

Theoretical-empirical Article

Analysis of Scales and Measures of Moral Virtues: A Systematic Review



Análise de Escalas e Medidas de Virtudes Morais: Uma Revisão Sistemática

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ABSTRACT

Objective: to investigate how scales for the concept of moral virtues are constructed and measured, in studies associated with business ethics and the tradition of virtue ethics. **Methods:** a systematic literature review was conducted to select empirical articles on moral virtues that design or apply scales. Based on search, selection, and analysis criteria, five databases were consulted, and 37 papers were selected, with subsequent analysis of the scales development and measurement procedure (items, sample, factor analysis) and emerging factors. **Results:** the study gathers scales of multiple moral virtues (19) and of specific virtues (18), showing limitations in the generation of items, and in the item-sample proportion in some scales, as well as theoretical contributions in leadership and relationship strengthening, making a theoretical and methodological discussion in the light of the assumptions of virtue ethics in the Aristotelian-Thomistic tradition. **Conclusions:** the article intends to contribute to a better understanding of moral virtues in management, by discussing the scales from the unity of virtues and the phronesis-moral virtues connection, with implications for human behavior and business ethics. Procedures are recommended for future qualitative and quantitative studies in new research contexts.

Keywords: moral virtues; scale analysis; virtue ethics; business ethics.

RESUMO

Objetivo: investigar como as escalas para o conceito de virtudes morais são construídas e mensuradas, em estudos associados à ética empresarial e à tradição da ética das virtudes. **Métodos:** realizou-se uma revisão sistemática da literatura para selecionar artigos empíricos sobre virtudes morais que elaboram ou aplicam escalas. Com base em critérios de busca, seleção e análise, foram consultadas cinco bases de dados e selecionados 37 trabalhos, analisando-se o procedimento de desenvolvimento e mensuração de escalas (itens, amostra, análise fatorial) e fatores emergentes. **Resultados:** o estudo reúne escalas de múltiplas virtudes morais (19) e de virtudes específicas (18), evidenciando limitações na geração de itens e na proporção item-amostra em algumas escalas, como também contribuições teóricas em liderança e fortalecimento de relações, fazendo uma discussão teórico-metodológica, à luz dos pressupostos da ética das virtudes na tradição aristotélico-tomista. **Conclusões:** o artigo intenciona contribuir para uma melhor compreensão sobre as virtudes morais em administração, ao discutir as escalas a partir da unidade das virtudes e da conexão *phronesis*-virtudes morais, com implicações no comportamento humano e na ética empresarial. Recomendam-se procedimentos para estudos futuros qualitativos e quantitativos em novos contextos de pesquisa.

Palavras-chave: virtudes morais; análise de escalas; ética das virtudes; ética empresarial.

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INTRODUCTION

Virtue ethics has proved to be an influential tradition in business ethics studies in recent years (Alzola, Hennig, & Romar, 2020). The interest in the topic has intensified since authors of moral philosophy such as Anscombe (1958) and MacIntyre (2007) reinterpreted Aristotle (2009). The ethical problems of organizational reality have been discussed based on different perspectives and traditions related to virtues (Sison, Ferrero, & Guitián, 2018). Such perspectives and traditions are alternatives to consequentialists and deontological ethics, and empirical and quantitative studies have been a prominent theme in the field since the turn of the millennium (Sison & Ferrero, 2015).

Empirical and quantitative studies have elaborated scales and measures based on the lists of moral virtues by Solomon (1992; 1999) and Murphy (1999). Such studies aim to identify and measure moral virtues in administration and business. However, the use of certain scientific methods from social sciences to address moral virtues – a philosophical concept valued in many cultures – has been criticized (Beadle, Sison, & Fontrodona, 2015). These methods may reduce the elements and assumptions to mere observable behaviors, hindering a better understanding of virtues (Sison & Ferrero, 2015; Alzola, 2015). This process has reinforced the need for a solid theoretical basis on the moral virtues construct, considering its multidimensionality (Aguirre-Y-Luker, Hyman, & Shanahan, 2017).

Another concept that has been developed in addition to individual moral virtues refers to organizational moral virtues, or virtuousness (Huhtala, Kangas, Kaptein, & Feldt, 2018; Gomide, Vieira, & Oliveira, 2016; Rego & Cunha, 2015). Despite their strict relationship, the concepts of moral virtue and virtuousness are not identical: the first refers to the individual, while the second to the organization, to what can be externally verified (Alzola, 2015; Sison & Ferrero, 2015). Thus, there are moral virtues scales at the individual level, and virtuousness scales at the group and organizational levels, such as those revisited by Dawson (2018) and Aguirre-Y-Luker, Hyman e Shanahan (2017). This article is limited to investigating moral virtues scales at an individual level – characteristics of a single individual – leaving the virtuousness scales for future research.

The topic has different theoretical traditions (Sison et al., 2018) and extensive lists of virtues. Although the conception of virtues encompasses components or dimensions (Newstead, Macklin, Dawkins, & Martin, 2018), empirical research has been restricted to observable traits or behaviors, revealing a methodological impasse in the relationship between the virtue ethics, originating in moral

philosophy, and the experimental sciences, with certain ramifications in psychology. Given the development of new scales on virtues, this research seeks to answer the following question: ‘How are the scales for the moral virtues construct elaborated and measured in studies related to virtue ethics?’ This article seeks to analyze the scales and measures of the individual (personal) moral virtues construct, based on a systematic literature review (Snyder, 2019).

This study builds on two previous research works. One of them is the study by Aguirre-Y-Luker et al. (2017) who address challenges, possibilities, and best practices for the development of scales, describing scales, items, and psychometric aspects. The other is Dawson (2018), who lists individual, group, and organizational moral virtues scales.

The intention is to continue these works offering a systematic review of articles that develop or apply scales based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) by Moher, Liberati, Tetslaff and Altman (2009). Also, we conduct a statistical analysis following the recommendations by Fávero, Belfiore, Silva and Chan (2009), Hair, Babin, Money and Samouel (2005) and Hair, Black, Babin, Anderson and Tathan (2009).

Finally, this study seeks to contribute to the analysis of methods used to elaborate and apply moral virtues scales, given the methodological impasse for empirical research on virtue ethics. The analysis is conducted through a methodological and theoretical discussion, considering Aristotelian-Thomistic assumptions of virtue ethics (Sison, Beabout, & Ferrero, 2017).

After this introduction, the second section below presents the concept of moral virtues, considering assumptions of virtue ethics and perspectives seeking to measure virtues. The subsequent section describes the methodological procedures and the analysis criteria adopted in this systematic review, followed by the fourth section presenting the results and discussions about measures and scales found in the literature, analyzing methods and theoretical assumptions. Lastly, we offer suggestions for future studies and present the final considerations, including the research limitations and conclusions.

MORAL VIRTUES ACCORDING TO THE TRADITION OF VIRTUES ETHICS IN BUSINESS ETHICS

The work of authors such as Elizabeth Anscombe (1958), Philippa Foot (1967), and Alasdair MacIntyre (2007), who return to Aristotelian and Thomistic concepts, were responsible for the resumption or reinterpretation of

moral virtues in philosophy, psychology, education, and business ethics. Virtue ethics has been developed through both Western and Eastern perspectives (Alzola et al., 2020), that unfolded from moral traditions related to organizations' ethical issues and different functions of Administration (Ferrero & Sison, 2014).

The interest in virtue ethics has been observed in conferences, thematic symposia and special calls for paper (Alzola et al., 2020; Beadle et al., 2015; Hühn, Habisch, Hartmann, & Sison, 2020), handbooks on virtue ethics in administration (Sison et al., 2017), book publishing (Hartmann, 2020; Moore, 2017; Sison et al., 2018) and by the emergence of new research groups, such as Virtue Ethics in Business (VEiB), from University of Navarre. Also, scientific journals such as the Journal of Business Ethics, the Business Ethics Quarterly, and Business Ethics: Environment and Responsibility bring together many issues that address virtue ethics.

Studies on virtues can be linked to two distinct perspectives: virtue theory and virtue ethics (Sison & Ferrero, 2015). Virtue theory refers to studies on virtues within the deontological and consequentialist models. In contrast, virtue ethics is adopted as a third perspective in moral philosophy to represent studies focused on character and anchored in the three elements *arête* (virtue or excellence), *phronesis* (prudence or practical wisdom), and *eudaimonia* (human flourishing). While the deontological and consequentialist perspectives refer to the action, virtue ethics focuses on the agent, considering particularities of the context regarding community life (Alzola et al., 2020).

Solomon (1992) and Moberg (1999) were pioneers in considering virtue ethics in business ethics. Solomon (1992) attempted to address the gap between ethics and business practices through an Aristotle-based perspective (Alzola et al., 2020), with the idea that people and corporations are part of the community. Moberg (1999) explored the connection between virtue ethics and personality psychology, paving the way for empirical research on virtue ethics in business ethics.

Moral virtues are usually described as character dispositions that indicate the correct ends of actions, while prudence or practical wisdom (*phronesis*) is the virtue responsible for indicating the means to achieve such ends (Ames & Serafim, 2019; Aristotle, 2009; Ferrero & Sison, 2014). The moment virtuous actions, such as courage and humility, are repeated, they turn into habits, and, in the long run, these habits determine their character. The virtuous agent expresses virtues in their actions, and therefore their actions and personal traits can serve as a reference for others (Alzola, 2015). Such actions result from a will or intention with an end (or *telos*), seeking to achieve *eudaimonia*. The human being improves themselves and their future practices by performing virtuous actions. Thus, “the core of virtue

ethics is the causal relationship it establishes between what the agent does and what the agent becomes through the acquisition of virtues and the development of character” (Ferrero, 2020, p. 11).

Among the main traditions of virtue ethics, the neo-Aristotelian tradition, the Thomist school, and the contributions of MacIntyre (2007), who delve into the ethics of Aristotle and Thomas Aquinas (Zyl, 2019), stand out. Recent studies share the notion of cardinal virtues – hinges of virtues – inherited from these traditions (Morales-Sánchez & Cabello-Medina, 2013). There are four cardinal virtues: (1) temperance, also known as self-control or moderation (Sanz & Fontrodona, 2019); (2) fortitude; (3) justice (Morales-Sánchez & Cabello-Medina, 2013); and (4) prudence or practical wisdom; originally from the Greek term *phronesis* (Ames, Serafim, & Zappellini, 2020; Bachmann, Habisch, & Dierksmeier, 2017). Such traditions consider that virtues can be learned, especially through lived experience (Aristotle, 2009).

Assuming that other agents can perceive someone's virtuous action, studies that use scales seek to measure the perception of moral virtues about the action of colleagues, leaders, and managers in general. Solomon's (1992; 1999) list of virtues contributed in this regard. Its framework considers six dimensions: community, excellence, role identity, integrity, judgment, and holism. The author suggests a list of virtues related to business – such as honesty, loyalty, courage, trustworthiness, benevolence, cooperation, civility – which underpin Shanahan and Hyman's (2003). moral virtues scale. However, the extent to which a set of virtues can be associated with administration and business is discussed without considering the context and the administrators' own perception about the virtues to be cultivated (Dawson, 2018).

In addition to this empirical problem, positive psychology and positive organizational scholarship (POS) limit the definition of virtues in terms of behavior and based on aspects external to the individual (Alzola, 2015; Aguirre-Y-Luker et al., 2017). According to Sison and Ferrero (2015) virtues cannot be reduced to the cognitive and emotional aspects of character, as they encompass other fundamental elements and assumptions, such as the interrelationship between actions, habits, character, and life trajectory. This context suggests that human nature has an end (*telos*), which is happiness (*eudaimonia*) or human flourishing.

There is no unanimous concept of virtue, given the contributions of different traditions and fields of knowledge. Notwithstanding, it tends to be considered “the human inclination to feel, think, and act in ways that express moral excellence and contribute to the common good.” (Newstead et al., 2018, p. 446). According to Alzola (2015), the “virtues are traits of character” whose intellectual, emotional,

motivational and behavioral components “cannot be reduced to any of the others,” (Alzola, 2015, p. 306), which is something similar to the multi-components perceived by Morgan, Gulliford and Kristjánsson (2017). In virtue ethics, they are understood as personal inclinations or dispositions expressed by a range of other dispositions such as actions, habits, character, and lifestyle (way of living), with a view to the common good (Sison & Ferrero, 2015). Therefore, it has been admitted that the behavioral manifestation of action is not enough to infer the presence of virtue (Alzola, 2015; Robson, 2015).

Newstead, Macklin, Dawkins and Martin (2018) develop the concept of virtue (inclination toward good). The authors present the notion of virtues and virtuous, which represent the perception of a virtuous event, understood as a subjective experience, an interpretation an agent does about a virtue someone expresses (virtues) in an event/moment.

As observed in this section, the framework of virtue ethics brings together theoretical elements and fundamental assumptions. Among its elements are: the human agent and its nature, reiterated moral actions and habits that shape its character, the practice of moral virtues, coordinated by practical wisdom or prudence, an ultimate end aimed at human flourishing or eudaimonia, in a community context in which one contributes to the common good. As for the assumptions, two of them are worth highlighting, related to (1) the connection or interdependence between the virtue of phronesis and the moral virtues – for example, prudence in decision-making implies that temperance will manage the impulses that would affect such a decision, like anger or impatience; and, (2) the unity of the virtues: in the agent, the virtues are linked to each other – that is, there is no isolated virtue – which means that if a person has one virtue, this same person also has the others (Zyl, 2019).

Perspectives that seek to measure moral virtues

In administration, studies of virtue ethics have formed a line of research that adopts quantitative and statistical methods to measure virtues and their positive impacts on organizations (Ferrero & Sison, 2014). Such a line of research is inserted in positive psychology and is called Positive Organizational Scholarship (POS) (Meyer, 2018; Sison & Ferrero, 2015). It is divided into two perspectives that seek to measure virtues: (1) one linked to the positive psychology of Peterson and Seligman (2004) adopting an individual-level approach and corresponding to a positive movement in social sciences (Kinghorn, 2017); and (2) studies that assume the concept of virtuousness to access virtues at an organizational level (Meyer, 2018; Huhtala et al., 2018).

These two lines of research aim to measure virtues, adopting methods and assumptions that are different from those shared by the Aristotelian-Thomist tradition of virtue ethics (Sison & Ferrero, 2015; Meyer, 2018).

The first is linked to positive psychology and considers character strengths as individuals' positive traits. Peterson and Seligman (2004) model was developed from reading classic texts from different cultures. The documents were reviewed by a research group that inductively brought together the human characteristics that lead to flourishing. There are differences between the concept of virtues and strengths of character (Alzola, 2015). The VIA model – virtues in action – is composed of six main characteristics (virtues) and 24 strengths. However, this model has been methodologically and philosophically questioned. It does not assume the unity of virtues (Robson, 2015). Kinghorn (2017) explained how the model was built and argued that the cultural context is crucial to indicate if the model is valid or universal. It embraces the values of a modern democratic society that privileges the individuals' self-determination, rights, and liberties (Kinghorn, 2017). For the author, there is no way for a set of virtues to transcend the particular political community in which they were conceived, which implies that the particular context matters and future instruments should consider the culture of the analyzed context and community.

The second line of research is positive organizational studies (POS), which adopts the concept of virtuousness that is not identical to the notion of virtue (Sison & Ferrero, 2015). Virtuousness is manifested in structures, processes, attributes, and cultures and in individual and collective action and is expressed in and through organizations (Cameron, Bright, & Caza, 2004; Sison & Ferrero, 2015). It is understood as an aspect that contributes to organizational performance, which can be used instrumentally to achieve good indicators of commitment, satisfaction, and social capital (Sison & Ferrero, 2015). In this approach, the concept of virtuousness is examined predominantly by quantitative methods and at an organizational level (Meyer, 2018). Furthermore, this line of research does not address the role of phronesis in its framework for understanding organizations' virtuousness (Sison & Ferrero, 2015).

Sison and Ferrero (2015) also refer to conceptual differences. The authors claim that the assumptions about human nature, the ultimate end, *phronesis* and *eudaimonia* underlying virtuousness are very different from virtue ethics and the locus of achievement. Virtues are found in people and only by analogy are associated with concepts such as corporate character. On the other hand, virtuousness refers to organizations primarily and only secondarily to individuals (Meyer, 2018).

Among critics of virtue ethics, Aguirre-Y-Luker et al. (2017) state that situationist criticism does not recognize the need to know internal factors inherent to behavior. In contrast, Alzola (2017) argues that moral virtues can help understand individuals' actions. Despite the diversity and empirical challenges, adaptations for different contexts and cultures are still needed (Dawson, 2018). Moreover, after all, can virtues be measured? There is no consensus on this issue. Robson (2015) argues that positive psychology is able to measure personality traits and behavior tendencies, but it is not able to coordinate virtues because it cannot propose a substantive architecture to support a virtues approach based on a tradition, like virtue ethics.

METHODOLOGICAL PROCEDURES

This section presents the systematic review and the procedures used to synthesize and compare evidence (Mendes-da-Silva, 2019; Snyder, 2019). The steps carried out and the criteria and method adopted to search and select studies are described below, together with the procedures adopted in the methodological-theoretical analysis and the presentation of results. The study was conducted after formulating a central research question (Mendes-da-Silva, 2019), and the main elements and eligibility criteria adopted sought replicable and transparent procedures (Moher, Liberati, Tetslaff, & Altman, 2009). The eligibility criteria are:

1. Type of study: empirical research that develops or applies moral virtues scales and measures at an individual level – this being the selection criterion;

2. Exclusion criteria: (a) research from other areas, such as medical and legal; (b) works that do not directly address virtues; (c) theoretical or empirical studies that do not address the construct through scales; (d) empirical research that develops or applies virtues scales at an organizational level (virtuousness);
3. Topic: the process of identifying and selecting the articles is conducted by reading the titles, abstracts, keywords, and the name of the journal;
4. Research design: empirical studies that report the development, application, and results obtained using virtues scales at the individual level;
5. Period researched: The study did not define a specific period;
6. Language: the review considered articles in Portuguese, English, and Spanish;
7. Publication status: peer-reviewed scientific articles;
8. Search criteria: consulting electronic databases and including studies cited in the selected articles (if they were not already part of the sample). The first stage took place in June 2017, and updates were carried out in 2018 and February 2021. The search was carried out in five databases: EBSCOhost, Science Direct, Scopus, Web of Science and Wiley.

Five different queries consisting of two terms were used to expand the scope of the searches. The first term referred to scales and measurement, and the second to virtues, as detailed in Table 1.

Table 1. Number of references per database, query, and search format.

Form	Search query	Ebsco	Science Direct	Scopus	Web of Science	Wiley	Total
All content	1. "Scale development" AND "virtue* ethic*"	3	0	2	2	100	107
	2. "scale*" AND "virtue* ethic*"	11	1	16	14	-	42
	3. "scale*" AND "moral virtues"	-	116	5	34	-	155
	4. "scale development" AND "moral virtues"	12	1	-	8	65	86
	5. "measur*" AND "moral virtues"	-	-	22	7	-	29
Abstract	1. "Scale development" AND "virtue* ethic*"	-	-	4	1	1	6
	2. "scale*" AND "virtue* ethic*"	2	3	66	14	17 ^a	102
	3. "scale*" AND "moral virtues"	16 ^a	1	42	8	25 ^a	92
	4. "scale development" AND "moral virtues"	-	-	4	2	1	7
	5. "measur*" AND "moral virtues"	21 ^a	16 ^a	79	8	15	139
	Total	65	138	240	98	224	765

Note. ^a Searches with the first term of the search query applied to the abstract and the second to the article's entire content.

Until 2018, 517 articles were selected. In February 2021, 248 articles were added, completing a sample of 765 references. The experience gained with the selection carried out in 2018 offered elements to improve the process. Thus, the update in references in 2021 was conducted based only on the abstracts. Also, some articles were manually added to the sample of references (n=3), found during the search and reading work indicated in Step 2 of the selection process (Figure 1). The following journals were carefully searched to ensure the selection of articles in the area: *Journal of Business*

Ethics, Business Ethics: Environment and Responsibility and Business Ethics Quarterly.

The references were exported to the Endnote 8 reference organizer in the first step and Mendeley in the last selection. The selection process during the stages was the same: first, the removal of duplicated articles; second, the reading of titles, abstracts, keywords, and name of the journal, applying the eligibility criteria. Figure 1 shows the flow of the selection process until reaching the number of 37 articles that develop or apply moral virtues at an individual level, forming the sample.

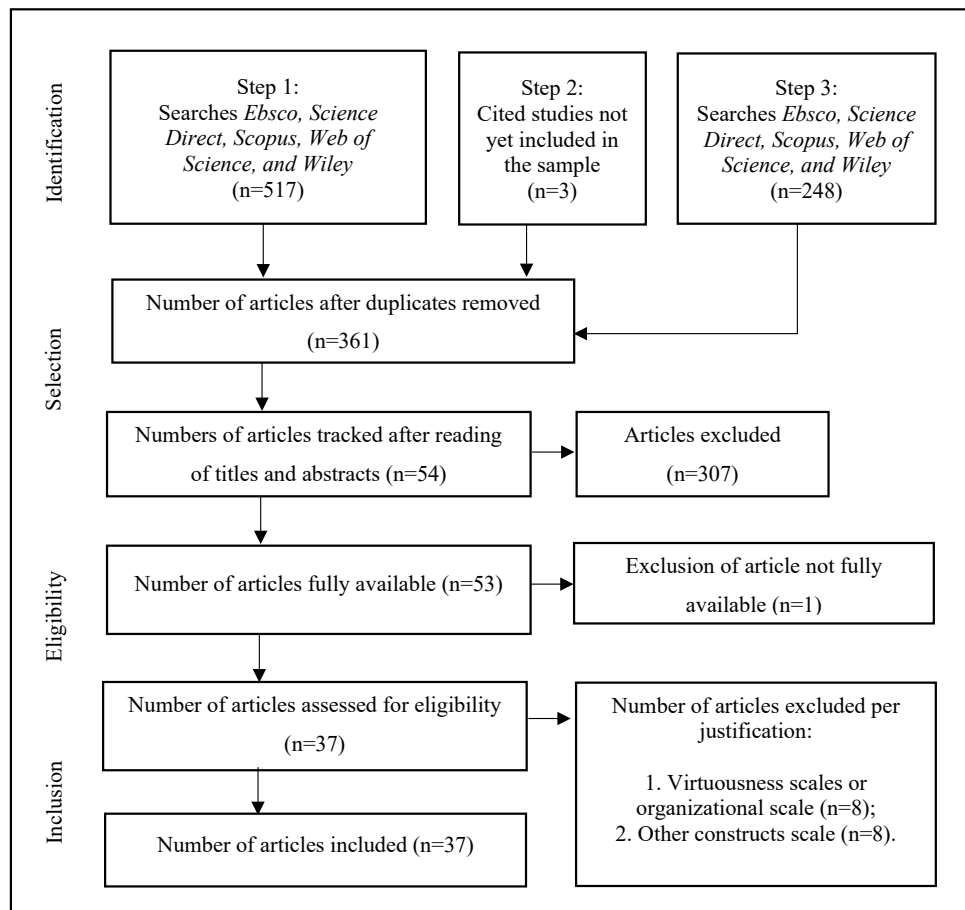


Figure 1. Selection process, according to the model by Moher et al. (2009).

As shown in Figure 1, sixteen references were excluded after being submitted to the eligibility analysis. Eight articles addressed other constructs, while another eight worked with virtuousness scales or virtue at an organizational level. The articles adopting the virtuousness scale were excluded since, based on virtue ethics, there are different assumptions between virtuousness and moral virtues (Sison & Ferrero, 2015; Meyer, 2018). Studies referring to the organizational level – focusing on objectively verifiable elements expressed

in or through organizations (such as structural and cultural elements) (Meyer, 2018) – were excluded since this research focuses on the individual level.

For a theoretical-methodological discussion on the development of virtues scales and measures, the articles were first thoroughly read and their primary data organized in Excel spreadsheets, containing information on (a) how the scale is constructed or applied, item generation, pre-

tests, sample and respondents, item treatment; (b) statistical analysis adopted, statistical techniques, adjustment factors, analysis techniques, emerging factors; (c) eliminations of items, types of validations and related topics and; (d) country of application, to analyze possible limitations and the rigor used in creation and validation. For the analysis of the use of Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and other techniques, we considered the guidelines by [Fávero et al. \(2009\)](#) and [Hair et al. \(2005\)](#).

After analyzing the scales, the contributions of the articles to the knowledge on moral virtues were examined. In this case, the analysis observed the articles listing a set of virtues and those exploring a single virtue in-depth. Methodological challenges to accessing moral virtues are discussed, especially for researchers who are part of a tradition of virtue ethics. The discussion examines how virtues are defined, operationalized, and accessed in order to discuss theoretical implications and methodological issues in a broader scope, as the debate on measuring virtues is an open question for which researchers in business ethics and psychology may have different positions on possibilities and relevance.

PRESENTATION AND DISCUSSION OF RESULTS

The 37 empirical articles selected show the contributions of two areas interested in virtues or virtue ethics:

business ethics and psychology. The articles were published in 21 different journals. In the area of administration and business, the *Journal of Business Ethics* (JBE) published 11 articles on scales and measuring moral virtues at an individual level, followed by other journals in the area that published only one article each: *Asian Journal of Business & Accounting*, *Business Ethics: A European Review*, *Canadian Journal of Administrative Sciences*, *Journal of Business Research*, *Leadership & Organization Development Journal* and *Organizational Dynamics*. In the area of psychology, the journals *Personality and Individual Differences* (four articles), *Current Psychology* (three articles) and *Frontiers in Psychology* (two articles) stood out.

Studies that develop or apply virtues scales follow two predominant formats, focusing on (1) multiple virtues analyzed together or (2) a single moral virtue. In administration journals, the research works are mostly based on lists proposed by [Solomon \(1999\)](#) and [Murphy \(1999\)](#). As for psychology journals, the articles are based on the positive psychology developed by [Peterson and Seligman \(2004\)](#) or attempts to link psychology and moral philosophy (e.g., [Shahab & Adil, 2020](#)). Of the 37 articles, 19 refer to the use and development of scales on multiple virtues, which we chose to call multiple moral virtues, and 18 address scales and measures of specific moral virtues (Table 2).

Table 2. Moral virtue scales at the individual level – multiple and specific moral virtues.

Scale	Authors	Journal	Citations ^a
Multiple moral virtues			
Virtue Scale (VS)	Cawley, Martin and Johnson (2000)	PID	245
	Stoeber and Yang (2016)	PID	27
Virtue Ethics Scale (VES)	Shanahan and Hyman (2003)	JBE	152
	Racelis (2013)	AJBA	18
	Racelis (2014)	APSSR	3
	Dawson (2018)	JBE	8
	Donada, Mothe, Nogatchewsky and Ribeiro (2019)	JBE	15
	Shanahan and Hopkins (2019)	JBE	7
VIA-Classification	Park and Peterson (2006)	JA	775
	Song and Kim (2018)	JBE	27
	Arthur, Earl, Thompson and Ward (2021)	JBE	3
Virtuous Leadership Scale (VLS)	Sarros, Cooper e Hartican (2006)	L&ODJ	96
	Wang and Hackett (2016)	JBE	70
Measure of Auditor's Virtue	Libby and Thorne (2007)	JBE	65
Leadership Virtues Questionnaire (LVQ)	Riggio, Zhu, Reina and Marosis (2010)	CPJPR	256
Character Strengths Leadership Survey	Thun and Kelloway (2011)	CJAS	63
Virtue Adjective Rating Scale (VARs)	Yang, Stoeber and Wang (2015)	PID	32
Leadership Character Insight Assessment (LCIA)	Seijts, Gandz, Crossan and Reno (2015)	OD	54
Ethical Tendencies Scale	Koçyiğit and Karadağ (2016)	TJBE	9

Continues

Table 2. Moral virtue scales at the individual level – multiple and specific moral virtues. (Continued).

Scale	Authors	Journal	Citations ^a
Virtuous Leadership Questionnaire (VLQ)	Wang and Hackett (2016)	JBE	70
Individual Business Virtues (IBE)	Dawson (2018)	JBE	8
Specific moral virtues			
Multidimensional Ethics Scale (MES)	Beekun, Westerman and Barghouti (2005) Manly, Leonard and Riemenschneider (2015)	JBE JBE	56 36
Deontic Justice Scale	Beugré (2012)	JASP	38
Specific scales correlated with Engagement Beauty Scale (EBS)	Diessner, Iyer, Smith and Haidt (2013)	JME	104
Self-regarding and other regarding virtues	Grappi, Romani and Bagozzi (2013)	JBR	287
Multicomponent Gratitude Measure (MCGM)	Morgan et al. (2017) Gulliford, Morgan, Hemming and Abbott (2019) Hudecek, Blabst, Morgan and Lermer (2020)	PID CP FP	55 6 1
Moral Virtue Theory of Status Attainment (MVT)	Bai, Ho and Yan (2020)	JPSP	10
Consumer moral virtue of Integrity	Castro-González, Bande, Fernández-Ferrín and Kimura (2019)	JCP	29
Self-report Humility Scale	Qin, Liu, Brown, Zheng and Owens (2019)	JBE	6
Gratitude Questionnaire (G-20)	Bernabe-Valero, Blasco-Magraner and García-March (2020)	FP	-
Intellectually Humble Scale	Colombo, Strangmann, Houkes, Kostadinova and Brandt (2021)	RPP	-
Good and Evil Character Traits (GECT) Scale	Jiao, Yang, Guo, Xu, Zhang and Jiang (2020)	SJP	-
Resilient Measurement Scale (SPP-25)	Lasota, Tomaszek and Bosacki (2020)	CP	-
Professional Moral Courage scale (PMC; Sekerka 2009, 2 items)	Mansur, Sobral and Islam (2020)	BEER	1
Temperance Scale	Shahab and Adil (2020)	PJ	-
Enright Self-Forgiveness Inventory (ESFI)	Kim, Volk and Enright (2021)	CP	-

Note. *Personality and Individual Differences* (PID); *Journal of Business Ethics* (JBE); *Asian Journal of Business & Accounting* (AJBA); *Asia-Pacific Social Science Review* (APSSR); *Journal of Adolescence* (JA); *Leadership & Organization Development Journal* (L&ODJ); *Consulting Psychology Journal: Practice and Research* (CPJPR); *Canadian Journal of Administrative Science* (CJAS); *Organizational Dynamics*; *Turkish Journal of Business Ethics* (TJBE); *Journal of Applied Social Psychology* (JASP); *Journal of Moral Education* (JME); *Journal of Business Research* (JBR); *Journal of Personality & Social Psychology* (JPSP); *Journal of Cleaner Production* (JCP); *Current Psychology* (CP); *Frontiers in Psychology* (FP); *Review of Philosophy and Psychology* (RPP); *Scandinavian Journal of Psychology* (SJP); *Business Ethics: A European Review* (BEER); *PsyCh Journal* (PJ).

^a Search conducted on Google Scholar on March 2, 2021.

The articles published in the first decade of the current millennium adopted multiple virtue scales, covering a list of character traits. In the following decade, there was a methodological discussion about changing the concept to address the organizational level, with discussions about organizational virtuousness and assumptions and positive psychology methods. Over the past three years, empirical studies have predominantly focused on measuring a specific virtue, seeking to address components such as thinking, feelings, and behaviors expressing virtues. However, it is noteworthy that these questions remain open, and there are different positions on the feasibility or not of coordinating moral philosophy and psychology to broaden the understanding of moral virtues (Beadle et al., 2015).

Authors such as Newstead et al. (2018) and Snow, Whright and Warren (2020) consider that such coordination is possible.

It is crucial to emphasize that moral virtues scales, multiple or specific, assess the perception of virtues, whether the respondent's self-perception or the 'perception' in relation to other people (manager, employee, leadership, for instance), something similar to what Newstead et al. (2018) called virtues. However, such studies do not consider these perceptions as originated from an event. They are limited to an abstract opinion on a list of attributes, disconnected from an action context. This is verified in most of the measurement instruments in the list of items.

Articles that addressed specific moral virtues empirically observed one or two virtues: appreciation of virtues and their links with status (Bai, Ho, & Yan, 2020), self-consideration and consideration for others (Grappi, Romani, & Bagozzi, 2013), moral courage (Mansur, Sobral, & Islam, 2020), gratitude (Bernabe-Valero, Blasco-Magraner, & García-March, 2020; Gulliford, Morgan, Hemming, & Abbott, 2019; Hudecek, Blabst, Morgan, & Lerner, 2020; Morgan, Gulliford, & Kristjánsson, 2017), gratitude and love (Diessner, Iyer, Smith, & Haidt, 2013), humility (Colombo, Strangmann, Houkes, Kostadinova, & Brandt, 2021; Qin, Liu, Brown, Zheng, & Owens, 2019), integrity (Castro-González, Bande, Fernández-Ferrín, & Kimura, 2019), justice (Beekun, Westerman, & Barghouti, 2005; Beugré, 2012), self-forgiveness (Kim, Volk, & Enright, 2021), respect and responsibility (Manly, Leonard, & Riemenschneider, 2015), good and bad character traits (Jiao, Yang, Guo, Xu, Zhang, & Jiang, 2020), resilience (Lasota, Tomaszek, & Bosacki, 2020) and temperance (Shahab & Adil, 2020).

In addition to scales for specific virtues, several scales associated with leadership were developed (Mansur et al., 2020; Qin et al., 2019; Riggio, Zhu, Reina, & Maroosis, 2010; Thun & Kelloway, 2011; Sarros, Cooper, & Hartigan, 2006; Seijts, Gands, Crossan, & Reno, 2015; Wang & Hackett, 2016).

Development and application of scales on moral virtues

Table 3 summarizes the information about the scales used in the articles analyzed. It is possible to observe the number of initial and final items, the item-sample ratio, the country, and the profile of respondents in the studies (mostly university students and practitioners). The scales found in the systematic review use items with a Likert response grid (strongly disagree – strongly agree) or adjective rating scales, ranging from four to ten-point scales.

As for the context, the articles portray research works carried out in 15 different countries. The United States (11 studies), China (3 studies), and the United Kingdom (3 studies) stand out. Some articles discussed research results referring to two countries (Bai et al., 2020; Beekun et al., 2005; Hudecek et al., 2020; Seijts et al., 2015). Some studies recruited respondents via platforms, such as remote workers on Amazon Mturk (Bernabe-Valero et al., 2020; Colombo et al., 2021; Kim et al., 2021; Mansur et al., 2020). In the selected article by Mansur et al. (2020), the authors did not specify the research context

when describing the sample, even though the authors are affiliated with a Brazilian university. The literature shows that virtues depend on the context of action and, therefore, exploratory analysis in a new context is essential (Kinghorn, 2017; Newstead et al., 2018). For example, the virtue of temperance may be harder to develop depending on the country, and different virtues can be cultivated in each context. Also, choice of scales or adapting and developing scales are tasks that require analysis of the context, observing other cultures (Dawson, 2018).

In the item-sample size ratio, some studies (n=11) did not reach the 5:1 ratio as recommended by Hair et al. (2009, p. 108). In contrast, Bai et al. (2020) seek a ratio of 10:1, which is a practice followed by most recent articles. For Hair et al. (2009), researchers should interpret any finding with caution when dealing with smaller samples or small proportions. In addition, the generation of more items through theoretical deepening, lexical analysis (Jiao et al., 2020), consultation with experts (Dawson, 2018), and potential respondents (pre-tests) are measures that could reveal items more aligned with virtues from specific contexts (Aguirre-Y-Luker et al., 2017). In this sense, the work by Shanahan and Hyman (2003) is an example of a study that conducted focus groups for pre-test among the few articles that used pre-testing (Libby & Thorne, 2007; Shanahan & Hyman, 2003).

The concepts adopted in the articles and their findings – both referring to elements of virtue ethics – were considered to illustrate the analysis of the scales' development. Studies on virtues in leadership suggest that the leader's character is still an essential attribute for ethics in administration, which could broaden the discussion on leadership traits and leadership as a process and expand the debate between heroic and post-heroic perspectives (Sobral & Furtado, 2019).

Sarros et al. (2006) suggest that integrity is a key attribute for a leader's character. The article by Riggio et al. (2010) explores the cardinal virtues of temperance, fortitude, justice, and prudence related to leadership, based on assumptions by Thomas Aquinas and Aristotle. It is one of the few studies that seek to address the assumption of the unity of virtues. The authors carried out two stages of exploratory factor analysis and obtained results that suggest a single explanatory factor for the model, which Riggio et al. (2010) consider evidence of the unity of virtues.

Table 3. Items, samples, and measures on moral virtues scales at the individual level.

Articles	Initial Items (A)	Sample (B)	Proportion (B/A)	Final Items	Statistical analyses	Country	Respondents' profile
Multiple moral virtues							
Cawley et al. (2000)	140	390(1), 181(2), 143(3)	2.8	48	EFA	US	Psychology students
Shanahan and Hyman (2003)	45	445	9.9	33	EFA	US	Marketing students
Park and Peterson (2006)	198	250	1.3	24	EFA	US	Students (10-17 years old)
Sarros et al. (2006)	7	238	34.0	7	ANOVA	Australia	Members of the Australian Institute of Management
Libby and Thorne (2007)	55	376	6.8	29	EFA	Canada	CICA members
Riggio et al. (2010)	36	200	5.6	19	EFA, CFA	US	Administrators
Thun and Kelloway (2011)	27	327	12.1	14	EFA	Canada	University employees
Racelis (2013)	34	140	4.1	22	EFA	Philippines	University students
Racelis (2014)	34	141	4.1	22	EFA	Philippines	Students who are managers
Yang et al. (2015)	90	348	3.9	90	EFA	China	Students
Seijts et al. (2015)	10	364	36.4	10	-	Canada and the US	Organizations' leaders
Koçyiğit and Karadağ (2016)	10	312	31.2	26	EFA, CFA	Turkey	Undergraduate students
Stoeber and Yang (2016)	48	243	5.1	48	-	China	University students
Wang and Hackett (2016)	89	348	3.9	18	EFA, CFA	North America	MBA students
Dawson (2018)	45	137	3.0	13	EFA, CFA	UK	HR professionals
Song and Kim (2018)	50	400	8	50	CFA	US	Adults
Arthur et al. (2021)	24	2.340	97.5	24	ANOVA, CFA	US	Professionals in five different areas
Donada et al. (2019)	14	201	14.4	14	-	France	CEOs
Shanahan and Hopkins (2019)	3	129	43	3	CFA	US	Managers and salespeople
Specific moral virtues							
Beekun et al. (2005)	14	165	11.8	14	EFA	US and Russia	MBA students
Beugré (2012)	36	124(1) 101(2)	3.4 2.8	18	-	US	Employees of an electronics retail chain
Diessner et al. (2013)	18	5.380 (1) 542(2)	298.9	18	SEM	US (Idaho)	University students
Grappi et al. (2013)	5	280	56.0	5	CFA	Italy	Consumers
Manly et al. (2015)	12	86	7.2	12	-	US	IT business students
Morgan et al. (2017)	119	477(1) 1.599(2)	4.0 55.1	29	EFA, CFA, ANOVA, MANOVA	UK	Online respondent
Castro-González et al. (2019)	2	252	126	2	CFA	Spain	Consumers
Gulliford et al. (2019)	6+29	311	8.9	6+29	ANOVA	UK	Adults
Qin et al. (2019)	9	487	54.1	9	EFA, CFA	China	Supervisors and employees
Bai et al. (2020)	60	292(1), 167(2) 155(3)	4.9	15	EFA, CFA	US and China	Students Managers
Bernabe-Valero et al. (2020)	20	302	15.1	20	CFA	US	Adults
Colombo et al. (2021)	20	60(1), 301(2), 347(3), 431(4)	3	20	-	Netherlands	University students

Continues

Table 3. Items, samples, and measures on moral virtues scales at the individual level (Continued).

Articles	Initial Items (A)	Sample (B)	Proportion (B/A)	Final Items	Statistical analyses	Country	Respondents' profile
Hudecek et al. (2020)	6	508(1) 1.599(2)	84.7	6	CFA	Germany and UK	Adults
Jiao et al. (2020)	55	350	6.4	53	EFA, CFA	China	Adults
Lasota et al. (2020)	25	214	8.6	25	SEM	Poland	Students and employees
Mansur et al. (2020)	10	202	20.2	9	EFA, CFA	Not informed	Adults
Shahab and Adil (2020)	24	250(1) 268(2)	10.4	24	EFA, CFA	Pakistan	University students
Kim et al. (2021)	60	252(1), 204(2), 343(3), 567(4)	4.2	30	EFA, CFA	USA	Students-parents; adults

Note. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), structural equation modeling (SEM), univariate analysis of covariance (ANOVA), multivariate analysis of covariance (MANOVA).

Wang and Hackett (2016) found support on Aristotelian and Confucian concepts to develop the Virtuous Leadership Questionnaire. They started from six virtues – courage, prudence, justice, temperance, humanity, and truthfulness and, by factor analysis, reach five factors: courage (4), temperance (4), justice (3), prudence (4), and humanity (3).

In their Character Strengths in Leadership scale, Thun and Kelloway (2011) find the factors humanity (4 items), wisdom (5), and temperance (5), while Seijts et al. (2015) discuss character as an amalgamation of virtues, personality traits, and values, describing 11 elements of character and their importance to the leadership. Finally, Mansur et al. (2020) suggest that moral courage contributes to ethical leadership and group citizenship behavior.

Further evidence of the role of moral virtues was observed in topics such as the relationships between buyer-seller (Donada, Mothe, Nogatchewsky, & Ribeiro, 2019); leader-led (Qin et al., 2019); managers-salespeople (Shanahan & Hopkins, 2019); the professionals' character (Arthur et al., 2021); and responsible consumption (Song & Kim, 2018).

Although elaborated with statistical rigor, leadership scales are specific to this role, i.e., they are elaborated from specific cultural, moral, and political contexts. Thus, these scales need re-elaboration when applied to other organizational contexts or inserted in a community with its particular culture. Such adaptation accommodates particularities in terms of moral virtues and the notion of human flourishing.

When applying Peterson and Seligman (2004), character strengths model, some studies partially or fully employ the items of character strengths:

(a) Park and Peterson (2006) address moral competence as good character, using 198 out of the model's 240 items. However, the authors' sample consists of 250 adolescent students, making the item-sample ratio lower than statistically recommended. Park and Peterson (2006) apply the exploratory factor analysis (EFA), obtaining four factors – temperance (4 items), intellectual (6), theological (10), and other strengths (4); (b) Song and Kim (2018) approach nine virtues of the model to verify how positive consumer traits explain their responsible consumption; and, (c) Arthur et al. (2021) address professionals' self-perception regarding the most important virtues of the model. Although there are differences and similarities between moral virtues and character strengths (Alzola, 2015), the paths to understanding them within organizations go through theoretical deepening and research strategies that allow reaching more than a single "picture" of virtues, recognizing that they are cultivated throughout life.

Discussion

Virtue is a concept with a philosophical root and is considered in the virtue ethics tradition as the middle ground between two vices: the lack of virtue and the excess of virtue (Aristotle, 2009). In this sense, the virtuous agent constantly reflects on their conduct, mistakes, and successes, seeking a path toward good. In this sense, self-education or self-improvement is a key element. Therefore, the importance of context, of action within a broader perspective (in life's trajectory), is highlighted. After making a few or several mistakes, one learns the virtues, such as self-forgiveness (Kim et al., 2021). Thus, a comprehensive ethical framework is desirable, a framework capable of considering negative and positive aspects of character,

mistakes and successes, vices and virtues, as seems to be the case with virtue ethics.

A form of reaching a more detailed understanding of a virtue's multi-components is choosing the strategy of examining only one virtue, as recent studies have done. For example, the emerging factors indicated from the EFAs represent a set of perceptions of virtues or character traits, even though they result from the operationalization from different areas and ethical assumptions. Some factors appear more than once, such as temperance (Park & Peterson, 2006; Riggio et al., 2010; Thun & Kelloway, 2011; Wang & Hackett, 2016), justice (Beekun et al., 2005; Riggio et al., 2010; Wang & Hackett, 2016) and resourcefulness (Cawley, Martin, & Johnson, 2000; Yang, Stoeber & Wang, 2015; Dawson, 2018). The virtue of prudence is found in the studies by Riggio et al. (2010) and Wang and Hackett (2016), while Sarros et al. (2006) and Thun and Kelloway (2011) define the factor as wisdom.

On the other hand, it would be a limitation not to consider, for example, the role of *phronesis* linked to moral virtues (Ames et al., 2020; Bachmann et al., 2017). The unity of virtues recognizes the connection between them, i.e., to be virtuous, someone expresses more than one virtue. It is the case, for example, of honesty and justice to communicate in the best possible way; courage and prudence to make good decisions in the face of environmental risks.

As for the assumptions regarding the participation of prudence in each virtue and the unity of virtues (Sison & Ferrero, 2015), most articles do not consider them in the development or use of scales. Among the few exceptions is the attempt by Riggio et al. (2010). Some works rely on authors of virtue ethics – such as Aristotle (2009), MacIntyre (2007) and Sison and Ferrero (2015) – while others connect virtue ethics to positive psychology (e.g., Arthur et al., 2021; Donada et al., 2019; Shahab & Adil, 2020).

What would the possible research strategies be, considering the need for further theoretical development on virtues in administration? Based on this question, we resume some theoretical-methodological aspects to gather suggestions for future studies.

SUGGESTIONS FOR FUTURE STUDIES

From a theoretical-methodological perspective, four points are worth mentioning: learning of virtues,

their presence in different social roles, subjective-objective duality, and judgment-action. The first is that the cultivation and learning of virtues take place throughout life, based on experience (Sison & Ferrero, 2015). Methods that occasionally consult respondents at a specific time, without a contextualized analysis of their life trajectories, cannot access the context and circumstance of action, which is considered in the tradition of virtue ethics (Kinghorn, 2017). It is also worth bearing in mind the respondents' age or experience, which can make a difference in moral maturity.

The second point is connected to the first as it refers to someone's reflection on their life as a whole. Thus, research must include the professional dimension and the harmony among the individuals' different social roles (Sison et al., 2018). The third point refers to the subjective-objective duality related to the concept of virtue, which needs to be addressed by approaches focused on observable behaviors or in the use of scales on the perception of virtues. Such duality is important because a moral virtue expresses harmony between subjective-objective, will and action, something complex to access through scales and measures. Finally, the fourth point raises the question of the judgment-action gap that separates the moment of answering a test/scale on a given hypothetical question from the experience of an ethical question. Accessing the virtues from someone's life trajectory could find reliable evidence of the participant's experience.

Therefore, some interpretative research strategies and qualitative approaches could achieve a deeper understanding of the virtues in a specific national and organizational context, considering the assumptions of the unity of virtues and the crucial role of *phronesis* (Sison & Ferrero, 2015; Zyl, 2019). Possible contributions from oral history, narrative approaches, case studies, ethnography, and phenomenology can be considered. Exploratory strategies usually precede quantitative approaches to subsidize future studies using scales, such as step 1, suggested in Figure 2.

The review of works that seek to measure virtues requires a methodological and theoretical discussion. As for the method, this article a) questions why the studies have been seeking to measure virtues, b) tries to understand the limitations and possibilities based on the articles reviewed, and c) seeks to engage in discussions about which methods can be considered for empirical studies of virtue ethics. Against this backdrop, possible procedures in future studies are suggested, as pointed out in Figure 2.

Steps	Suggestions and recommendations
1. Exploratory and qualitative theoretical or theoretical-empirical studies	Literature review on a specific virtue and its relationship with phronesis (search for clarity and conceptual deepening) Review of the assumptions of the chosen ethical approach Choosing qualitative approaches to access participants' narratives: ethnography, oral history, phenomenology, among others. Considering aspects of the participant's culture and context
2. Quantitative exploratory studies to develop perception of virtues scales	Generation of a pool of items on perceptions of virtue, considering the literature review and evidence found in step 1. When generating items, considering the multiple components of virtues: intellectual, motivational, emotional and behavioral (e.g. "You are courageous in the different roles played in the community"). Review of items with moral virtues experts. Conducting pre-tests with a sample of targeted respondents. Considering items that express the opposite of virtue (vice). Application and analysis of data using EFA, in addition to other statistical criteria, paying attention to the sample-item proportion. Analysis of emerging factors in light of the assumptions of the chosen ethical approach.

Figure 2. Suggestions of steps in future studies on moral virtues.

Steps 1 and 2 are understood as a route to studies on moral virtues. Step 2 follows basic guidelines for the development of scales, as proposed by [DeVellis \(2016\)](#).

Future studies facing concerns about the instrumentation of the construct to improve performance or productivity may address its contribution to human flourishing and interpersonal relationships. The perception of virtues may allow us to understand how people associate these attributes with other organizational issues, such as leadership, decision-making, or organizational culture. From a theoretical perspective, there is still a debate about using scales to expand or deepen the understanding of moral virtues in the organizational and business environments while bearing in mind the assumptions and elements of the tradition of virtue ethics as a framework for the study of ethics in Administration.

Among the research limitations, this study focuses on analyzing moral virtue scales at the individual level. Therefore, the virtuousness scales (at the organizational level) can be approached in future studies. Also, the studies were selected for the systematic review based on a search limited to terms such as virtue ethics and moral virtues. Thus, further studies may look for a specific virtue. Finally, the research reports do not describe how convergent and discriminant validations were carried out in relation to other concepts. The article was organized to offer a general analysis in the light of virtue ethics, discussing only some of the assumptions.

FINAL CONSIDERATIONS

This study carried out a systematic review and analyzed how scales on moral virtues are constructed and measured in studies associated with virtue ethics in administration.

The 37 articles used in the analysis were retrieved from five databases. They were published in 21 journals, most of them in business ethics, and portray studies that developed or applied scales related to the perception of moral virtues at the individual level. Nineteen articles covered multiple moral virtues, and 18 articles sought a specific moral virtue.

The Aristotelian-Thomistic virtue ethics assumptions and statistical recommendations for the development and application of scales supported the analysis offered in this article. The research analyzed the construction of scales in the studies examined, presenting numbers on the generation of items before and after factor analysis, the proportion of respondents per item (sample-item), the respondents' profile in each study, the research context (given by the 15 countries represented in the articles selected), and the types of statistical analyses adopted (such as exploratory and confirmatory factor analysis and emerging factors, structural equation modeling, Anova, Manova).

The selected studies illustrate areas in the field of administration related to the theme of virtues, such as leadership, manager-employee relationship, and responsible consumption. As a portion of respondents is university students, further studies are required to access practitioners working in the field. Virtues such as courage, gratitude, humility, integrity, forgiveness, respect, resilience, and temperance were discussed.

The results were discussed theoretically and methodologically, considering the use of scales in relation to the conceptual deepening of the area, and the assumptions regarding the particularities of the contexts, the unity of virtues, and their interconnection with phronesis (practical wisdom). Learning, presence in different roles, and judgment-action duality were also discussed to elucidate

theoretical and practical implications of the limitations found in conceptual deepening and operationalization.

Therefore, it was possible to suggest procedures for future studies on moral virtues, organized in successive stages. The intention is to coordinate the first step with qualitative exploratory studies – which grants conceptual precision and data on the context and targeted participants – and the second step, with recommendations for the development of scales on the perception of virtues, obtaining larger sets of items, the better item-sample ratio in accessing the field,

validation with experts and potential respondents, and pre-testing.

Conceptual deepening encompasses Western and Eastern traditions for virtue ethics, and it is necessary to reflect on the reasons for trying to measure virtues in the field of administration. An alternative path can be analyzing and identifying organizational aspects that help people cultivate virtues, such as practices and institutions, organizational culture, and administrative functions.

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