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## Confirmatory Factor Analysis of Migrant Entrepreneurship versus Nearshoring

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**Abstract:** The relationship between migration and entrepreneurship is established and consolidated in the context of nearshoring. In this sense, this work aimed to contrast the theory with an observable model. A cross-sectional, correlational, and psychometric study was conducted with 100 students selected for their institution's commitment to forming intellectual and entrepreneurial capital. The results confirm a three-dimensional structure related to migration, entrepreneurship, and nearshoring. About the state of the art where opportunism is highlighted as a factor of innovation, this work warns of the prevalence of the dimension related to nearshoring as a factor that explains the highest percentage of explained variance.

**Keywords:** Confirmatory Factor Analysis, Migration, Entrepreneurship, Observed Model, Theoretical Model

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### 1. Introduction

Migratory flows refer to a passage, stay, and return process explained by three epistemic foundations: a) acculturation, b) selectivity, and c) identity. It is a multidimensional process in which each phase and each

dimension reveals the differences between rulers and governed regarding sustainable, human, and local development policies. It mainly explains the asymmetries between migratory flows and native areas [1].

The concept of migration is multidimensional, but studies related to migrant cultures concerning native cultures have focused on a generalizing concept of rupture, crossing, stay, and return in the economic and occupational order. Many occupational studies, which emphasize the dependence, conformism, and obedience of migrant cultures to the native culture, are aimed at human, local, and regional development only with the cooperation of migrants in services or agro-industrial activities [2]. The phenomenon of migration has been addressed from an ethnocentric, polycultural, or multicultural approach, focusing on the adjustment of migrant cultures concerning the laws, values, and norms of native cultures [3]. In that sense, substantial justice from multiculturalism is the integration of social justice and cultural justice or the concatenation of economic, political, and social rights concerning cultural differences and self-determination.

From these approaches, migration has been understood as a process of acculturation, assimilation, adaptation, and selectivity of talents concerning an internal labor market that demands the environment and the capabilities required to carry out local development through the distribution of the labor force in strategic sectors such as agroindustry or services. The selectivity of talents that moved from emerging countries to developed ones is only possible in the cases of the so-called Economy 4.0 [4].

This is because migration perspectives consider native cultures active and vital in development. In contrast, migrant cultures are passive or collaborative in the endogenous development of native cultures, together with substantive justice as an antecedent of interculturalism, concepts of impartiality such as the granting of rights to minorities, self-government or political and legal autonomy, politics or guarantees of dissemination of equality among members of a group, as well as cultural specificity and legitimacy embodied in dialogue, negotiation, and co-responsibility subscribe to the construction of a new society. Model for the study of migrant cultures about native cultures [3]. In this sense, social justice was linked to the consequences of immigration as it warned about asymmetries regarding rights and obligations, opportunities and capabilities, as well as commitments and responsibilities between migrant cultures and native cultures [5].

The study of migratory flows, no longer as passive entities dependent on native cultures, is based on the work of entrepreneurship and innovation that distinguishes this new wave from its predecessors focused on compliance and obedience, now observed in migrations as active and innovative entities. These are migratory flows with civic virtues oriented to the sense of identity and belonging to a universal community, observed by their degree of empathy, commitment, altruism, solidarity, satisfaction, and happiness [5].

The theoretical, conceptual, empirical, and hypothetical frameworks regarding business migration flows are grouped into 1) acculturation, assimilation, and adaptation; 2) selectivity and human capital; 3) identity, spheres, networks, and multi and intercultural flows.

The acculturative, assimilative, or adaptive perspective distinguishes migrants and natives by their place of origin, habits, and customs and by their objectives, tasks, and goals. It is a logic of benefit and utility determining factors in the relations between migratory flows and natives. In this sense, development policies with such an approach highlight the achievements and scope of programs based on sustainable development rather than human or local development since it is assumed that the labor market will generate and disseminate the bases to establish the quality of life and subjective well-being. -Be related to health, education, and employment. These are sectoral programs and strategies in which the support and incentives, as well as the financing, have the objective of containing migratory flows according to the needs of the labor market [6]. In this way, business migration flows are limited to the inclusion and social protection policies the host State implements to promote the development of the industrial and service production economy. Migrants are considered a qualified and specialized workforce, a fundamental part of the machinery of the productive and service sectors. The State is supposed to protect the interests of natives by postponing the stay of migrants and promoting their capacities, knowledge, and skills from and with the corresponding occupational health [7].

The selectivity approach considers that development will be generated through policies to promote business and open markets. Regionalism and multilateralism are essential to promote sustained development and, immediately, human and local development. The objective is to promote policies to evaluate, accredit, and certify the quality of the processes and achievements of institutions and organizations sponsored by business development and market

opening policies. In this selectivity process, migratory flows are evaluated by their degree of intellectual capital about the labor market requirements [8].

The implementation of migratory flows is considered a phase or instance after the implementation of business promotion policies, but above all, as a result of health, educational, and labor policies with emphasis on the evaluation, accreditation, and certification of institutional and organizational objectives, tasks and goals, since it is precisely in these instances where the asymmetries between natives and migrants are resolved in favor of sustainable, human and local development. It is considered that the selection of the best talents, intellectual capital, skills, and knowledge will build a culture of entrepreneurship, innovation, and success [9].

Unlike acculturation and selectivity, the identity paradigm warns that the asymmetries between migrants and natives are due to establishing spheres, networks, and flows since migrants establish relationships of empathy and commitment by their capabilities, and natives are organized instead in terms of a culture of domination. Among other differences, migratory customs and practices are oriented and tolerated by natives due to their consensual diversity; that is, migrants are considered different in their traditions but, at the same time, indispensable for the country's development. A receiver is an economy that expels those [8].

Therefore, policies implemented from this approach recognize the differences between migrants and natives, which will determine sustained human and local development. Programs and strategies do not seek to dilute asymmetries but to increase them in favor of recognizing, admiring, and respecting personal attributes, organizational innovations, state integrity, and national competitive advantages [10]. This is how development policies are adequately structured based on the differences between migrants and natives. However, the approach distances and brings groups together according to programs and strategies implemented at different levels: sustainable, human, and local [11].

From a theoretical point of view, the study of migration undoubtedly involves the establishment of an agenda based on an exhaustive review of the literature (i.e., the state of the art, the state of the art, or the state of knowledge) about the topic of migration. Based on an epistemological criterion, two significant approaches to theoretical discussion are established [12]. As it is social work, it was thought that "intervention" would be privileged; however, the concept of intervention has been questioned and even replaced by the term intercession. In fact, in the past, with the Welfare State, social work should contribute to economic and social development. However, now paradoxically, with neoliberalism in the middle, society is becoming more involved; however, social work is to promote dialogue, management, and evaluation. In other words, intercession is mediation between the State and organizations. Social work will mediate the communication between the different actors in civil society. This is your future [9].

Entrepreneurship consists of enhancing opportunities (including generating opportunities), optimizing resources, and strengthening capabilities [13]. Entrepreneurship is also a historical process in which development levels are reflected according to migratory flows. Therefore, entrepreneurial learning is undoubtedly an indicator of development [14]. In this sense, social work has generated models for the study of entrepreneurship, understood as the learning of the actors involved in the journey and staying with an entrepreneurial culture so that, upon returning, with the use of certain capitals, learning, knowledge, and skills, have a favorable impact, in this case, on the commercialization of a product (organic coffee). Studies related to knowledge networks, also known as neural networks, have established associations between different variables, such as beliefs, attitudes, intentions, and behaviors, to demonstrate the learning of a node (group) for a neuron (or network system).

The degree of entrepreneurship is considered a node in a particular network of migrants returning to their place of origin, provided with resources, skills, knowledge, and experience; all of this is oriented toward investment in the local economy [15]. However, studies on migratory flows have focused their interest on the dominant native cultures by proposing ethnocentric, polyculture, or multicultural laws, values, and norms that, although they limit the entrepreneurial capacities of migratory flows, can adapt, assimilate the dominant lifestyles and be selected based on their skills and knowledge to achieve their insertion in society (see Table 1). However, migration and entrepreneurial dimensions have not been observed in the light of nearshoring. Therefore, this work aimed to explore the relationships between the dimensions reported in the literature from 2020 to 2024 concerning the responses of a sample of students. Are there significant differences between the migration and entrepreneurial dimensions of nearshoring and those observed in a sample of students? The hypothesis is that there are differences

because the literature tends to romanticize nearshoring as a development opportunity per se without considering the formation of intellectual capital, training, and specialization.

**Table 1.** Comparison of migratory and entrepreneurial categories

Dimension	Migratory	Entrepreneur	Nearshoring
Aim	Search for job opportunities and improvement of living conditions	Business creation and job creation	Relocation of operations to reduce costs and improve delivery times
Economic Impact	Increase in remittances; boost to economies of origin and destination	Job creation and GDP growth	Cost reduction; stimulation of the local economy of the host country
Motivational Factors	Need for economic and social stability; support networks at destination	Identification of business opportunities; access to financing	Tax incentives; proximity to key markets (e.g., US)
Challenges	Cultural and linguistic barriers; restrictive immigration policies	Access to finance; tax regulation	Infrastructure; availability of qualified talent
Role of Technology	Facilitates communication and cultural adaptation at the destination	Enables innovation and market expansion	Automation and optimization of logistics processes
Sustainability	Improving quality of life at origin and destination; possible effects on local development	Economic growth and job creation in the long term	Reducing the carbon footprint by producing close to consumption centers
Associated Policies	Migration policies and work permits	Policies to support entrepreneurship and SME development	Free trade agreements and investment agreements

## 2. Methodology

A cross-sectional, exploratory, and confirmatory study was conducted on 100 students from a public university selected for their institution's commitment to forming intellectual capital through talent incubation.

The Migrant Entrepreneurship Scale (Annex A) was used. It includes: 1) Expected Mobility, 2) Multicultural Experience, 3) Perceived Benefits, 4) Work Adaptation, 5) Attitude towards Entrepreneurship, 5) Perception of Opportunities, 6) Entrepreneurial Resources, 7) Entrepreneurial Skills, 8) Talent Attraction. The overall reliability reached a value of 0.789, and the dimensions ranged between 0.762 and 0.793. Sphericity and adequacy were higher than the minimum required and significant. Validity was established between 0.345 and 0.672.

Respondents were contacted via institutional email to learn about the project's objectives and responsibilities and request their collaboration without remuneration. The data were captured in Excel and processed in Google Colab. Reliability, adequacy, sphericity, validity, adjustment, and residual values were assumed as evidence if their values were close to one.

## 3. Results

The residual variances analysis suggests that the observed values vary regarding predictors. Such a relationship defines the precision of the model, with its proximity to zero being a better fit (Table 2). The results show values close to zero, so a moderate-fit model is recognized. The intercept analysis suggests the value of migration, entrepreneurship, and nearshoring when their predictors equal zero (Table 3). The values are close to unity, so the predictor variables are assumed to be relevant in their relationship with the constructs.

**Table 2. Residual variances**

Indicator	Estimate	Std. Error	z- value	p	95% Confidence Interval	
					Lower	Upper
expmov	0.227	0.016	13.767	< .001	0.194	0.259
expmulti	0.154	0.011	13.693	< .001	0.132	0.176
adaplab	0.486					
attempt	0.239	0.032	7.385	< .001	0.175	0.302
reception	0.369	0.029	12.668	< .001	0.312	0.426
foremp	0.245	0.127	1.925	0.054	-0.004	0.494
tospeak	2.755	0.203	13.536	< .001	2.356	3.153
adapt	0.136	0.010	13.155	< .001	0.115	0.156
innear	0.429	0.062	6.874	< .001	0.307	0.551
fornear	0.249	0.150	1.661	0.097	-0.045	0.543

**Table 3. Intercepts**

Indicator	Estimate	Std. Error	z- value	p	95% Confidence Interval	
					Lower	Upper
expmov	1.331	0.025	54.125	< .001	1.282	1.379
expmulti	1.149	0.020	56.771	< .001	1.110	1.189
adaplab	1.553	0.039	40.052	< .001	1.477	1.630
attempt	1.352	0.026	51.871	< .001	1.301	1.403
reception	1.411	0.032	44.588	< .001	1.349	1.473
foremp	1.460	0.029	50.080	< .001	1.403	1.517
tospeak	2.078	0.086	24.088	< .001	1.909	2.247
adapt	1.832	0.019	94.891	< .001	1.794	1.870
innear	1.731	0.037	46.620	< .001	1.658	1.803
fornear	2.216	0.036	61.215	< .001	2.145	2.287

Misfit analysis suggests the observed model's fit concerning the theory (Fig. 1). Values close to zero are assumed to be evidence of fit. The findings demonstrate the prevalence of relationships close to zero, although some are close to unity. Adjusting the model in those relationships that are far from zero is recommended.

	expmov	expmulti	adaplab	actemp	recomp	foremp	habnear	adapnear	innear	fornear
expmov	0									
expmulti	.02	0								
adaplab	0	0	0							
actemp	.14	.03	.16	0						
recomp	.2	.07	.04	0	0					
foremp	.11	.18	.07	0	0	0				
habnear	.07	.06	.04	.06	.03	.02	0			
adapnear	.01	.03	.17	0	.06	.03	.03	0		
innear	.05	.01	.02	.12	.11	.08	.01	0	0	
fornear	.03	.1	.1	.11	.02	0	0	0	0	0

Figure 1. Misfit model

The model's analysis suggests a confirmed factor structure (Fig. 2). The results indicate three factors related to migration, entrepreneurship, and nearshoring, although the first factor can only consider one indicator. Regarding entrepreneurship and nearshoring, both include indicators that reflect their structure.

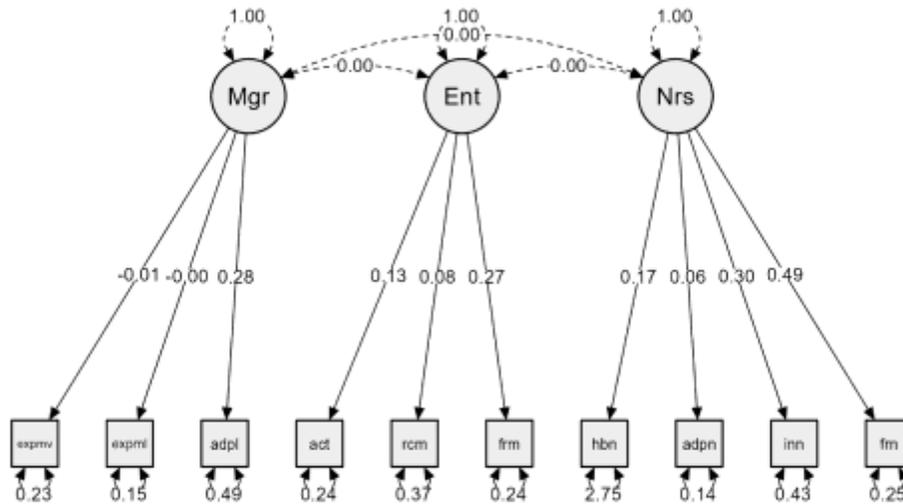


Figure 2. Structural model

The analysis of the fit parameter indicates the relationship and correspondence between the observed model and the theory (see Table 4). The chi-square value is significant, although the parameter is sensitive to the sample and tends to be significant.

Table 4. Chi-square test

Model	X <sup>2</sup>	df	P
Baselinemodel	137,461	45	
Factor model	89,536	35	< .001

Note. The estimator is ML.

The fit and residual parameters assess the correspondence of the observed model to the theoretical model (Table 5). The findings indicate that the theoretical model approximates the observed model since the fit coefficients and residuals tend to unite to zero.

Table 5. Other fit measures

Metric	Value
Root mean square error of approximation (RMSEA)	0.064
RMSEA 90% CI lowerbound	0.048
RMSEA 90% CI upperbound	0.081
RMSEA p-value	0.071
Standardized root meansquare residual (SRMR)	0.063
Hoelter'scritical N ( $\alpha = .05$ )	209,582
Hoelter'scritical N ( $\alpha = .01$ )	241,163
Goodness of fit index (GFI)	0.997
McDonald's fitindex (MFI)	0.930

Metric	Value
Expected cross-validation index (ECVI)	0.399

#### 4. Discussion

Within the framework of male and female gender relations focused on work opportunities and capabilities, the discussion on the similarities and differences between the concepts of human, sustainable, and local development can be located in two indicators of social development: 1) the dignity of life and 2) the quality of life [16], as well as at the institutional level in terms of its lack of coordination at the different levels of government, federal, state and municipal [17].

The dignity of life refers to human and social rights as mediators of public action and social need [16]. It is assumed from the social development approach that the differences in rights between men and women arise after both male and female identities are victims of a melting pot of rights violations. This is because, although they are different in their opportunities and capabilities, they share common problems and development strategies. This is the case of the quality of life, which refers to health, nutrition, housing, education, environment, culture, and longevity [16]. These are opportunities and capabilities of access and utility of each of these privileges, once again circumscribed between the recognition and the ignorance of the female identity and the male identity.

In this way, social development is the product of public and private actions, programs, and strategies aimed at dignity and health, reflected in the quality of life. However, simultaneously, it is part of a vicious circle of similarity (shared problem) and differentiation (development privileges). Therefore, it is necessary to have state leadership [17]. From this definition of social development, it will be possible to derive the differences and similarities between human, sustainable, and local development. Establishing the definitions, objectives, instruments, and goals that distinguish them will be essential since the scarcity or lack of dignity and quality of life is the common denominator [18].

However, it is necessary to consider that the differences related to work opportunities and capabilities between men and women are limited to the imperfections of the labor market [16]. Therefore, tax collection and redistribution policies will be essential to clarify the solidarity that characterizes male and female identities, mainly cooperation aimed at their development [19].

From a matrix around the sustainable, human, and local dimensions, it is possible to note differences and similarities if the diagnosis is considered in terms of the absence or scarcity of rights, objectives, instruments, and goals [16,17]. In this way, sustainable development refers to an area in which the State generates opportunities and contributes to the capacities of civil society to reduce inequalities between cultures, localities, communities, families, and individuals [20]. Suppose sustainable development guides social equality to overcome poverty in the most excluded sectors. In that case, human development will promote health, education, and labor rights to develop capacities that culminate in dignity and quality of life [22]. In this way, human needs and expectations will correspond to policies to strengthen human capital through general social care and education, generating the desired social well-being [21].

However, abandoning the welfare-based paternalism of state leadership requires local policies focused on rebuilding the social fabric and regaining citizen trust by promoting supportive and cooperative relationships and social and economic compensation, marked by labor and pay equity [23]. In each dimension of sustained human and local development, rights' effectiveness, efficiency, and validity are the central issues on the state and civil agenda, leading to cultures, races, gender identities, ages, education levels, and income [24].

The differences and similarities between sustainable, human, and local development allow us to observe the inequality between men and women, among other items. This is so because the problems, objectives, instruments, and goals seem to disfavor the feminine identity over the masculine one, not only as evidenced by the poor numbers but also in the opportunities generated by institutions and companies, which favor a logic of competition centered on the conviction of success, an essential attribute of the masculine identity, and to the detriment of the ethics of conservation, a fundamental feature of the feminine identity [25].

In this way, sustainable, human, and local development policies emphasizing competition rather than solidarity will favor male identity. However, at the same time, they not only exclude female identity in the areas of health, education, or work, but they also confine male identity to these areas, ignoring family issues such as paternity rights [26]. Male youth migration flows can be understood from the asymmetries and similarities between social

inclusion and protection processes, considering that human rights are the instrument of universal and comprehensive implementation [27,28].

That is to say, social inclusion, being an ethic, a vocation, and a discourse of equality, not only implies the exercise of rights in the foundation of programs and strategies but is also aimed at reducing the barriers that inhibit the construction of citizenship, cohesion, belonging and democratic life through administrative decentralization, social recognition, social pact, negotiation of conflicts and the expansion of rights for their social redistribution [29].

If social inclusion is reflected in social protection as a synonym for social assistance, then masculinities in their youth and migratory flows would have ample possibilities of being included and protected. However, this last issue implies social assistance related to progressiveness, equality, comprehensiveness, institutionality, participation, transparency, accessibility, and accountability [30]. In other words, social and economic rights should not only be guaranteed by the State but should be inserted in a policy, program, and strategy aimed at eradicating inequalities, indicated by their regression in terms of opacity of resources and inaccessibility to information [31]. In this way, the similarities and differences between inclusion and social protection are central issues on the political and civil agenda, mainly about a diagnosis of inequality and social exclusion, as well as in the objectives, instruments, and goals aimed at the inclusion of protection [32].

Social inclusion can be broadly defined as the outcome of social protection, which is viewed as an integrated policy, program, and strategy for managing societal demands and redistributing resources. This encompasses three key areas: 1) social assistance, 2) social security, and 3) the labor market [27,28]. Conversely, social exclusion, evident through social inequality and exacerbated by the decline of economic and social rights, manifests in issues such as illegality and informality in employment, multidimensional poverty, and varied needs, significantly affecting single-parent families led by women. A lack of technical and operational coordination at the municipal level, accompanied by insufficient transparency and accountability in information sharing, underscores the necessity for social protection [33]. In this context, social protection involves executing assistance, security, and labor market strategies as components of universal, comprehensive policies prioritizing verticality in their development and horizontal implementation. This approach necessitates cross-sectoral collaboration, institutional coordination to address diverse needs, and mediation of conflicts between political and civil actors [34].

Understood as a strategy of assistance, security, and labor regulation, the differences and similarities between social inclusion as an ethic derived from social protection show that: 1) migratory flows have a place in the integration of social protection through the demographic bonus; however, 2) the masculine identities of migrants would only be a priority while they are in a productive age; 3) both migratory flows and masculine identities are more prone to state exclusion since it prioritizes the sectors of the future [35].

From the social work intercession model, which proposes the impact of contextual repertoires in narratives and discourses, fifteen ex-migrants settled in Xilitla, SLP, in the Huasteca. Potosina were interviewed to interpret and establish the influence they had throughout their trip, stay, and return, all this in the face of acculturation, selectivity, identity, and governance, as well as rationality: economic, multicultural, intercultural, and ethnocentric, having as an evident antecedent the entrepreneurial culture of the EU [36].

The former migrant organic coffee merchants had a business apprenticeship based on the transparency of their microenterprise management. Each peso was used for the development of their business. The merchants without experience in migration had a business apprenticeship based on the specificity of their sales. Each peso must be invested in a single product. A specification refers to establishing axes, trajectories, relationships, and hypotheses around a process in which the variables reviewed in the state of knowledge reflect a particular context or scenario. However, their expected relationships anticipate conflicts and changes. In this way, a preponderant axis: the comprehensiveness of public policies in the other nodes, diversity, security, activism, and co-responsibility. Each path of dependency relationship between the five factors allows for establishing hypotheses that can be contrasted immediately if the theoretical, conceptual, and empirical frameworks reviewed in the state of knowledge are met. The model proposes the study of business migration flows based on the leadership of the State through the comprehensiveness of social policies, as well as the diversification of public social protection and security. However, in another aspect, social security movements propose co-responsibility in managing and administering public services in social entrepreneurship. It is a model delimited by two political and social actors around the establishment of a business promotion system that is distinguished by its degree of social protection,

comprehensive strategies, local security, and openness to social demands, as well as the construction of a co-government or governance indicated by its degree of co-responsibility.

However, the co-governance scheme includes other public and private sectors and actors, such as corporations and cooperative societies. This means that the model is limited to two actors who, although they are the predominant axes of co-governance, whose management and administration capacity is regulated by civil organizations and government institutions.

Finally, according to the work of Carreón et al. [12,19] entrepreneurship originates in local identity, regional roots, attachment to the place, and the sense of community as a substantial part of the uses and customs oriented toward profit and gain. This work instead considers that it is the interdependence between migrant and native cultures that generates a business hybrid and that, although local identity is its foundation, the work expectations that drive the crossing, stay, and return of migrants are also a determining factor in the work cycle of a migrant. It is recommended to a) carry out intensive processing of the information in other repositories; b) adopt other content analysis techniques; c) generate comprehensive models, which include business migratory flows and business areas; c) as well as discussion between the historical identity of the place of origin concerning the work expectations of the migrant's receiving context.

## 5. Conclusions

A structure of relationships between predominant categories was observed in which collaborative and consensual learning was established, although the research design limits the findings to the sample. These results demonstrate the specification of a model to anticipate scenarios of exclusion or inclusion between migratory flows and native communities, as well as the relevance of entrepreneurship in the local development of both groups.

The establishment of assumptions that explain factors used in the state of the art and specified in a model to address business migration flows. It involves constructing a system of co-management and co-administration of public resources and services related to social entrepreneurship, business development, microfinance, or microcredit focused on localities receiving or driving migration flows.

The discussion on social entrepreneurship, as a process of state management or administration or through citizen participation in self-management and self-organization, is rethought towards models of co-government, co-management, co-administration, and co-administration. Responsibility indicates a rapprochement of public administration with organized civil society, but policies, strategies, and programs regarding social protection are disjointed. Therefore, opening the debate is necessary to establish a comprehensive system of social entrepreneurship, at least between rulers and the governed.

### Author Statements:

- **Ethical approval:** The conducted research is not related to either human or animal use.
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## ANNEX A

Measuring Instrument: Migrant and Entrepreneurial Dimensions in the Face of Nearshoring at the Public University

Objective: To evaluate the perceptions, experiences and attitudes of the university community in relation to the opportunities and challenges offered by nearshoring from a migration and entrepreneurial perspective.

Target Population: Students, professors, researchers, and administrative staff.

Format: Self-administered questionnaire (can be in digital or printed format).

Section 1: Demographic and Identification Data

- Age
- Sex
- Study program or area of work
- Level of education or position
- Nationality / Place of residence
- Previous immigration experience (Yes/No): If the answer is "Yes," specify the country and duration.

Section 2: Migratory Dimension versus Nearshoring

Key Indicators: Expectations, Motivation and Adaptation

1. Mobility Expectations:

- Would you consider migrating to work or interning at a company involved in nearshoring? (Likert scale: 1=Not at all likely, 5=Very likely)

2. Experience in Multicultural Interaction:

- In your academic/work life, how frequently do you interact with people of different nationalities or cultures? (Likert scale: 1=Never, 5=Very frequently)

Nearshoring Migration:

- How much do you agree with the statement: "Migration and cultural diversity benefit the development of skills necessary for nearshoring"? (Likert scale: 1=Totally disagree, 5=Totally agree)

#### 4. Adaptation to New Work Environments:

- How prepared do you feel to adapt to an international or diverse work environment, typical of nearshoring companies? (Likert scale: 1=Not at all prepared, 5=Very prepared)

#### Section 3: Entrepreneurial Dimension versus Nearshoring

##### Key Indicators: Attitude towards Entrepreneurship, Resources and Institutional Support

##### 1. Attitude towards Entrepreneurship:

- Are you interested in starting your own business in a sector related to nearshoring (logistics, technology, manufacturing, etc.)? (Likert scale: 1=Not at all interested, 5=Very interested)

##### 2. Perception of Nearshoring Opportunities in the University Environment:

- How much do you agree with the statement: “The university fosters opportunities for entrepreneurship in sectors relevant to nearshoring”? (Likert scale: 1=Totally disagree, 5=Totally agree)

##### 3. Access to Entrepreneurship Resources:

- Are you aware of the university's resources to support entrepreneurial projects (e.g., incubators, financing)? (Options: Yes/No)

##### 4. Training in Entrepreneurial Skills:

- Do you think you have received sufficient training in entrepreneurial skills (finance, management, networking) during your time at university? (Likert scale: 1=Totally disagree, 5=Totally agree)

#### Section 4: Nearshoring and its Impact on Professional Future

##### Nearshoring appeal:

- How attractive do you consider nearshoring for your professional career development? (Likert scale: 1=Not at all attractive, 5=Very attractive)

##### 2. Key Competencies and Skills for Nearshoring:

- How prepared do you feel with the skills and competencies required to work in an industry related to nearshoring? (Likert scale: 1=Not at all prepared, 5=Very prepared)

##### 3. Role of the University in Preparing for Nearshoring:

- Do you think the university offers adequate support to prepare for nearshoring issues? (Likert scale: 1=Totally disagree, 5=Totally agree)

##### Nearshoring Companies:

- Would you be interested in internships or working for companies involved in nearshoring? (Likert scale: 1=Not at all interested, 5=Very interested)

##### Response Scale

- Most questions use a 5-point Likert scale, where:

- 1 = Strongly disagree / Not at all interested

- 2 = Disagree / Not very interested

- 3 = Neutral

- 4 = Agree / Interested

- 5 = Totally agree / Very interested

##### Analysis of Results

1. Migratory Dimension: Identify the openness to mobility and cultural adaptation crucial for internationalized jobs in nearshoring.

2. Entrepreneurial Dimension: Evaluate interest in and preparation for undertaking work in sectors linked to nearshoring and access to university resources.

Nearshoring Perspective: Measure the level of knowledge and preparation of the university community to face job opportunities in nearshoring.

## **ANNEX B**

# Step 1: Install required libraries

```
!pip install pandas pyreadstatfactor_analyzerstatsmodels matplotlib scipy
```

# Step 2: Import the libraries and load the file

```
import pandas as pd
```

```
from factor_analyzer import FactorAnalyzer
from statsmodels.multivariate .factor import Factor
import matplotlib.pyplot as plt
import scipy.stats as stats
# Load the .ods file
file_path = '/mnt /data/TJHG AFC Entrepreneurship.ods'
data = pd.read_excel ( file_path , engine=" odf ")
# Step 3: Explore and preprocess the data
# Look at the first rows of the dataset to identify relevant columns
data.head ()
# Remove unnecessary rows or columns or those with missing values if necessary
# For example, data = data.dropna () or data = data.drop ([ ' NotNecessaryColumns '], axis=1)
# Step 4: Confirmatory Factor Analysis
# Define the number of factors expected according to your model
num_factors = 3 # Change the number of factors according to the theoretical model
# Perform exploratory factor analysis to determine the suitability of the CFA
fa = FactorAnalyzer( n_factors = num_factors , rotation='varimax')
fa.fit ( data )
# Optional: Extract and display the factor loadings of each variable on each factor
print( pd.DataFrame ( fa.loadings _ , index= data.columns ))
# Step 5: Evaluating the fit model for the AFC
# Calculate the KMO and Bartlett's test of sphericity
from factor_analyzer.factor_analyzer import calculate_kmo , calculate_bartlett_sphericity
kmo_all ,kmo_model = calculate_kmo ( data )
print( "KMO: " , kmo_model )
chi_square_value ,p_value = calculate_bartlett_sphericity ( data )
print( "Bartlett's test chi-square: " , chi_square_value )
print( "p-value: " , p_value )
# Step 6: Perform the CFA with statsmodels
# Define the correlation matrix and apply the AFC
model = Factor( data.values , n_factor = num_factors )
result = model.fit ()
# Print the AFC results
print ( result.summary ())
# Step 7: Visualizing the factors
# Make a screen plot to evaluate the variance explained by each factor
ev , v = fa.get_eigenvalues ()
plt.plot ( range(1, len ( ev ) + 1), ev )
plt.xlabel ('Factors')
plt.ylabel ('Eigenvalue')
plt.title ('Sedimentation plot ( Scree Plot )')
plt.show ()
# Step 8: Interpret the results
# Based on the results, interpret the factor loadings and model fit indices.
```