An Analysis on Food Assistance Information Systems (FAIS)

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Abstract

In the United States, more that 13.5 million households are food insecure representing 10.2% of population, reported by the USDA (2021). The government and some private organizations provide help facilitating access to net-related services. However, underrepresented communities (i.e., Hispanic) are less prone to use these information systems that provide food assistance. The Hispanic community is diverse and there exist several factors that might influence the lack of use of these information systems, i.e., English language proficiency, computer skills, acculturation levels, and economic status. The IS-CUCO project is focused on understanding and addressing factors, e.g., the lack of *Cultural and Structural competence*, that limit the use of FAIS by Hispanics. The research group needs to understand FAIS key characteristics and the different types of food programs. The subgoal of this work is to create a baseline of knowledge that supports the work of the research group.

Introduction

Food Assistance Information Systems (FAIS) has the potential of easing access to food and nutrition programs for underserved populations. Food insecurity describes the situation of households where there is limited access or a concern of obtaining food for all members of a home due to lack of money or other food aid resources. The Hispanic households are the second community with higher rates of food insecurity in the United States with 16.2% and the Black non-Hispanic with 19.8% (*USDA ERS - Key Statistics & Graphics*, n.d.).

Problem Statement/Hypothesis

Even though food aid programs are available to the public, there are unknown causes why people in need do not use these benefits. A subgoal of the research group is to create a knowledge base on FAIS key characteristics, types of food assistance, programs, and services. The research team believes that there is consistency among FAIS concerning the food types, food programs, services being offered/listed/presented, access requirements, and availability in Spanish, allowing the same usability for English and Spanish speakers.
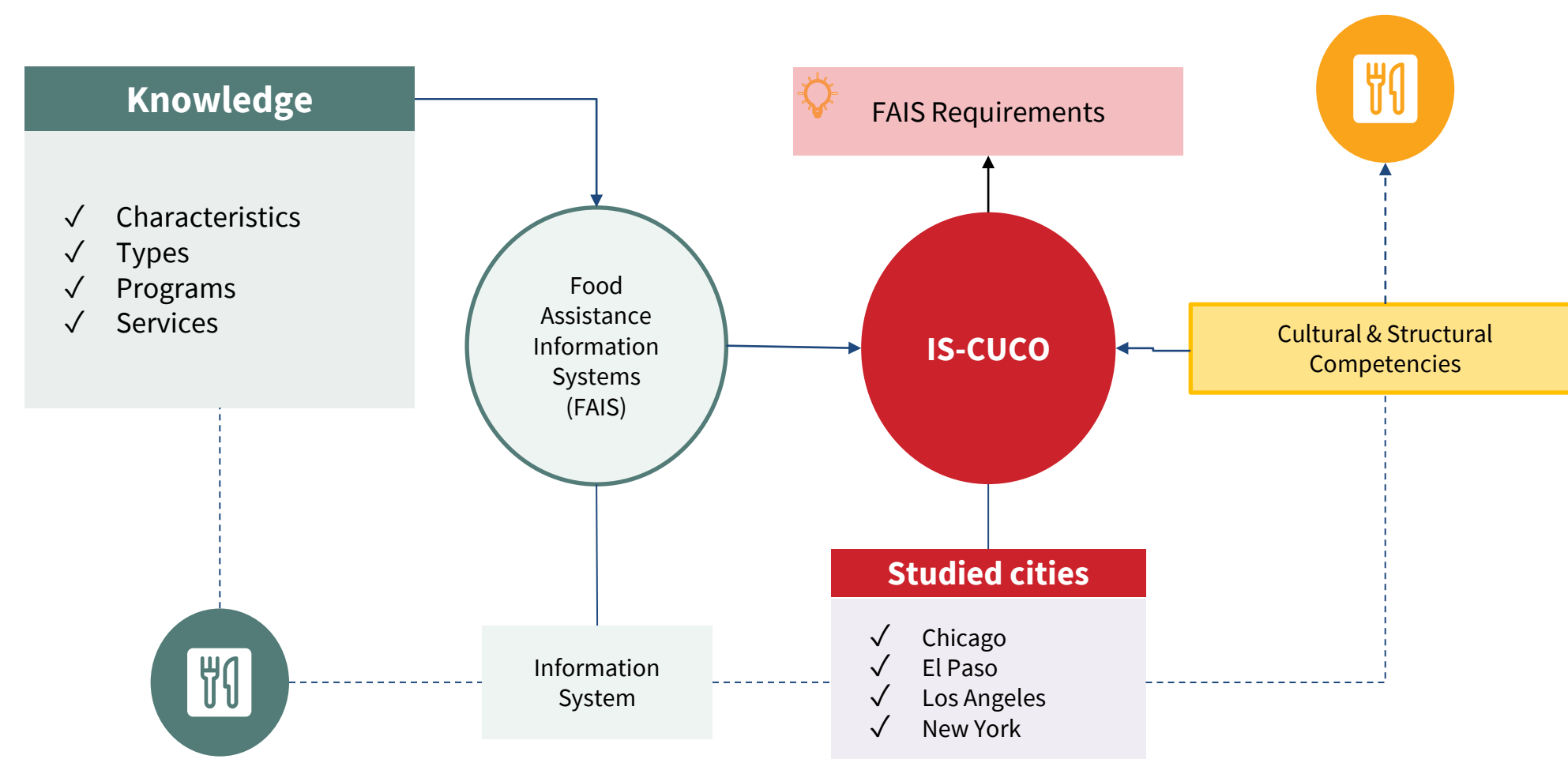

Figure 1. Information Systems meet Cultural Competencies and research intent

Background

The *Information Systems meets Cultural Competencies (IS-CUCO)* project, sponsored by the National Science Foundation, is focused on understanding, and addressing factors, e.g., the lack of *Cultural and Structural competencies* that limit the use of FAIS by Hispanics. The project's goal is to promote the use of food security related services by incorporating cultural and structural competencies into their information systems. The research team, constituted by multiple institutions and different areas of expertise are working together to identify the cultural and linguistic factors that impact the usage of FAIS services by Hispanic populations, the structural factors that make this resources accessible, and the integration of these cultural and structural elements into FAIS software development process.

Methods and Materials

The team's initial findings from literature review, identified key elements of usability for Information Systems (IS) and the need of incorporating inclusive design principles into them. In addition, a review of Food Assistance Information Systems of the representative cities from the members of the research group, i.e., *Chicago, Los Angeles, New York, and El Paso*, recognized different food programs, sponsors, information flows, and services available in these cities. This information will inform the team's activities for user engagement and adoption.
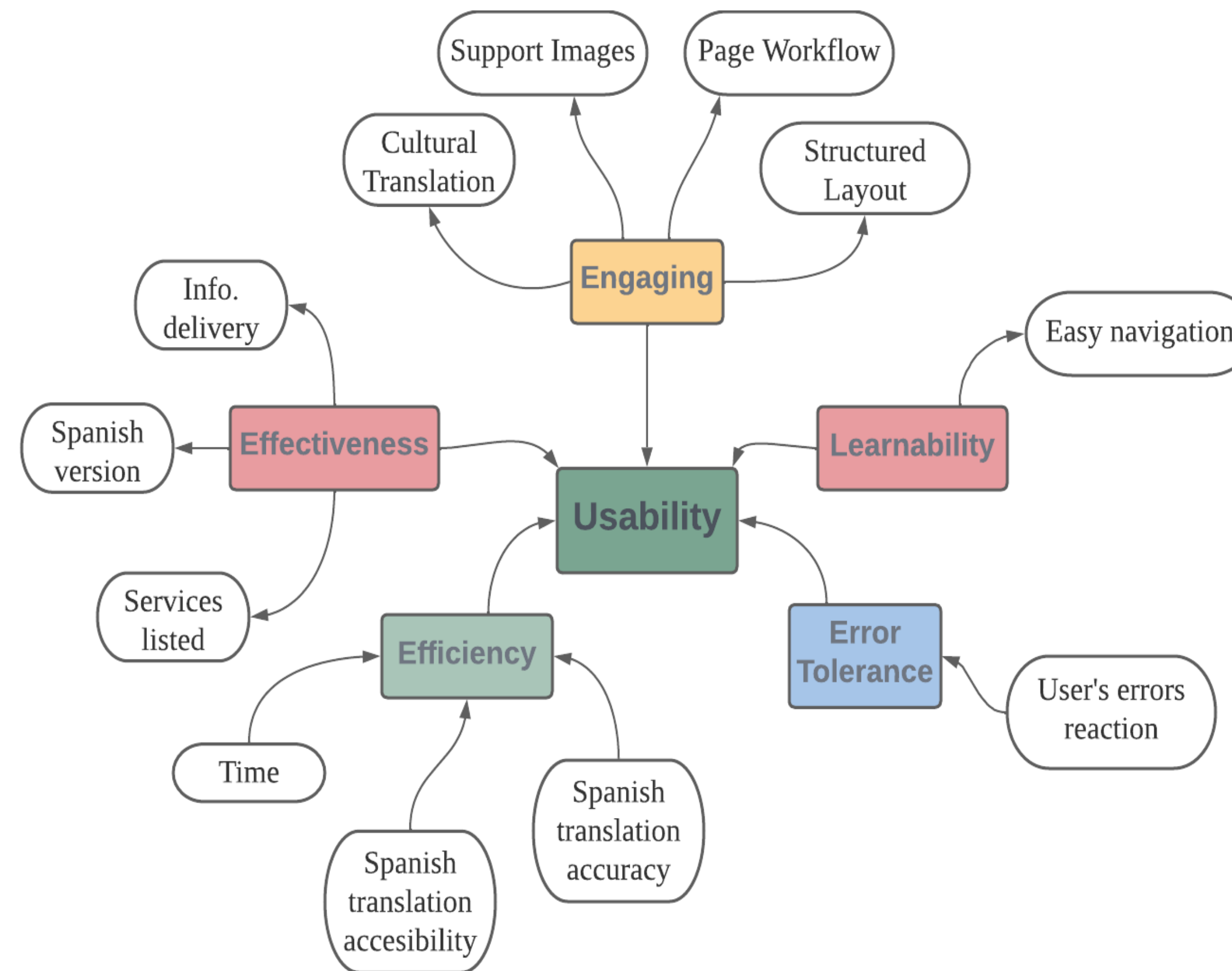

Figure 2. Usability aspects considered to evaluate FAIS

Results

- The team identified the term *usefulness* to assess IS which is the combination of its *utility* and *usability*. The FAIS usefulness refers to the capacity of the IS to deliver the tools and information to promote the services and have a robust design facilitating their use. The research team considered effectiveness, efficiency, engagement, error tolerance, and learnability quality factors to assess FAIS usability.
- FAIS (i.e., websites) were examined based on the team's experience. The opportunity to inspect several FAIS revealed that some of them are well organized and include an engaging design, whereas others include plain text without structure making them difficult to find information and services being offered. For instance, services are not included in a menu, no easy access to a Spanish version of the website, endless scrolling to find services, or complex menu navigation.
- As a result of the analysis, FAIS were classified as *benefit outreach, informational, food bank, food pantry, and soup kitchen*. As well, they were identified the services they provide by type as shown on table 1.

Service	Food Assistance Information System				
	Benefit Outreach	Food Bank	Food Pantry	Soup Kitchen	Informational
Volunteer	-	X	X	X	-
Donate	-	X	X	X	X
Benefit Outreach	X	X	X	X	X
Find Food	-	X	X	-	-
Advocate	-	X	-	-	-
Fundraise	-	X	X	-	-
Delivery	-	X	X	-	-
Food Rescue	-	X	X	-	-
Nutrition Edu.	-	X	X	X	-
Children/Older Adults Nutr. Prog.	-	X	-	X	-
Soup Kitchen	-	-	-	X	-

Table 1. FAIS by type and services provided

Conclusions

Food programs have similar food type facilities (*food bank, food pantry, and soup kitchen*) and offer similar services across the four cities; however, FAIS are not consistent in the way they provide information related to food assistance services. Therefore, the implementation of a FAIS can either facilitate access to the information and food services; or hinder their use, by making information hard to find and/or understand, showing services without any structure, or offering inaccurate automated translation. The above practices may impose barriers that prevent Hispanics from using FAIS, especially those that are not English speakers or unaware of food assistance programs. There is a need for establishing guidelines to orient FAIS designers on addressing cultural and structural aspects that may increase the use and adoption of FAIS by Hispanics.

References

USDA ERS - Key Statistics & Graphics. (n.d.). Retrieved September 20, 2022, from https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/key-statistics-graphics/