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Analysis of the relationships between corporate social responsibility and corporate sustainability: empirical study of co-operativism in Ecuador.

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Manuscripts

Table 1. Communalities of corporate social responsibility (CSR) and corporate sustainability (CS)

CSR	Communality
CSR Economic	
CSR1. Products	0,522
CSR2. Quality	0,705
CSR3. Prices	0,671
CSR4. Economic growths	0,604
CSR Legal	
CSR5. Regulations	0,610
CSR6. Employment laws	0,572
CSR7. Reports	0,647
CSR8. Rules of Procedure	0,586
CSR9. Environment	0,616
CSR Ethical	
CSR10. Ethics guidelines	0,753
CSR11. Ethics Committee	0,720
CSR12. Ethics Practices	0,742
CSR13. Ethics Business	0,619
CSR Philanthropic	
CSR14. Beneficial Causes	0,593
CSR15. Donations	0,648
Corporate Sustainability	Communality
CS Corporate Identity	
CS1. Vision and Mission	0,586
CS2. Institutional Values	0,563
CS3. Identification	0,597
CS Economic	
CS4. Economic Reports	0,658
CS5. Budgeted	0,781
CS6. Leadership	0,657
CS Social	
CS7. Stakeholders	0,598
CS8. Equal Opportunities	0,636
CS9. Suggestions	0,603
CS10. Business purpose	0,773
CS Environmental	
CS11. Recycling programs	0,782
CS12. Nonrenewable resources	0,601
CS13. Environmental certificates	0,694
CS14. Environmental impacts	0,825
CS15. Green providers	0,643

Source: Own elaboration

Table 2. Estratification of the Sample

Non financial Co-operatives	N Co-operatives	%	N Stakeholders
Consumption	16	1%	7
Production	492	18%	210
Services	1943	73%	828
Housing	216	8%	92
Total	2667	100%	1137
Financial Co-operativas	N Co-operativas	%	N Stakeholders
Segment 1	31	5%	50
Segment 2	38	6%	60
Segment 3	82	12%	120
Segment 4	176	26%	260
Segment 5	326	49%	490
Without segment	12	2%	20
Total	665	100%	1000

Source: Own Elaboration

Table 3. Sample characteristics

Variable	N	%	Mean (Sd)
Age			37,7 (10,9)
Sex			
Woman	714	35,0	
Man	1328	65,0	
Education			
Post-compulsory secondary Education or lower	1084	53,1	
Professional technician	246	12,0	
Diploma	94	4,6	
Degree	574	28,1	
MSc or PhD	44	2,2	
Internal Stakeholder			
Shareholder	726	35,5	
Employee	1.199	58,7	
Manager	56	2,7	
Shareholder and Employee	53	2,6	
Shareholder and Manager	10	0,5	
External Stakeholder			
Provider	106	14,5	
Customer/User	537	73,6	

Source: Own elaboration.

Table 4. Coefficient correlation: CSR and Corporate Sustainability

	Mean	SD	CSR-Econ.	CSR-Legal	CSR-Ethical	CSR-Philan.	CS-C. Ident.	CS-Econ.	CS-Social
CSR-Economic	4,71	0,58	1						
CSR-Legal	4,32	0,70	0,25**	1					
CSR-Ethical	3,52	1,13	0,02	0,45***	1				
CSR-Philanthropic	3,52	1,09	0,07	0,11	0,19*	1			
CS- C. Identity	4,38	0,79	0,15	0,42***	0,30***	0,03	1		
CS-Economic	4,45	0,93	0,16	0,12	0,06	0,07	0,19*	1	
CS-Social	4,46	0,62	0,32***	0,18	0,01	0,11	0,22*	0,34***	1
CS-Environmental	2,84	1,14	0,16	0,32***	0,34***	0,28***	0,16	0,09	0,21*

*** $p < 0,001$

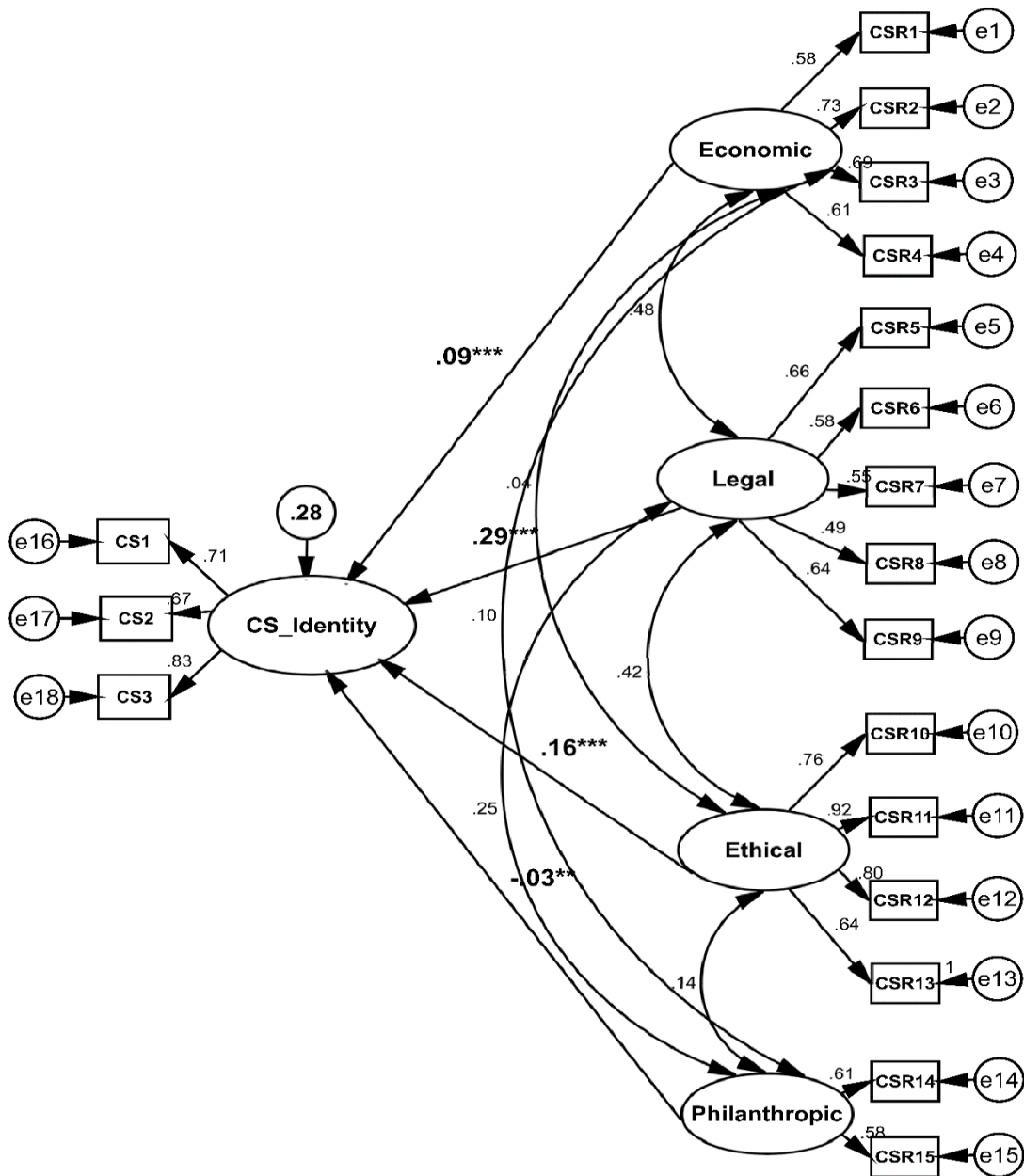
Source: Own elaboration

Table 5. Goodness of fit indexes of the estimated models

Indicator	CS dimensions				
	Corporate identity	Economic	Social	Environmental	
χ^2/df		33.8	27.86	40.80	28.48
GFI		0.98	0.94	0.94	0.94
AGFI		0.96	0.96	0.96	0.95
CFI		0.96	0.96	0.96	0.94
NFI		0.97	0.95	0.97	0.95
TLI		0.97	0.94	0.94	0.93
RMSEA (CI 90%)	0.041 (0.021 - .068)	0.067 (0.05 - 0.11)	0.078 (0.05 - 0.13)	0.075 (0.05 - 0.12)	

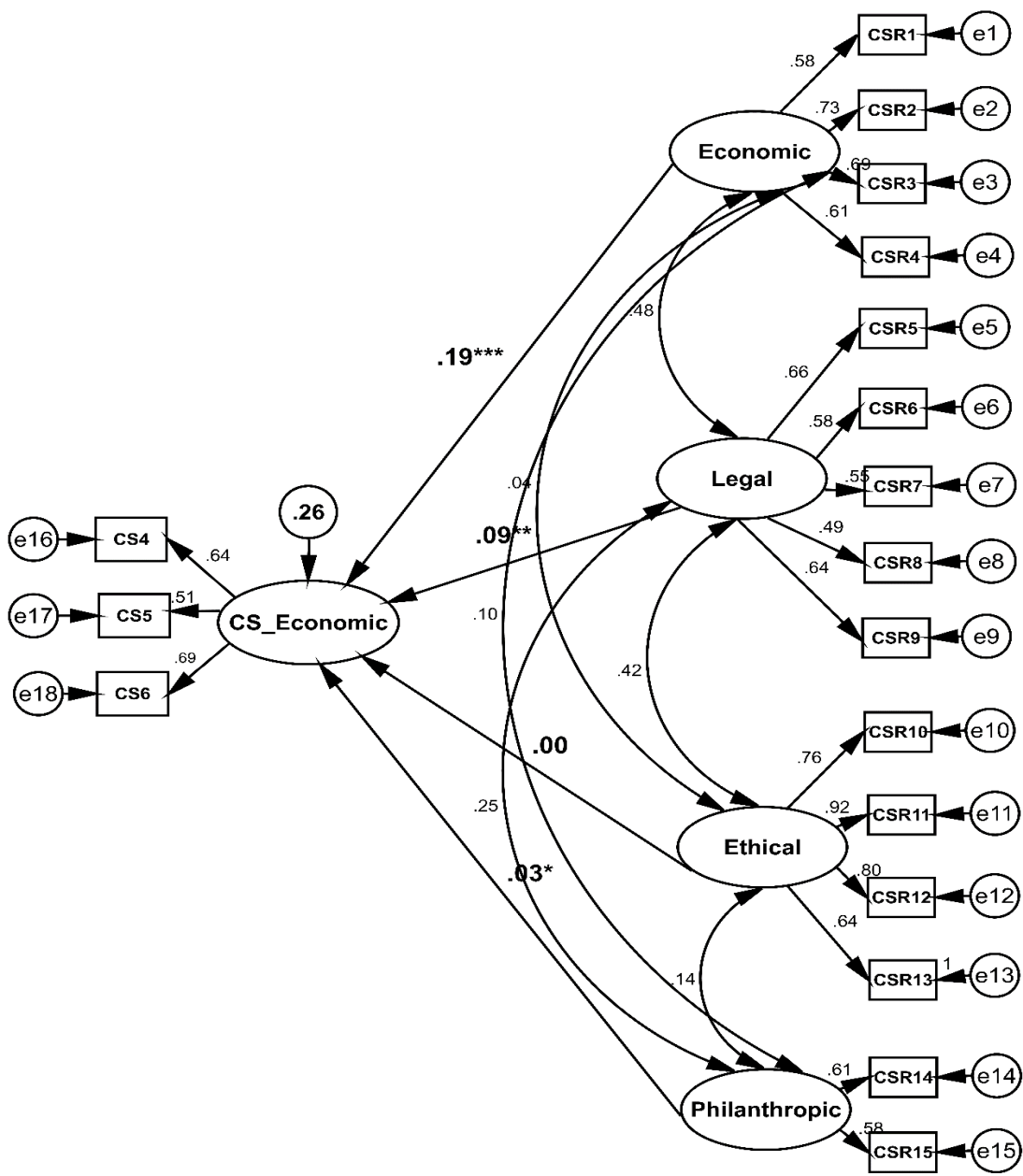
Source: Own elaboration

Figure 1. Estimation of structural model: relationships of CSR dimensions regarding corporate identity dimension (corporate sustainability).



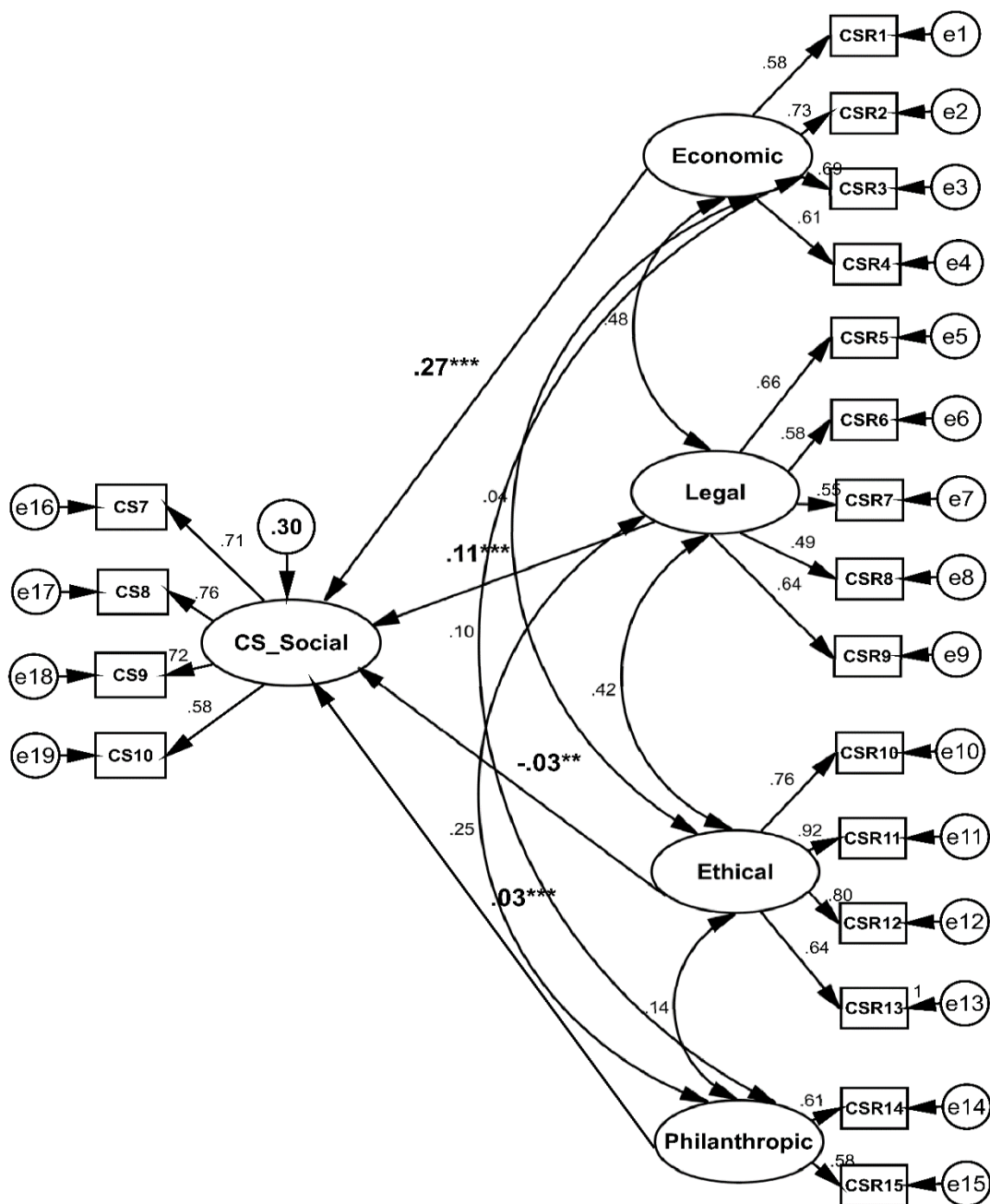
Source: Own elaboration

Figure 2. Estimation of structural model: relationships of CSR dimensions regarding economic dimension (corporate sustainability).



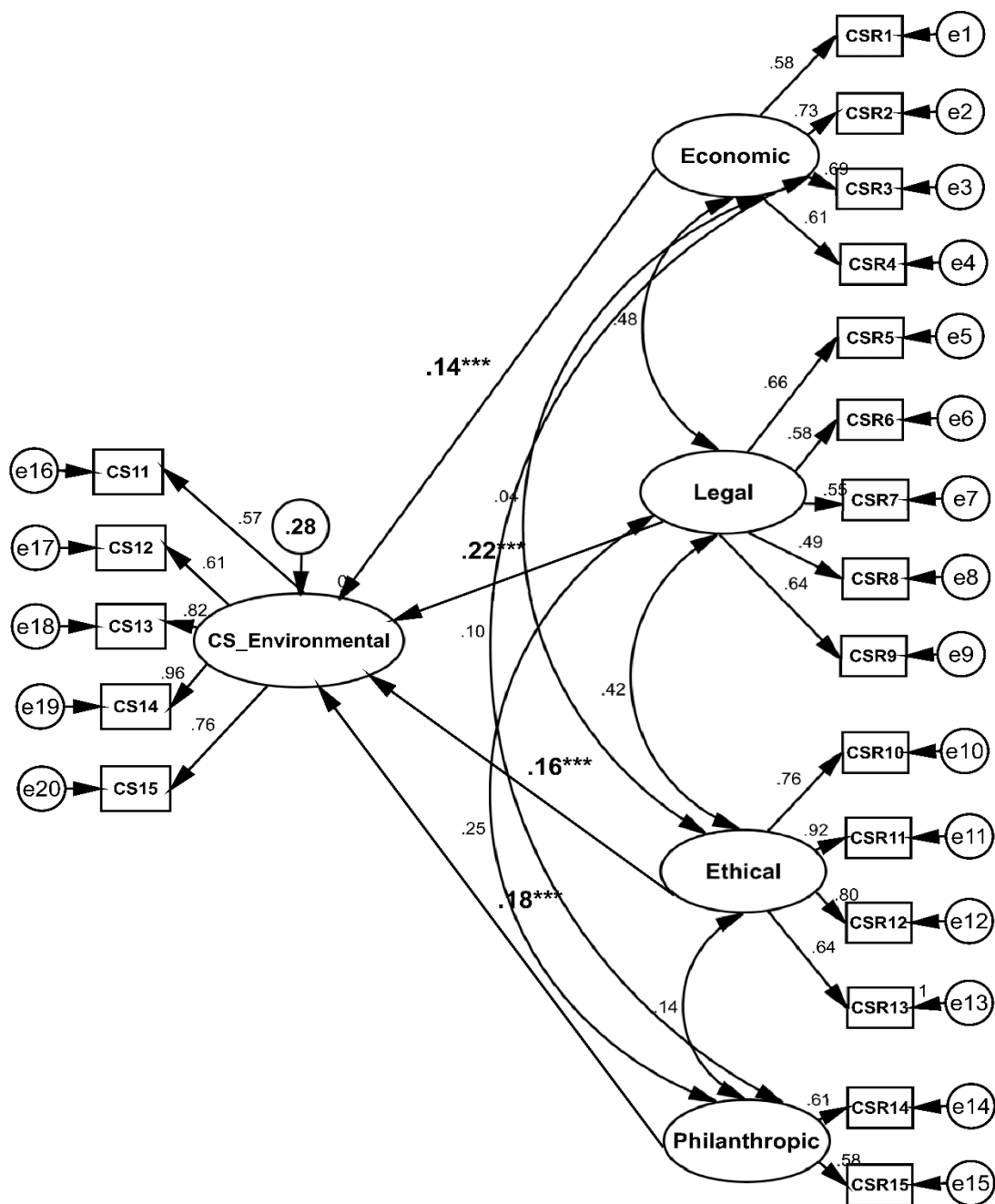
Source: Own elaboration

Figure 3. Estimation of structural model: relaciones de las CSR dimensiones sobre la social dimension (corporate sustainability).



Source: Own elaboration

Figure 4. Estimation of structural model: relationships of CSR dimensions on the environmental dimension (corporate sustainability).



Source: Own elaboration

Analysis of the relationships between corporate social responsibility and corporate sustainability: empirical study of co-operativism in Ecuador.

Corporate social responsibility (CSR) and corporate sustainability have been subject to wide academic debate in recent times. However, publications that connect both constructs in most parts are clearly theoretical. The aim of this work is to analyse the possible relationship between corporate social responsibility and corporate sustainability in Ecuadorian co-operatives. These approaches lead to focusing this study on the perceptions of internal and external stakeholders. For this, a sample of 2,042 individuals from these social economy institutions was used. Various covariance-based structural equation modelling (CB-SEM) examples were developed in order to determine the effect of the dimensions of the CSR within the dimensions of corporate sustainability. The main findings of this research allowed for the determination that there is a positive and statistically significant correlation between the dimensions of these constructs. In any case, within the relationships of the four CSR dimensions identified (economic, legal, ethical and philanthropic), the greatest link among them with the social dimension of corporate sustainability is highlighted. This model explains 30.2% of the variance of this dimension. Specifically, its link with the economic dimension ($\gamma = 0.27, p < 0.001$) and the legal dimension ($\gamma = 0.11, p < 0,001$) of CSR stands out.

Keywords: Corporate Social Responsibility; Corporate Sustainability, Socially-responsible management, Co-operatives, Ecuador

1. INTRODUCTION:

With the passing of time, the business sector is facing new challenges which make complying with institutional goals more difficult, thus making the adoption of new practices for the benefit of the company and the environment necessary. In this context, the co-operative sector, since the beginning, has responded to the associated and economic needs of its members and stakeholders (Fernández *et al.* 2018). Notwithstanding, strategies should be employed which are more than mere

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3 philanthropic contributions (Uski *et al.* 2007). From here, the need to implement
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5 corporate social responsibility (CSR) practices in these institutions of the popular and
6
7 solidarity economy arises, as well as analysing the contribution of these practices to the
8
9 achievement of corporate sustainability. The name “popular and solidarity economy” is
10
11 widely accepted in Latin America as referring to the area that, on a global level, is
12
13 known as social economy. The institutions which form it are distinguished by their
14
15 capacity to construct an equal, sustainable and comprehensive society (Lee 2019). In
16
17 addition, their management model is focused on social aims, in which its members are
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19 performing tasks such as production, exchange, commercialisation, financing and
20
21 consumption of goods or services. Specifically in Ecuador, according to the regulations
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23 in force, they are considered to be included within a range of organisations among
24
25 which the following may be highlighted: associations, federations, savings banks, co-
26
27 operatives, mutual societies, etc. (Calvo *et al.* 2019).
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33 Although there is no consensus on the definition of CSR (Aguinis and Glavas
34
35 2012), it is recognised as being a wide-ranging and multi-dimensional construct
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37 (Dahlsrud, 2008), that looks for balance between business decisions and the well-being
38
39 of its stakeholders (Epstein *et al.* 2015). For its part, corporate sustainability is projected
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41 in some research as a positive effect of CSR (Amini and Bienstock 2014), that includes
42
43 the environment as a central axis of its concerns, given that it is the area where
44
45 businesses and individuals interact (Van Marrewijk and Werre 2003). In this sense, its
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47 preservation and care allow for the subsistence of the business over time and, as such,
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49 for future generations (Baumgartner 2014). Due to this, there is a growing interest
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51 among organisations in an ethical management framework that allows for sustainable
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53 economic growth, environment protection and the development of a company with a
54
55 long-term approach (Bodhanwala and Bodhanwala 2018).
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3 Organisations which have CSR as a central idea play a leading role in the search
4 for sustainability (Baumgartner and Rauter 2017), given that they actively contribute to
5 the creation of jobs, generation of income, abilities and, in general, the development of
6 human capital (Ashrafi *et al.* 2018). For this, they should promote good social practices
7 in order to ensure corporate citizenship, present transparent performance reports and,
8 most of all, behave ethically (Balmer *et al.* 2007). Due to the importance of these
9 constructs on a global level, because of the benefits for the organisation-stakeholders-
10 environment trilogy, social management in developing countries has barely been studied
11 (Melissen *et al.* 2018).
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24 The main goal of this work is to provide empirical evidence of the possible
25 relationships between corporate social responsibility and corporate sustainability in co-
26 operativism in Ecuador, considering the importance of the practice of social
27 sustainability in this popular and solidarity business sector (Fernández *et al.* 2018). In
28 this case, the co-operatives present themselves as institutions created to serve the
29 company (Alfonso and Rivera 2013) and, as such, are attracted to the application of
30 these constructs in their management. In this Latin American country, co-operatives are
31 grouped into two large blocks, according to whether they are dedicated to the financial
32 sector or not. In this way, the first large block is composed of financial co-operatives,
33 within which they are sub-divided by segments (from 1 to 5), in accordance with the
34 monetary value of their assets. The second large block is composed of the co-operatives
35 that do not engage in financial activity as their main activity. Within these ones, the sub-
36 division depends on the main activity that is being developed. This may be: services,
37 production, housing and consumption.
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56 In order to report on this goal, fieldwork was developed, in which a research
57 questionnaire was given to the co-operative stakeholders, which was adapted from the
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3 theoretical model of Carroll (1979) for the CSR construct; and the models of Chow and
4
5 Chen (2012), Lee and Saen (2012), Simões and Sebastiani (2017) for the corporate
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7 sustainability construct. The correlations among the dimensions of both constructs were
8
9 analysed by applying Pearson's linear correlation co-efficient. For their part, the causal
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11 relationships were statistically studied using different covariance-based structural
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13 equation modelling (CB-SEM) examples, looking to specify, where appropriate, the
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15 effect of the CSR dimensions within the dimensions of corporate sustainability.
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19 This article is composed of five main sections, in addition to this introduction.
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21 To start with, the literature review has been conducted, which constitutes the basis for
22
23 focusing the research area. The second part presents the methodology referring to the
24
25 fieldwork and relationships established between both constructs; followed by the results
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27 and the discussion of these. It ends with the conclusions which show the main
28
29 contributions of the study and the future lines of research.
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32 33 34 **2. LITERATURE REVIEW:**

35 36 37 **2.1. Overview of co-operativism in Ecuador**

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39 In Latin America, co-operativism began with the indigenous people, whose
40
41 various forms of co-operation were weakened after the arrival of the Spanish
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43 *conquistadores*. Thus, the dominant pre-Colombian cultures in Guatemala, Bolivia,
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45 Ecuador and Peru adopted a unique combination of work and property which involved
46
47 multiple group and individual forms, while also developing social solidarity supply
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49 systems. Specifically, in Ecuador, these types of organizations emerged in the last
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51 decade of the 19th century, in the ancient city of Quito, where voluntary forms of co-
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53 operation existed that were characterised by projects for the community's benefit such
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55 as community or jointly responsible work, among others (Calvo *et al.* 2019). In 1937,
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3 state intervention in this sector led to the first Law for Co-operatives in Ecuador. Now
4
5 in the 21st century, Ecuadorian co-operativism has been converted into a strategic part
6
7 of the social economy. Because of this, in 2011, a modern regulation in this sector
8
9 known as the Organic Law of Popular and Solidarity Economy was passed and, at the
10
11 same time, the Superintendency of Popular and Solidarity Economy was created as a
12
13 regulatory body for the associative, communal, co-operativist and popular economic
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15 unit sectors, among others (Gómez García *et al.* 2018).
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21 2.2. Theoretical Background

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23 Currently, the role of organisations is suffering from a notable change in terms of goals
24
25 and targets. In this sense, gradually, businesses are no longer mere providers of goods
26
27 and services; they are becoming socially-responsible institutions. This means that their
28
29 operations will affect the entire community (internal-external stakeholders and the
30
31 environment) where they are developed (De Witte and Jonker 2006). With this premise,
32
33 CSR is seen as the commitment made by businesses to maximise the long-term
34
35 economic benefits while, at the same time, taking care of social well-being, by means of
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37 policies which allow for the sustainable use of material resources and an appropriate
38
39 management of human resources (Alvarado-Herrera *et al.* 2017). This suggests a solid
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41 advance towards the sustainability of the organisation and society in general (Pérez *et*
42
43 *al.* 2018).
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49 The application of these socially-responsible management principles creates
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51 organisational profits such as an increase in productivity, efficiency, improvement in the
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53 quality of products and services and sustainable competitive advantages (Glavas 2016).
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55 However, strategies vary according to the type of organisation and the context in which
56
57 they operate, given that they have different priorities and values which specify their way
58
59 of behaving (Saxena and Kohli 2012). Because of this, the co-operatives, being social
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3 economy institutions, with solid, universal co-operative principles, should adopt CSR
4
5 strategies based on sustainable and ethical management, within the regulatory
6
7 framework of this sector, where the following are prioritised: transparency,
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9 democratisation, co-operation and environmental management (Lee 2019).
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13 2.3. Corporate Social Responsibility

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16 Co-operativism is a social movement whose organizational model, regardless of its
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18 activity, is focused on serving the community (Calvo *et al.* 2019). Thus, it possesses
19
20 different financial structures in comparison with mostly commercial businesses, given
21
22 that they tend to have less financial profitability, while also having less chance of risks
23
24 (Challita *et al.* 2014). In this case, CSR is presented as a commitment made by the
25
26 businesses to behave in a socially-responsible way. This implies doing more than
27
28 merely complying with the applicable legislation, seeking to safeguard the overall well-
29
30 being of the community they operate in (González Santa Cruz *et al.* 2019). In this way,
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32 it involves the placement of institutional targets that are in accordance with the
33
34 environment and all its stakeholders, without forgetting the financial result, which will
35
36 guarantee the permanence of these institutions throughout the years (Melissen *et al.*
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38 2018). It is because of this that it may be considered that these types of organisations are
39
40 concerned with the compliance and adoption of strategies related to CSR, given that it
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42 allows for them to develop the economic, social and financial aspects in a sustainable
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44 way (Dyczkowska 2015).
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51 In this context, this research uses, from the world of CSR, the theoretical model
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53 of Carroll (1979) as a reference. It has traditionally been used in commercial businesses.
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55 Notwithstanding the above, it is consistent with the principles, values and philosophy of
56
57 the institutions of popular and solidarity economy (Uski *et al.* 2007). This is because,
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59 despite being organisations with priorities that are more social as opposed to financial,
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3 co-operatives should also seek profitability in order to cover the needs of their
4 stakeholders, in order to comply with the principles of mutual help and the distribution,
5 if appropriate, of surpluses (Bollas-Araya and Seguí-Mas 2014).
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10 The model indicated, of a pyramid type, is structured on the basis of four CSR
11 dimensions: economic, legal, ethical and philanthropic. The economic dimension is
12 located on the base of the pyramid and includes the financial result, a product of the
13 commercialisation of norms and regulations, in such a way that the organisation has
14 legal stability (Roessler 2010). For their part, the ethical dimension is related to
15 transparency, principles and reasonable behaviour for the purpose of protecting and
16 respecting human and environmental rights (Kolk 2016). The philanthropic dimension
17 is found in the upper part of the pyramid. This relates to the voluntary help of the
18 institutions towards charitable causes (Aakhus and Bzdak 2012).
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32 2.4. Corporate Sustainability

33 Corporate Sustainability arises as one of the results of sustainability
34 development, whose appearance in 1987 in the Brundtland report (Montiel and
35 Delgado-Ceballos 2014) had the preservation of the planet as its core concern
36 (Baumgartner and Rauter 2017). A few years later, the targets of this report were taken
37 in order to be integrated into business management, considering the economic factor as
38 well (Oskarsson and Von Malmborg 2005). However, despite the growing interest of
39 companies in the publication of sustainability reports, the aim of this construct appears
40 to not be entirely clear (Baumgartner and Ebner 2010). In any case, currently many
41 organizations have, by now, assimilated this vision towards society and the
42 environment, within their models for management, challenges and aims (Gilbert *et al.*
43 2019).
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This is how sustainable business development appears, as an evolution of the traditional concept of corporate development, which focused solely on financial capital (Melissen et al. 2018) in combination with sustainability; thus giving rise to the corporate sustainability. This last one is related to the commitment that organisations have not only to be profitable but to take care of the sustainability of the resources which shall allow for the subsistence of future generations as well (Arrive *et al.* 2019).

This suggests that the community has left its role as a passive agent behind in order to become the main and most demanding stakeholder of an organisation (Bodhanwala and Bodhanwala 2018). In co-operatives, the community as well as the members, managers and workers belong to a single category of stakeholder, given that, in most cases, both parties are users (customers and/or providers) and shareholders at the same time, resulting in certain advantages such as better efficiency and capacity to attract more shareholders, in such a way that it complies with the co-operative principle: concern for the community (Gijsslinckx 2009).

In terms of corporate sustainability, this study has chosen the theoretical models of Lee and Saen (2012), Chow and Chen (2012) and Simões and Sebastiani (2017), where three traditional dimensions of the construct: economic, social and environmental are presented; a new dimension, known as corporate identity, is also included. The economic dimension is reflected in the material wealth of the businesses, this being: the creation of value and competitive advantages (Lee and Saen 2012; Schneider 2015). The social dimension is shown by means of strategies which allow for the improvement of the quality of life of all the stakeholders (Baumgartner and Ebner 2010). The environmental dimension involves the actions taken to diminish the environmental impacts derived from the development of the organisation's productive activities (Chow

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3 and Chen 2012). Finally, the dimension of the corporate identity is related to the
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5 organisation's way of being, which is reflected in its vision, mission values and beliefs
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8 (Balmer *et al.* 2007).
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10 11 **2.5.** *Relationship between corporate social responsibility and corporate* 12 13 *sustainability* 14

15 Although CSR and corporate sustainability come from different sources, they
16
17 take part in a common future and it is that both share the same vision. In this sense, both
18
19 seek a balance between the social, economic and environmental responsibilities
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21 (Montiel 2008). Thus, while corporate sustainability has an intrinsic value (value of the
22
23 entity itself, without considering the value of human beings), CSR provides a value of
24
25 use (profits for the human being).
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29 In any case, various theoretical studies have tried to explain the relationships
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31 between CSR and corporate sustainability (among others, Van Marrewijk and Were
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33 2003; Baumgartner 2014; Lozano 2015; Ashrafi *et al.* 2018). In this sense, some
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35 researchers have considered that both constructs have the same meaning (Montiel and
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37 Delgado-Ceballos 2014) and coincide with a three-dimensional approach. Others, by
38
39 contrast, argue that the constructs have different sources and, as such, they should be
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41 studied as separate concepts (Bansal and Song 2017; Ashrafi *et al.* 2018). Finally, there
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43 is a group of academics that have reached the conclusion that the study of this
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45 relationship is complex and confusing and, therefore, they recommend the integration of
46
47 both constructs (Lozano 2008; Sarvaiya and Wu 2014).
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51 Despite the numerous theoretical studies published over time, there is little
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53 empirical work concerning the question. Accordingly, Saxena and Kohli (2012)
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55 analysed the impact of CSR in corporate sustainability in the banking sector of India,
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57 inserting the size (the total number of assets) and the age of the bank as control
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3 variables. To do so, they worked with 38 institutions. So as to measure corporate
4 sustainability, these researchers focused on the financial indicators, concluding that
5 there is no concrete relationship between the two constructs. For their part, Sarvaiya and
6 Wu (2014) have explained this relationship using an empirical study based on a
7 qualitative analysis of the viewpoints of the senior officers of the largest corporations in
8 New Zealand. One of the main findings was that the terms of CSR and corporate
9 sustainability are used synonymously for the publication of social management reports.

10
11 For their part, Pérez *et al.* (2018), basing themselves on the theory of the
12 stakeholders, have researched corporate sustainability and CSR (as a single construct).
13 For this, they considered the perceptions of 600 employees of Spanish businesses, in
14 order to determine the influence of these practices on the staff's behaviour, commitment
15 and satisfaction. The results of this work indicate that the perceptions of the workers
16 regarding the dimensions of these constructs differ among them and that each one of
17 them is related in a positive and significant way. Recently, Arrive *et al.* (2019) analysed
18 the importance of CSR in corporate sustainability. In order to do so, they worked with a
19 sample of 154 business customers in Beijing (China). Their results show that CSR
20 practices have a significant impact on the image and re-evaluation of the organisation,
21 considered to be a fundamental part in the achievement of corporate sustainability. In
22 any case, empirical studies that analyze the possible relationships among dimensions
23 which make up both constructs have not even been developed, which provides an
24 appropriate originality to this study.

25
26 Considering the results of previous studies, this research follows the
27 consequential theory of corporate social responsibility and corporate sustainability
28 constructs of Baumgartner (2014). This research argued that the inclusion of the social
29 practice significantly influences the ability of organisations to survive and generate
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3 profits in the long term. In accordance with the approach of the stakeholders, business
4 operations not only affect the shareholders but also the community, employees (Lu *et al.*
5 2019) and the environment (Sial *et al.* 2018). For this, one way of identifying the
6 contribution of CSR to corporate sustainability is by means of the impact on the
7 behaviour of customers (Latif *et al.* 2018) and employees (Pérez *et al.* 2018).
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16 **3. METHODOLOGY**

17 *3.1. Survey Design.*

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22 The target of this research consists of analysing the possible relationships between the
23 dimensions of CSR and corporate sustainability. By doing so, it intends to see the
24 possible causal relationship between them and both constructs in general. To do so, a
25 quantitative methodology was developed, by means of fieldwork in which a research
26 questionnaire was applied. This allowed for measuring the perception of the
27 stakeholders (members, employees and leaders/managers) regarding the CSR and
28 corporate sustainability strategies being used in Ecuadorian co-operatives.
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40 *3.2. Data Collection*

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42 The fieldwork was supported by a group of researchers from Eloy Alfaro de Manabí
43 Lay University in Ecuador. To do so, the surveyors received training regarding the
44 strategies for applying the questionnaire and the criteria for verifying the information
45 received from the individuals chosen for the study. The data was collected in the period
46 between the 1st of February and the 15th of March 2018, being carried out throughout
47 the entire country of Ecuador. In order to give the research representativeness, a
48 stratified sample was used (according to the data reflected in the following section 3.4)
49 in terms of the segments in the financial co-operatives and the activity areas in the non-
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3 financial co-operatives, using the grouping presented by the Superintendency of Popular
4 and Solidarity Economy as a reference (public body belonging to the function of
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6
7 Transparency and Social Control of the Government of Ecuador).
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10 11 3.3. Measuring 12

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14 The research questionnaire was structured in relation to two ideas: socio-demographic
15 situation and perception regarding the constructs being studied (regarding the basis of
16 the models already indicated). The first idea was offered with yes and no, closed and
17 open (numerical) question types. This allowed for the differentiation of the CSR and
18 corporate sustainability actors (member, employee, leader/manager), with their
19 respective characterisation of age, sex and level of studies, among others. Additionally,
20 this first idea includes the possible additional role of each one of the stakeholders that it
21 may be: customer/user and/or provider. The second idea was based on the main
22 constructs of this research, which used a Likert scale of 5 points, in which 1 means
23 “totally disagree” and 5 “totally agree”.
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37 For the CSR construct, the theoretical basis uses the model of Carroll (1979) and
38 the questionnaire proposed by Kim, *et al.* (2016), which has recently been validated by
39 González Santa Cruz, *et al.* (2019). These researchers showed, by means of a large
40 empirical study, the appropriateness and adaptation of the questionnaire of Kim, *et al.*
41 (2016) to the Ecuadorian co-operative sector ($\chi^2(105) = 8773.86, p < 0.0001$). The
42 goodness of fit statisticals of this recent study are the following: Comparative Fit Index
43 (CFI) = 0.916, Tucker Lewis Index (TLI) = 0.910 and Root Mean Square Error of
44 Approximation (RMSEA) = 0.59, where the confidence intervals of 90% are included.
45 On the other hand, the theoretical model and the questionnaire suggested by Chow and
46 Chen (2012) was used for the construct of corporate sustainability which, similar to that
47 indicated previously, applied the validation and appropriateness of the scale ($\chi^2/df =$
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3 4.02, $p < 0.05$), by means of the goodness of fit statistical: CFI = 0.970, TLI = 0.910 y
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5 NFI = 0.960.

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7 With this background, the adaptation of the questionnaire referring to the
8
9 construct of corporate sustainability suggested by Chow and Chen (2012), bearing in
10
11 mind that suggested by Kim, *et al.* (2016) to measure CSR, had already been adapted to
12
13 and recently validated for the co-operativism of Ecuador. For this, the adaptation of the
14
15 previously validated scales was performed with the help of a group of experts in the
16
17 area of the Ecuador social economy. In order to specify if the proposed items were
18
19 appropriate, the matrix of communality was performed. In this, we observe the
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21 proportion of variance which each variable contributes to the final solution (table 1).
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26 INSERT TABLE 1
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28 29 30 3.4. *Sample and sampling error*

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32 This study collects the perceptions regarding the CSR and corporate
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34 sustainability of the stakeholders: leaders/managers, employees and members of the co-
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36 operatives of Ecuador (many of whom are, at the same time, customers/users and/or
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38 providers). The number of members registered reached 6,509,311 individuals,
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40 belonging to 3,332 active co-operatives (data from the 31st of December 2017,
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42 according to the Superintendency of Popular and Solidarity Economy – a government
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44 institution of Ecuador). The study sample consisted of 2,137 individuals. The
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46 stratification was performed with consideration of the percentage that each type of co-
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48 operative represents (within the non-financial and financial blocks), according to the
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50 data registered in the aforementioned institution. They also coincide with the
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52 percentages of valid surveys received (table 2).
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57 INSERT TABLE 2
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3 **As aforementioned**, 2,137 surveys were applied, of which only 95 of them (which
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5 represents 4.4%) were rejected due to incomplete or lacking data, resulting in a total of
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7 2,042 valid surveys (Table **3**). Considering this data, a sampling error of 2.2% for a
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9 confidence of 95% is specified.
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12 INSERT TABLE **3**
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16 3.5. *Data analysis*

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18 Once the field work was completed, a purification of the surveys was
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20 undertaken, excluding those which contained mistakes or items which lacked values. In
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22 the next step, the tabulation and statistical treatment of the data was performed and the
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24 SPSS v 23 and **AMOS Graphics** software was used, which determined statisticals to
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26 show the causal relationship between the dimensions of CSR and corporate
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28 sustainability. First of all, Pearson's linear correlation coefficient (r) was used in order
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30 to establish the statistically significant correlations among the dimensions of each one
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32 of the constructs studied. **Following this, diverse covariance-based structural equation**
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34 **modelling (CB-SEM) examples have been developed, in order to determine the effect**
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36 **and relationships of the CSR dimensions within the dimensions of corporate**
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38 **sustainability.**
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44 4. RESULTS

45 4.1. *Correlation Matrix*

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48 In table **4**, the description of the scores obtained in the surveys collected is shown. Here,
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50 it can be seen that the dimension which had the highest score within CSR was the
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52 economic one (4.71 mean; 0.58 SD). This confirms that, much like a purely commercial
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54 business, the Ecuadorian co-operatives also have their primordial attention in this
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56 dimension but with a different approach, given that they are non-profit organisations. In
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3 this case, these social economy organisations have an aim directed at the market and the
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5 results are, in this way, being competitive and surviving over time.
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8 For their part, the dimension with the highest score for corporate sustainability
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10 was the social dimension (4.46 mean; 0.62 SD). This means that this construct has a
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12 long-term approach, whose results are aimed at finding an economic-environmental
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14 balance, avoiding endangering resources which shall satisfy the needs of future
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16 generations. In the specific study area, this result confirmed that the well-being of the
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18 company prevails in Ecuadorian co-operatives, complying with the premise of the co-
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20 operative movement.
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23
24 In table 4, Pearson's linear correlation coefficient (r) among the dimensions of
25
26 the constructs studied is shown. The maximum correlation among the variables does not
27
28 exceed 0.70. Therefore, it does not present multi-collinearity problems which may
29
30 affect the findings of this research.
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33 INSERT TABLE 4
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36 37 4.2. Multivariate Analysis

38 For the purposes of proving and estimating, where appropriate, the possible
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40 causal relationships, the results of the structural equations modelling examples are
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42 shown, which seek to determine the effect of the CSR dimensions in each one of the
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44 dimensions of corporate sustainability.
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47 First of all, and related to the corporate identity dimension (corporate
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49 sustainability), all the CSR dimensions were statistically significant ($p < 0.05$), although
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51 with different weightings (figure 1). The legal dimension was the variable that presented
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53 the greatest effect, and directly so, on corporate identity ($\gamma = 0.29, p < 0.001$), followed
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55 by the ethical dimension ($\gamma = 0.16, p < 0,001$) and the economic dimension ($\gamma = 0.09, p$
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57 < 0.001). The one which was indirect and with a lower weighting, was the philanthropic
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3 dimension ($\gamma = -0.03, p = 0.004$). The model explained 28.1% of the variance of
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5 corporate identity dimension.
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8 PLEASE INSERT FIGURE 1
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12 Secondly, figure 2 shows another model related to the economic dimension
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14 (corporate sustainability), in which it is seen that the CSR dimensions which showed a
15
16 direct effect and were statistically significant were economic ($\gamma = 0.19, p < 0.001$), legal
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18 ($\gamma = 0.09, p = 0.006$) and philanthropic ($\gamma = 0.03, p = 0.021$), ordered according to their
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20 weighting. The model explained 26.2% of the variance of the economic dimension.
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24 PLEASE INSERT FIGURE 2
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28 In third place, in relation to the social dimension (corporate sustainability),
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30 figure 3 shows that all the CSR dimensions were statistically significant ($p < 0.05$). The
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32 economic dimension was the variable that presented the highest effect ($\gamma = 0.27, p <$
33
34 0.001), followed by the legal dimension ($\gamma = 0.11, p < 0.001$) and the philanthropic
35
36 dimension ($\gamma = 0.03, p = 0.004$), all of these directly. The ethical dimension showed an
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38 indirect effect ($\gamma = -0.03, p < 0.001$) on the social dimension. The model explained
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40 30.2% of the variance of the social dimension.
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45 PLEASE INSERT FIGURE 3
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50 Finally, in terms of the environmental dimension (corporate sustainability),
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52 figure 4 determines that all the CSR dimensions had a significant and direct effect. The
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54 legal dimension had the highest effect ($\gamma = 0.22, p < 0.001$), followed by philanthropic
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56 ($\gamma = 0.18, p < 0.001$), ethical ($\gamma = 0.16, p < 0.001$) and economic ($\gamma = 0.14, p < 0.001$).
57
58 All of these explain 28.4% of the environmental dimension variance.
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PLEASE INSERT FIGURE 4

Regarding the settings of the models in table 5, the indicators are shown. These displayed appropriate values for all the CSR dimensions.

PLEASE INSERT TABLE 5

5. DISCUSSION

The social management of organisations has led to a growing interest among academics in recent years (Baumgartner 2014; Bansal and Song 2017; Ashrafi *et al.* 2018), focusing his attention on the dimensionality of corporate social responsibility and corporate sustainability. However, despite having identified differences, similarities and relationships between both constructs, there are still only a few empirical studies which support the relationship. Some of these support the results in the perceptions of the employees (Pérez *et al.* 2018), customers (Latif *et al.* 2018) or the opinion of the managers (Sarvaiya and Wu 2014). This research is aimed at financial aspects, workplace satisfaction and commitment or corporate image, putting the multi-dimensional nature of corporate sustainability to one side.

This research had the application of a research questionnaire as its starting point, which allows us to discover the perceptions of the stakeholders (internal and external), regarding the socially-responsible activities performed by the co-operatives in Ecuador. These institutions have directed their management and study towards economic, financial or productive questions, without considering the social component (Fernández *et al.* 2018). Due to this, it is essential to create tools that contribute to measuring social management (Dočekalová and Kocmanova 2016) and, most of all, determining the impact of CSR on the financial and non-financial aspects of corporate sustainability

(Epstein *et al.* 2015), considering the specific characteristics of the context where they are applied (Fernández *et al.* 2017).

In this case, the analysis of both constructs was developed by means of a measuring scale which derives from a theoretical study and empirical work was, on the one hand, focused on the CSR dimensions: economic, legal, ethical and philanthropic (Carroll 1979); and, on the other hand, on the traditional dimensions of corporate sustainability: economic, social and environmental (Chow and Chen 2012; Lee and Saen 2012). A new dimension was included for this last construct: corporate identity (Simões and Sebastiani 2017), whose addition to the traditional model is proposed. **This study confirms that Ecuadorian co-operatives have a positive and statistically significant relationship between CSR and corporate sustainability, in all the dimensions.**

1. CONCLUSIONS

CSR and corporate sustainability are wide-ranging, complex and multi-dimensional constructs which have been studied from various perspectives. As such, they have led to vast debates in the academic area, given that both are related to integration in the organisations of social and environmental concerns, which seeks long-term survival and profits. However, despite the importance of these constructs, the literature review shows that there are few empirical studies which are concerned with the consequential analysis of the relationship of these constructs. In addition, many of these present methodological restrictions, given that they have focused on a single part of corporate sustainability, such as the economic or financial dimension.

For their part, especially in Ecuador, only two studies have been published in recent years, but in both of these, each construct is analysed separately. Therefore, one of the main contributions of this research work is to provide empirical evidence of the causal relationships between CSR and corporate sustainability (and their dimensions), in

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3 the co-operativism of this developing country. In this sense, the results of this study
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5 show that there is a consequential relationship between CSR dimensions and corporate
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7 sustainability. This highlights the fact that the dimension with the best score for the
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9 explained variance (30.20%) is the social dimension of corporate sustainability, which
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11 reaffirms the principles of social behaviour of both constructs and the co-operative
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13 sector. Accordingly, this study provides a better understanding of the strategic
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15 applications of CSR dimensions in corporate sustainability, with the aim of promoting
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17 the overall development of Ecuadorian co-operatives.
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22 The implications of this study are related to the preparation of methodology and
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24 the implementation of strategic tools, which allow for Ecuadorian co-operatives and
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26 their institution of control (the Superintendency of Popular and Solidarity Economy) to
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28 discover the contribution of the socially-responsible activities towards corporate
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30 sustainability in these institutions. Similarly, this research looks to provide empirical
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32 evidence to the organisations involved, in order to begin improvement activities, in such
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34 a way that a balanced development happens within society, the co-operative and the
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36 environment. The results show that CSR has a positive and significant impact on
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38 corporate sustainability. As such, it is proposed that the leaders/managers of the co-
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40 operatives adopt the application of instruments which allow for discovering the
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42 perception of their stakeholders regarding advances in social matters. The use of the
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44 scale applied in this research provides a vision regarding the way that the co-operatives
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46 should operate CSR strategically, in order to return to society and comply with the co-
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48 operative principles, as well as the construction of new approaches included for
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50 corporate sustainability.
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56 This research was not exempt from presenting restrictions. The main one was
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58 formed in the fieldwork phase, given that there are co-operatives operating in areas that
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3 are difficult to access. These were sent surveys online, yet they barely achieved any
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5 results. To finish, as a future line of research, it is proposed working with a sample of
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7 commercial businesses in order to specify the possible differences between the co-
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9 operative sector and the commercial sector in terms of CSR and corporate sustainability.
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