Chapter 13 Impact of the Application of Ethical Values in the Dimensions of Entrepreneurship and Change/Innovation



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Abstract The proposed research is of great relevance at an organizational and business level as it relates ethical values to the dimensions of entrepreneurship and change/innovation, as well as each to each other. Indicators from a very recent literature review are being related and compared with the indicators and/or ethical values of the empirical instrument applied to a sample formed by 475 professionals who work in the highly industrial and productive region of Baja California in Mexico, which borders the southern state of California, U.S.A.

Once the instrument is applied, the results obtained are (1) the need for ethics in companies; (2) the level of ethical values when professionals perform the role of entrepreneurship and change/innovation, based on 28 ethical values or variables; (3) the relationship between ethics and the two dimensions cited in the study; (4) the "why" or causes of such relationship, which it is categorized by creating their own taxonomy; (5) all the empirical results obtained are related to gender, and relevant correlations and conclusions are generated. The study is very useful for knowledge application and business performance at all levels and for all kinds of companies and organizations.

Keywords Ethics · Entrepreneurship · Change · Innovation · Ethical values · Indicators · Business

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13.1 Introduction

Entrepreneurship and change/innovation have been integral and key to human evolution, encompassing all the dimensions of life and activities throughout history. While having developed slowly for centuries, in the era of digital technologies upon which we now greatly depend, they are currently advancing at an ever-increasing pace, creating uncertainty and changes, which seem to overwhelm and enslave us although we believe we are free. This can be related to the tangible aspect, while similarly ethical values have accompanied human beings from the beginning in an intangible way, and they are indicators which reflect implicit trends that become realities. Combining both aspects becomes an art that we all need to learn for a productive, effective, and ethical management.

The organizations and companies will obtain different achievements based on their management of the indicators gathered and analyzed in this study and many others, which will feasibly affect their performance and sustainability.

Both dimensions of this study have been examined thoroughly by many researchers, especially since the beginning of the current century, with a wide, rich, and important range of studies and investigations. However, by no means does this imply that the field is saturated; on the contrary, it is a dynamic and evolving topic in our digital era, and being relevant to all academic disciplines, it should be further developed and awareness about it should be created at all levels. Therefore, this study aims to better understand the influence of ethical values in both dimensions mentioned above.

13.1.1 Purpose

Overall Goal This research study aims to determine the relevance, relationship, and feasible improvement solutions to be applied based on a series of indicators which reflect the ethical values that are found in entrepreneurship, as well as change/innovation, in organizations and companies. The study has been performed by graduate professionals who work in different organizations or companies in the area of Baja California, Mexico and the methodology used has the potential to be applied in other regions of the world.

Specific Objectives The following goals should be attained:

- Create a table which reflects the link between reviewed literature and the results of the empirical study.
- Identify how professionals behave and apply a series of indicators/variables/values/attributes when performing their role within entrepreneurship and change/ innovation, in order to gather metrics that help draw correlations.
- Establish indices of need for ethics in entrepreneurship and change/innovation.

- Identify reasons and categories, which shape the relationship between ethics and entrepreneurship and ethics and change/innovation.
- Draw conclusions and understand limitations, as well as to offer recommendations for further studies.

13.1.2 Justification for the Study

To sum up, when analyzing companies and corporations, the following justifications can be identified:

This study of the dimensions of entrepreneurship and change/innovation, as well as their assessment, measurement, and interrelation, is considered relevant for research purposes and of practical use in organizations and companies.

Being able to identify the impact of ethical values on entrepreneurship and on change/innovation and on their embodiment, according to the perception of professionals, who work or manage a wide range of companies.

It can be said that both dimensions have key influence roots based on the use and application of the indicators/variables/values/attributes being measured and analyzed, which vary depending on the approaches and interpretations made by managers or entrepreneurs according to their ideals, circumstances, and hierarchy of goals. Hence, the findings of this study, whether foreseeable or not, will potentially be used as clarification and guidance, especially in our evolving digital era.

13.2 **Theoretical Framework**

13.2.1 Content Analysis

The theoretical framework for this research study is given by the conceptual support based on the theoretical concepts that provide the basis for this project. Prior research about the content, application, and practicality of the two dimensions encompassed by this study, namely, entrepreneurship and change/innovation, should be considered, including academic research and valid and reliable experiences in order to provide the basis, perspectives, links, approaches, and multiple innovative ideas, which will enable us to achieve concrete results in order to validate this study.

It is worth noting that while change can lead to innovation, innovation always triggers changes in one way or another. Currently, the rapid pace of progress forces us to change in multiple ways, which implies that we must prepare and adapt. Each person and group, as well as organizations or companies, will in turn change at its own pace. In the digital age, technologies at all levels and effectiveness in the use of information have become key to the development and indirectly, the source of power for any organization and country. Therefore, it is critical to identify the variables used by the different researchers in the most updated way possible.

Thus, for example, at the mainstream level, many activities will have to rely on smart phones and computers. The restrictions we now face are manifold and we must adapt to a continuous and sometimes convulsive change. Ladeira et al. (2019) investigate this phenomenon based on the factors that shape digital entrepreneurship creating mind maps, cause and effect relationships, and neural networks of connection and relationship. These advancements spur digital entrepreneurship, including digital business models at both the micro and systemic levels, creating new jobs, as well as business and economic growth (Sahut et al. 2019). Kraus et al. (2019) analyze and use the relevance of digital business models, crowdfunding, collaborative economy, and contributions to digitization as key to progress in this era. When focusing on companies and corporations, where digitalization is critical, it is important to understand the origin of the relation between corporate entrepreneurship, innovation, and knowledge conversion, which are essential factors. This relation has not yet been well established (Arfi and Hikkerova 2019).

When taking a closer look at this digital age, according to Obschonka and Audretsch (2019), the two monsters appear that are changing our known landscape, namely, Big Data and Artificial Intelligence. With technological corporations whose capital is based in innovation, technological and digital entrepreneurship models arise in different countries, with whole areas dedicated to technology, such as the so-called Silicon Valley, analyzed by Audretsch (2019), who looks at their pros and cons and their global impact. Thus, "Smart Entrepreneurship" is examined, in an attempt to identify the link between actual field practice and ongoing, agile, evolving, and innovative research and a number of questions arise regarding decisionmaking and ethics with very diverse external perspectives and varying interests. This is how Petkovska et al. (2018) focus on open innovation which implies specific knowledge and know-how, that is, it requires an information-based approach and the ability to determine the adequate timing. For this, a structure that unifies the understanding of entrepreneurship and technological innovation and information networks need to be created to enable greater and better productive performance (Sobel and Clark 2018; Urbano et al. 2019). Far from discouraging the students, these challenges spur them, especially in the field of information technology (IT), and they strive to maintain their entrepreneurial intent and self-motivation in order to achieve innovations that create change (Sitaridis and Kitsios 2019). Along with Penalver et al. (2018), we aim to give greater emphasis to the relations between strategy and structure, considering factors such as cooperative innovation between companies and their innovation capabilities.

The vast majority of digital entrepreneurship does not focus on the ethical-social or family factor but on the creation of products or apps for profit and other purposes. This reality is immersed mainly in the economic factor. However, entrepreneurship itself and change/innovation are associated with ethics to the extent that they are governed by standards and rules set forth by laws to establish a certain order and avoid damaging others. Unfortunately, this seems to be a defensive approach rather than a positive natural attitude to ensure the common good. Indeed, the entrepreneur sometimes acts out of necessity or fear to deal with difficult situations or avoid risks that may damage third parties or themselves.

However, some authors such as Ahsan (2020) consider the factor of ethics and create mechanisms to ensure ethical practices in the shared economy and improve effectiveness. Miller (2019) considers entrepreneurship as a virtue and analyzes its perspectives and benefits. When focusing on ethics, reviewing literature about it, discovering its sources and investigating its applications in companies and other sectors is a rewarding challenge that motivates researchers to delve into the subject (Banon-Gomis et al. 2011; Kim et al. 2016). It then appears as an incentive for social entrepreneurship aiming to actively help those in need and leverage skills and opportunities related with it (Pathak and Muralidharan 2018). This requires training based on applicable knowledge and ethical values in order to transform people into agents of innovative ventures (Rodriguez-Lopez and Souto 2019; Sitaridis and Kitsios 2019).

The influence of ethics, although negative in this instance, becomes clear in the case of bribes given to obtain and/or grant government loans to entrepreneurs (Baron et al. 2018).

Another aspect worth examining is the work motivation for both the company and the individual in the venture analyzed by Bolzani and Der Foo (2018) who establish relations based on five variables, namely, achievements, power, security, benevolence, and self-direction. Likewise, Lyubovnikova et al. (2018) analyze the variables productivity and innovation to drive satisfaction and self-esteem in companies, considering a work environment that provides greater support and productive well-being. On the other hand, Choi et al. (2018) carried out a study that compares and relates socially oriented entrepreneurial intentions according to the perception of behavior control.

An important point to consider is the relationship that appears when entrepreneurship seeks social improvement with ethics, known as social entrepreneurship, which has been steadily expanding and requires a high level of innovation to obtain positive results and ensure its sustainability (Osorio-Vega 2019; Pathak and Muralidharan 2018).

Similarly, ethics combines with social responsibility, which has become a highly relevant topic for organizations, especially in the last decade, which according to many investigations, increases their competitive edge and sustainability (Ali et al. 2017; Cuervo-Cazurra 2018; ElGammal et al. 2018). This implies that a mentality change has occurred in terms of ethical values and responsibility when considering not only profit but also the human factor, which is ultimately the most productive in an improved work environment. This ethical and responsible awakening is worth living, and everyone should be up-to-date with its multiple advantages, although they might not be immediately visible but might be motivational and generate a better productive coexistence within a company and society at large (Ferrell et al. 2017; Mercader 2017). There are successful examples such as the one presented by BR et al. (2018), where financial services are created for farmers with almost no resources using a positive entrepreneurial mindset, providing training and access to technology and entering work cycles with continuous benefits.

Currently, the comfort zones we are trying to establish are temporary, and therefore, this forces us to broaden our minds and horizons to compete in a dynamic world that increasingly requires problem-solvers, capable of swiftly implementing their creations and products created by others. Similarly, Ibarra et al. (2018) propose business models based on different levels of innovation, highlighting the urgency and validity of digitization. On the other hand, Bristow and Healy (2018) examine the relation between resilience and innovation for the economic and general recovery in the aftermath of crisis, while Geissdoerfer et al. (2018) focus on sustainability by benchmarking normal business models with those that consider sustainability in detail with its different additional variables. Innovation analysis is particularly interesting when focusing on the process rather than on the product—which is the usual approach—and this provides useful results (Desyllas et al. 2018). This concept and criterion are supported by Niosi and McKelvey (2018) with cascading innovation being introduced in processes. Regarding innovation and innovative minds, all kinds of feasible solutions arise in all areas of life; for example, Jackson (2018), in his degree thesis, proposes and generates innovation in payment means, which in larger companies can be more sophisticated and simplified in this digital age.

Actually, this has less to do with having many innovators with great, feasible ideas than with being creative enough to sell them, ensuring their profitability and sustainability. Hence, any innovator or entrepreneur should also have in mind that "seeds" should be planted for the future and not for the short terms, and plan accordingly. Hence, Rajapathirana and Hui (2018) focus on business performance variables, innovative capacity, and examine different types of innovation. In this way, innovation expands and there are more and more books that gather the contents of different articles and research studies by multiple authors under the common topic of innovation applied to various areas, from social services (Langer et al. 2019) to Innovation Processes and Change and Technology, with a number of different business models (Schallmo et al. 2018). Here, it is worth noting the importance of migratory changes of companies in different areas or countries based on conditions and multiple variables that can improve productivity and benefits, including parallel companies that can be created, which implies innovating new methods and performance models (Hacklin et al. 2018).

13.2.2 Summary

In summarizing the literature review, which again, has been as recent as possible, especially in the areas of innovation and change, information and technology have become a priority for advancement and development. From this, it becomes clear how the most advanced and profitable corporations in the current landscape specialize in technology support and data and information management, while those who work in production are necessary and although they can be bigger, they have become dependent in one way or another, on technology and information that involves continuous innovation, which today has become increasingly accelerated and highly competitive.

Again, it is worth highlighting that any change should be designed and carried out in a responsible and ethical manner, something which applies to all fields of development and progress, including business, economy, education, society, science, and politics among others; this would help combine achievement and productivity wisely (Ferrer 2010; Mercader 2019). Reviewing the benefits of applying ethical values is highly useful for parties in a win-win situation that should be the norm when doing business and daily living.

The multiple variables and indicators that emerge from the analysis of the literature review and the referential framework presented in this study need to be studied and interrelated because they provide guidance for decision-making and execution of business and organizational processes and indicate the trends in this digital and changing era. Therefore, separately or combined, they may be used by a wide range of businessmen, leaders, researchers, students, educators, and private and government personnel, both at the professional and personal level, as well as at the corporate and institutional level, and why not at the familiar and social level.

Table 13.1 shows a very brief but clear summary, with four sub-tables, namely, Tables A, B, C, and D, which include the following:

Table 13.1A. Indicators, variables, and/or elements of entrepreneurship and change/innovation in the literature analyzed

Table 13.1B. Authors from analyzed investigations related with the indicators obtained from the literature review in the digital age

Table 13.1C. Categorizations and/or indicators empirically obtained when applying the instrument to the relation between ethics and entrepreneurship and change/ innovation

Table 13.1D. Ethical values and/or indicators applied empirically in the instrument to establish the respondent's level of perception of behavior in ethical values when performing in a role related to entrepreneurship and change/innovation

Table 13.1 Summary and relation of indicators obtained and used for reviewing literature and applying the instrument empirically

13.3 Methodology

13.3.1 The Methodology and Procedure

The methodology and procedure applied are as follows:

- (a) The sample included 475 participants, all of them professionals with academic studies and a university degree, working in different types of companies or organizations and from different careers, although mainly in Engineering and Administration.
- (b) This sample is more than enough to achieve 95% reliability when compared to the professional population in the region.

 $\textbf{Table 13.1A} \quad \textbf{Indicators, variables, and/or elements of entrepreneurship and change/innovation in the literature analyzed}$

Companies and corporations	Human behavior	Ethics
Work environment	Self-learning	Actions and example
Organizational learning	Self-direction	Collaborative attitudes
Training	Business and individual self-efficacy	Financial support
Entrepreneurship-impact causes	Self-motivation	Social benefits
Growth and development	Barriers and student learning	Creation of environmental value
Business decisions	Benevolence	Ethical issues
Productive performance	Abilities and capacities	Discrimination
Market design and probabilities	Personality characteristics	Self-interests decrease
Work teams and HR	Collaboration	Inspirational education
Business spirit	Environmental conditions	Being ethical
Organizational strategies	Working conditions	Entrepreneurship as a virtue
Strategies and plans	Challenges	Moral entrepreneurship
Technological experiences	Disruption	Ethical judgment
Context/time factor	Micro and systemic approach	Ethical leadership
Decision-making factor	Enthusiasm	Bad attitude
External factors	Entrepreneur intention	Social domain orientation
Cash flow, purchases, payments, and collections	Business motivation	Evolutionary thinking
Business formation	Individual motivation	Economic and social consequences
Integrating leadership	Self-motivation	Responsibility
Achievements, power, and security	Opportunities	Social responsibility
Need for various insurance	Conduct control perception	Bribes
Structural issues	Cause-effect relations	Shared value
Problems to solve	Foreseeable and unforeseen risks	Social innovation vision
Financing resources	Satisfaction	
Business performance	Decision-making	
Benefits and losses	Under-pressure work	
Systematic revision	Uncertainty factors	
Technology and equipment		
Strategic utility		
Business models	Entrepreneurship	Innovation
Shared knowledge	Pros and cons analysis	Competitive innovation
Cross linking	Corporate entrepreneurship	Innovative contribution
Crowdfunding	Digital entrepreneurship	Migrant companies
Sustainable marketing	Social entrepreneurship	Understanding structures
Qualitative methodologies	Sustainable entrepreneurship	Technological functions

(continued)

Table 13.1A (continued)

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Alternative methodologies	Intention of social service	Cascade innovation
Management methodologies	Entrepreneurial intentions	Knowledge market
Parallel business models	Competitive advantages	Process innovation
Primary business models		Product innovation
Digital models		Networks and informatio
Digital platforms		Economical-innovative resilience
Network systems-companies		Technological innovation
Sustainability		Support theories
Transformation		
Macro elements	Economy	
Governmental agencies	Failure analysis	
High technology	Changes of government, currency, and others	
Business and trade associations	Circular economy	
Institutional barriers	Collaborative economy	
Government anomalies	Competitive economy	
Big data	Ecosystems and geography	
Inclusive growth	Unpredictable phenomena	
Sustainable development	Trade fluctuations	
Globalization	Permits, insurance, and others	
Artificial intelligence	Regulations and norms	
Investments and return		
Loans		
NGOs		
Contextual overview		
Silicon Valley case		
IT information technology		
ICT		

- (c) The instrument has been developed by the author in order to gather answers to different questions related to entrepreneurship and change/innovation, their relationship, and the influence of ethical values on these dimensions.
- (d) The professionals that constituted the sample answered the questions on the instrument anonymously.
- (e) The instrument was designed as a questionnaire with open-ended and closed questions, and therefore, the analysis is quantitative and qualitative in this research, which implies that it will be a mixed analysis.
- (f) An electronic questionnaire was provided to people with professional, master, or doctorate degrees who work mainly in the State of Baja California.
- (g) The questionnaire included socio-demographic variables, such as gender, age, nationality, profession, and level of education.
- (h) The support of the literature review on the subject and within the theoretical framework is crucial to provide support and validate the study, and it was based

Entrepreneurship	Innovation	Ethics
Ahsan (2020)	Bristow and Healy (2018)	Ali et al. (2017)
Arfi and Hikkerova (2019)	Desyllas et al. (2018)	Banon-Gomis et al. (2011)
Audretsch (2019)	Geissdoerfer et al. (2018)	Cuervo-Cazurra (2018)
Baron et al. (2018)	Hacklin et al. (2018)	ElGammal et al. (2018)
Bolzani and Der Foo (2018)	Ibarra et al. (2018)	Ferrell et al. (2017)
Choi et al. (2018)	Jackson (2018)	Ferrer (2010)
Kraus et al. (2019)	Langer et al. (2019)	Kim et al. (2016)
Ladeira et al. (2019)	Lyubovnikova et al. (2018)	Mercader (2006)
Miller (2019)	Niosi and McKelvey (2018)	Mercader (2017)
Obschonka and Audretsch (2019)	Penalver et al. (2018)	Mercader (2019)
Pathak and Muralidharan (2018)	Rajapathirana and Hui (2018)	Osorio-Vega (2019)
Petkovska et al. (2018)	Schallmo et al. (2018)	
Rodriguez-Lopez and Souto (2019)		
Sahut et al. (2019)		
Sitaridis and Kitsios (2019)		
Sobel and Clark (2018)		
Urbano et al. (2019)		

Table 13.1B Authors from analyzed research related with the indicators obtained from the literature review in the digital age

 $\textbf{Table 13.1C} \quad \text{Categorizations and/or indicators empirically obtained when applying the instrument to the relationship between ethics and entrepreneurship and change/innovation}$

Human benefit and coexistence	Guide and way to act	Social responsibility
Reliability	Ethical values need	External-driven behavior
Decision-making	Need in work and life	Being and behavior
Social development	No relationship	Various
Differentiation between good and evil	Relation with environment	

on the most recent information since the subject is innovative and constantly changing in our digital era.

- (i) Statistical methods were applied, drawing correlations between entrepreneurship and change/innovation and among the variables or ethical values that were considered in the different questions of the instrument. Additionally, descriptive statistics were used.
- (j) The ethical values indicator taxonomy designed by Mercader (2006) was used and validated in subsequent investigations, with relevant adaptations to this study for some of the questions.
- (k) New categorizations or indicators on the relationship between ethics and entrepreneurship and change/innovation were developed, as a result of the responses gathered from the sample.
- (l) Comparisons and relationships against the theoretical framework and the empirical study and subsequently correlations were done. This provided the

Table 13.1D Ethical values and/or indicators applied empirically in the instrument to determine the respondent's level of perception of behavior in ethical values, when performing in the role of entrepreneurship and change/innovation

Social behavior values	Growth and improvement values
Honesty	Vision/objectivity
Respect	Communication
Responsibility	Knowledge/learning
Integrity	Self-motivation
Equity/justice	Decision-making
Friendship/union	Compliance/diligence
Kindness/care	Self-discipline/temperance
Personal talent values	Spiritual of self-values
Courage	Patience
Enthusiasm	Tolerance
Spirit of service	Humility
Perseverance/worker	Appreciation/gratitude
Generosity	Understanding
Creativity	Love
Good humor	Compassion/forgiveness

basis for proposing improvements with feasible solutions to be applied by organizations and companies, as well as by researchers.

The findings of this survey prompted us to reflect on, understand, focus on and apply to professionals, employees and employers, and education—both for teachers and students—an integrated knowledge and interest which can be used to promote the need to continuously apply entrepreneurship and change/innovation aligned with labor, personal, and social performance. The influence and relation of both dimensions with ethical values should also be examined.

13.3.2 The Questions, Sample, and Results of the Survey

The questions of the survey focused on the following:

- 1. Gender
- 2. Age
- 3. Nationality
- 4. Profession
- 5. Level of education
- 6. In your opinion, how necessary is ethics in businesses?
- 7. At which level do you usually perform in your entrepreneurship role based on the following ethics-related variables?
- 8. At which level do you usually perform in your change/innovation role based on the following ethics-related variables? Rate yourself on a scale of 1–10 in each of the following values, being 10 the highest.

The 28 ethical values or indicators used include the following:

Kindness/Care, Compliance/Diligence, Respect, Honesty, Spirit of service, Vision/Objectivity, Self-motivation, Humility, Patience, Compassion/Forgiveness, Friendship/Union, Creativity, Decision-making, Tolerance, Appreciation/Gratitude, Communication, Responsibility, Integrity, Honesty, Knowledge/Learning, Courage, Understanding, Enthusiasm, Equity, Perseverance, Generosity, Self-discipline, Good humor, Love.

- 9. Do you think there is a relationship between ethics and entrepreneurship?
- 10. Do you think there is a relationship between ethics and change/innovation?
- 11. Why? Please explain.

The sample taken for this research study, consisting of 475 professionals, is representative of the population of Baja California and the percentage of graduates of state universities according to figures from the National Institute of Statistics and Geography of Mexico (*INEGI*, *Instituto Nacional de Estadística y Geografia de Mexico*), with a confidence level of 95% and an error margin of 5%, since applying the formula required no less than 385 participants.

The data gathered has been critical when analyzing the responses obtained, with the following results:

- 1. Categorizations, based on the open questions, of the reason and/or why the respondent considers that there is a relationship between ethics and entrepreneurship and between ethics and change/innovation.
- 2. Mean (averages) in the two dimensions analyzed, namely, entrepreneurship and change/innovation, which have focused on companies and organizations.
- 3. Correlations between the two dimensions under study, entrepreneurship and change/innovation, and also between the 28 ethical values applied and both dimensions.

The results are presented in percentage tables and charts—the frequencies have been omitted due to the space limit—for easier understanding in a visual and simple way, and some of them also combined with gender. Empirically obtained from the analysis of the study sample, these results are highly relevant and useful for entrepreneurs, professionals, public and private employees, teachers and students, as well as the general public.

13.4 Results and Discussion

For clarity purposes, the order of the survey questions should be followed when analyzing the data. In addition, significant findings within the table entries have been bolded. The survey begins with demographic questions.

13.4.1 *The first question* aims to establish the respondent's gender or sex and the results of the sample indicate that of a total of 475 participants, 223 were female,

accounting for 46.95% of the sample and 252 were male, 53.05%, which implies a fairly balanced sample for this study.

13.4.2 The second question refers to age, which in its analysis was classified on ranges of 5 years as shown in Table 13.2, combining age ranges with gender. It should be noted that 32.63% of the sample, a significant majority, ranged between 26 and 30 years old. The second larger majority is aged 31-35 years old, with 17.68%, and then, with very close percentages, the group aged 20–25 and the group aged 36-40 years old, with 16.63%. The sum of these four categories accounts for 83.58% of the total sample and the sum of 20-30-year-old accounts for 49.26% of the sample. The differences between masculine and feminine groups are not significant.

Similarly, Table 13.3 was designed by generations, with Millennials accounting for three thirds of the sample, that is, a very significant percentage of the sample (66.35%). Responses from both sex groups were also very balanced.

13.4.3 The third question refers to nationality, with a vast majority (93.05%) of Mexicans, followed by 4.21% from the United States and the rest of nationalities only account for a 2.74% (Table 13.4).

13.4.4 The fourth question focuses on the professions of the respondents in the sample, which reveals a wide range of professions, although when analyzed in detail, the vast majority of respondents exert three professions, namely, Engineering with 24.84%, Management with 13.05%, and Public Accounting with 12.00%; the three professions combined account for 49.89% of the total professions. A section called Miscellaneous was also prepared, accounting for 6.74% of the sample, while Law reached 5.68%. All other professions were well below 5%, including Architecture, Foreign Trade, Communication, Graphic Design, Teaching, Economics, Nursing, Computer Science, Medicine, Marketing, International Business, Dentistry, Psychology, and Chemistry. On the other hand, 1.89% replied they had a Bachelor's degree without specifying the career or profession, and similarly, 1.89% declared they were Entrepreneurs and 2.11%, Employees. Only 2.32% did not answer the question.

Age range	Female	Female %	Male	Male %	Total	Total %
20-25	39	17.49	40	15.87	79	16.63
26–30	70	31.39	85	33.73	155	32.63
31–35	43	19.28	41	16.27	84	17.68
36–40	34	15.25	45	17.86	79	16.63
41–45	18	8.07	18	7.14	36	7.58
46–50	6	2.69	12	4.76	18	3.79
51–55	8	3.59	7	2.78	15	3.16
56–60	5	2.24	2	0.79	7	1.47
61–65		0.00	2	0.79	2	0.42
Total	223	100.00	252	100.00	475	100.00

Table 13.2 Participants' age by age range of 5 years combined with gender

Total %

Total

Male %

Generations

Baby boomers	5	2.24	4	1.59	9	1.89
X	32	14.35	37	14.68	69	14.53
Y (Millennials)	147	65.92	171	67.86	318	66.95
Z	39	17.49	40	15.87	79	16.63
Total	223	100.00	252	100.00	475	100.00
<u>Fotal</u>	223	100.00	252	100.00	475	100.00
able 13.4 Nation	alities of the p	articipants con	nbined with	gender		
Nationality	Female	Female %	Male	Male %	Total	Total %
D:1!		0.00	1	0.40	1	0.21

Male

Table 13.3 Age of the participants by generations combined with gender

Female %

Female

Nationality	Female	Female %	Male	Male %	Total	Total %
Brazilian		0.00	1	0.40	1	0.21
Spanish		0.00	1	0.40	1	0.21
Foreign		0.00	1	0.40	1	0.21
Guatemalan	1	0.45		0.00	1	0.21
Mexican	207	92.83	235	93.25	442	93.05
Mexican-USA	4	1.79	2	0.79	6	1.26
Mexican-Chilean		0.00	1	0.40	1	0.21
USA	10	4.48	10	3.97	20	4.21
Venezuelan		0.00	1	0.40	1	0.21
No reply	1	0.45		0.00	1	0.21
Total	223	100.00	252	100.00	475	100.00

A significant difference is observed between the sexes, particularly in Engineering, since female engineers account for 10.76%, while male engineers account for 37.30%, with a total of 24.84% professional engineers in the sample. It is also interesting to note that if professions coming from the School of Business Administration and Economics, such as Foreign Trade, Economics, Marketing, and International Business, were integrated, their combined percentage (9.89%) when added to that of Public Accounting (12.00%) and of Management (13.05%) would account for 34.94%, which is very significant and would be the highest percentage.

A table for professions has not been included here for the sake of space, but it will be provided upon request via email.

13.4.5 *The fifth question* indicates the level of education or academic level of the respondents, and it is worth highlighting that being a professional was part of the inclusion criteria. However, it should be noted that only 68.84% have a professional degree, 12.42% are pursuing a master's degree, and 17.05% already have a master's degree, with only 1.47% who have obtained a doctorate. The goal of the survey was that all respondents have some type of college preparation and work experience (Table 13.5).

These questions conclude the demographic analysis.

13.4.6 The sixth question refers to the degree of necessity of ethics in companies. The responses obtained from the participants are very important since they reflect a prevailing need for ethics in companies and organizations in general and,

Academic degree	Female	Female %	Male	Male %	Total	Total %
(a) Doctorate	3	1.35	4	1.59	7	1.47
(b) Master's degree	31	13.90	50	19.84	81	17.05
(c) Professional degree	163	73.09	164	65.08	327	68.84
(d) Pursuing a master's degree	26	11.66	33	13.10	59	12.42
No reply		0.00	1	0.40	1	0.21
Total	223	100.00	252	100.00	475	100.00

Table 13.5 Academic degree of the participants combined with Gender

Table 13.6 Need for ethics in companies

Need for ethics	Female	Female %	Male	Male %	Total	Total %
(a) Highly necessary	184	82.51	215	85.32	399	84.00
(a) Quite necessary	35	15.70	30	11.90	65	13.68
(c) Moderately necessary	4	1.79	5	1.98	9	1.89
(c) Somewhat necessary		0.00	1	0.40	1	0.21
No reply			1		1	
Total	223	100.00	252	100.00	475	100.00

therefore, in what goes on inside them, since the response Highly Necessary reaches 84%, which, when combined with the response Quite Necessary, accounts for 97.68%, that is, almost all the respondents in the sample (Table 13.6).

13.4.7 The seventh question was as follows: At which level do you usually perform in your entrepreneurship role based on the following ethics-related variables? The participants rated the 28 ethical values and/or variables from 1 to 10, 10 being the highest value and based on this rating, the averages or arithmetic mean were obtained in order to subsequently establish correlations.

Table 13.7 shows a summary of the responses for this question, and it is worth noting that all the ethical values and/or variables assessed were considered highly relevant and none was rated below 8. The results show that the most significant values in the role of entrepreneurship were those above 9 out of 10, namely, Honesty, Responsibility and Respect, which unsurprisingly confirms the findings of previous literature (Mercader 2006), followed by Integrity, Perseverance/Hardworking, Compliance/Diligence, and Equity/Justice. These results provide guidance for entrepreneurship, especially in the digital age.

13.4.8 The eighth question was presented as follows: At which level do you usually perform in your change/innovation role based on the following ethics-related variables? Again, the participants assessed the 28 ethical values and/or variables rating them on a scale from 1 to 10, and the averages or arithmetic mean were obtained to later establish the corresponding correlations.

Table 13.8 shows a summary of the results from this question, with all the ethical values and/or variables rated above 8, which shows the relevance of the ethical values in change/innovation. The most significant values in the role of change/innovation were rated above 9, including Honesty, Respect, and Responsibility, which were considered the most important values and of utmost priority for companies and

Value		Average	Value		Average
order	Ethical value	evaluation	order	Ethical value	evaluation
1	Honesty	9.190987	15	Self-motivation	8.801724
2	Responsibility	9.182013	16	Self-discipline/ temperance	8.797414
3	Respect	9.173448	17	Humility	8.739785
4	Integrity	9.096983	18	Generosity	8.698925
5	Perseverance/ worker	9.029979	19	Understanding	8.691649
6	Compliance/ diligence	9.025974	20	Kindness/care	8.688841
7	Equity/justice	9.008584	21	Friendship/union	8.659529
8	Spirit of service	8.955032	22	Creativity	8.61588
9	Appreciation/ gratitude	8.94206	23	Courage	8.602151
10	Vision/objectivity	8.903433	24	Patience	8.570815
11	Decision-making	8.897216	25	Love	8.564378
12	Enthusiasm	8.892704	26	Good humor	8.561966
13	Knowledge/ learning	8.866953	27	Tolerance	8.549356
14	Communication	8.860215	28	Compassion/ forgiveness	8.359914

Table 13.7 Respondent's level of perception of behavior in ethical values when performing in the role of entrepreneurship

organizations. These are followed, as it was the case for entrepreneurship, by Integrity, Perseverance/Worker, and Equity/Justice. In this case, compliance/diligence were rated below 9. Once again, this constitutes a guide of values to be applied in change/innovation.

- **13.4.9** *The ninth question* focuses on the existence of a relation between ethics and entrepreneurship using a Likert scale. The results of this question are shown in Table 13.9, which indicate that the highest percentage is Very strong relation (41.68%) followed by Strong relation (37.26%). Both answers combined account for 78.94%, which shows the relevance of the relation.
- **13.4.10** *The tenth question* asks whether the respondent considers that there is a relation between ethics and change/innovation, also using a Likert scale, with results shown in Table 13.10. The highest percentage is Very strong relation (43.79%) followed by Strong relation (34.95%). Both answers combined account for 78.74%, which shows a remarkable relationship, very similar to that obtained for entrepreneurship.
- **13.4.11** *The eleventh question* focuses on establishing the reason underlying the relation mentioned in questions 9 and 10. Qualitative responses were highly diverse and at the same time, some were ambiguous, but they were summarized in 14 categorizations shown in Table 13.11. It is remarkable that 25.47% of the participants did not answer this open question, possibly because it was the last one. The percentages obtained were calculated based on the answers provided. The most outstanding

Value		Average	Value		Average
order	Ethical value	evaluation	order	Ethical value	evaluation
1	Honesty	9.178112	15	Self-motivation	8.788793
2	Respect	9.112554	16	Self-discipline/ temperance	8.774194
3	Responsibility	9.105376	17	Creativity	8.754881
4	Integrity	9.017204	18	Understanding	8.735484
5	Perseverance/ worker	9.004292	19	Courage	8.671674
6	Equity/justice	9.00216	20	Kindness/care	8.660173
7	Knowledge/ learning	8.948387	21	Generosity	8.65812
8	Vision/objectivity	8.907328	22	Humility	8.635776
9	Decision making	8.906725	23	Tolerance	8.623932
10	Spirit of service	8.87931	24	Friendship/union	8.608602
11	Compliance/ diligence	8.850427	25	Patience	8.529032
12	Communication	8.837259	26	Good humor	8.517391
13	Appreciation/ gratitude	8.819742	27	Love	8.399142
14	Enthusiasm	8.802151	28	Compassion/	8.378788

Table 13.8 Respondent's level of perception of behavior in ethical values when performing in the role of change/innovation

Table 13.9 Relationship between ethics and entrepreneurship in combination with gender

Relationship between ethics and		Female		Male		Total
entrepreneurship	Female	%	Male	%	Total	%
(a) Very strong	97	43.50	101	40.08	198	41.68
(b) Strong	89	39.91	88	34.92	177	37.26
(c) Moderate	29	13.00	52	20.63	81	17.05
(d) Moderately weak	2	0.90	7	2.78	9	1.89
(e) Weak	2	0.90	4	1.59	6	1.26
No reply	4	1.79		0.00	4	0.84
Total	223	100.00	252	100.00	475	100.00

forgiveness

categorizations were Being and Behavior with 14.41%, Need in work and life with 13.28%, and Decision-making with 12.99%. The sum of the first five categorizations, which are above 10, accounted for 61.02%.

13.4.12 No longer a question. Before concluding this research analysis, it is important to clarify the following:

First, it is worth highlighting that a very high and statistically significant positive correlation has been found between the two dimensions under study, entrepreneurship and change/innovation, namely, of 0.9447551.

Relationship ethics and change/innovation	Female	Female %	Male	Male %	Total	Total %
(a) Very strong	100	44.84	108	42.86	208	43.79%
(b) Strong	77	34.53	89	35.32	166	34.95%
(c) Moderately weak	38	17.04	43	17.06	81	17.05%
(d) Weak	5	2.24	11	4.37	16	3.37%
No reply	3	1.35	1	0.40	4	0.84%
Total	223	100.00	252	100.00	475	100.00%
Total	223	100.00	252	100.00	4/5	100.00

Table 13.10 Relationship between ethics and change/innovation in combination with gender

Table 13.11 Categorizations of the relationship between ethics and entrepreneurship and change/innovation in combination with gender

	Categorizations	Female	Female %	Male	Male %	Total	Total %
1	Human benefits and coexistence	2	1.20	3	1.60	5	1.41%
2	Reliability	4	2.40	2	1.07	6	1.69%
3	Decision-making	26	15.57	20	10.70	46	12.99%
4	Social development	14	8.38	13	6.95	27	7.63%
5	Differentiation between good and evil	13	7.78	8	4.28	21	5.93%
6	Guide and way to act	4	2.40	3	1.60	7	1.98%
7	Need in work and life	27	16.17	20	10.70	47	13.28%
8	No relationship	2	1.20	7	3.74	9	2.54%
9	Ethical values need	16	9.58	20	10.70	36	10.17%
10	Relation with the environment	13	7.78	23	12.30	36	10.17%
11	Social responsibility	2	1.20	9	4.81	11	3.11%
12	External driven behavior	6	3.59	15	8.02	21	5.93%
13	Being and behavior	21	12.57	30	16.04	51	14.41%
14	MISCELLANOUS	17	10.18	14	7.49	31	8.76%
	Total	167	100.00	187	100.00	354	100.00%
	No reply					121	
	Participants at the start	223		252		475	

Second, correlations have been found between the 28 ethical values applied to entrepreneurship and change/innovation; in this case, they are positive and of medium significance, ranging from **0.7458714**, the highest correlation, and **0.6008530**, the lowest. These results are shown in Table 13.12 below.

This concludes the analysis, in the knowledge that answers and valid and useful information have been found for the benefit of companies and public and private organizations and in the hope that these answers and information will be applied at all levels to help strengthen Ethics and its influence on entrepreneurship and change/innovation.

Value			Value		
order	Ethical value	Correlation	order	Ethical value	Correlation
1	Friendship/union	0.745871	15	Courage	0.654354
2	Respect	0.726284	16	Compassion/ forgiveness	0.647519
3	Communication	0.724073	17	Humility	0.646356
4	Integrity	0.71588	18	Tolerance	0.64571
5	Love	0.713374	19	Spirit of service	0.642583
6	Responsibility	0.708268	20	Understanding	0.636193
7	Creativity	0.694618	21	Good humor	0.632124
8	Self-motivation	0.688625	22	Perseverance/worker	0.631799
9	Compliance/diligence	0.6733	23	Kindness/care	0.630068
10	Appreciation/gratitude	0.669187	24	Enthusiasm	0.629394
11	Decision-making	0.668518	25	Vision/objectivity	0.610883
12	Self-discipline/ temperance	0.666063	26	Equity/justice	0.603759
13	Honesty	0.66362	27	Patience	0.602337
14	Knowledge/learning	0.660225	28	Generosity	0.600853

Table 13.12 Correlations between the ethical values applied to entrepreneurship and change/ innovation

13.5 Conclusions, Limitations, and Future Research

For the sake of clarity, and based on the findings of the analysis of the results gathered by the empirical application of the instrument, combined with the results of the literary review, especially the most recent literature, the conclusions are presented as follows:

13.5.1 Conclusions

- (i) A considerable number of indicators/variables values have been obtained from the review and analysis of the literature related to the two dimensions under study—entrepreneurship and change/innovation—based on the characteristics of our digital era and prioritizing the most recent publications. The indicators/variables have been classified in theoretical categorizations, namely: Companies and corporations, Human behavior, Ethics, Business models, Entrepreneurship, Innovation, Macro elements, and Economy. Table 13.1 summarizes all this material, with an accurate convergence of the multiple elements of the topic, based on the concepts and criteria of different authors.
- (ii) The fact that there is a great need for ethics in entrepreneurship and in change/ innovation and that this has been empirically verified and validated, turns out

- to be a real sign that points to the urgency of acting upon ethical values at all levels and in every place of work and life, especially in this era of pervasive speed and change.
- (iii) It should be noted that the ethical values with the highest averages in both dimensions were Honesty, Respect, and Responsibility followed by Integrity, in line with the hierarchy of values found in previous research studies, upon which our instrument was based (Mercader 2006).
- (iv) The results helped us understand and correlate the intangible dimension represented by ethics and the application of ethical values to draw the conclusion that it can and should be included in the tangible dimension represented by entrepreneurship and change/innovation in order to obtain more balanced and sustainable results and achievements.
- (v) Given that the research sample comprised only professionals in middle or high positions in different types of companies, the results obtained can be said to have been filtered through the perspectives of people with a certain degree of knowledge, position and preparation that presumably provide greater reliability.
- (vi) Participant perception of levels of behavior in ethical values when they perform both in the role of entrepreneurship and of change/innovation showed a higher average or mean in the range of 9.1909 and 8.3509 for entrepreneurship and between 9.1781 and 8.3787 for change/innovation. It would be interesting to identify why the differences are small among the values and why they were rated high.
- (vii) The successful identification of a very high and positive correlation between entrepreneurship and change/innovation (0.9447551) is an achievement of great interest and confirms the interrelation between both dimensions. As stated at the beginning of this chapter, entrepreneurship goes hand in hand with change and innovation. Additionally, the correlations obtained as a result of the application of the 28 ethical values or variables included in the instrument to the two dimensions under study, which ranged from 0.60 to 0.75, positively show that there is a correlation between ethics and the dimensions under study, although the correlation is moderately strong.
- (viii) Remarkably, 66.95% of the respondents are Millennials (Y) and within this group, 32.63% of the total sample is between 26 and 30 years old, thus providing a generational perspective that is worth considering, since they make up the vast majority of the professional workforce in our digital age.
 - (ix) There is an important relation between ethics and entrepreneurship and also between ethics and change/innovation; in the first case, when combining the responses Very strong and Strong, it accounts for 78.94% of the total, thus highlighting the relevance of the relation. Similarly, in the case of change/innovation, it accounts for 78.74%.
 - (x) When obtaining answers to the reason for the above mentioned relationship, 14 new categorizations were established, and these can be used as indicators of the relation between ethics and the dimensions studied, which poses an interesting learning challenge and opportunity for analysis by business experts and other researchers, since they are linked to social, labor, and business development.

13.5.2 Limitations and Future Research

As with most research studies, limitations appear, and they can be summarized as follows: The research and its empirical application are conducted within a specific region that is considered relevant due to its industrial and productive nature, but this does not necessarily imply that the results would be similar if they were conducted in other regions, both nationally and internationally. Similarly, the study was limited to a wide group of professionals in different industries, and this could be further refined to more specific or more homogeneous groups.

It would be very interesting indeed to do further research to analyze and detail the most relevant indicators and variables for samples in other countries in order to compare the differences and similarities created by diverse cultures and management styles. Likewise, it would be important to use the instrument for researching the public and government sectors, as well as education, health, social welfare and political sectors. Last but not least, further research should be done combining the findings from the symbiosis between ethics and entrepreneurship and ethics and change/innovation at all levels and ages with new development perspectives for us, in this digital era, providing greater Productivity and Happiness.

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