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Student Perception of Their Knowledge of Social Entrepreneurship: Gender-gap and Disciplinary Analysis of an Ashoka Changemaker Campus in Latin America

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4 **Student Perception of Their Knowledge of Social Entrepreneurship:**
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7 **Gender-gap and Disciplinary Analysis of an Ashoka Changemaker**
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10 **Campus in Latin America**

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13 **Design/methodology/approach:** We evaluated the perception of knowledge about
14 social entrepreneurship of a group of students from a university certified as Ashoka
15 Changemaker Campus, to check if there are differences by gender and disciplinary
16 area. The population was 140 students, to whom a validated instrument was applied.
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23 **Purpose:** The objective of the study was to analyze the perception of knowledge and
24 experience development in social entrepreneurship in students of a university certified by
25 Ashoka as a Changemaker campus, to identify data that argue for equitable training among
26 all students regardless of gender and discipline studied.
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33 **Findings:** The results shed light on the few differences among students in the Business,
34 Engineering, and Health Sciences disciplines compared to those enrolled in the Humanities
35 and Social Sciences concerning knowledge and experience in social entrepreneurship. The
36 findings also indicate gender equality in the perception of knowledge and experience of
37 innovation and social entrepreneurship.
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45 **Research limitations/implications:** The sample size in the different disciplinary areas is a
46 limitation of this research. However, the findings are valuable in terms of gender and the
47 study being conducted in the first university certified as a Changemaker Campus in Latin
48 America.
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3 **Practical implications:** Underlying the statistics and the hypotheses are the importance of
4 improving students' experience and expanding their equitable opportunities to learn about
5 and implement innovative proposals for social entrepreneurship projects.
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10 **Social implications:** Training in equality and inclusion contributes to an equitable and
11 socially just society, especially when this training aims to bring new possibilities to society.
12 This study links with those that have been conducted in other institutions, where conscious
13 efforts have been made to reduce the gender gap or differences by disciplinary area when
14 undertaking social entrepreneurship projects that connect sectors for social benefit. This
15 research also argues for the need to identify the impact of other cultural elements, in
16 addition to the knowledge provided by universities, that reduce the gap among their
17 students.
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20 **Originality/value:** This study is original because of its hypotheses about university
21 students' social entrepreneurship projects, being conducted in a special environment
22 (Ashoka Changemaker campus) in Latin America. The data were analysed under
23 hypothesis testing, contrasting the empirical evidence with the theoretical assumptions.
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30 **Keywords:** Social Entrepreneurship, Social enterprise, Female entrepreneurs,
31 Entrepreneurship Education, Higher Education, Educational Innovation.
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40 **Article classification:** Research Paper
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45 **Introduction**

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48 Entrepreneurship brings up paradigms deeply rooted in people's imagination; they tend to
49 relate words such as "undertake" or "entrepreneur" in the areas of business and technology
50 to men. These conceptions have been studied in university settings. For example, Gilmartin
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3 et al. (2019) analysed the gap in business intentions between women and men who are
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5 engineering and business students, emphasizing the personal importance that future
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7 professionals attach to starting a new business or organization. In this regard, there is a line
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9 of entrepreneurship linked to social innovation that has a heavy presence of humanistic,
10
11 environmental, and health factors; the majority participation is by women (Hsieh et al.
12
13 2019). Arredondo Trapero, Vázquez Parra, and Velázquez Sánchez (2016) identified that
14
15 Latin American university women showed a greater tendency to make contributions of a
16
17 social nature in innovation and entrepreneurship, participating little in technology or
18
19 efficiency improvement in companies. Their conclusions point out that, culturally, Latin
20
21 American women limit their intentions to develop ventures in technological or business
22
23 areas. When they consider marriage and the desire to have children, they conclude that
24
25 these conflict with such projects. Therefore, they decide to develop social projects, which
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27 they believe align more conveniently with their personal lives. However, despite this belief,
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29 the gender gap, even in social enterprises, remains wide: of the 210 fellows or cases
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31 included by the Ashoka organization on its website in the Mexico section, only 90 are
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33 women, demonstrating the strength of male presence.
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41 How true is it to say that university women have majority participation in
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43 developing entrepreneurship and innovation proposals of a social nature? According to a
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45 2016 study published on the Escuela Superior de Administración y Dirección de Empresas
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47 (ESADE, 2016), this is misleading. Yes, there is a greater tendency for women to
48
49 participate in entrepreneurship and social innovation projects within universities, but few
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51 have economic support. While close to 46% of male social entrepreneurs get the necessary
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53 funding, only 26% of women do (ESADE, 2016). To reduce this gender gap, organizations
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3 such as Ashoka U work with young students from middle and higher educational
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5 institutions. They start when the students begin to conceive entrepreneurial and innovative
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7 projects because all the necessary support must be provided for project germination to
8
9 overcome many paradigms and prejudices surrounding traditional and social
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11 entrepreneurship. Through its Ashoka U program, Ashoka University promotes
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13 entrepreneurship and social innovation regardless of gender or educational discipline,
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15 providing opportunities that benefit anyone who seeks to become an agent of change.
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20 Thus, this research diagnoses a sample of students attending a Mexican university
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22 certified within the AshokaU program on the perceptions of their knowledge of
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24 entrepreneurship and social innovation. The intention is to demonstrate whether there are
25
26 real arguments that these institutions support Ashoka's vision that all people can be agents
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28 of change capable of proposing innovative social entrepreneurship projects, regardless of
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30 gender or discipline. To achieve this objective, this paper develops a theoretical framework
31
32 focused on social innovation and entrepreneurship, as well as showing Ashoka's particular
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34 vision on the training of social entrepreneurs in universities. In its methodological section,
35
36 the paper focuses on the sample population of a Mexican university certified as an Ashoka
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38 Campus. It concludes that there is an equal perception of knowledge, with few differences
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40 between students based on gender or area of study. It is acknowledged that the main
41
42 limitation of this study is the limited sample population in some of the disciplinary areas
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44 (Humanities and Social Sciences), however, this is due to the proportion of students in
45
46 these areas on the campus where the study was conducted. Even so, the results are valuable
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48 in terms of having been carried out at the first university certified as a Changemaker
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50 Campus in Latin America.
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Literature review

Social innovation and entrepreneurship

Innovation is an important driver of entrepreneurship. When talking about entrepreneurship, we usually discuss the attitude that people have toward planning, organizing, and proposing new projects as they seek to establish a structured process that allows them to achieve their goals (Marulanda Valencia and Morales Gualdrón 2016). Landström (2019) presents an interesting journey through the definitions of entrepreneurship and its social and intellectual evolution in education. At present, the subject of entrepreneurship seems to be quite common in universities and centres of education that value professional training and leadership skills that result in planning and possibly implementing specific projects (Rodríguez Garnica 2016).

Entrepreneurial possibilities have boomed increasingly in the academic disciplines in universities. Working collaboratively with educational institutions, Latin American governments pay much attention to entrepreneurship, launching various projects to encourage and promote their regions' entrepreneurs and ideas (García Cabrera, García Soto, and Dias Furtado 2015). Thus, new notions become included in the language of educational institutions to promote entrepreneurship. Aspects such as innovative entrepreneurship, the generation of business cells and incubators, and the impact that a good coaching system can bring to new ventures are considered. The Latin American economy's reliance on micro, small, and medium-sized enterprises (MSMEs) is accompanied by the universities' promotion and support of innovative, entrepreneurial models (García Cabrera, García Soto, and Dias Furtado 2015).

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3 Entrepreneurship has made strides within the framework of social innovation. It has
4
5 become increasingly common in the last decade to find innovative and entrepreneurial
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7 projects that aim to solve social or human problems (Padilla et al. 2016). This is social
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9 innovation. It involves entrepreneurship that seeks innovative solutions for society's
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11 existing problems, such as poverty, hunger, unemployment, discrimination, and the
12
13 environment. Thus, social innovation promotes community development (Naranjo Rivera,
14
15 2015). To confront these problems, social entrepreneurs must understand the social,
16
17 economic, political, and cultural contexts underlying them; this requires having a vision
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19 external to the project or the proposed organization (Nikulin et al. 2017). Saebi, Foss, and
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21 Linder (2019) provide important insights into the role of social entrepreneurship in
22
23 fostering the growth of inclusivity and institutional change; also, Agustina et al. (2019)
24
25 highlights its influence on people's quality of life. However, when considering social
26
27 entrepreneurship projects, one must identify the specific challenges to them, such as the
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29 lack of a leader in the area, stakeholders' expectations, the lack of administrative and
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31 financial knowledge, and the country's regulations (Cinar 2019).
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39 Difficulties in socially innovative ventures have hindered their consolidation and
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41 growth. Unfortunately, according to Stewart (2002), only 40% of social initiatives endure
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43 more than five years of life after their foundation. This is twice the survival rate of the Latin
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45 American regions' MSMEs and continues to be a highly challenging parameter for
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47 entrepreneurs (Fernández Guerrero, Revuelto Taboada, and Simón Moya 2018). The
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49 economic and human resources invested become a loss in the medium and long terms if the
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51 projects do not continue after a few years (Sepulveda Rivas and Gutiérrez Walter 2016).
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3 From this perspective, training institutions see these challenges as an interesting area of
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5 opportunity to address various factors involved in the failure or survival of social projects.
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8 Wanyoike and Maseno (2021) conducted research in East Africa where they found
9
10 that the personal experiences of entrepreneurs have a determinant impact on the
11
12 development of social entrepreneurship proposals, which also, according to Ahmed, Islam
13
14 and Usman (2020), can be influenced by the family support that entrepreneurs have.
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17 Emotionally speaking, Darmanto and Pujiarti (2020) warn that emotional intelligence can
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19 affect several areas such as self-efficacy, intention, and support for the environment, among
20
21 others, when carrying out social entrepreneurship projects.
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25 Considering the above, how can educational institutions provide innovation and
26
27 entrepreneurship training that makes a positive social impact? Social entrepreneurship is of
28
29 utmost importance in meeting the needs of *vulnerable* sectors of society. Therefore, to help
30
31 these sectors, universities must create an efficient support system that encourages their
32
33 students to enter social entrepreneurship (Bazan et al., 2020). Various universities are
34
35 investing in new ways to structure their innovation and entrepreneurship programs by
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37 providing opportunities within the general curricula for students in any discipline to
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39 develop the necessary skills and transversal competencies such as social commitment and
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41 responsibility, collaboration, social intelligence, and community development (Oliver,
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43 Galiana and Gutiérrez Benet 2016). Therefore, universities, beyond the development of
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45 disciplinary competences, work to promote environments in which their students develop
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47 an entrepreneurial spirit, since, as Islam (2019) points out, beyond knowledge, there are
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49 other factors that can be key to the development of this type of project.
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3 Inter-connectivity with other sectors and organizations is highly important. For
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5 example, *Social Entrepreneurship MX* is an organization of social entities that seek to
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7 support talented university students who desire to design solutions to social problems.
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9 According to its website, it promotes networking and training to generate entrepreneurial
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11 projects that increase social impact. For Liu, Xiao, Jiang and Huen (2020), building strong
12
13 collaborative networks is fundamental for the development of entrepreneurship at an early
14
15 age, which can also be strengthened by a culture of altruism (Stirzaker, Galloway,
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17 Muhonen and Christopoulos, 2021). It is also not easy to discuss innovation and social
18
19 entrepreneurship at the international level without mentioning the work that the Ashoka
20
21 organization carries out with universities and other secondary and higher education
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23 institutions. Through its Ashoka U program, it promotes innovation and social enterprises
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25 under the vision that everyone, regardless of their characteristics or knowledge, can be an
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27 agent of change (Álarez Arregui and Rodríguez Martín 2015).
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33 ***Innovation and social entrepreneurship. Ashoka U's vision.***

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35 According to Ashoka, social innovation is more efficient and sustainable than philanthropy
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37 and altruism to solve social problems. In addition to confronting social and human
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39 challenges, it generates value for society, leading to economic and humanistic development.
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41 Ashoka is a non-profit organization founded in the United States in 1980, being a
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43 consultant in innovation and social entrepreneurship. It has currently triggered more than
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45 3,000 social enterprises and counts on the support and participation of 300 educational
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47 institutions in different parts of the world. The Ashoka U website refers to universities that
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49 have gone through a rigorous selection process to join a collaborative international network
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51 of "Changemaker Campuses." The basis of its proposal is that people must solve social
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3 problems since they know the problems present and their implications (Canton and Garcia
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5 2018). Ashoka U believes that innovation and social entrepreneurship are within reach of
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7 everyone, as long as they have sufficient and appropriate tools to turn their ideas into a
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9 reality (Rahman, Herbst and Mobley 2016). Thus, Ashoka has built a network of innovators
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11 called "agents of change" or "change agents" in more than 90 countries, including Mexico.
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13 These change agents have managed to trigger their projects within innovative environments
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15 or ecosystems such as educational institutions, according to Ashoka Mexico's website¹.
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20 Ashoka U, or the Changemaker Campus program, groups together institutions it
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22 certifies that integrate social innovation and entrepreneurship into the educational
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24 disciplines they provide as an added value offering to all their students. To achieve this, the
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26 program guides universities through a certification process of education in entrepreneurship
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28 and social innovation, implementing academic designs guided by new visions expressed in
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30 the institutions' curricula. In this way, Ashoka grants the designation of "Changemaker
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32 Campus" to those leading institutions that have demonstrated a commitment to developing
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34 education in innovation and social entrepreneurship. In Mexico, there are three, namely,
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36 Tecnologico de Monterrey (Guadalajara Campus,) the University of Monterrey, and the
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38 Autonomous Popular University of the State of Puebla, according to information presented
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40 on the Ashoka U website.
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47 Something relevant to point out is that, beyond promoting entrepreneurship as a
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49 discipline to be developed in certain areas of knowledge, Ashoka shows universities the
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51 need to promote innovation and social entrepreneurship as a professional value that all their
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56 ¹ <https://www.ashoka.org/es-mx>
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3 students can access. Therefore, it directs attention to changing the paradigms and prejudices
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5 often surrounding entrepreneurship, that in business or engineering schools, mostly males
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7 participate. Changing this concept must be one of the priority objectives for any institution
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9 certified as an AshokaU Campus, especially in those countries and some disciplinary areas
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11 with cultural barriers to female entrepreneurship.
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16 There are multiple research studies based on Ashoka's vision for university
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18 education, considering the importance of the multidisciplinary relationship of
19
20 entrepreneurship and the impact this can have on students. Griffin, Jaggard, Singh and
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22 Turak (2017), link the vision of an Ashoka university to the development of positive
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24 psychology programmes, which is like the proposal of Sud, Narayan and Agarwal (2019),
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26 who demonstrate the linkage that entrepreneurship and liberal arts can have in an Ashoka
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28 university in India, revolutionising higher education in the Haryana region.
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33 Furthermore, Haski-Leventhal (2020) considers that the training provided at Ashoka
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35 universities allows for holistic approaches where disciplinary knowledge can be developed
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37 alongside a focus on responsibility, ethics, and sustainability in students. This is closely
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39 related to the findings of Gomez and Demuner (2019), who state that the vision of Ashoka
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41 universities not only enables the training of new entrepreneurs, but also has an impact on
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43 the local development of communities.
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47 **Contextual framework**

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49 The study presented here took place at the Tecnológico de Monterrey, Campus
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51 Guadalajara, a private higher-education institution that has developed an action model for
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53 innovation and social entrepreneurship. The model seeks to strengthen ethical and civic-
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3 commitment competencies through curricular subjects and co-curricular experiences,
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5 among social service and student groups, for example². Its objective is for students to learn
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7 to reflect upon and analyze their reality, respect people and the environment, and develop
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9 supportive and inclusive actions that solve problems in their society. The Guadalajara
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11 campus was certified as a Changemaker Campus in 2011, becoming the first educational
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13 institution in Mexico and Latin America to obtain this designation, reaffirming its
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15 commitment to carry out actions and accompany its students in the process of turning them
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17 into change agents³.
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23 Campus Guadalajara of Tecnológico de Monterrey shares Ashoka's vision that
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25 higher education should become the next global driver of social change, making the
26
27 educational experience a space to trigger and promote innovation and social
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29 entrepreneurship to all students, as can be read on the Ashoka U website⁴. Approaching the
30
31 tenth anniversary of its certification as a Changemaker Campus, the institution continues to
32
33 promote innovation and social entrepreneurship. It has reached a point where it is possible
34
35 not only to measure results but also changes in the paradigms that are usually associated
36
37 with the work and implications of social entrepreneurship. Thus, it is necessary to assess
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39 students' perceptions of their knowledge of entrepreneurship and social innovation to argue
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41 whether the institution's work to promote Ashoka's vision has been successful.
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47 This institution's selection was influenced by its being the first certified institution
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49 in Latin America, a region where entrepreneurship encounters prejudices in disciplinary
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54 ² <https://bit.ly/2NewDZO>

55 ³ <https://bit.ly/2NcW8L5>

56 ⁴ <https://ashokau.org>
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3 areas and its entrepreneurs' perceptions. Compared to the other two certified institutions in
4
5 Latin America, the chosen institution is the only one with sufficient years of experience to
6
7 be able to carry out this measurement. The selection of a Latin American institution
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9 responds to the cultural imaginary that often limits the participation of young university
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11 women in certain entrepreneurial ventures.
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14 15 **Research methodology** 16

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18 This study used a quantitative methodology with hypothesis testing to corroborate two
19
20 primary assertions that support Ashoka's vision that everyone can be a change agent. The
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22 two assertions are a) whether the perception of social innovation and entrepreneurship
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24 issues is imparted equitably to both genders, and b) if this perception of social innovation
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26 and entrepreneurship is proportionately equitable in the disciplinary areas of the students.
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31 For the determination of these assertions and their corresponding hypotheses, the
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33 study considered the vision proposed by Ashoka for its certified universities, as well as
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35 studies conducted in other Ashoka universities where the importance of multidisciplinary in
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37 the training of social entrepreneurs is raised (Griffin, Jaggard, Singh and Turak 2017; Sud,
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39 Narayan and Agarwal, 2019; Haski-Leventhal, 2020). Additionally, studies by Lortie,
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41 Castrogiovanni, and Cox (2017), Anggahegari, Yudoko, and Rudito (2018), and Vázquez,
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43 García, and Ramírez (2020), who posit the relevance of social entrepreneurship
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45 development independent of student gender, are considered.
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49 ***Hypothesis*** 50 51 52 53 54 55 56 57 58 59 60

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3 *H1. The perception of knowledge that students at Tecnológico de Monterrey, Campus*
4 *Guadalajara declare to have on social innovation and entrepreneurship issues is equally*
5 *proportional between men and women.*
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11 *H2. The perception of knowledge that students at Tecnológico de Monterrey, Campus*
12 *Guadalajara declare to have on social innovation and entrepreneurship issues is equally*
13 *proportional among the different training areas offered.*
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16 ***Instrument***

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21 The instrument was a validated social entrepreneurship questionnaire (García González et
22 al. 2020) comprised of categories of which, in this study, the results of three categories
23 were analysed, namely, personal aspects, perception of knowledge and experience in
24 entrepreneurship issues, and evaluation of competencies. The first area included answers
25 related to age, country of origin, gender, and the academic discipline the student was
26 pursuing. The second included three questions that sought to establish the level of
27 experience or perception that respondents had about their knowledge of social innovation
28 and entrepreneurship issues. Finally, the third section had 28 questions that measured
29 competencies related to innovation and entrepreneurship. The questions in the second and
30 third sections had a closed-answer format with a Likert-type scale of options.
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45 **For a more efficient application, the instrument was digitised and implemented by**
46 **Google Form. This process was carried out during the period 17-28 February 2020.** For the
47 purposes and objectives of this diagnosis, this text focuses on just three questions of the
48 instrument, two in the first section (gender and discipline) and one in the second
49 (knowledge or experience in innovation and social entrepreneurship activities). The
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3 purpose is to identify whether students' perception of their knowledge of social
4 entrepreneurship, regardless of gender or subject area, is the same.
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8 ***Population and sample*** 9

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11 To carry out this diagnosis, we applied the instrument to a population of 140 students in
12 different semesters and curricula to obtain various views and perspectives (Table 1). To
13 achieve a balanced sample, we applied the instrument within the class, *Ethics, People, and*
14 *Society* (H1018). It is a subject taken by all students; it does not directly relate to social
15 innovation and entrepreneurship. Being in the second one-third of the curriculum, it
16 provides us an objective view of the work that the Campus does. (Students in more
17 advanced semesters would have answers coming from previous knowledge).
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28 The following inclusion criteria were used for the selection of this sample:
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- 30
- 31 • That they were active students in some disciplinary career of the Tecnológico de
32 Monterrey, Campus Guadalajara.
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 - 34 • That they had not previously studied any subject directly related to social innovation
35 or entrepreneurship.
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 - 37 • That they answered the entire instrument.
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43 In keeping with ethical principles and respect for the information of the student participants
44 in the sample, the instrument was preceded by information related to the purpose of the
45 research. The invitation to participate in the study was voluntary and the anonymity of the
46 answers provided was assured.
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52 ***[Insert Table 1 here]***
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55 Some data to highlight:
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- 3 ▪ Business and Engineering and Science make up 70% of the sample.
- 4
- 5 ▪ Of the total number of male students more than half are in Engineering and Science.
- 6
- 7 ▪ Of the total number of female students, more than 64% are registered in Business
- 8 and Architecture and Design.
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- 12 ▪ Women make up 46% of the total sample.
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14 Note that in Table 1, although at first glance it appears that there is no balance in the
15 numbers, they turn out to be proportional to the populations that each disciplinary area or
16 school has. Although the Humanities area appears to be underrepresented, that department
17 has only one curricular program on campus (Communication), and its population is very
18 small. This is also true of the Social Sciences area, whose population on campus is very
19 limited. This contrasts with the School of Business or the School of Engineering, which
20 have seven full academic programs each, and Health Sciences offers five curricular
21 programs.
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32 **Results**

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37 Once the instrument was applied, it was possible to determine that 70% of the participating
38 students who participated were in Engineering and Business programs, and 5% of all
39 students were enrolled in Social Sciences and Humanities (see Table 1). Also, 82.7% of the
40 male students were studying Engineering and Business vs. 55.4% of the female students.
41
42 Of all students, the programs least represented were Social Sciences and Humanities with
43 1.3% and 9.2%, respectively. Almost 80 percent of the participating engineering students
44 were men, and in two areas (*Architecture, Art and Design, and Business*), 55.4 percent of
45 women in the sample were registered.
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55 ***[Insert Table 2 here]***
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3 In terms of students' perception of their knowledge of social entrepreneurship and
4 experience with entrepreneurship, those belonging to the disciplines of Business,
5 Engineering, and Health Sciences presented few differences in contrast to those enrolled in
6 Humanities and Social Sciences. Also, although the results show a clear tendency that these
7 students had a better perception of the knowledge about the topic, most did not have the
8 experience, which is more usual in Business and Engineering students (see Table 3).
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17 ***[Insert Table 3 here]***
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20 An analysis of variance was performed on the PRE means of Men (M) for the variables of
21 family experience and expectations regarding social entrepreneurship (Table 2) and it was
22 found that at least one of the means of the variables mentioned above is statistically
23 different. To prove it, an Analysis of Variance with a type I error of 0.05, 2 degrees of
24 freedom of the numerator and 225 degrees of freedom of the denominator was carried out.
25 The F obtained was 13.97 with a $p=0.00$.
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35 Similarly, an analysis of variance was performed on the means of the ERP of
36 Women (W) for the variables of family experience and expectations regarding social
37 entrepreneurship (Table 2) and it was found that at least one of the means of the variables
38 mentioned above is statistically different. To prove this, an Analysis of Variance was
39 carried out with a type I error of 0.05, 2 degrees of freedom of the numerator and 189
40 degrees of freedom of the denominator. The F obtained was 14.55 with a $p=0.00$.
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49 ***[Insert Table 4 here]***
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52 Finally, analysis of variance and hypothesis tests were performed on the samples of men
53 and women, finding the following data (Table 5)
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2
3 (a) Analyses of variance by gender were carried out (see Table 4) and a significant
4
5 difference was found between the means of the three variables of experience and
6
7 expectations. Additionally, hypothesis tests were performed to determine the
8
9 significance between the means of the same variables between W and M. The result
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11 was that there was no significant difference between them.
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- 14 (b) Two-tailed hypothesis tests were performed, using the t-student test statistic with
15
16 type I error of 0.05 and assuming unknown but equal population variances. The
17
18 result is that only item 5 is different between W and M. The subcompetence
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20 Personal is also different between W and M.
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- 23 (c) Two-tailed hypothesis tests were performed, using the t-student test statistic with
24
25 type I error of 0.05 and assuming unknown but equal population variances. The
26
27 result is that only item 9 is different between W and M. The Leadership sub-
28
29 competency is also different between W and M.
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- 32 (d) Two-tailed hypothesis tests were performed, using the t-student test statistic with
33
34 type I error of 0.05 and assuming unknown but equal population variances. The
35
36 result is that only item 16 is different between W and M. The Innovation
37
38 subcompetence is also different between W and M.
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- 41 (e) Two-tailed hypothesis tests were performed, using the t-student test statistic with
42
43 type I error of 0.05 and assuming unknown but equal population variances. The
44
45 result is that ALL items in this sub-competency are significantly different between
46
47 W and M. The Social Value sub-competency is also different between W and M.
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49
- 50 (f) Two-tailed hypothesis tests were performed, using the t-student test statistic with
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52 type I error of 0.05 and assuming unknown but equal population variances. The
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3 result is that only item 26 is different between W and M. The Management
4
5 subcompetence is also different between W and M.
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7
8 As a general result, it can be stated that women perceive themselves as having a higher
9
10 degree of competence than men in all subcompetencies at the time of applying the pretest
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12 instrument.
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15 *[Insert Table 5 here]*
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17 18 **Discussion on Findings** 19

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21 From the results of the application, and having performed a hypothesis test, it can be argued
22
23 to confirm only the first hypothesis:
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- 25
26 • *H1. The perception of knowledge that the students of the Tecnológico de Monterrey,*
27
28 *Campus Guadalajara declare to have on social innovation and entrepreneurship*
29
30 *issues is equally proportional between men and women.*
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33
34 Indeed, the results from the survey sample displayed in Table 2 show that the means
35
36 between men and women regarding the perception of their knowledge about innovation and
37
38 social entrepreneurship are equal. The hypothesis that the means of males concerning the
39
40 perception of their knowledge about social entrepreneurship and the experience of
41
42 undertaking a project or business is proportionally equal to that of females is not rejected. It
43
44 has a significance level of .05 in a two-tailed test with $p=.308$; therefore, it is accepted that
45
46 the means are proportionally equal.
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50 As for ignorance and lack of experience, there is an equal proportion of men and
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52 women, with a significance level of .05 in a two-tailed test and $p=.322$. Therefore, it is
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54 accepted that the proportional averages between men and women are equal.
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Further elaboration on each of the answers that make up this hypothesis point to some additional findings:

- The perception of knowledge about social entrepreneurship and the experience of entrepreneurship among men and women are equal (significance level .05, $p=.3094$)
- Ignorance about social entrepreneurship *without the experience being considered* among men and women is equal (significance level .05, $p=.1056$).
- The assertion that women's proportional average about their perception of knowledge of social entrepreneurship and experience with entrepreneurship is equal to that of men is false (significance level =.05, $p=.005$).

Interestingly, of the nine enterprises considered successful on the Campus, males predominate in six. It would be important to review why. Although women start more socially innovative enterprises and consider they have the knowledge to carry them out, not all their ventures become success stories.

- *H2. The perception of knowledge that students at Tecnológico de Monterrey, Campus Guadalajara declare to have in social innovation and entrepreneurship is equally proportional among the different areas of training offered.*

In the case of this second hypothesis, it can be said that it is only partially fulfilled.

In the results shown in Table 3, one can see that the students' perception of knowledge of social entrepreneurship and their experience with entrepreneurship were the same only in the disciplinary areas of Business, Engineering, and Health Sciences, having significant differences from those students in Humanities and Social Sciences.

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3 Furthermore, although the students knew about social entrepreneurship, more than
4 two-thirds (67.9%) had no experience. Only 7.1% of the students who did *not* know about
5 social entrepreneurship had no experience. 80% of the students who did not know about
6 social entrepreneurship and had no experience belonged to the Business and Engineering
7 areas. Specifically, 74.8% of Engineering and Business students who answered the survey
8 said they knew about social entrepreneurship but had no experience.
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17 In one aspect, if there were significant differences, it was related to the
18 entrepreneurial experience, which was notably higher in Health Sciences than in Social
19 Sciences, Engineering, and Humanities. It would be relevant to analyze the data further
20 because six of the nine successful ventures were in Engineering. Here, it would be
21 interesting to probe in which third of their curriculum the engineering students begin to
22 undertake enterprises because this could mean that there is a trigger factor we are
23 overlooking in the present analysis.
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34 When analysing the successful cases on the Campus, it will be necessary to conduct
35 a more precise analysis that examines the Engineering and Health Sciences areas. In these
36 two programs offered by the institution, there are cross-utilizations of physical spaces and
37 academic staff because, in some areas of Engineering, such as Biotechnology and Agrifood
38 Biosystems, there is a strong relationship with the School of Health Sciences in the projects
39 they carry out.
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49 Independent of these considerations, it is important to recognize that the percentage
50 of male and female students who say they know nothing about innovation and social
51 entrepreneurship is minimal. This allows us to establish that the work being done at the
52 institution as a Changemaker Campus provides good results. Indeed, the institution
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promotes Ashoka's vision by developing in most of its students the perception that they all know how to be change-makers.

Theoretical implications

Although our initial objective in this research was to analyze the Tecnológico de Monterrey, Campus Guadalajara, after having ten years of certification as a Changemaker Campus, we came to understand that its results go beyond simply identifying facts and realities. Underlying the statistics and the hypotheses is the importance of improving the students' experiences and expanding their opportunities to learn and implement innovative proposals for social entrepreneurship projects. Thus, we saw in this research that we could identify (Table 2) that there are no significant differences between the knowledge that men and women have regarding social entrepreneurship issues ($p=.3094$), and no significant differences in their level of ignorance ($p=.1056$). Although the results also identify a level of similarity by disciplines (Table 3), this is only demonstrated in the areas of Business, Engineering, and Health Sciences. However, this finding is not conclusive due to the limited sample size of students in Humanities and Social Sciences. Therefore, we conclude that the institution's effort has been fruitful in reducing the gender gap in entrepreneurship issues. This conclusion aligns with studies by Warnecke (2018), Nicolás, Rubio and Fernández-Laviada (2018) and Rosca, Agarwal and Brem (2020), who show the conscious efforts that some educational institutions have made to reduce the gender gap by undertaking social entrepreneurship projects and ventures.

Practical implications, limitations, and future directions

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3 The study found that women perceive themselves as having a higher degree of competence
4 than men in all subcompetencies at the time of applying the pretest instrument (Table 5).

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7 This has an implication for educational practice in several ways: (a) the instructional design
8 of the training activities should contemplate examples of women entrepreneurs, in order to
9 raise awareness with success stories, (b) the practical entrepreneurship activities carried out
10 by teams should contemplate a balance of men and women among its members to take
11 advantage of the potential of men and women in the creation of new projects, (c) analyze
12 the ventures postulated by the students, from a gender perspective, to locate the social value
13 they are working on and relocate the areas where new visions are required.
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24 This research is limited by the small sample size and the limited participation of
25 students in certain disciplinary areas. However, the findings are valuable in terms of gender
26 and belonging to the first Latin American university certified as an AshokaU Campus. As
27 previously mentioned, although this study argues that the perception of knowledge and
28 experience in entrepreneurship and social innovation among men and women in the second
29 one- third of their education does not show a significant gap, it would be necessary to make
30 a subsequent analysis to identify other factors that end up widening the gap at the time
31 ventures are implemented. This would deepen understanding the higher failure rate of
32 female ventures. This is a point of high practical relevance turned up by this research for
33 universities that provide entrepreneurial training. It argues the need to carry out new studies
34 that identify those elements that widen the gender gap and know why, despite men and
35 women having equal knowledge and intention, the ventures by females develop less
36 successfully.
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Thus, this paper achieves findings that would allow diagnosing the status of Tecnológico de Monterrey, Campus Guadalajara, as a Changemaker Campus after ten years of certification. Also, it concludes that being a Changemaker Campus effectively promotes innovation and social entrepreneurship regardless of gender, at least in terms of the students' perceptions and intentions. With this writing, recommend further investigation to analyze the impact of social entrepreneurship training and all the factors that could limit the implementation of such projects.

Conclusion

Considering that innovation and social entrepreneurship turn out to be efficient and powerful tools to solve social problems, it is extremely relevant that more people join in proposing and developing these types of projects. Universities should consider that, when developing transversal competencies, such as leadership, ethics, and citizenship, their students should commit to carrying out proposals for concrete actions that truly promote social change. Social entrepreneurship is a highly relevant and impactful competency for young university students. They seek tools from their institutions that truly help them innovate, regardless of their gender or disciplinary area. Ashoka is aware and unafraid to propose that everyone can be agents of change and that the institutions designated as Changemaker Campuses should focus on providing their students the tools they require.

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Student Perception of Their Knowledge of Social Entrepreneurship: Gender-gap and Disciplinary Analysis of an Ashoka Changemaker Campus in Latin America

Tables

Table 1: Characteristics of the sample population, by sex and disciplinary school enrolled.

Gender and School.	%	Male	%	%	Female	%	Total	
Gender		75	53.6%		65	46.4%	140	
Architecture, Art and Design	12.0%	9	36.0%	24.6%	16	64.0%	25	17.9%
Health Sciences	4.0%	3	30.0%	10.8%	7	70.0%	10	7.1%
Humanities	1.3%	1	100.0%	0.0%	0	0.0%	1	0.7%
Social Sciences	0.0%	0	0.0%	9.2%	6	100.0%	6	4.3%
Engineering	56.0%	42	79.2%	16.9%	11	20.8%	53	37.9%
Business	26.7%	20	44.4%	38.5%	25	55.6%	45	32.1%

Source: Own elaboration

Table 2: Results showing item responses by gender and disciplinary school.

		Answer											
Men		I			II			III			IV		
Disciplinary School	% Area	I know about social entrepreneurship, and I have already had the experience of entrepreneurship.	% Component	% Area	I know about social entrepreneurship, and right now, I'm in the process of getting started.	% Component	% Area	I know about social entrepreneurship, but I have no experience.	% Component	% Area	I don't know about social entrepreneurship, and I don't have any experience.	% Component	Total
Architecture, Art, and Design	16.7%	2	22.2%	50.0%	1	11.1%	9.3%	5	55.6%	14.3%	1	11.1%	9
Health Sciences	16.7%	2	66.7%	0.0%	0	0.0%	0.0%	0	0.0%	14.3%	1	33.3%	3
Humanities	0.0%	0	0.0%	0.0%	0	0.0%	1.9%	1	100.0%	0.0%	0	0.0%	1
Engineering	33.3%	4	9.5%	50.0%	1	2.4%	61.1%	33	78.6%	57.1%	4	9.5%	42
Business	33.3%	4	20.0%	0.0%	0	0.0%	27.8%	15	75.0%	14.3%	1	5.0%	20
Total	100.0%	12	16.0%	100.0%	2	2.7%	100.0%	54	72.0%	100.0%	7	9.3%	75
		0.160			0.027			0.720			0.093		

Women														
Disciplinary School		I know about social entrepreneurship, and I have already had the experience of entrepreneurship.	%		I know about social entrepreneurship, and right now, I'm in the process of getting started.	%		I know about social entrepreneurship, but I have no experience.	%		I don't know about social entrepreneurship, and I don't have any experience.	%	Total	
Architecture, Art, and Design	11.1%	1	6.3%	36.4%	4	25.0%	24.4%	10	62.5%	25.0%	1	6.3%	16	
Health Sciences	44.4%	4	57.1%	0.0%	0	0.0%	7.3%	3	42.9%	0.0%	0	0.0%	7	
Social Sciences	0.0%	0	0.0%	9.1%	1	16.7%	12.2%	5	83.3%	0.0%	0	0.0%	6	
Engineering	22.2%	2	18.2%	9.1%	1	9.1%	19.5%	8	72.7%	0.0%	0	0.0%	11	
Business	22.2%	2	8.0%	45.5%	5	20.0%	36.6%	15	60.0%	75.0%	3	12.0%	25	
Total	100.0%	9	13.8%	100.0%	11	16.9%	100.0%	41	63.1%	100.0%	4	6.2%	65	
		0.138			0.169			0.631			0.062			

Source: Own elaboration

Table 3: Results by Disciplinary Area (School)

Disciplinary Area		I			II			III			IV		Total
Disciplinary Area	% of the disciplinary area that has that component	I know about social entrepreneurship, and I have already had the experience of entrepreneurship.	%	% of the disciplinary area that has that component	I know about social entrepreneurship, and right now, I'm in the process of getting started.	%	% of the disciplinary area that has that component	I know about social entrepreneurship, but I have no experience.	%	% of the disciplinary area that has that component	I don't know about social entrepreneurship, and I don't have any experience.	%	Total
Architecture, Art, and Design	18.2%	4	16.0%	38.5%	5	20.0%	14.7%	14	56.0%	20.0%	2	8.0%	25
Health Sciences	27.3%	6	60.0%	0.0%	0	0.0%	4.2%	4	40.0%	0.0%	0	0.0%	10
Social Sciences	0.0%	0	0.0%	7.7%	1	16.7%	5.3%	5	83.3%	0.0%	0	0.0%	6
Humanities	0.0%	0	0.0%	0.0%	0	0.0%	1.1%	1	100.0%	0.0%	0	0.0%	1
Engineering	27.3%	6	11.3%	15.4%	2	3.8%	43.2%	41	77.4%	40.0%	4	7.5%	53
Business	27.3%	6	13.3%	38.5%	5	11.1%	31.6%	30	66.7%	40.0%	4	8.9%	45
Total	100.0%	22	15.7%	100.0%	13	9.3%	100.0%	95	67.9%	100.0%	10	7.1%	140

Source: Own elaboration

Table 4.

Analysis of variance in the PRE means of Men and Women for the variables of family experience and expectations regarding social entrepreneurship.

Pre-men: 76						
Groups	Account	Sum	Average	Variance		
Do you have experience in social entrepreneurship activities?	76	173	2.28	0.74		
Family experience with entrepreneurship	76	151	1.99	1.29		
Family expectations regarding entrepreneurship	76	116	1.53	0.31		
ANALYSIS OF VARIANCE (ANOVA)						
Origin of variations	Sum of squares	Degrees of freedom	Degrees of freedom	F	Probability	Critical value for F
Between groups	21.75	2.00	10.87	13.97	0.00	3.04
Within groups	175.13	225.00	0.78			
Total	196.88	227.00				
Pre-Women: 64						
Groups	Account	Sum	Average	Variance		
Do you have experience in social entrepreneurship activities?	64	152	2.38	0.62		
Family experience with entrepreneurship	64	115	1.80	1.28		
Family expectations regarding entrepreneurship	64	101	1.58	0.34		
ANALYSIS OF VARIANCE (ANOVA)						
Origin of variations	Sum of squares	Degrees of freedom	Degrees of freedom	F	Probability	Critical value for F
Between groups	21.70	2.00	10.85	14.55	0.00	3.04
Within groups	140.97	189.00	0.75			
Total	162.67	191.00				
PRE comparison between H and M in the three variables of interest.						
Groups	Woman		Male			
	media	s	media	s		
Do you have experience in social entrepreneurship activities?	2.38	0.62	2.28	0.74		
Family experience with entrepreneurship	1.80	1.28	1.99	1.29		
Family expectations regarding entrepreneurship	1.58	0.34	1.53	0.31		
	n woman =	64.00				
	n male =	76.00				

