$CGV_Score*Quick_Ratio_{t-1}$	0.00579 (-0.0179)		-0.0469 (-0.0291)
$lnTA_t$	-0.615*** (-0.142)		-3.766*** (-0.49)
Constant	-70.91*** (-23.72)		67.28*** (-15.94)
Observations	783		977
R-squared	0.541		0.285

Note(s): *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Standard errors in parentheses

Table 9.
Main results of OLS
regressions using
model-1

mid and long-term, thus this in turn negatively affects profitability shortly. Secondly, companies with lower environmental sustainability standards may fail to attract investors, retain customers, or engage other stakeholders, losing profitability in the short-term. As regards, instead, the negative relationship between the management commitment to sustainability and firms' profitability found for companies lesser ESG performers, we assume the following motivation. Companies that are approaching sustainability or that should improve their lower ESGP, contextually allocate resources to implement managerial systems, practices and mechanisms ensuring the execution and control of those activities which foster long-term stakeholder value creation. Therefore, this may penalize ROA shortly, but in the long-term, it may boost both financial and non-financial performance only if the company reaches mid-higher ESGP. Differently, results showed that corporate social sustainability is in positive correlation with CFP, focusing on the worst sustainable companies' sample. This result confirms what assumed in [H1a](#) and previous studies' evidence (e.g. [Nirino et al., 2019](#); [Gangi et al., 2020](#)). We presume that this positive relationship is due to the nature of social sustainability activities which do not need strong investment as environmental ones and concurrently produce immediate both financial returns and higher ESGP ([Nirino et al., 2019](#)). Moreover, results of regressions on both panels data highlighted moderating effects of slack resources on ESGP and CFP relationship, supporting both [H2a/b](#), and confirming prior studies' mixed results (e.g. [Li et al., 2017](#); [Lin et al., 2019](#)). Notably, we found negative and significant moderating effects that absorbed slack resources produced on ESGP-CFP link. Further, results showed that the interaction between environmental sustainability and firms' profitability is negatively moderated by financial available slack resources. Finally, the analysis highlighted that operational slack resources negatively moderate the relationship between the management to sustainability and CFP. Furthermore, we found slack resources' mediating effects on the ESGP-CFP link, also considering companies' sample with lower sustainability performance. Notably, the analysis highlighted that absorbed slack resources positively moderate the interaction between environmental sustainability and CFP,

Table 10.
Main results of OLS
regressions using
models 2–6

ROA _{i,t} (DV) vs IVs and CVs	Model-2		Model-3		Model-4		Model-5		Model-6	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
ROA _{i,t}	0.665*** (-0.0351)	-0.606*** (-0.0619)	0.647*** (-0.0351)	-0.673*** (-0.0396)	0.651*** (-0.035)	-0.631*** (-0.062)	0.652*** (-0.0349)	-0.639*** (-0.0636)	0.658*** (-0.035)	-0.636*** (-0.0604)
Production _{it} Score _{it}	0.112 (-0.203)	1.695*** (-0.289)	0.246* (-0.145)	-0.873*** (-0.332)	0.447*** (-0.109)	2.352*** (-0.805)				
Management Score										
ResourceUse Score										
Ennovation Score										
CapitalScore	0.438 (-15.18)	11.77* (-5.647)	4.405 (-10.28)	-48.30*** (-6.395)	3.906 (-5.086)	-10.13* (-5.727)	9.68 (-8.647)	-1.74 (-8.708)	0.13** (-0.151)	-1.010** (-0.411)
CapitalSaves Ratio _{it}	0.099 (-0.183)	0.403*** (-0.0848)	0.205 (-0.143)	0.560*** (-0.0771)	0.290*** (-0.070)	0.385*** (-0.0787)	0.192* (-0.114)	0.438*** (-0.060)	0.177 (-0.145)	0.573*** (-0.0783)
Quick Ratio _{it}	-2.197 (-1.47)	-0.975** (-0.503)	0.357 (-1.001)	-1.490*** (-0.239)	-0.802* (-0.416)	-1.004** (-0.432)	-1.11 (-0.839)	-0.694** (-0.340)	2.489* (-1.390)	-1.497*** (-0.239)
Production _{it} Score*Overhead Ratio _{it}	-0.13 (-0.196)	-1.820*** (-0.286)								
CapitalScore*Overhead Ratio _{it}			-0.209 (-0.142)	1.019*** (-0.327)						
Ennovation Score*Overhead Ratio _{it}										
Management Score*Overhead Ratio _{it}										
ResourceUse Score*Overhead Ratio _{it}										
Production _{it} Score*CapitalSaves Ratio _{it}	-0.0011 (-0.0025)	-0.00379 (-0.0038)								
Ennovation Score*CapitalSaves Ratio _{it}			-0.00274 (-0.0018)	-0.0110*** (-0.004)						
Management Score*CapitalSaves Ratio _{it}										
ResourceUse Score*CapitalSaves Ratio _{it}										
Production _{it} Score*Quick Ratio _{it}										
Ennovation Score*Quick Ratio _{it}	0.0238 (-0.0193)	-0.00891 (-0.016)								
CapitalScore*Quick Ratio _{it}			-0.0123 (-0.0144)	0.039 (-0.025)						
Management Score*Quick Ratio _{it}										
ResourceUse Score*Quick Ratio _{it}										
Constant	-0.449*** (-0.132)	-4.179*** (-0.480)								
Inf _{it}	10.6 (-15.85)	61.97*** (-14.79)	4.741 (-0.853)	112.2*** (-14.41)	5.379 (-5.988)	88.68*** (-14.4)	1.064 (-0.189)	83.32*** (-15.87)	783	977
Observations	783	977	783	977	783	977	783	977	783	977
R-squared	0.524	0.234	0.53	0.236	0.536	0.211	0.527	0.188	0.528	0.248

Notes: **p < 0.01, *p < 0.05, *p < 0.1

Observations in parentheses

***, ** and * indicate significance at the 1%, 5% and 10% level, respectively

∞. Variable not included in the model

confirming H2a. At the same time, we found positive moderating effects of absorbed slack resources on the link between the management commitment to sustainability and firms' profitability, supporting H2a. Differently, findings highlighted that the operational available slack resources negatively moderate the interaction between social sustainability and CFP, supporting H2b. Moreover, results showed that operational available slack resources produce positive moderating effects on the relationship between social sustainability and CFP, confirming H2a. Contextually, we found that the operational available slack resources negatively moderate the relationship between social sustainability and firms' profitability, supporting H2b. Regressions on *Model-2* using "Top" panel data did not produce any significant results that support H3a/b and H2a/b. We found, instead, some evidence in line with the related research hypotheses, using "Bottom" panel data and the same model. Notably, the analysis showed that firms' profitability is in positive correlation with the corporate commitment that aims to preserve the consumers' health and safety, as well as customers' integrity and data privacy, selling higher quality standard products. Therefore, this evidence contrasts some prior studies' insights (e.g. Ingenbleek, 2015), and it supports H3a. Accordingly, we may assume that companies which need to enhance their ESGP, they should arrange products quality in line with customers' new expectations as regard sustainability, healthy, and safety, so to achieve competitive advantages and higher short-term profitability. This strategic approach, indeed, has been adopted by the best sustainable companies which probably reached, in turn, their market positioning through the promotion of higher product sustainability and quality standards. Moreover, results showed that absorbed slack resources negatively moderate the relationship between $ProductResp_Score_{t-1}$ and ROA_t , confirming H2b and prior studies' findings (e.g. Li *et al.*, 2017). Regressions carried out using *Model-3* highlighted that the integration of sustainability principles in strategy and management system positively affects the one-year lagged corporate profitability for those companies which usually perform higher ESGP. This evidence supports thus H4a, and it is in line with prior studies' results (e.g. Bodhanwala and Bodhanwala, 2018). Differently, results showed that including ESG issues in strategy and management activities may penalize the short-term firms' profitability for lesser sustainable companies. These findings are in line with H4b, confirming the stream of literature that argues for a negative relationship between CSR-strategy and CFP (e.g. Folajin *et al.*, 2014). We may assume that this negative relationship is due to some difficulties which a company that approaches ESG issues or a sustainability beginner faces in the short-term. In this regard, companies need time to integrate ESG factors in decision-making processes and systems so to achieve positive results on firms' profitability and sustainability performance over time. Moreover, we found moderating effects only in the case of worst sustainable companies of slack resources between $CSRStrategy_Score_{t-1}$ and ROA_t , supporting respectively H2a/b. Notably, the analysis highlighted that absorbed slack resources positively moderate that ESGP-CFP link, while operational available slack resources produce negative moderating effects on the same relationship. Regressions using *Model-4* highlighted that product and processes environmental innovation activities positively affect CFP for both best and worst sustainable companies. This evidence supports H3a and H5a, confirming previous studies' insights (e.g. Chkanikova and Mont, 2015). Notably, analysing regression coefficients, we may assume that the innovation is a cross-cutting driver involving products, processes, and supply chain management and useful to improve financial and non-financial firms' performance. Therefore, the implementation of eco-innovations is key to foster sustainability even boosting corporate profitability, especially for those companies which need to improve their ESGP. As for moderating effects, all the analysis highlighted that absorbed and operational available slack resources negatively moderate the link between sustainability and firms' profitability. These results confirm H2b, as well as prior studies' findings (e.g. Li *et al.*, 2017). Regressions on *Model-5* showed that the firms' short-term profitability is positively affected by the managerial commitment to sustainability also

executing good corporate governance principles. These findings support H5a. The analysis highlighted such evidence for both best and worst sustainable companies' samples. Therefore, in the light of such a result, we may state that the managerial commitment towards sustainability and good corporate governance are required drivers to boost both ESGP and corporate profitability shortly. Further, we found evidence for H2b. Notably, regressions highlighted that absorbed slack resources moderate negatively the interaction between $Management_Score_{t-1}$ and ROA_t , considering both the best and worst companies' samples. Contextually, the analysis highlighted for the best sustainable companies that operational available slack resources negatively moderate the relationship between the managerial commitment to sustainability and towards the implementation of good governance. Furthermore, we found that financial available slack resources also may negatively moderate the same link in the case of the worst sustainable companies. Finally, regressions on *Model-6* using "Top" panel data showed that the short-term firms' profitability is positively affected by the corporate capability in rationalising natural resources and fostering sustainability along the supply chain. This evidence supports H5a, as well as it is in line with prior studies (e.g. Maloni and Brown, 2006). Moreover, the analysis showed that absorbed and financial available slack resources negatively moderate the relationship between $ResourceUse_Score_{t-1}$ and ROA_t . These results confirm H2b. On the other hand, the analysis highlighted that scarcely sustainable companies may suffer from a reduction in their short-term profitability, despite efforts boosting the sustainable management of resources and supply chain. This finding is in line with H5b. In the light of such evidence, we may presume the following reasons. Companies with lesser ESGP need to invest in fostering efficiently the management of natural resources in production processes and along their supply chain. This approach in turn penalizes the short-term firms' profitability. Moreover, lesser sustainable companies may have weakly routinized practices that efficiently manage natural resources in production and supply chain activities. Therefore, such a gap may negatively affect also corporate profitability. Further, we found that absorbed slack resources produce positive moderating effects on the $ResourceUse_Score_{t-1}$ and ROA_t link, while the operational available slack resources negatively moderate the same relationship. These results support H2a/b. Lastly, all performed regressions highlighted that slack resources critically affect corporate short-term profitability. Further, results showed that firms' size negatively affects ROA_t , while industry and timing generally did not show significant effects.

5. Conclusions

This study examined the ESGP-CFP link in AF&B industry, contributing to the present literature in several ways. Firstly, it is among the first studies that deepened the relationship between sustainability and the AF&B companies' short-term profitability. Therefore, we found that corporate sustainability represents a benefit for those companies that are the best ESG performers, while it may be costly for the others. Notably, our results highlighted that sustainability enhances future CFP. These findings confirm Gangi *et al.* (2020) insights, while partially contrast those of Nirino *et al.* (2019). Differently, results performed using "Bottom" panel data showed that only social sustainability positively affects CFP, confirming Nirino *et al.* (2019) findings, while prior improvements in environmental and governance performance are detrimental for the firms' profitability in the short-term, in line with scholars advocating the shareholder perspective (e.g. López *et al.*, 2007; Hillman and Keim, 2001). Secondly, adopting an original analytical approach, we decomposed corporate sustainability in its multiple micro dimensions (i.e. management commitment, strategy, product, and processes) to examine whether and how improvements in peculiar ESGP aspects may affect CFP. Notably, we found different evidence respectively for best and worst ESG performers. The analysis showed that improvements in sustainable processes, CSR

strategy, management commitment, and good corporate governance produce positive impacts on the best sustainable companies' CFP in the short-term. This partially confirms the insights of [Acar et al. \(2019\)](#), [Bodhanwala and Bodhanwala \(2018\)](#), [Chkanikova and Mont \(2015\)](#) and [Gangi et al. \(2020\)](#). Conversely, for the lesser sustainable AF&B companies, we found a negative effect of CSR strategy and sustainable production/supply chain management on short-term CFP. These findings are in line with [Boyle et al. \(1997\)](#), and [Folajin et al. \(2014\)](#) as well as partially contrast the insights of [Bodhanwala and Bodhanwala \(2018\)](#), and [Maloni and Brown \(2006\)](#). However, these negative effects can be mitigated by other sustainability initiatives such as responsible products, eco-innovation, and management commitment to sustainability, which have shown positive effects on short-term CFP. Accordingly, we theoretically highlight that sustainability becomes profitable under certain conditions. Notably, companies need to consolidate sustainability management fostering a real managerial commitment and becoming at the forefront in addressing ESG issues ([Vitale et al., 2019](#)). When companies approach sustainability for the first time or implement isolated initiatives without a real managerial commitment, sustainability can be detrimental to CFP. Therefore, our evidence contributes to Good Management Theory (e.g. [Waddock and Graves, 1997](#)). We showed that sustainability can be profitable depending on the degree of efforts on specific and crucial ESG factors. As for moderating effects of slack resources on the scrutinized relationship, we found that such variables critically affect the ESGP-CFP link, but our analysis produced mixed results as previous studies (e.g. [Li et al., 2017](#); [Lin et al., 2019](#)). Our results corroborate the need of breaking down AF&B companies' sustainability into its multiple aspects to better appreciate all firms' performance and their mutual interdependencies, in line with what also developed by recent international initiatives (e.g. Fixing The Business of Food; Food and Agriculture Benchmark). Finally, this paper provides the following practical implications. To reinforce the ESGP-CFP relationship in the short-term, the best sustainable companies should focus on CSR strategy, environmental innovation, managerial commitment and good corporate governance, as well as efficiency in resource use. As for worst sustainable companies, managers should prioritize efforts boosting responsible products, eco-innovation, and management commitment towards sustainability to enhance short-term firms' profitability. Accordingly, implementing activities on these ESG issues may also foster firms' sustainability commitment over time. Differently, managers must not discourage if companies may achieve shortly financial losses executing some sustainability initiatives such as the implementation of CSR strategy, the efficient use of resources in production processes, and the sustainable supply chain management. These ESG topics may penalize CFP in the short-term but they may help companies to enhance sustainability standards as well as the firm's profitability in the long-term (as demonstrated by the best sustainable AF&B companies). In the wake of our study, we invite other scholars to deepen the ESGP-CFP link in the AF&B sector also focusing on other possible sustainability aspects, enlarging companies' sample and the period analysed, as well as adopting other statistical techniques (e.g. Partial Least Squares Structural Equation Modeling, Dynamic Panel Data, etc.).

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