

Intelligent social forecast in the Olympic program of La Laguna: A multicultural perspective

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Abstract

In this research, three multicriteria decisions (MCDM) analyses are applied using the TOPSIS (Technique for Order of Preference by Similarity to Ideal Solution) methodology in managing the Olympic program of La Laguna. The model is structured and conceptualized as an intelligent social forecast system and integrates KPI's (Key Performance Indicator) such as PISA (*Programme for International Student Assessment*) test, cultural cohesion metrics, and Olympic medals as an output of the entire model and program. Multivariate statistical and other qualitative techniques such as structured modeling equation (SEM) and paradigms such as Cultural algorithm, social portfolio problem, and demographic data are used. The model is ennobled with social theories, and the concept of aleph places is presented and introduced. It is pointed out how the MCDM decisions integrate the intelligent support system within the intelligent component, with high potential for other artificial intelligence applications. Finally, as next steps, it is established that a data set with the profile and history of each medal winner along with a case study is necessary to establish several scenarios that will help model social capital processes. These qualitative methods must be addressed in the context of the Imaginary Institution of Society.

Keywords: MCDM, TOPSIS, Laguna Olympic Program, Cultural algorithms, socio-cultural-urban interfaces, social portfolio problem, and Aleph places.

1.- Introduction

A Smart City is characterized by being made up of different components, one of vital importance is the physical health of children and young people. "Divide and conquer", the Romans used to say. Today, with the change of historical chronotope already predicted by Hans Ulrich Gombich[1] and potentiated by the great technological corporations in times of pandemic, the only alternative for citizens is to evolve and cities are the first place, cities are the battlefield where all these changes will take place. Equipping them with the requirements so citizens can succeed in this greater good is a critical task; soon *dive et impera* will be a thing of the past in any contemporary society. Move heavy artillery so that our social capital is superimposed on our groups, communities, and society; an alignment of capabilities that can be designed systematically, *Smart Cities* is the paradigm to adopt. [13] The sum of collective intelligence recognizing problems created by ourselves in the past and aspire to our full potential. Every instance a human subject integrates and incorporates the social structure; new hybrid processes and places where humans interact, new paradigms emerge, new strategies designed to influence society, evolve to a higher level, and reach the maximum human potential, Maximize the use of resources of our region, and build a new society. A way of projecting the cultural integration in La Laguna within the framework of a smart city.

Cultural Algorithms Cultural Algorithms (CA) [2] is a sub-discipline of evolutionary computation, whose knowledge component is called Belief Space, Fig. 1, in a certain group or population. Cultural algorithms were introduced by Reynolds [2]. Idealized approaches to cultural evolution by several scientists include the following: Edward B. Tylor was the first to introduce the term "culture" in his two books on primitive culture in 1881; he conceived culture as "A complex whole which includes knowledge, beliefs, art, morals, customs, and every other capacity and habit acquired by man as a member of society". Early approaches to the study of culture focused on the classification of cultures around the world into groups based on "adhesions" between cultural elements and/or components. In the 1960s, cultural ecology emerged as a discipline concerned with the nature of interactions between the cultural system and its environment. The 1970s saw a new emphasis on how culture shaped the flow of information in a system, a generalization of the cultural ecology perspective. Geertz in 1973 in his book, *The Interpretation of Cultures*, exposes culture as the fabric of meaning in terms of which human beings interpret their experience and orient their actions. William H. Durham in 1990 wrote the article titled, *Advances in evolutionary Culture Theory* said "Culture is a shared ideological phenomenon (values, ideas, beliefs, etc.)" [3]. A Cultural Algorithm can be conceptualized by the following Pseudocode in Figure 1:

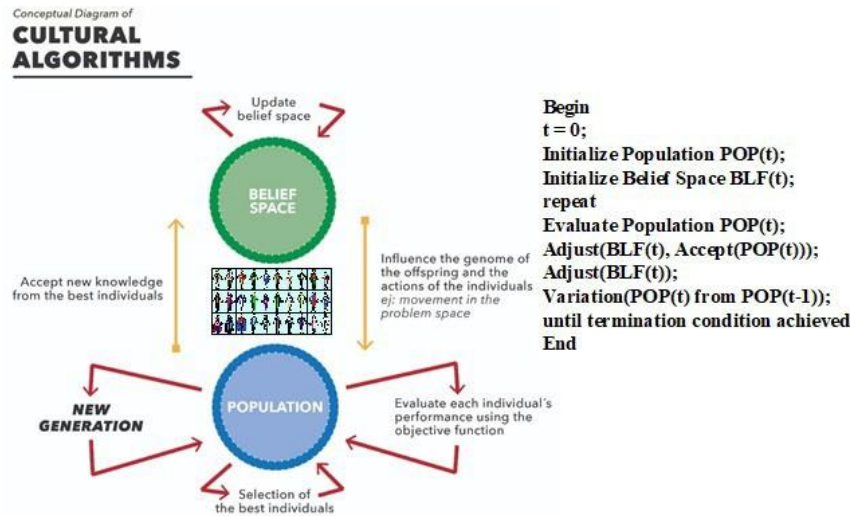


Fig. 1. Conceptual Diagram of Cultural Algorithms.

The introduction of cultural algorithms as an initial concept in this article has a purpose; it is the representation of the macro system in which we would be making different cultural algorithms for the creation of a Smart City in this occasion the Cultural Algorithm, Olympic Program of La Laguna (POLL), is one of them; more cultural algorithms or modules can be incorporated; so to speak; this is how one by one we can add different algorithms that contribute to the conceptualization of the Smart City. So then by refining and improving other existing algorithms which would be designed to maximize the

contribution to the Smart City. In Torreón the concept is not new, a case of success locality on which we elaborate our Cultural Algorithm, the POLL. Yohan Uribe Jimenez, deputy editorial director of the local newspaper; “*El Siglo de Torreón*” , recently rescued a successful experience, in his conference *Architecture against violence*. This is the case of the Cultural and Sports Complex “Antigua Jabonera La Unión” shown in Fig. 2, located between the colonias la Primera and Segunda Rinconada, in the west of the city of Torreón, an underdeveloped urban area. According to the IMPLAN webpage, this endeavor had a positive impact on the population of this sector, previously affected by crime. The project, linked to the concept of urban recycling¹; Yohan argues the project resulted in a success case study, where the mix of architecture and sports is a clear case of a successful cultural algorithm in an already existing old and ruined property. Rescued from gangs, embellished with architecture and of course along equipment and furniture, this industrial vestige, is then transformed and can attract children and young people associated with gangs. Practically we could be saying that we are scaling up a success story to the whole La Laguna territory:



Fig. 2. Facilities of the cultural and sports complex. Antigua Jabonera La Unión:

- (A) Blueprints of the project for the recovery of the physical space.
- (B) Front of the property.

2.- Problem scope and description.

Based on the datasets associated with the most recent information from CONADE's 2019 and 2021 Olympics; and other primary sources of information, we can appreciate a great difference in the number of medals between in our cities from both overall state results, 36 Medals in Durango and 112 medals in Coahuila, corresponding for Torreón: 9; Gómez Palacio: 0; Lerdo: 0. Against the state capitals Saltillo 77 medals and Durango 44 medals and corroborated with local sports organizations and institutions. It can be said that Coahuila's state delegation excelled during the CONADE (National Commission on Physical Culture and Sport) 2021 national Olympiad. Coahuila doubled the participation of athletes compared to the last edition. The state delegation won 112 total medals, a historic achievement for our state sport, of which 35 were gold, 25 silver, and 52 bronze. Coahuila is positioned in 9th place in the national medal ranking in 2019 it was in 17th place. Now, the distribution clearly is not congruent, clearly an unbalanced situation. We already have identified critical variables as unequal dispersion of economic resources from CONADE and SEP (National Ministry of Public Education), by the head states of Coahuila and Durango.

¹ Rescuing antique and old government buildings or properties and incorporating into the urban support network

A good strategy was implemented in Coahuila since the playoffs of some sports were held locally, a successful strategy that brings more sports closer to our community indeed; this resulted on a tipping point triggered by local participation, thereby contributing to more medals in the region: 3X3 basketball, fronton (Trinquete and 30 m), rugby 7, baseball, racquetball, although in team sports, we hardly aspire to Olympic medals, except softball that there was a preferential political decision in Saltillo to favor their team. National soccer and field hockey qualifiers were held in Durango. It should be noted that 2020 is a very atypical year because of COVID-19, and it is important to point out that in 2021 the national budget for CONADE was reduced, resulting in a decrease in the budget for all of Mexico. From 2 thousand 676.5 million pesos for the Olympic year, a reduction of 107.5 million pesos compared to 2020. Since there were no competitions because of the COVID-19 pandemic. In a recent interview with the deputy director of the Municipal Sports Institute (of Gomez Palacio, Durango) he commented that in the state of Durango there were no economic resources from the government State Sports Institute, specifically for operation and day to day spending, triggering the discrimination process against La Laguna. As a result of all these situations, there is low participation in the National Olympiad. Findings during the interviews very interesting facts and situations emerge:

- During the National Games CONADE 2021, Coahuila doubled the participation of athletes compared to the last edition of the National Olympics (previous name of these games).
- Coahuila achieved 112 medals in total, a historic achievement for our sport, of which 35 were gold, 25 silver, and 52 bronze.
- Coahuila is positioned in 9th place in the national medal standings

The objective of the *Physical Culture and Sports Program* in the Federal Expenditure Budget is to benefit the Mexican population aged 6 years and older, through the Physical Culture, Sports and High-Performance strategies implemented by CONADE, without discrimination and in coordination with the Physical Culture and sports bodies, national sports associations, and other related organizations. As we mentioned before, it is important to highlight that in 2021 national budget for CONADE will be reduced, representing a total decrease of 107.5 million pesos. In a recent interview with Diego de la Garza Adriano, subdirector of administration and sports infrastructure in Gómez Palacio, and Lic. Moisés Arce Daher, director of the Instituto Municipal del Deporte in Torreón, both commented there is no hope of receiving economic support from either states Durango, and Coahuila, it's almost a custom and tradition in our region.

Demography for the POLL A fundamental aspect of our model is the forecast is to incorporate the issue of demographics; to ensure a good capacity it is necessary to incorporate demographic data; this forecast is based only on the populations of Torreón, Gomez Palacio, and Lerdo; data is based on the last count conducted by INEGI survey in 2020, Fig. 3, gives us a good estimate and allows us to make extrapolations the POLL capacity in the following years.

It is concluded that La Laguna requires capacity for 430,500 habitants in the next 5 years on a yearly basis.



Fig. 3. Demographic data for Metropolitan Zone of La Laguna (Torreón, Gómez Palacio and Lerdo).

Metropolization. The metropolitan perspective for the integral development of La Laguna submerged in an interstate metropolitan area, since its cities are in 2 states: Durango and Coahuila. Metropolization is an obligatory concept in many aspects of the social and urban processes within the Smart City [5] Laguna, this process gives a weak light on the horizon where there is fog and the POLL a solid structure in which citizens would bet and grow as individual and community, underpinned by the Olympic values: discipline, excellence, friendship. interests that 15 cities or municipalities represent important challenges, accelerating conurbation processes, identifying interest groups, and exploiting the combined capacity between municipalities. Our metropolis Torreón, Gómez, Lerdo, Matamoros and Francisco y Madero is the 10th largest metropolitan area of La Laguna out of others metropolitan areas. The POLL and its capability to reach this entire region with services. Nevertheless, the law of metropolitan interests are environment, water, security and justice, community, and metropolitan governance it is set up; other interests undermine our metropolization processes. Once again, these interests divide and tear us apart as tribes, groups, and society and as a result, a divided society that also leads to a brain drain. If a city is not capable of retaining its talents, it is a city where there is no quality, and La Laguna phenomena like these emerge. In a survey of experts in metropolization, we ask for the qualified opinions of 10 experts, allowing us to detect the metropolization of social processes is not even 25% advanced. In the specific case in sports: a metropolitan tournament was organized before the Covid- 19 crisis in 2019 and attendance was low. The POLL has the potential to provide impetus and momentum to all these processes. It is draw to our attention in our research identifying the scope of this metropolization almost identical in spirit and issues to the Smart City initiative [15].

Social capital. The formation of social capital is created through cultural practices and social exchanges based on values as is possible to be seen Figure 4 [9]; there are many forms to model social capital many based on tactical strategies of social capital accumulation. But when projected to the public at Olympic events, enhanced by the mass media, it is the interconnection between the three key Olympic values: respect, friendship and excellence, and society these values are emulated to the crowd of people participating during the event; the study of Olympic social capital has generated many theoretical inventories in the academic literature. Already as a sub-discipline, the concept of Olympic social capital creates a network of relationships; the formation of this network interconnects all the actors involved, whether as athletes, organizers, live attendees, spectators, or even radio listeners[6].



Fig. 4. A sample of children practice golf in La Laguna.

The Olympic concept and its core product the Olympic Games, benefit from the values of Olympism, which is unique in the world of sport and fosters the creation of social capital[6]. The simultaneous experience perception and cultural practice of Olympic values, transform the individual on a collective level and thus form a binding and deploying social capital [7], extensive global media coverage and other complements links social capital within the economic and political sphere of the context [8].

Towards plausibility ad hoc model for La Laguna. Social and professional interactions can also cause the erosion of Olympic social capital. In this context, it is critical that the Olympic message effectively reaches the largest Olympic stakeholder group in a global audience, everything is interconnected. Live viewers go through a cycle of simultaneously shared experiences, resulting in an episodic memory of Olympic values that is stronger and more sustainable in the collective memory. This would also be the case for the POLL; Complexity exists in this communication process. The task becomes complicated, but a social issue of entrepreneurship aligned as well with the Smart City it's the recipe to ignite, this powerful process. Integrating multivariate models in real-time on web, with GPS capability and even scenarios where IoT instruments and devices can interact with the model. Recalling the Cultural Algorithms (CA) section of this paper, the Macro perspective of the CA helps us ground the model and put a baseline on society. Many cause - effect variables can stimulate the Olympic social capital processes [9]; but this can only be testable not only by implementing the total model, but several pilots can also allow us to check results and experiments, and then extrapolate. It is the iteration of the CA that allows us to present social capital as an element to be incorporated in the **Belief Space**; and gradually develop a new social worldview derived from the POLL.

The infrastructure it's a key variable that allows us to accumulate social capital; this infrastructure will have to be competitive according to global standards; this triggers the accumulation of social capital and incorporating it into the worldview of a smart city. It is the accumulation of several strategies that will generate what is called "A bathtub metaphor dynamics"; the iteration of this process generates the adequate competencies and "capability build-up" helping us develop deliver the Belief space and / or "Olympic game capability" [7] within the smart city, one more feature to reach our maximum potential at La Laguna. **PISA Test.** PISA is the acronym for the *Programme for International Student Assessment*. It is an effort of the OECD (Organization for Economic Cooperation and Development), whose purpose is to evaluate the capacity and training of students when they reach the end of compulsory education, at the age of 15. This is a population that is about to start their working life or begin education at the high school stage. The PISA Test Program is conceptualized as a tool to offer abundant and detailed intelligence that will allow the adoption of decisions and public policies on a critical path to increase the educational levels or ranking of the countries that are members of the OECD. Allowing us to benchmark globally. The areas of reading, mathematics, and scientific competence are evaluated. There is an emphasis on the mastery of processed, the understanding of concepts, and the ability to act and function in real situations in each domain. A proxy for assessing social capital can be use this indicator to establish a baseline, if the entire population is processed through the POLL, it should increase the PISA Test as well; maybe in the future can be another variable to assess within the program or even develop a CA for education, another socio-cultural-urban interface for the Smart City.

3.- Programa Olímpico de La Laguna (POLL)



Fig. 5. Brand of the Olympic program of La laguna (POLL).

“In the modern world, full of powerful possibilities and threatened at the same time by dangerous decadences. Olympism can constitute a school of moral nobility and integrity as well as of physical strength and energies; but this will require as a condition that you raise and maintain unceasingly your concept of honor and sporting disinterest at the height of your muscular impulse”, see Fig. 5. These words were written by Pierre de Coubertin, pedagogue, and historian, reflect the essence and justify the creation of the Olympic Program of La Laguna (POLL), the social construct that we are trying to put together that can fuel the people of La Laguna beyond our actual potential to Torreón, Gomez, and Lerdo and consequently to all La Laguna². Agela Saini author of Superior the new science of race says: “.. After all race is a social construct, not a biological trait. That’s the scientific consensus. So why do many still doubt it?..” strong words and old ones too , but she refers to the future as well. Table 1 are the elements of the Olympic program of La Laguna.

Table 1 Elements of the Olympic Program (POLL).

Elements of the Olympic Program (POLL)
Access to the Olympic Program
Coach and Athlete Training via the Web
Aleph Infrastructure or Smart City Hotspots
Assignment of Shadow Organisms
Access to Knowledge Base
Economic Support for Finalists
Associated costs to qualify

It is in the management of this social construct [8] and its prognosis where we theorize, design and build a model and system of support for intelligent decision making in the Olympic Program of La Laguna, in figure 6 [9].



Fig. 6. Components of POLL involving all Community.

Operationalization of the POLL As we had previously established, the operationalization of the POLL starts with a supra-systemic model called Cultural Algorithms; in it, we will be able to perform many iterations, it is the tenacity of the team and athlete that gives life to the program, we will be able to see a flow of a percentage % of the population, and be able to monitor its performance and thus the POLL in general. The POLL seeks to achieve certain results for the region KPI's categories.

² What is Olympism (<https://olympians.org/woa/olympism/?langid=3>)

Table 2 KPI's Database Categories.

KPI's Databases Categories
User Profile
Athlete recruitment and retention (Track Record)
Geolocation
Visualization
Profitability
Users, partners, and Collaborators
Social Capital Creation
Serviceability

The categories of KPI's, help monitor the processes; but the POLL's main success will be measured in terms of benefits in medals, the latent variable. Program management includes management of projects for achieving capability in the three areas Socialization, Sports, Infrastructure, and Connectivity. POLL favors more accurate management in central or local government, including providing a better service to the community. A Program manager who accounts to the program sponsor (or board). Runner up orchestrators for the program could be organizations such as La Comunidad de Instituciones de Educación Superior de La Laguna (CIESLAG) and Asociación Deportiva Universitaria de La Laguna (ADUL). The program must react to changes in strategy and changes in the environment in La Laguna. But above all exploring the best options to integrate the POLL: Sports (materials, training, and knowledge), infrastructure and connectivity, and finally Socialization are some of the final and critical deliverables of the Decision Support System (DSS) of the POLL to yield a better outcome.

4.- Description of the Decision support system (DSS). Fig. 7. The key to the system is the consultation of interdisciplinary experts in both sport and sport program management such as doctors, team members, coaches, medal winners, etc. This system begins to be nourished with the experience of experts in the issues addressed by the MCDM decisions and each MCDM draws on experts in the criteria that each MCDM requirements and demands. The following block diagram illustrates the essence of the DSS, and information in each block addresses addressing the function the algorithms need to model and implement. The DSS plays a critical role and in the multicriteria decision method (MCDM), more than an obscure method, it is a simple method in the model to classify the intelligence for the decision to be made. The three MCDM methods proposed to build the initial DSS have an easy and accessible weight calculation. For this we use interviews and weighting methods. By carefully selected method and coefficients used; the MCDM should provide the basis for a very good forecast. Emphasis in the importance of choosing the correct method for a given multicriteria decision support model and DSS. Input data by experts and then comparing them by a conglomerate experience the weighted data is generated, for the POLL ensuring a structured method for the elicitation of weights incorporated in the model. Furthermore, providing different weighting

methods, and techniques with the possibility to compare within coaches and, experts of specialized knowledge, may increase interest among the actors of the POLL as well. Awareness and a competitive situation emerge by establishing a track record, benchmarks provide the basis to stay competitive. Other weighting methods, objective, subjective or hybrid, can be used in future experimentation. A good practice is to compare the results of objective methods with expert assessment. Additionally, more comparative methods can be applied and considered enabling a broader spectrum and support structure for the analysis.

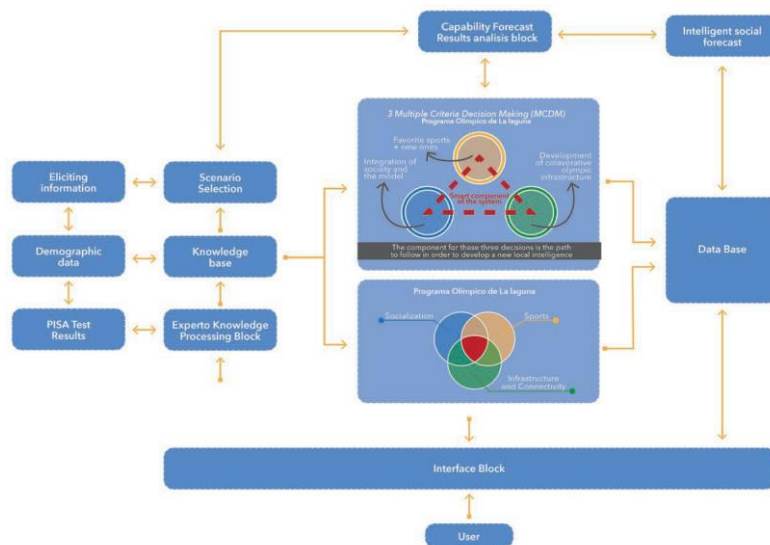


Fig. 7. Intelligent multicriteria analysis applied to POLL Block Model.

The *Intelligent System Component* of the database is conceptualized in three categories Fig. 8. which are the universes of the MCDMs: Favorite Sports, Socialization, Infrastructure Development.

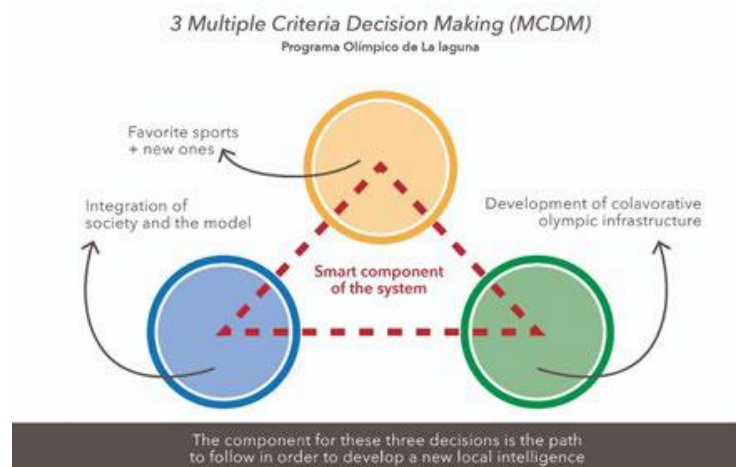


Fig. 8. “3 Multiple Criteria Decision Making (MCDM)”.

Favorite Sports. A sample of 5 sports in Fig. 9. was generated out from the 55 sports that make up the CONADE National Olympiad. This small selection is made according to regional interests, medals won historically and new sports emerging in the international Olympiads. These are the growth areas of the POLL.

New Sport	spaces	Gender	Social status	Fun	Climate	Increase Health	Cost-Benefit	Associated with Cultural Identity	Socialization	Relevance to	Scholar practice
Skating	8	m-50, f-37	0.498	0.914	0.774	0.715	0.387	0.815	0.515	0.769	0.066
Surf	2	m-40, f-30	0.857	0.714	0.851	0.879	0.568	0.318	0.343	0.646	0.642
Sport Climbing	7	m-50, f-40	0.617	0.658	0.385	0.712	0.514	0.904	0.81	0.563	0.145
Break Dance	11	m-48, f-43	0.275	0.637	0.416	0.748	0.885	0.768	0.071	0.897	0.948
Ciclismo BMX	3	m-44, f-26	0.391	0.939	0.181	0.455	0.889	0.441	0.207	0.656	0.679

Fig. 9. Sports Sample for the POLL.

Socialization. A network of vigilante's is required to promote and support the socialization of the project in different areas. Twenty-four civil society organizations identified, would be the support network for the POLL; it is important to select the *most prestigious, most related to the project and, solid* in La Laguna. Among the roles that these organizations would play in the POLL would be the supervisor, socialization of the results, campaign network. But it is above all the communication of what happens in POLL to society and its management a sense of reality.

Infrastructure Development. Coined as Aleph place or Smart City Hot spots. Intelligence developed by the POLL in these places; this intelligence must be identified through different approaches and epistemes along with social processes.

5.- Models

The following procedure used to calculate the MCDM decisions solved by TOPSIS method [4]

- 1) Elicitation of weight coefficients in categories and requirements.
- 2) Matrix normalization
- 3) Calculation of Euclidean distance generating result or ranking based on the Mahalanobis distance [9]

For the calculations between the distances of latitude and longitude, on the second and third MCDM, we use the haversine formula which determines the distance between two points on a sphere given their longitudes and latitudes, shown in equation 1.

$$d = 2r \arcsin \left(\sqrt{\sin^2 \left(\frac{\phi_2 - \phi_1}{2} \right) + \cos(\phi_1) \cos(\phi_2) \sin^2 \left(\frac{\lambda_2 - \lambda_1}{2} \right)} \right) \quad (1)$$

6.- Aleph Places³ or Smart City Hotspots are identified, adapted and interconnected. The Aleph places are the infrastructure where sports activities will take place. Incorporating the Aleph places into society, aligning them,

³ Based on Borges' short story; recovering the idea that where there is Aleph, it becomes a cosmic place that makes us find sense and meaning in our lives.

and the evolution into true sports complexes and cultural centers can coexist, integrating Including the new runner up sports such as Skating, Gotcha and Kendo among others Fig. 14. Embellished with architecture and ornamental trees. In these places where we would also generate the intelligence required to find meaning in the lives of our current and future youth. Already with a database with possibilities and opportunities between clubs, public and private universities, sports units, can be also a point of interconnection, in here our young people will have strong foundations of our society. Equipped with a children's library, daycare center, outdoor theater, exhibition halls, and workshops; with spaces for pets; free Wifi, cafeteria, and if space permits, community markets that promote fair trade; these cultural centers would be spaces designed for the beginning of a change. All La Laguna would be converted into a true interconnected Olympic Village. For example, the issue of installed capacity at Aleph Places, see Fig. 10, is a critical issue to consider and is the MCDM and fundamental aspect of the POLL. According to a preliminary analysis of the existing infrastructure, there are up to 77 potential locations Figure 11 is an example; each place its analyzed and match with sports that can be adapted providing sports services in the Laguna metropolitan area.



Fig. 10. Distribution of collaborative Aleph spaces for sports in La Laguna, potential Aleph Places.

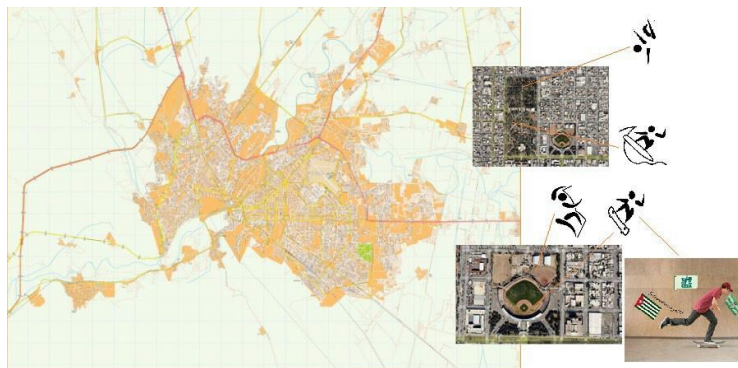


Fig. 11. Survey visits and budgeting process and prioritization would select the most viable and optimal space to influence the paradigm shift to a Smart City in La Laguna, four new Olympic sports were considered.

7.- Structural Equation Modeling (SEM)

SEM encompasses an entire family of models [10]. The intelligent social forecast of the POLL seeks to model medals, that is the latent variable. But before that happens our youth would have to work within milestones of the program that makes them get there, Fig. 12 is a model related to the research on the POLL. We are convinced that performance sports, socialization and adequate capability will deploy the latent variables, many medals. Pilots can be run, but the real information to increase social capital would be practiced, in the aleph places.

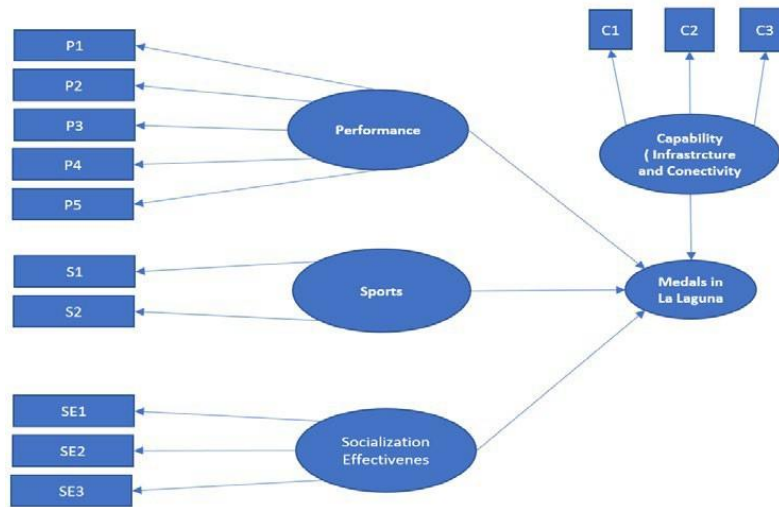


Fig. 12. Structural equation associated with the improved practice of sports in the POLL.

8.- Future Experiments

Mapping the Social Imaginary is a way to experiment within these algorithms, social theories provide an uncounted universe of situations and generate other applications for the forecast, institutions are not given once and for all, on the contrary, they are processes, imaginary interpretation compose them and require discourses, their practices, and rituals, all of these are forces in constant tension are put into play. The sum these institutions their processes, practices, rituals, and any force that influence the system under scrutiny should be mapped and found and used of Smart City Components, Fig. 13, these enablers coined as socio-cultural-urban interfaces would increase our reality to a new sense of citizenship approximation for Smart City.



Fig. 13. Components in a Smart City.

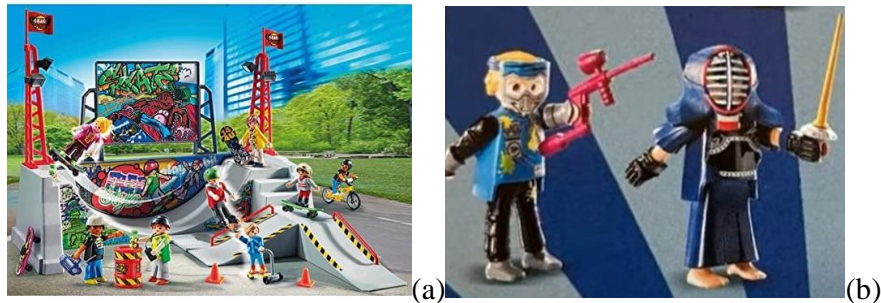


Fig. 14. New Sports in the Olympics:
 (a) Skating
 (b) Gotcha and Kendo.

9.-Next Steps to build a correct POLL for “La Laguna”

First, refine series and increase model variables, then incorporate Rational Choice paradigm and other methodologies. Eventually, we will have to generate a business case and rollout for program advancement. Achieve socialization effectiveness in a network influence analysis and by using the CIGEL system; CIGEL stands for *Centro de Información Georreferenciada de la Región Lagunera* and incorporate new paradigms the POLL to have a geographic disaggregation, data analysis, and data mining, elements that help us integrate strategies to yield better results. Programs and project management will be the body of development of the POLL along with the communications process, which can lead to smart communication strategies to help us build community and populate the POLL. The refinement and validation of the demographic series will help establish standards for budgets for the operation of the program. The survey each alternative must be done to generate and validate a budget; the evolution of a Network of Aleph Places will take the POLL to higher standards along with society [13].

10.- Result discussions

When we start to run the three MCDM decisions in their mathematical models we can observe the following: The most economical sport for access to the Olympics is Chess, this is derived from the ranking method used. There is no adequate infrastructure for the training of some sports such as Sport Climbing; there is only one gym that has a wall with adequate gear and equipment for the practice of the sport. The year 2020 where there was no Olympics by Covid 19 pandemic and would be an absence of information for the forecast. The results of 2021 from the National Olympiad show a breakthrough in the overall number of medals, this should be attributed to an awakening of society to a new post-pandemic paradigm shift in society. There is an important number of medals between state capital Saltillo 77 medals and non-capital cities Torreón, 9 medals; this is not due to the anthropometric characteristics of the athletes but because of the economic resources the government deposits in its city capital for the use and practice of sports for the National Olympiad, this is verified in various interviews. Sixty-eight units or aleph places candidates already identified in the possible network in La Laguna this constitutes an opportunity for the creation of the POLL [14].

11.- Conclusions and future research

There is no competitive spirit in sports at La Laguna; this spirit is not promoted in the local schools and universities; sports are only promoted for health issues and a way to influence integral education. It is necessary to restructure the economic resources associated with the promotion of sports in La Laguna. Recent cases of Corruption in CONADE have detected fraudulent practices in amounts of \$70 million of pesos; imagine all the athletes that can be potentialized by these economic resources. Another major problem detected in La Laguna is the duplication of athletes in local vs. state associations; the informatic system of CONADE is simply oriented to meet

state demands and not interstate interests as in the case of La Laguna. According to the current legal framework, there must be sports associations to trigger and generate interest in the practice of sport. Imagine 55 Olympic Sports associations and 32 states a total of 1760; that brings complexity to the ecosystem and a tangled situation that promotes corruption. Smart infrastructure in Aleph Places is a key component of smart cities. Sentimental analysis is a useful tool that is planned to be used in the Aleph places so that we can incorporate more intelligence into the forecast. Corruption is a factor that at the end of the day undermines the economic capacity of CONADE. New methods of resource dispersion and control must be incorporated into the federal public administration. Although there are three MCDM decisions, the information gathered to establish the MCDM decisions serves to generate future Artificial Intelligence applications. Design Thinking tools can be implemented for each athlete, discipline, or even tournament to achieve better performance and yield of the POLL. Ethnographic research can lead us to learn the success stories and gives us insight on those key issues governing the social capital creation these studies can be applied to medal holders so it can generate a model we can all relate to and lead younger folks to that success path[13].

⁴ https://wradio.com.mx/radio/2021/10/13/nacional/1634157538_368019.html

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