



Accounting for Plural Cognitive Framings of Growth and Sustainability: Rethinking Management Education in Latin America

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Abstract

This paper surveys future managers' cognitive framings of interconnected concerns for economic growth, social prosperity, and the natural environment across six countries in Latin America, and elaborates on implications for sustainability management education. Our cluster analysis unveils three cognitive types. Our findings show that whereas some future managers exhibit a 'business case' cognitive frame, prioritizing economic growth over the environment, the other two clusters of participants show signs of cognitive dissonance with some of the tenets of the current growth paradigm while still not neatly fitting the definition of a paradoxical cognitive frame. In particular, individuals within the latter two groups do not visualize links among economic, social, and environmental dimensions that make up sustainable development. Following calls to enhance our understanding of sustainability micro-foundations, our study offers a more nuanced picture of the cognitive plurality beyond dichotomous characterizations of managerial cognitive frames as either business case or paradoxical. Moreover, results elucidate the cultural mediation that operates in the reproduction of business stances vis-à-vis nature, opening up possibilities for management education programs to engage with cognitive plurality to effect paradigmatic change.

Keywords Managerial cognition · Sustainability · Economic growth · Post-growth · Latin America

Introduction

Discussion on sustainable development—i.e., a concept reconciling economic growth with ecological boundaries (Sachs, 2015)—has gained new momentum. The Covid-19 crisis has put mounting pressure on nation-states and businesses to engage with sustainability towards enhancing material living conditions, as well as regenerating ecosystems to mitigate the risk of future pandemics (Bansal et al., 2021). It is, notwithstanding, highly debated whether sustainability can be attained within a model of continuous

economic growth (Raworth, 2017). Moreover, it has been argued that our societal “obsession for growth” should be left behind, to pursue other goals that sustain prosperity while recognizing the finite nature of the environment (Howard-Grenville & Lahneman, 2021; Whiteman et al., 2013).

Studies have suggested an economic paradigm shift necessarily involves shifting existing cognitive frames, and believing that it is essential to unlearn and replace current production and consumption systems (Rees, 1995; Rosner, 1995). Cognitive frames pertain to actors' construals of the world and how they shape their decisions in light of the information they consider and the values that they uphold that make up the motivational basis of their behavior (Grewatsch & Kleindienst, 2018). Since prevailing cognitions in society closely relate to the economic system it displays (Dietz et al., 2003), an enhanced understanding about influential economic actors' cognitive framings of interconnected concerns for economic growth, social prosperity, and the natural environment is called for. Such an understanding may allow us to distill the level of support for strategies that may go beyond the dominant paradigm, characterized by its emphasis on economic growth and its disregard for limits to material expansion (Tomaselli et al., 2017).

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Our research focuses on future business leaders' adherence to growth discourses and construals of sustainability. We survey MBA students since individuals with these backgrounds are considered to bear a passport to business leadership (Bhattacharyya & Rahman, 2020) and, as such, are influential actors in driving collective cognitions (Boillat et al., 2012; Coopey, 2003).

Whereas research on micro-foundations of sustainable development has gained substantive attention (Hahn et al., 2017), our study casts the net wider as we take an 'agnostic' approach to map out different cognitive types (Sharma & Jaiswal, 2018). We depart from extant research that has tended to rely on ready-made frames, characterizing managerial cognition as either *business-case*—entailing a single focus on those environmental and social issues that align with economic objectives- or *paradoxical*—entailing the recognition and acceptance of the simultaneous existence of contradictory objectives, helping actors to tackle sustainability issues beyond incremental solutions—(Hahn et al., 2014). We deliberately avoid a dichotomous grouping, since such dichotomization might have led to a concealed homogeneity (Drews et al., 2019).

Using cluster analysis, we find three cognitive frames suggesting a differentiation in individuals' construals of sustainable development based on the importance given to environmental issues and values that advance sustainability (or not). Whereas one of these emerging clusters suits the definition of a business-case frame, the remaining two do not necessarily fit the definition of a paradoxical frame, requiring that actors not only perceive inherent contradictions, but also *see* the links between opposing elements (Carollo & Guerri, 2018). Instead, we find that while individuals experience dissonance with the underpinnings of the current economic growth paradigm, the links between opposing elements would not be necessarily salient or visible to them. Among these future managers, we uncovered three cognitive tensions pointing to (i) a disconnection between economic growth, consumption, and the use of natural resources; (ii) ambivalence around growth's contribution to prosperity; (iii) ambiguity about the role of technology in tackling environmental problems created by economic growth.

This study advances the literature as follows. First, we contribute to the burgeoning field of sustainability micro-foundations, focusing on managerial cognitive frames (Hahn et al., 2014). Our approach departs from previous studies that have tended to rely on dichotomous characterizations of cognitive frames as either business-case or paradoxical, to offer a more nuanced picture of managerial construals of growth and sustainability. Furthermore, we set out to explore future managers' cognition in Latin America, a region that has remained under-examined by management research, but whose socio-ecological importance cannot be overstated (Aguinis et al., 2020). Our results reveal three

distinct cognitive types that do not necessarily fit 'ready-made' templates, suggesting that more pluralistic views of future managers coexist with an "official" business-case sustainability discourse.

Second, since only the cognitive framings of organizational members that have the skills to promote their views and values will come to shape business action (Bansal, 2003), we elaborate on the implications of our findings for management education to develop spaces where cognitive plurality can be embraced to enable critical reflection about sustainability issues and the inherent difficulties of unbridled economic growth, such that students may develop relevant skills to lead more substantive efforts towards sustainable development (Hahn & Aragón-Correa, 2015). We thus contribute to transdisciplinary management education approaches by outlining promising pedagogical strategies towards expanding future managers' cognitive bandwidth and casting alternatives to the dominant paradigm as ethically resonant (Gröschl & Gabaldon, 2018).

The remainder of the article is organized as follows. First, we introduce the relevant theoretical background and then describe the research setting, methodology, and data analysis. After presenting the results, we discuss the implications of the study findings for theory and practice, and the limitations of our study.

Theoretical Background

Economic Growth and Sustainability

Natural scientists have offered evidence revealing incompatibility between unbridled economic growth and sustainability owing to the exponential rise in the socio-environmental costs of achieving economic expansion in a resource-constrained Earth (Steffen et al., 2015; Weiss & Cattaneo, 2017).

The concept of sustainable development draws attention to the finite nature of our planet and intends to reconcile economic growth with environmental boundaries (Sachs, 2015). However, the debate remains open on whether sustainable development can be attained within a model of continuous economic growth (Raworth, 2017). On the one hand, 'green growth' proponents argue that economic growth can be made green by using resources more efficiently and novel technologies to decouple growth from environmental impact (Wiedmann et al., 2015). However, it has been contended that this approach neither challenges the underpinnings of economic growth, nor reconsiders our relationship with nature (Johnsen et al., 2017). On the other hand, 'post-growth' scholars submit that the world is experiencing a period of un-economic growth, where the costs of economic

expansion (e.g., loss of ecosystem services, climate change) are greater than its benefits (Daly, 2013).

Alternative discourses such as post-growth have remained marginal within management and organization studies, except for noteworthy exceptions (e.g., Vandeventer & Lloveras, 2021). Post growth approaches, although non-monolithic, share common concerns to acknowledge tensions inherent to sustainable development (Gudynas, 2011), change socio-ecological values and rethink the nature of prosperity (Fournier, 2008), and re-imagine economic arrangements in light of planetary boundaries (Demaria et al., 2013).

The international political and scientific communities have highlighted the pivotal role of business leaders in embracing alternative discourses to ‘capitalism-as-usual’ (Patenaude, 2011). From this perspective, the choice of a certain economic paradigm is underpinned by individuals’ construals about the effects of decisions on interconnected concerns for socio-economic prosperity and the environment (Dietz et al., 2003). Against this backdrop, recent reviews on micro-foundations of sustainability suggest that *antecedents* (vis-à-vis consequences) of sustainability engagement such as cognitive frames remain partially addressed (Gond & Moser, 2021; Jones et al., 2019).

Managers' Cognitive Framings of Growth and Sustainability

Cognitive frames, premised on beliefs about the linkage between the choice of actions and the subsequent impact of those actions on outcomes (Gavetti & Levinthal, 2000), pertain to individuals’ construals of the world and how they shape their decisions (Yang et al., 2019). Our focus is on the views that MBA students—as future managers—hold about the relationship between economic growth and sustainable development.

Cognitive frames act as filters that admit certain bits of information while excluding others and lead individuals to consider specific behaviors and strategic responses (Grewatsch & Kleindienst, 2018). In this connection, cognitive frames are moderated by the relative importance individuals attribute to specific values, explaining the motivational bases of behavior (Schaefer et al., 2020).

Certain values are more likely to result in corporate actions that advance sustainable development (Marcus et al., 2015). Schwartz (1992) proposed ten basic universal values¹ that can be plotted in two axes. The first axis juxtaposes *openness to change* with *conservation* (concerning resistance

to change). The second axis juxtaposes *self-transcendence* (entailing concern for the wellness of all and intrinsic motivation) with *self-enhancement* (concerning personal success and extrinsic motivation). A stronger importance given to openness to change and self-transcendence values may more likely advance sustainable development (Raworth, 2017). Conversely, a stronger emphasis on conservation and self-enhancement more likely predicts legitimization of current arrangements (Turker & Ozmen, 2018).

Hahn et al., (2014) seminal work states that there are two kinds of cognitive frames—*business case* and *paradoxical* frames—that individuals hold in tackling growth and sustainability. On the one hand, actors may adopt a *business case frame*, leading individuals to focus on socio-environmental aspects that align with economic objectives and favor economic growth over environmental concerns (Hockerts, 2015). Future managers holding this kind of frame, tend to perceive the market system as “fair” and economic growth as “inescapable”, such that they are expected to actively engage in system justification by which they cognitively legitimize existing economic arrangements (Hafenbrädl & Waeger, 2017). Furthermore, business case cognitive framings have been deemed to make substantive (vis-à-vis ceremonial) business engagement with sustainable development far from warranted, since believing in the fairness of the market may lead future managers to focus on incremental solutions, if not block feelings of moral outrage needed to be motivated to advance the sustainability agenda altogether (Kaplan, 2020).

On the other hand, *paradoxical* cognitive frames entail that actors holding them not only accept that tensions among different objectives exist over time, but also are aware of the links between opposing elements (Wilms et al., 2019). These frames have been deemed to help future managers in making tensions in the growth-environment debate visible and considering multiple stakeholders impacted by economic decisions, potentially leading to substantive responses to sustainable development (Hahn et al., 2014). Moreover, awareness of existing tensions may prompt actors to challenge (vis-à-vis legitimize) existing economic arrangements, rendering a paradigmatic transition possible (Gröschl et al., 2019).

Recently, Sharma and Jaiswal (2018) have suggested that previous research on cognitive framings has focused on a ‘ready-made’ frames’ perspective, risking to reify inherently socially situated processes (Cornelissen & Werner, 2014). Following their lead, we adopt an ‘agnostic’ perspective, breaking from pre-established frames to explore future managers’ cognitive frames in Latin America. A local understanding of future managers’ cognitive frames is needed to distill practical implications for local management education programs to ensure pedagogies give adequate relevance to sustainability values and encourage students to develop

¹ Specifically, universalism, benevolence, security, conformity, tradition, stimulation, self-direction, hedonism, achievement, and power. See Schwartz (2012) for a thorough description on each of these.

bonds with society and the natural environment (Montiel et al., 2018).

Research Setting

Our study surveys future managers' cognition in Latin America (henceforth, LATAM). Besides LATAM scholars' pivotal contributions to post-growth thinking (e.g., Escobar, 2015; Gudynas, 2011; Kothari et al., 2014), setting choice obeys two other reasons.

First, whereas LATAM is a strategic region for the conservation of natural resources due to having the largest biological diversity worldwide (ECLAC, 2018),² it has faced significant difficulties in the sustainable use of its natural wealth that may deliver long-term societal well-being (Aguinis et al., 2020; Banerjee, 2003). The World Economic Forum (WEF, 2014) identified rampant corruption, deficient education, and increasing inequality as the top three regional challenges. Studies have also warned against unsustainable exploitation of natural resources that could undermine future economic and environmental sustainability (Wiener Bravo, 2011), added to creating the potential for potent zoonotic infections such as COVID-19, which has significantly impacted the region's living conditions (López-Feldman et al., 2020). It is thus of paramount importance to LATAM to find a new economic paradigm that is socially inclusive and ecologically sustainable.

Second, previous studies have found that culture-related differences explain variation in attitudes to sustainability (Miska et al., 2018). Geographic, economic, historical, and political differences among countries in the region may easily lead to thinking that more than one meaningful culture is present, making the encompassing 'LATAM' label unreliable (Misoczky et al., 2020). However, comparative studies have found a single Latin American cultural cluster with homogenous values (e.g., Hofstede, 1984; Ogliastrini et al., 1999). In particular, LATAM has been described as an "honor" culture, balancing external reputation and internal self-worth orientations (Leung & Cohen, 2011). More recently Hernandez-Pozas et al. (2021) characterized LATAM as a distinctive cultural cluster where key managerial values are family and group collectivism (relationship orientation), expressive emotional acceptance, high communication context, short-termism, and low uncertainty avoidance.

In light of the above discussion, research setting choice is consistent with suggestions to explore phenomena under extreme circumstances (Eisenhardt & Graebner, 2007),

² ECLAC is the Economic Commission for Latin America and the Caribbean.

Table 1 Participants by school/country

School country	Frequency	Percentage (%)
Argentina	65	35
Mexico	32	17
Ecuador	27	15
Chile	24	13
Uruguay	21	11
Peru	17	9
Grand total	186	100

Table 2 Participants by age group

Age group	Frequency	Percentage
18–24	2	1.10%
25–34	71	38.20%
35–44	90	48.40%
45–54	23	12.40%
Grand total	186	100

granted that LATAM is a relevant setting for sustainable development and has been deemed to comprise a homogenous cultural cluster, making up a suitable (extreme) context for the examination of potentially emerging cognitive plurality.

Methodology

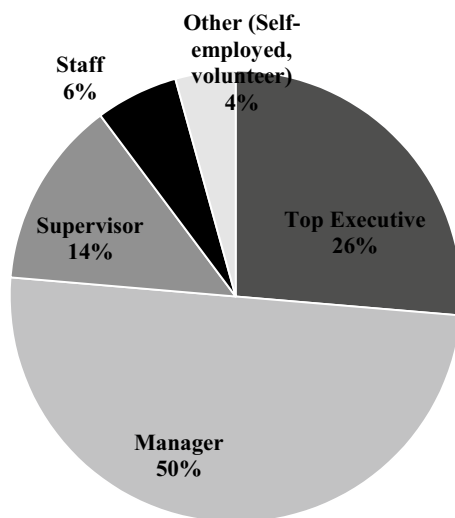
An online survey questionnaire (found in Online Appendix 1) was used, following Drews and van den Bergh (2016, 2017). The questionnaire was organized into five main sections: the first addressed participants' concerns about certain sustainability issues, the second and third sections gathered participants' views on the relationship between economic growth, prosperity, and the environment. The fourth section collected participants' values, following Schwartz (1992) scale of basic values. Finally, the fifth section requested sociodemographic information, including political affiliation, because political conservatism has been associated with system justification (Jost, 2019).

The online questionnaire was administered between April and July 2018 among MBA students from six business schools and countries in LATAM, namely, Argentina, Chile, Ecuador, México, Peru, and Uruguay. The survey yielded 186 complete answers. Table 1 shows the distribution of the number of responses per school/country.

The final sample consisted of 74% male participants, 26% female, reflecting a male dominance, consistent with global business schools' demographics (Konrad et al., 2016). Table 2 depicts the distribution of participants per age group,

Table 3 Participants by country of origin

Country	Frequency	Percentage (%)
Argentina	59	32
Bolivia	1	1
Brazil	2	1
Chile	22	12
Colombia	2	1
Ecuador	25	13
Mexico	29	16
Paraguay	2	1
Peru	14	8
Uruguay	25	13
Outside LATAM	5	3
Grand total	186	100

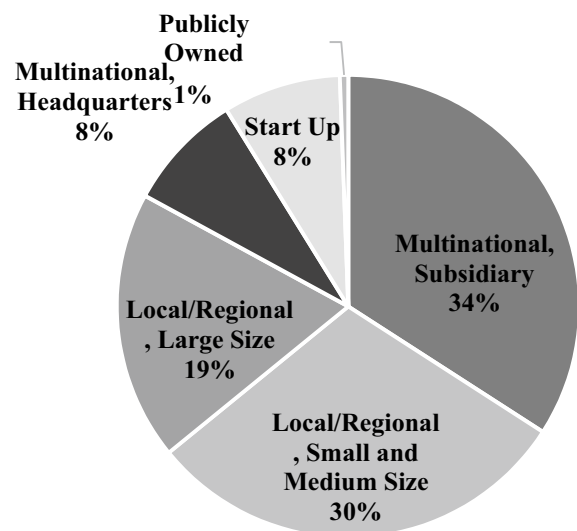
**Fig. 1** Participants by hierarchical rank

and Table 3 shows the number of participants per country of origin.

Concerning participants' occupation, 91% worked for the private/for-profit sector, 5% for the NGO/nonprofit sector, and the rest 4% for the government. Figures 1 and 2 show participants by their hierarchy and those employed in the private sector by the type of company. Figure 3 shows participants' industry affiliation of those employed in the private sector. As shown, participants are from diverse industry backgrounds.

Data Analysis

We used cluster analysis to examine similarities and differences across individuals. We conducted the analysis using Hierarchical Clustering on Principal Components (HCPC)

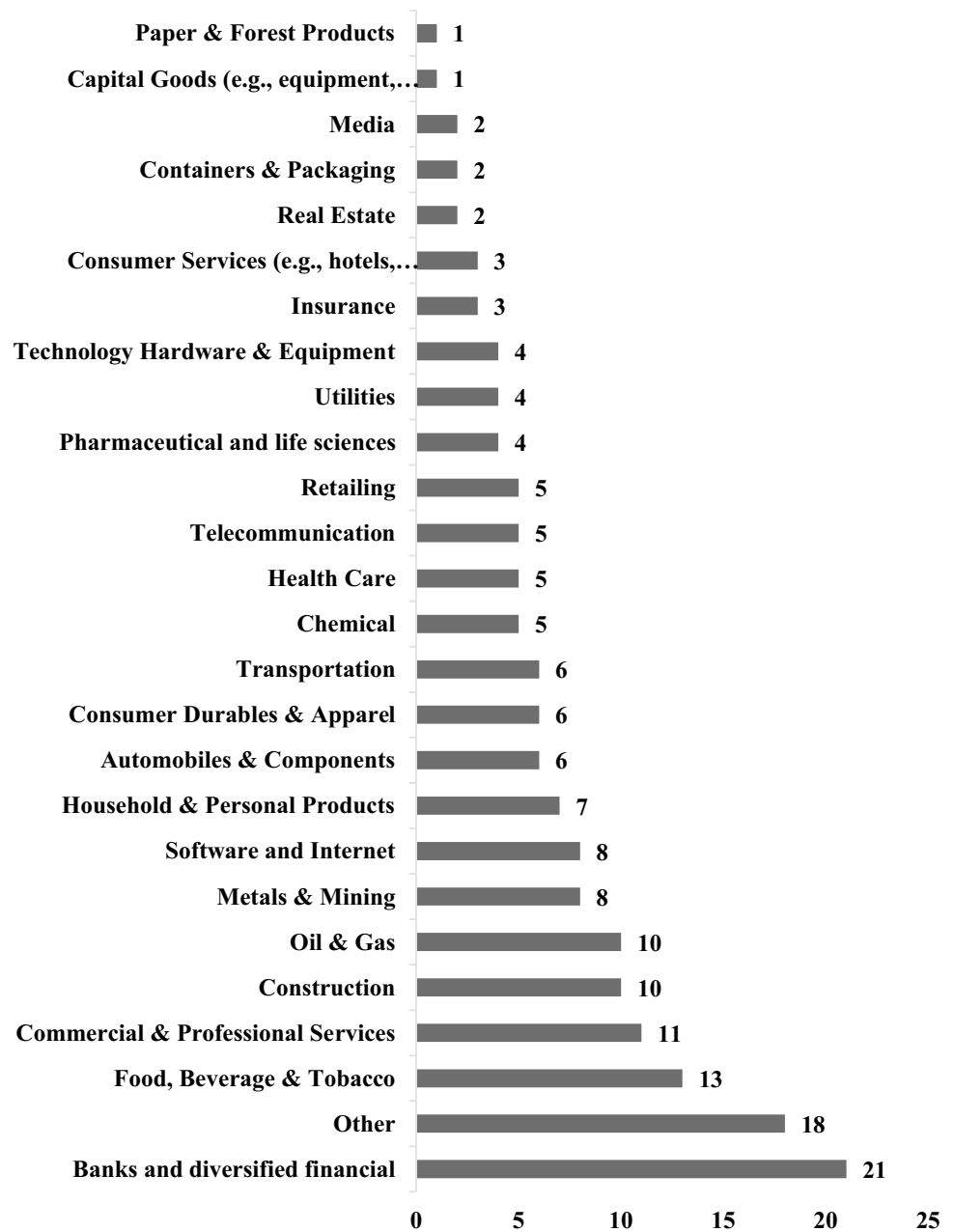
**Fig. 2** Participants by type of company

method. This approach combines three standard methods: factorial analysis (in this case, a multiple correspondence analysis), hierarchical clustering using the Ward Jr. (1963) method, and partitional clustering using the k-means algorithm. The HCPC method has the advantage of being more objective than using factorial analysis only, and by combining hierarchical and partitional clustering, it increases the robustness of results (Argüelles et al., 2014).

The multiple correspondence analysis (MCA) is a factorial analysis for data reduction, used to describe, explore, summarize and visualize information about individuals described by categorical values (Husson & Josse, 2014). It was conducted as a preprocessing step for clustering to reduce the high dimensionality in the dataset while retaining maximum information (Husson & Josse, 2014). We then applied the HCPC algorithm proposed by Husson et al. (2010) to obtain the clusters using the open-source statistical software R (Factomine R library). Categories with less than 10 responses were merged to avoid omission of individuals in low-frequency categories and avoid overrepresentation.

Results are presented in a correspondence map representing the cloud of individuals projected in a two-dimensional space, consistent with the first and second MCA dimensions. Figure 4 shows the correspondence map with individuals by cluster. Clusters of individuals were created using the HCPC algorithm that suggests an optimal level for division in the hierarchical tree. In our case, the analysis suggests three clusters and thus, the emergence of three cognitive types. Figure 5 presents the distribution of responses for the questions among the three clusters identified. We then compared medians and quartiles for each variable to characterize clusters. We subsequently used the description of each

Fig. 3 Participants' industry affiliation



cluster to understand the over and under-representation of individuals within the three clusters and characterize them.

Findings

From the former analysis, three distinct cognitive clusters emerged. However, as shown in Fig. 5, clusters overlap for some items/questions. First, overlapping concerns

similarities (same median³ different quartiles) in participants' level of concern about the *economic situation* and *income inequality*; they all moderately agree that "economic growth is necessary to finance environmental protection" (item 2e). Second, results show that participants exhibit moderate to high agreement upon the statement 'growth is essential to improve people's quality of life' (item 2b) and the low importance given to *power*, defined as "social

³ Median ranges from 1 to 5 consistent with the 5-point Likert scale used in our survey instrument. A low median indicates strong statement disagreement, while a high median indicates strong agreement.

Fig. 4 Factor map

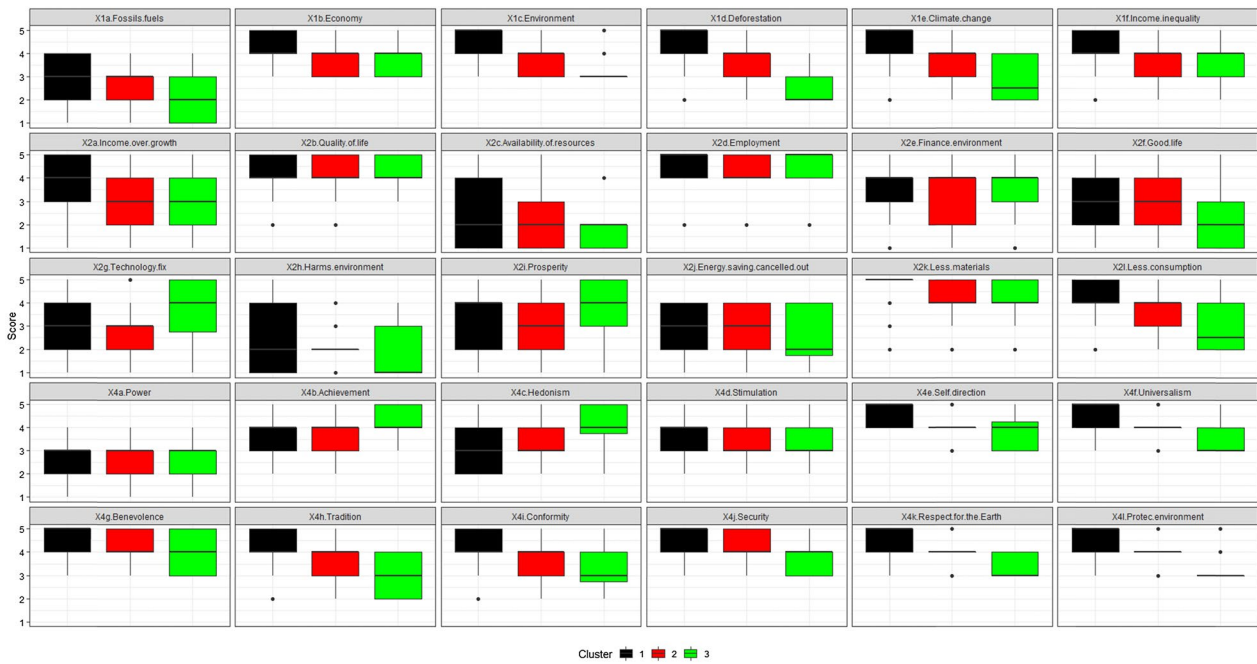
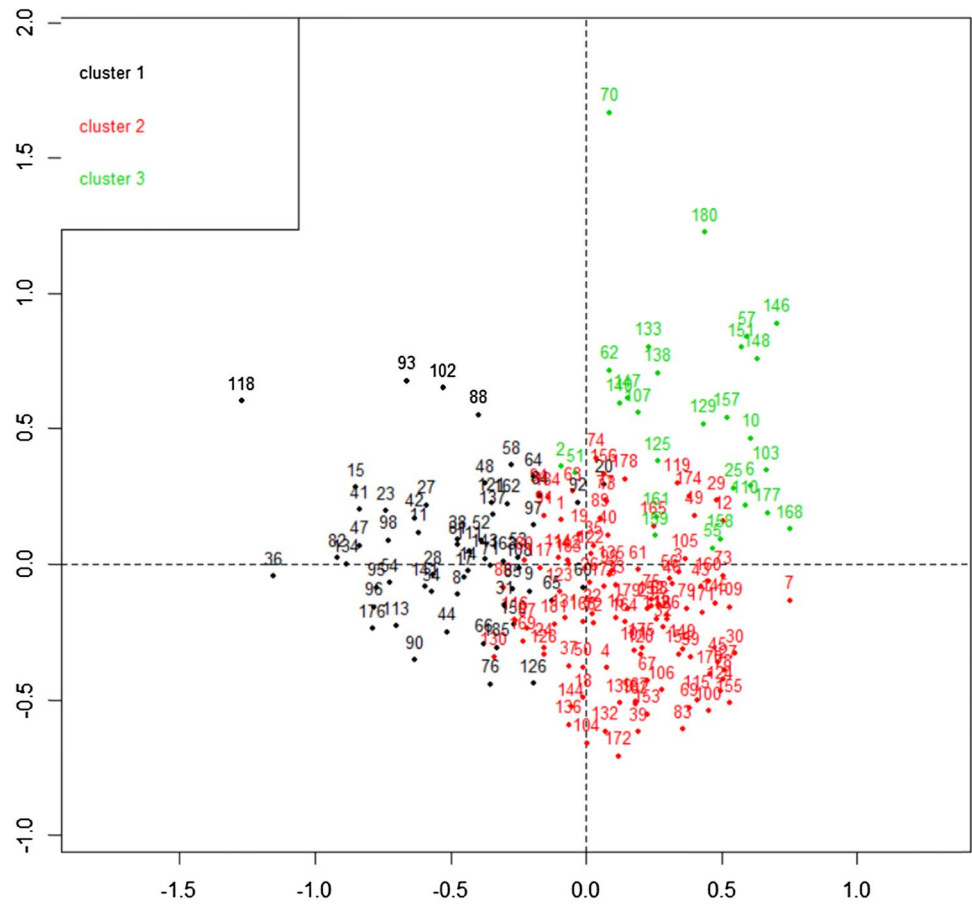


Fig. 5 Distribution of questions by cluster

power, authority, wealth, maintaining the public image” as a value guiding participants’ lives (all three clusters exhibit the same median values and quartiles). Third, the preferred stance on the growth–environment relationship for all clusters is to “continue promoting economic growth. There are many ways to make economic growth compatible with environmental sustainability” (item 3b). Hence, LATAM future managers mostly prefer green growth over growth-at-all-costs, favoring win–win and instrumental outcomes (Van der Byl & Slawinski, 2015).

However, our results also suggest a differentiation in future managers’ cognitive frames based on the role of growth and differences in participants’ value profiles, setting clusters apart in terms of different medians or quartiles. We describe each cluster in detail below.

Cluster # 1: The Environment is Extremely Important and we Should Reduce Consumption Levels

Cluster 1 (black color in Figs. 4, 5) comprises 31% of the sample. These individuals are extremely concerned about deforestation, climate change, and income inequality, and strongly agree that “distributing income more fairly should have a higher priority than economic growth” (item 2a). In addition, participants strongly agree that “in view of limited natural resources, people should figure out ways to increase quality of life while reducing overall material consumption” (item 2k). Similarly, they strongly agree upon the statement: “We should eventually transition into an economic model based on reduced levels of consumption” (item 2l).

Respondents in this cluster rank values of *respect for the Earth* (respect the rights of other species, be in harmony with other species) and *protection of the environment* (minimize pollution and waste, careful use of natural resources) as very or extremely important. Furthermore, values of *openness to change*—i.e., stimulation (daring, a varied life, an exciting life) and self-direction (creativity, freedom, curiosity, independence, choose your own goals)—as well as *self-transcendence*—i.e., universalism (breadth of worldviews, social justice, a world in peace, equality) and benevolence (willingness to help, honesty, forgiveness, loyalty, responsibility)—were ranked as extremely important.

However, cognitive tensions emerge concerning participants decoupling economic growth from the use of natural resources and negative environmental impacts.

First, participants do not directly associate economic growth with higher consumption of natural resources. Most participants in this cluster (67%) tend to (moderately or strongly) disagree that “the limited availability of natural resources (e.g., oil, gas) will sooner or later result in the end of economic growth” (item 2c). In the same vein, only 35% of respondents manifested they were very concerned about “the limited availability of fossil fuels.” In fact, within those

participants who strongly agreed with the statement “In view of limited natural resources, people should figure out ways to increase quality of life while reducing overall material consumption” (item 2k), 50% either strongly or moderately disagree with the idea that limited natural resources will result in the end of economic growth (item 2c).

Second, participants tend to disagree with the potential negative impact of growth on the environment: 60% of individuals from this cluster disagree (moderately or strongly) with the statement: “economic growth always harms the environment” (item 2h). Even if these individuals are the ones who adhere the most to the need for a transition towards an economic model based on less consumption (item 2l), 15% still strongly disagree with the negative impact of economic growth on the environment (item 2h).

Overall, cluster 1 prioritizes environmental sustainability focusing on the need to reduce consumption. However, participants would not directly link the growth of economic activity with higher levels of resource consumption (e.g., fossil fuels) and associated environmental impacts. In addition, another source of cognitive tension manifests in participants equally prioritizing opposite pairs of values (i.e., openness to change and conservation values). Specifically, whereas cluster participants showed high adherence to stimulation and self-direction, they ranked as extremely important security—a conservation-related value, encompassing national security, family security, social order, and reciprocal favors—denoting resistance to change.

Cluster # 2: Both the Environment and Economic Growth are Important, but the Latter Might not be Needed to Achieve Prosperity

Cluster 2 (red color in Figs. 4, 5) comprised 54% of the sample and gathered 100% of respondents aged 18–24. Participants show intermediate levels of concern for the environment vis-a-vis high levels in cluster 1.

Respondents in this cluster tend to strongly agree that “economic growth is essential to improve people’s quality of life” (item 2b), notwithstanding, they are dubious about the social benefits of economic growth. Specifically, participants only moderately agree that “economic growth is necessary to create employment” (item 2d), and are ambivalent concerning that “economic growth is the best indicator of a country’s prosperity” (item 2i, 46% moderately or strongly agree). It is also striking that participants are dubious about whether “A good life without economic growth is possible” (item 2f); 42% (moderately or strongly) agree upon the latter statement, whereas 20% neither disagree nor agree. In a similar vein, the statement “economic growth is necessary to finance environmental protection” (item 2e), shows the greatest response dispersion of all three clusters. In addition, when compared to cluster 1, individuals in cluster 2 are

more ambivalent about “economic growth always harms the environment” (item 2 h), with 18% neither disagreeing nor agreeing with this statement (compared to 12% in cluster 1). Overall, cluster 2 shows no consensus about the positive role or purpose of economic growth.

Cluster 2 is the most dismissive of the role of technology in solving environmental problems created by economic growth, with 45% of respondents disagreeing that “technology can solve all the environmental problems associated with economic growth” (item 2 g). At the same time, however, 43% disagree with the idea that “although technological progress supposes an energy saving, this effect is partially canceled-out due to greater economic growth” (item 2j). This trend is salient for those who moderately agree with the former statement (item 2 g). In other words, this cluster manifests mitigated optimism and ambiguity about technology-led solutions to solve environmental problems.

In terms of participants’ value structure, they prioritize opposite pairs of values, namely, conservation and self-transcendence. Specifically, respondents ranked *security* as a highly important value guiding their lives along with *tradition* (entailing respect for tradition, humility, acceptance of my portion in life, devotion, modesty) and *conformity* (entailing obedience, respect for parents and elders, self-discipline, being educated); at the same time, they equally ranked universalism and benevolence as highly important. Thus, although individuals refrain from disturbing the status quo, they display a strong social orientation.

In sum, participants in cluster 2 exhibit cognitive tensions in that they favor economic growth while remaining ambivalent about its social benefits, in particular how economic growth creates employment. Besides, this group has contradictory, or at best ambivalent, views of the role of technology in economic growth. These tensions are also reflected in the value structure of the cluster’s respondents, which is characterized by respondents giving equal importance to dimensions of resistance to change along with a strong social orientation.

Cluster # 3: The “Business-Case Minded”

Cluster 3 (green color in Figs. 4, 5) comprises the remaining 15% of the sample and most participants belong to the 25–34 age group. Comparatively speaking, individuals in this cluster are the least concerned about the environment and prioritize economic growth, as they perceive related positive outcomes. In particular, no individual in this group disagrees with the statement: “economic growth is essential to improve people’s quality of life” (item 2b). Similarly, 89% of respondents (strongly or moderately) agree with the idea that “economic growth is necessary to create employment” (item 2d). Moreover, they strongly disagree with the statements positing that “a good life is possible without economic

growth” (item 2f, median of 2), and that “economic growth always harms the environment” (item 2 h, median of 1).

In addition, respondents in cluster 3 show the highest levels of agreement with the importance of technology to solve environmental problems associated with economic growth (item 2 g) and with the idea that “economic growth is the best indicator of a country’s prosperity” (item 2i). Interestingly, approximately one-third (32%) of individuals in this cluster moderately agree with the statement concerning economic growth canceling technological progress in energy efficiency (item 2j). This might reflect some degree of ambivalence concerning the role of technology in solving environmental issues. Furthermore, while respondents in this group only moderately disagree with transitioning towards a model based on reduced levels of consumption (item 2 k, “in view of limited natural resources, people should figure out ways to increase quality of life while reducing overall material consumption”), they show no signs concern about the lack of availability of fossil fuels or climate change (items 1a and 1e).

In terms of this cluster’s value structure, respondents show a strong self-enhancement orientation—related to materialistic values and consistent with holding pro-growth, ‘business-case’ stances (Girschik et al., 2021)—while they make up the lowest scoring group for values related to self-transcendence (i.e., universalism). Specifically, cluster participants show high scores for *hedonism* (fulfill wishes, enjoy life, self-indulgence), ranked as an extremely important value guiding their lives. Furthermore, despite our sample not showing any extreme politicization in terms of political affiliation, individuals exhibiting a right-wing orientation concentrate in cluster 3, displaying attitudes consistent with system justification (Jost, 2019). Interestingly though, tradition and conformity—i.e., values related to resistance to change—are of little importance for this cluster of respondents.

Overall, cluster 3 comprises individuals who while exhibiting subtle cognitive tensions, most neatly fit the definition of a business case frame.

Discussion

In this paper, we set out to inquire about future managers’ construals of growth and the natural environment; and whether they inexorably privilege economic over socio-environmental objectives. Our results offer two main contributions to the literature. First, we offer a finer-grained characterization of plural cognitions of growth and sustainability among future LATAM managers where two of the cognitive types we uncover do not fit pre-existing templates (i.e., the paradoxical cognitive frame). Second, we uncovered three cognitive tensions among respondents that point to a lack of

understanding of the inherent difficulties of unbridled economic growth, opening up opportunities to expand the cognitive bandwidth of future managers through transdisciplinary educational approaches (Gröschl & Gabaldon, 2018).

Plural Cognitive Framings of Growth and Sustainability

Our results offer a more nuanced understanding of future managers' construals of the relationship between economic growth and the natural environment, beyond dichotomous characterizations of 'business case' versus 'paradoxical' frames. In particular, whereas cluster 3 respondents showed a more consistent, 'business case' cognition; clusters 1 and 2 (comprising 85% of the sample) are highly concerned for the environment, and showed a strong orientation towards social and idealistic concerns, consistent with LATAM's characterization as a relationship-oriented culture (Castaño et al., 2015). In addition, while clusters 1 and 2 respondents acknowledge the importance of economic growth, they remain ambivalent on specific aspects. Namely, for cluster 1 respondents, the main concern is about reducing consumption and materials' use. In turn, for cluster 2, the question mark on growth lies in its social benefits—particularly, how economic growth creates employment, and on the role of technology to decouple environmental impacts.

Participants in clusters 1 and 2 exhibit cognitive tensions pointing to inconsistencies in their conceptual understanding of the interconnections among social, economic, and environmental aspects of sustainable development. Moreover, there is no evidence that participants may acknowledge the opposition and interdependence between opposing elements that may allow us to characterize their cognitive framings as eminently paradoxical (Sharma & Jaiswal, 2018). In addition, results point to a lack of 'cognitive complexity', concerning future managers' ability to gather information and decide upon multiple interrelated issues and stakeholder needs that, in turn, may hinder the implementation of sustainability initiatives (Gröschl et al., 2019).

Engaging with Cognitive Plurality in Management Education

Psychologists argue that individuals becoming aware of experiencing cognitive tensions may lead to cognitive dissonance, entailing a negative affective state that may motivate individuals to respond with behavior changes (Hinojosa et al., 2017). Emerging cognitive tensions in our sample may thus open up promising prospects for discourses not centered on indefinite economic growth to receive wider support as future managers improve their knowledge of sustainability issues (Banerjee et al., 2021). This finding entails an untapped potential for management education to engage

with cognitive plurality to promote more robust paradoxical thinking and, in turn, enhanced business responses to sustainable development. In this vein, Gamma et al. (2018) suggested that individuals who display an idealistic cognitive frame (e.g., individuals in clusters 1 and 2) are expected to more strongly react to cognitive nudges that convey the need to change, and potentially embrace new behaviors.

MBA programs play an important role in exposing future managers to the multidimensional (i.e., economic, social, and environmental), inter-temporal (short- vs. long-term) aspects, complex nature (interaction between dimensions), and nested understanding of sustainable development (socioeconomic systems as embedded in nature) (Prado et al., 2020), such that future managers may achieve enhanced cognitive complexity, as well as stronger political skills to influence the strategic responses to sustainability taken at the organizational level (Hahn & Aragón-Correa, 2015). These political skills align with Gröschl and Gabaldon (2018) proposal of the core competencies that responsible leaders are to develop, including self-awareness and reflection, moral consciousness, courage and self-confidence, trust-building, and synthetic, dynamic, and non-linear thinking. We thus argue in favor of pedagogical approaches that open possibilities where future managers may increase their cognitive complexity by better differentiating and integrating multiple perspectives (Gröschl et al., 2019).

MBA programs, notwithstanding, have traditionally focused on seeking instrumental, win-win outcomes, such that participants may run the risk of remaining blindfolded of the tensions among economic, social, and environmental issues and, in turn, reify existing economic arrangements (Crane et al., 2014). As our results depict future managers' predicament integrating multiple sustainable development dimensions, we submit that engaging with cognitive tensions through critical reflection and open debate, may mobilize participants to reconsider not only their personal and organizational stance towards nature (Allen et al., 2019).

One way to open managers to critique lies in identifying provocations that challenge their preexisting assumptions, identifying where controversy and paradox lie, and inviting participants to embrace the potential discomfort that entails making sense of that (Kurucz et al., 2014). For instance, cluster 2 respondents were ambiguous, or even contradictory about the role of technology-led solutions in solving environmental problems created by economic growth. While some scholars assume that technological approaches can offer a pathway to low-carbon societies, others question their potential to bring systemic change (Lestar & Böhm, 2020). In this connection, whereas respondents seem to acknowledge limits to technology-led solutions, they might not fully grasp that increases in technological efficiency may lead to more resource consumption canceling the intended effect of techno-fixes (Huesemann & Huesemann, 2011). Spaces for

critical reflection may be offered in specific subjects such as business and society, business ethics, corporate social responsibility, among others. We strongly believe that these reflective spaces will be more conveniently carried out transversally, across academic areas, given that cognitive shifts might be better served by holistic educational approaches (Murcia et al., 2018).

Furthermore, breaking with traditional MBA programs' embeddedness with a linear view of the world and helping future leaders to grasp the interconnectedness of multiple objectives requires, in turn, multiple and non-traditional pedagogical strategies (Block et al., 2018). First, transdisciplinary pedagogy- involving integrating knowledge from diverse stakeholders, including the ones outside academia-, appears as a suitable approach to better understand the inherent multi-perspective and multi-scale nature of sustainability issues (Howlett et al., 2016). It is worth noting, however, that transdisciplinary approaches often demand expanding the boundaries of business schools and the resulting administrative implications (Dlouhá & Burandt, 2015), as well as co-teaching with multiple disciplines (Gröschl & Gabaldon, 2018).

Second, experiential learning, defined as pedagogical strategies in which learning is developed through experience (Kolb, 1984; Lewis & Williams, 1994), has been deemed to enable pluralism (McPherson et al., 2016) and fundamental cognitive shifts (Byrne et al., 2018). In particular, studies found that simulations and case studies are suitable for offering a transformative experience that supports a student's skills in systemic and long-term thinking, innovation, and empowerment to deal with complex problems (Prado et al., 2020). Project-based learning and problem-based learning are other approaches rooted in experiential learning that might prove useful to address sustainability issues. For instance, integrative projects where students from different programs collaborate in a sustainability challenge, discussing in groups, and creating spaces for reflexivity to integrate multiple viewpoints from a diverse set of stakeholders involved (Evans et al., 2015).

That said, however, as argued by Allen et al. (2019), reflexivity needs to cut both ways, involving a critical stance on the views we as educators hold. It is imperative to critically consider our stance in relation to the growth-environment debate, as well as to the systems of culture and power through which we create knowledge about the embeddedness of society into the natural world (Paulson, 2017). Following Ibarra-Colado (2008), we believe that, as LATAM scholars, it is imperative to reclaim the reality of knowledge from this region, too critical for global sustainable development goals, yet hidden in local discussion arenas. For such purposes, it is urgent to move from translation and imitation to original knowledge creation as "emancipated creation", taking into account local political considerations (Ibarra-Colado,

2006). We submit that the present study offers a step forward towards producing original Latin American knowledge about future local leaders' cognition, breaking the mechanical application of mainstream approaches and assumptions.

Future Research Opportunities and Limitations

The finding of plural construals of growth and sustainability begs a deeper inquiry on the culturally situated nature of cognitive frames. In particular, cluster 1 participants did not appear to link economic growth with higher consumption of natural resources or fossil fuels. A possible explanation might lie in the regional focus on awareness strategies about the impacts of climate change without linking those to sustainable natural resources management strategies, which may be leading to conceptual confusion between climate change and other environmental problems (Cruz Castaño & Páramo, 2020). In a recent review, Cruz Castaño and Páramo (2020) found that the general LATAM population, even university graduates, are misinformed about the relationship between climate change and energy consumption, and they tend to see broad environmental issues as disconnected from their everyday life. This insight resonates with regional cultural traits earlier described concerning a short-term, present-time orientation. Furthermore, in Cruz Castaño and Páramo (2020) study, participants manifested to believe that nation-states and not individual citizens should be held responsible or tackle environmental problems. This finding may be explained by the fact that, despite the economic opening up and market rationality permeating LATAM's landscape since the 1990s, the functioning of businesses in the region was subordinated to the protectionist and populist logic of the State for the longest time (Wehner & Thies, 2021).

In addition, our study results featured LATAM's future managers' ambivalence pertaining to current economic arrangements' potential to provide prosperity for all and the appropriateness of GDP as the best social welfare indicator, pointing to a disjunction between growth and development. We conjecture that while respondents may adhere to reducing material consumption when they link consumption to quality of life, they might be more prone to disconnect growth with the materials used because they fear less consumption may imply lower standards of living (Kothari et al., 2014). In this vein, findings suggest that cognitive tensions may cut both ways: while the daily experience of social ills such as corruption, poverty, and inequality may lead to the prediction that future LATAM managers think that their countries' economic models are not growth-focused enough (Ibarra-Colado, 2006), the same experience may cast doubt about the benefits of the current economic paradigm and motivate future business leaders to steer more substantive sustainable development efforts (Kaplan, 2020).

We argue that study results offer insights into some necessary conditions (i.e., cognitive tensions) for cognitive shifts and paradigmatic transition to occur. Needless to say, these are necessary, yet not sufficient conditions for change to take place, optimists as we may be. Notwithstanding, we submit that management education might be a powerful device to place alternatives to growth (e.g., post-growth) more prominently into managers' cognitive frames, which may translate into the adoption of alternative discourses and behaviors in the future.

Lastly, besides failing to provide conclusive evidence on the extent and precise likelihood of a cognitive and paradigmatic shift in LATAM, we acknowledge the following limitations of our research.

First, while study results shed light on how cognitive plurality manifests in LATAM future business leaders' interpretation of sustainability issues, our data does not allow us to trace a direct link between individual interpretation and actual response taken at the business level. Future studies could dig deeper into the tensions future managers experience regarding downscaling consumption and fostering prosperity (i.e., subject matters in which clusters 1 and 2 showed ambivalence) in their workplace. Micro-perspectives on sustainability have shed light upon how these tensions can make work meaningful, focusing on employees and sustainability professionals (Mitra & Buzzanell, 2017). Future research may examine how tensions are perceived by future managers more broadly (not exclusively sustainability professionals), and how they may transform their managerial work and derive meaningfulness. In addition, future work could focus on understanding how managers react to ethical nudges (particularly those showing cognitive types similar to clusters 1 and 2), and on more broadly examining the outcomes of using suggested pedagogical tools.

Second, while it has been argued that transition discourses are inseparable from the model of society that is dominant today (such that can be expected that similar cognitive frames across different regions would be found) (Escobar, 2015), our sample data comes from a specific cultural and political cluster. LATAM, sitting at the periphery of economic power in contemporary capitalism, faces wide political and economic constraints earlier referred to (e.g., a populist legacy) that affect managers' construals of economic growth and sustainability. In this regard, a recent study on Chinese managers has explicated the dynamics of (Maoist communist) ideological decay and persistence, in which higher education plays a key role in making certain management practices more prominent than others (Xu et al., 2021). While we restate the importance of deploying enabling pedagogies where students can incorporate new information and work toward adjusting their cognitive frames (Byrne et al., 2018), we propose that future cross-cultural

research may help in overcoming the shortcomings associated with focusing on a single cultural cluster.

We hope that the limitations of the present study can be taken up by the scholarly community as promising avenues for future research.

Conclusion

The present study offers important results in the emerging area of the micro-foundations of sustainability. Whereas this area of research has predominantly focused on intra-organizational dynamics (Gond & Moser, 2021), our study responds to recent calls to "bring cognition back in" (Menon, 2018) and sets out to explore intra-individual differences in cognitive framings of sustainable development beyond 'ready-made' frames.

While our data collection took place right before the pandemic, we believe that the discussion on our relationship with the economy, prosperity, and nature has gained new relevance in light of COVID-19. The post-growth movement is gaining traction in post-pandemic times as individuals seek to reconsider and transform their production and consumption habits (Soper, 2020).

In this context, we encourage management educators worldwide to seize the momentum to introduce post-growth concepts and invite participants to reflect on the values that undergird current economic arrangements (Rees, 2003). We contend that we have an opportunity to engage with plural cognitions in our classrooms. Combining original local knowledge production and non-traditional pedagogies show promise in increasing reflexivity, potentially leading future managers to better visualize and address the inherent tensions of sustainable development in a resource-constrained planet.

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Declarations

Conflict of interest The authors declare that there is no conflict of interest.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Research Involving Human Rights All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee.

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