Information Literacy Competencies Among Social Sciences Undergraduates: A Case Study Using Structural Equation Model

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Outline

1. Motivation

- Analyze the Information Literacy profile of Social Sciences Students at three Spanish Universities.
- Determine the psychometric properties of three scales used for diagnostic evaluation of the set of skills that make up the overall information literacy competencies focusing on opinions and evidences.
- Draw an overview of the importance and expectations of IL regarding students' informational competencies and skills.
- Estimate correlations between macro-competences in order to develop effective training programs.

1. Motivation

The assessment model is centred on

	Perceptions	**Evidences**
Subjective		
Objective		

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	Perceptions	**Evidences**
Subjective	IL-HUMASS	
Objective		EVALCI

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Specifically, three assessment tools have been used in this research:

- The **IL-HUMASS** questionnaire, in order to diagnose **attitudes** and **expectations**.

  IL-HUMAS survey is used as a singular and complex diagnostic tool that approaches the information literacy issue from the double internal dimension of **Motivation** and **Self-efficacy**.

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- The **EVALCI-K** test, to evaluate students' objective **knowledge**.

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- The **EVALCI-K** test, to evaluate students' objective **knowledge**.
- The **EVALCI-S** survey, to point out at objective evidences regarding **skills** (ability to apply information skills for problem solving).

2. Tools: IL-HUMASS Test

Self-assessment	**Motivation**		**Self-efficacy**	
Four Dimensions	Search	Evaluation	Processing	Diffusion
26 items	8	5	6	7

2. Tools: IL-HUMASS Test

En relación a ...	Importancia									Autoeficacia									Hábito
BUSQUEDA DE INFORMACIÓN	Baja								Alta	Bajo								Alto	
	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	
1. Saber utilizar fuentes de información impresa (ej. libros, ...)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
2. Saber acceder y usar los catálogos automatizados	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
3. Saber consultar y usar fuentes electrónicas de información primaria (ej. revistas, ...)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
4. Saber utilizar fuentes electrónicas de información secundaria (ej. bases de datos, ...)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
5. Conocer la terminología de tu materia	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
6. Saber buscar y recuperar información en Internet (ej. búsquedas avanzadas, directorios, portales, ...)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
7. Saber utilizar fuentes electrónicas informales de información (ej. blogs, listas de distribución, ...)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una
8. Conocer las estrategias de búsqueda de información (ej. descriptores, operadores booleanos, ...)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	Elige una

2. Tools: EVALCI-K Test

Knowledge	78 questions	for 26 items		
Four Dimensions	Search	Evaluation	Processing	Diffusion

2. Tools: EVALCI-K Test

Proyecto EVAL-CI
Test de conocimiento completo

BÚSQUEDA DE INFORMACIÓN:

Respondiendo a estas preguntas, vas a medir tus conocimientos sobre la competencia de búsqueda de información. Tendrás que demostrar que sabes localizar la información precisa en una fuente de información, que distingues las diferentes fuentes de información, que conoces las estrategias de búsqueda y que sabes seleccionar los términos adecuados para tus búsquedas de información.

SABER UTILIZAR FUENTES DE INFORMACIÓN IMPRESA (P. EJ. LIBROS, REVISTAS, ENCICLOPEDIAS, ETC.)

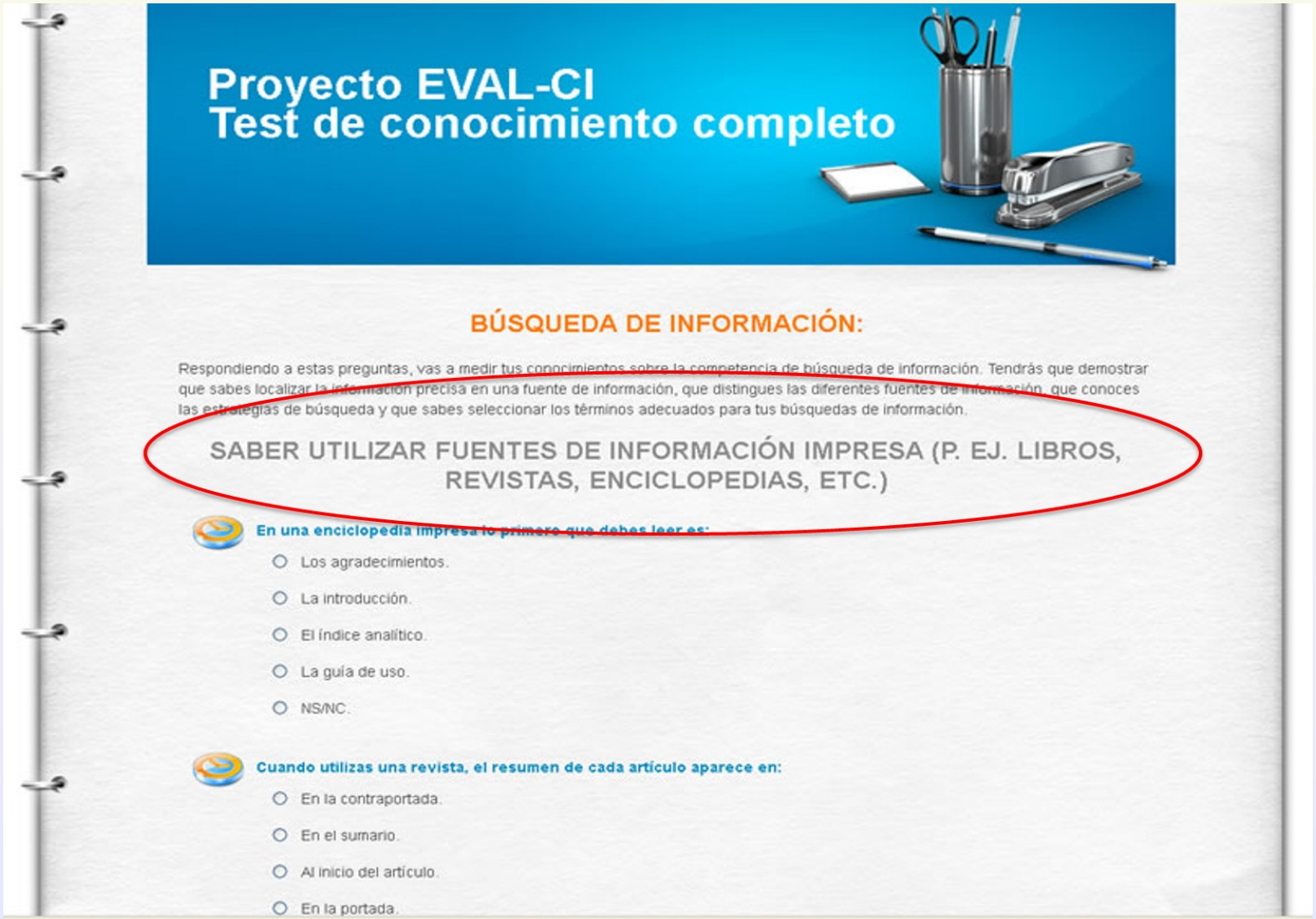
En una enciclopedia impresa lo primero que debes leer es:

- Los agradecimientos.
- La introducción.
- El índice analítico.
- La guía de uso.
- NS/NC.

Cuando utilizas una revista, el resumen de cada artículo aparece en:

- En la contraportada.
- En el sumario.
- Al inicio del artículo.
- En la portada.

2. Tools: EVALCI-K Test



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2. Tools: EVALCI-S Test

Skills	22 questions for 13 items			
Four Dimensions	Search	Evaluation	Processing	Diffusion

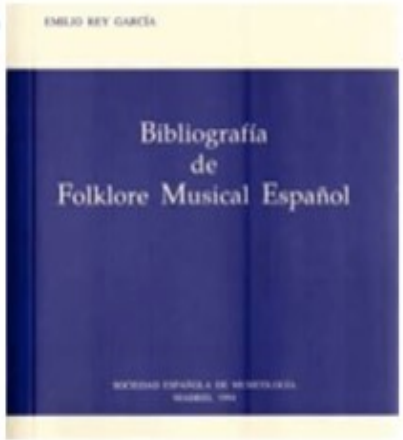
2. Tools: EVALCI-S Test

BÚSQUEDA DE INFORMACIÓN:

CONSULTA Y USO DE FUENTES ELECTRÓNICAS SECUNDARIA

Con esta rúbrica se pretende medir tus habilidades a la hora de consultar fuentes de información, conocer tus destrezas en la selección de las fuentes apropiadas y tus conocimientos sobre el uso de las bases de datos cuando buscas. En este apartado tienes tres preguntas. La primera de ellas te ofrece tres fuentes de información: un catálogo online de una biblioteca universitaria, la portada de una bibliografía impresa y la Wikipedia. Debes señalar cuál de ellas es considerada una fuente secundaria. En la segunda pregunta, ves un registro de un documento de una base de datos (ISOC), y debes elegir el campo que consideres más idóneo si tienes que buscar por tema, ¿qué campo sería el más adecuado?. La tercera pregunta se refiere al mismo registro y debes explicar el significado del campo Fuentes.

Señala, de las fuentes de información adjuntas, cuáles son secundarias:



3. Methodology: The Sample

The data gathering was collected during the 2012 – 2013 academic year.

Three Spanish Higher Education institutions:

3. Methodology

- Descriptive analysis of the variables and categories of the three scales and four dimensions: **motivation, self-efficacy, knowledge** and **know-how**.

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- Descriptive analysis of the variables and categories of the three scales and four dimensions: **motivation, self-efficacy, knowledge** and **know-how**.

- Structural Equation Modeling (SEM) to quantify:
  1. the level of Importance and Self-efficacy declared in IL-HUMASS,
  2. the overall level of knowledge and skills acquired provided in EVALCI,
  3. possible correlations between macro-competences,

  considering the above four dimensions.

3. Methodology: SEM

In the Structural Equation Model, we can identify two main components:

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1. A **measurement model** that represents the relationships of latent variables (or macro-competencies) with its indicators (or observed variables).
2. A **structural model** which describes the relationship between the latent variables.

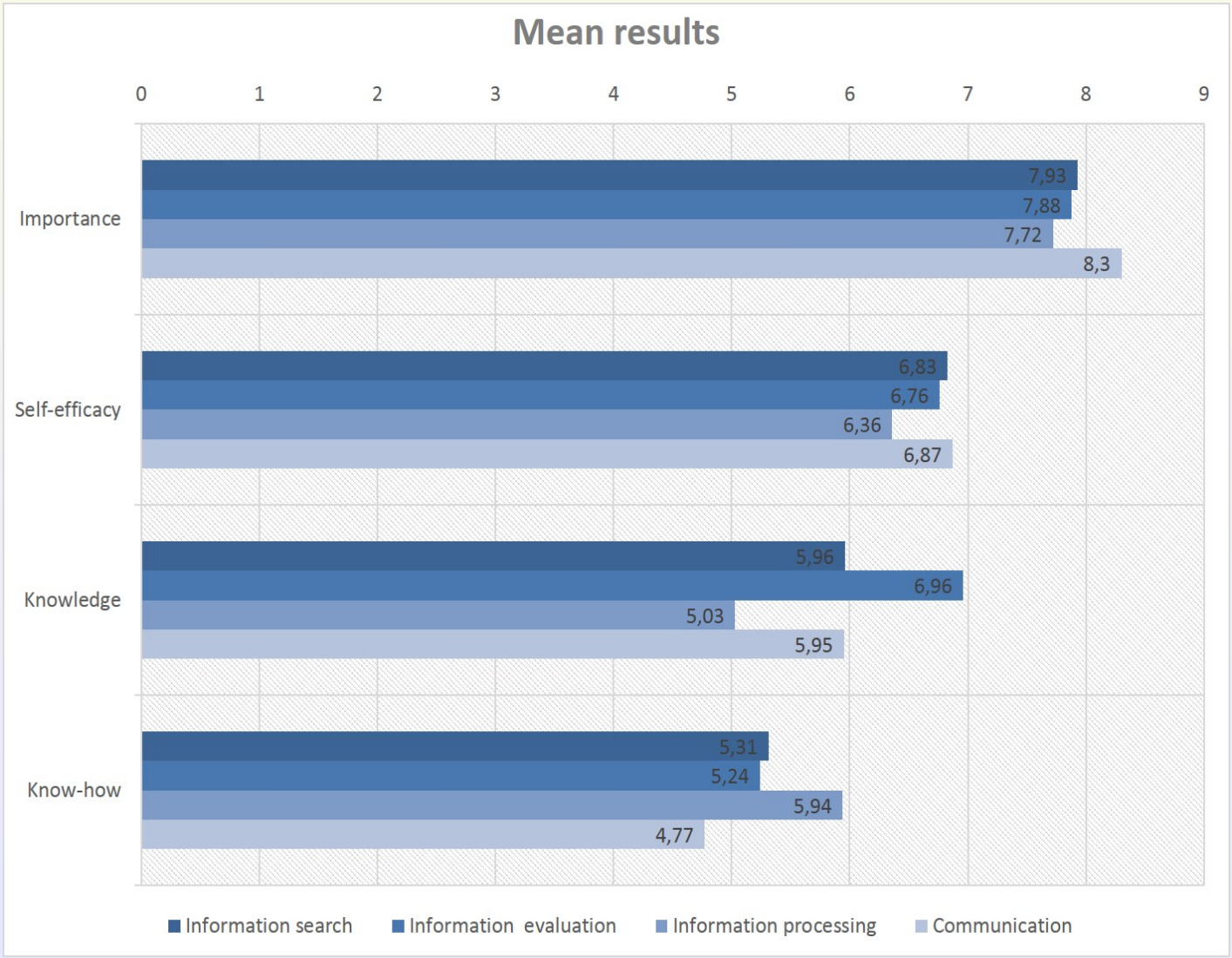
4. Results

INTERNAL CONSISTENCY

The Cronbach alpha coefficients rise:

0.94 for IL-HUMASS test,
0.87 for EVALCI-K,
0.83 for EVALCI-S.

4. Results: Descriptive



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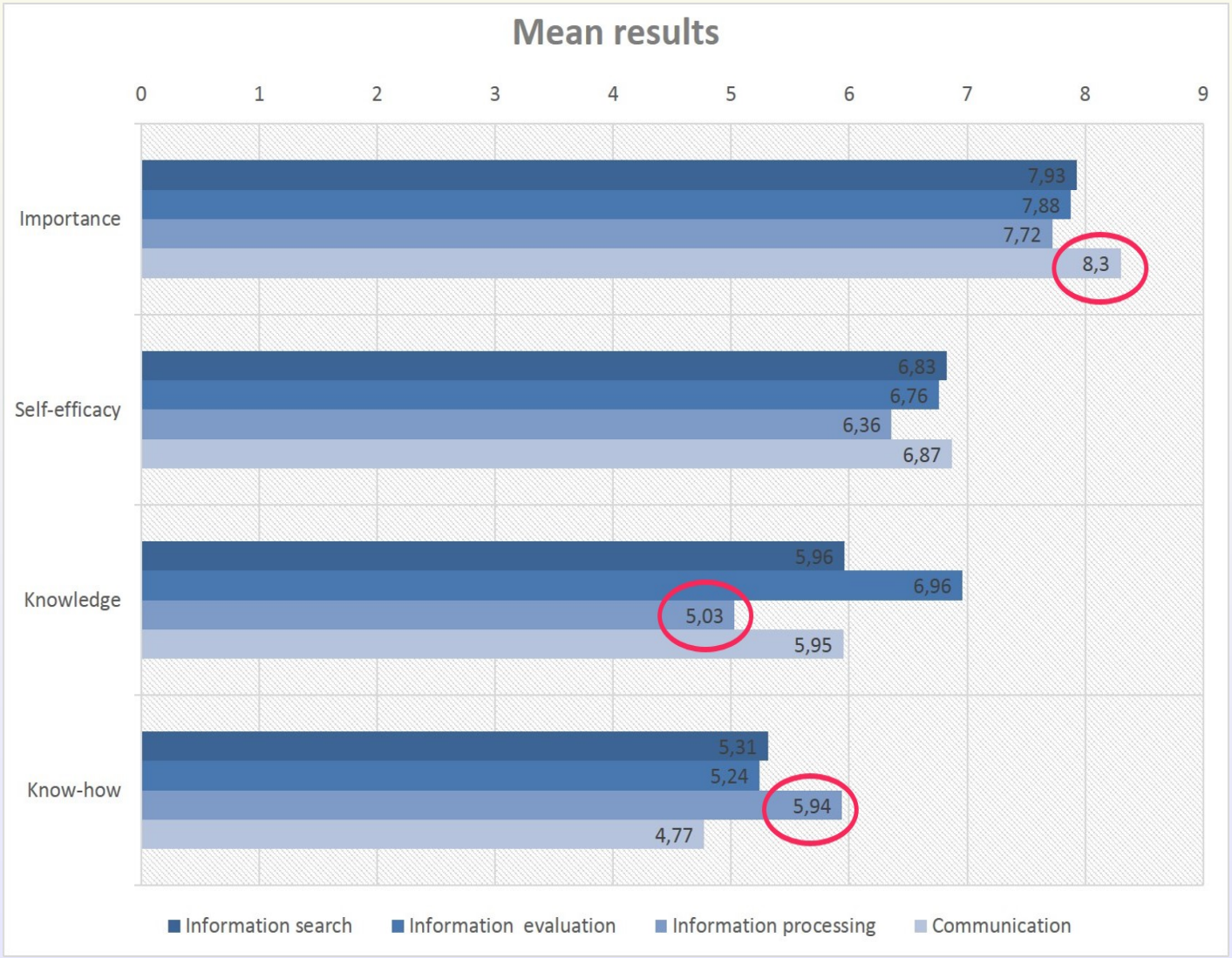

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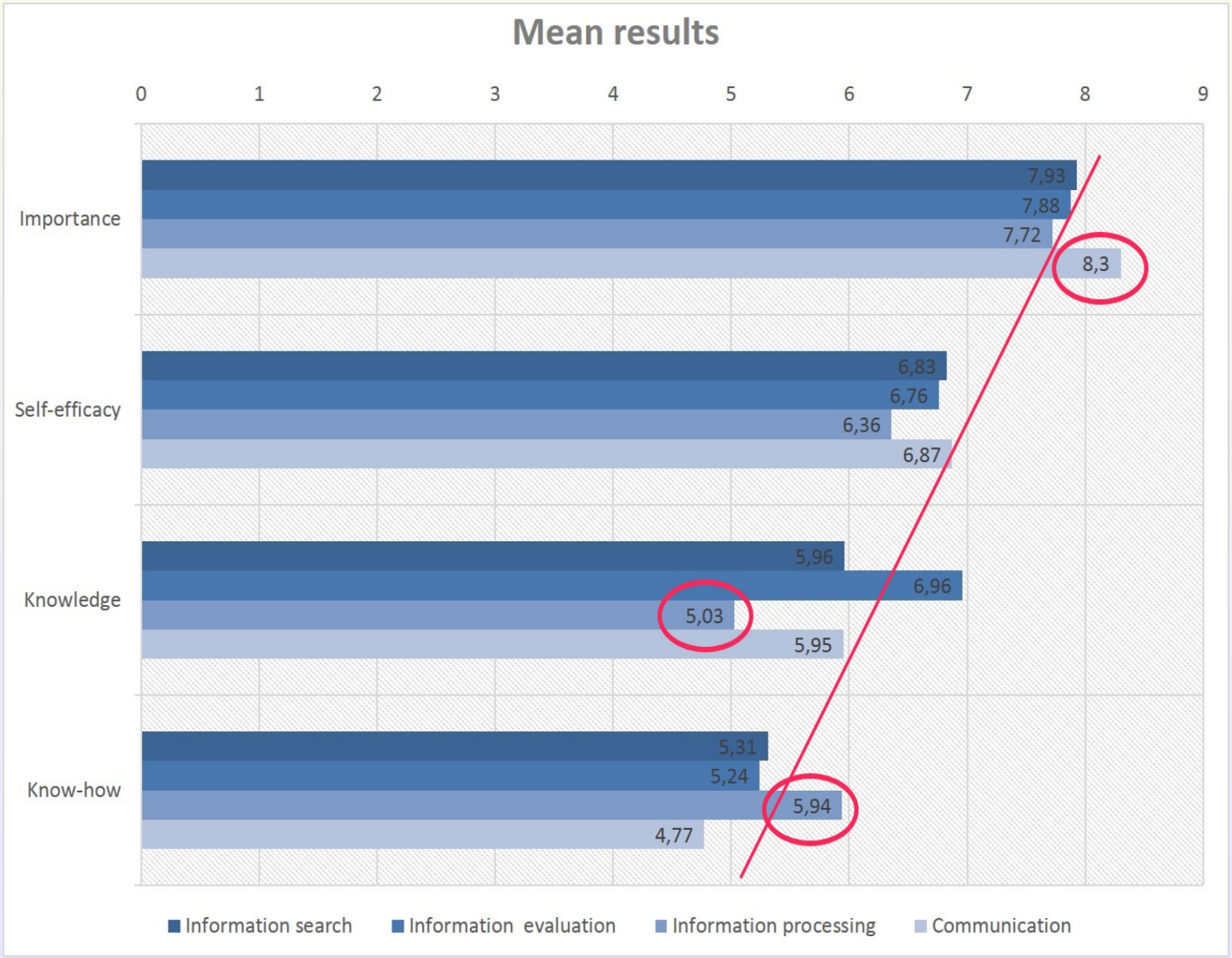
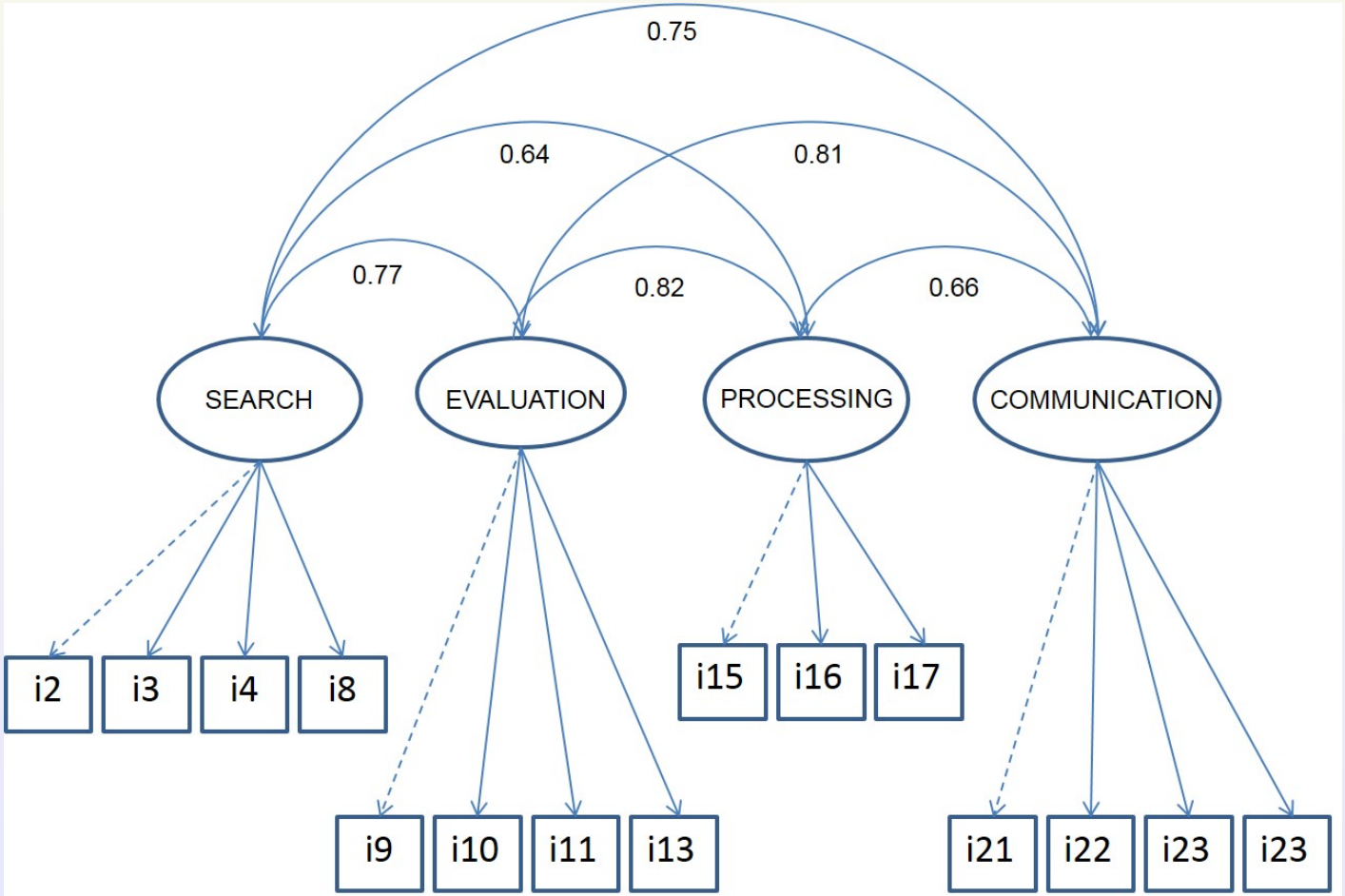


4. Results: SEM models

SEM model for Importance dimension



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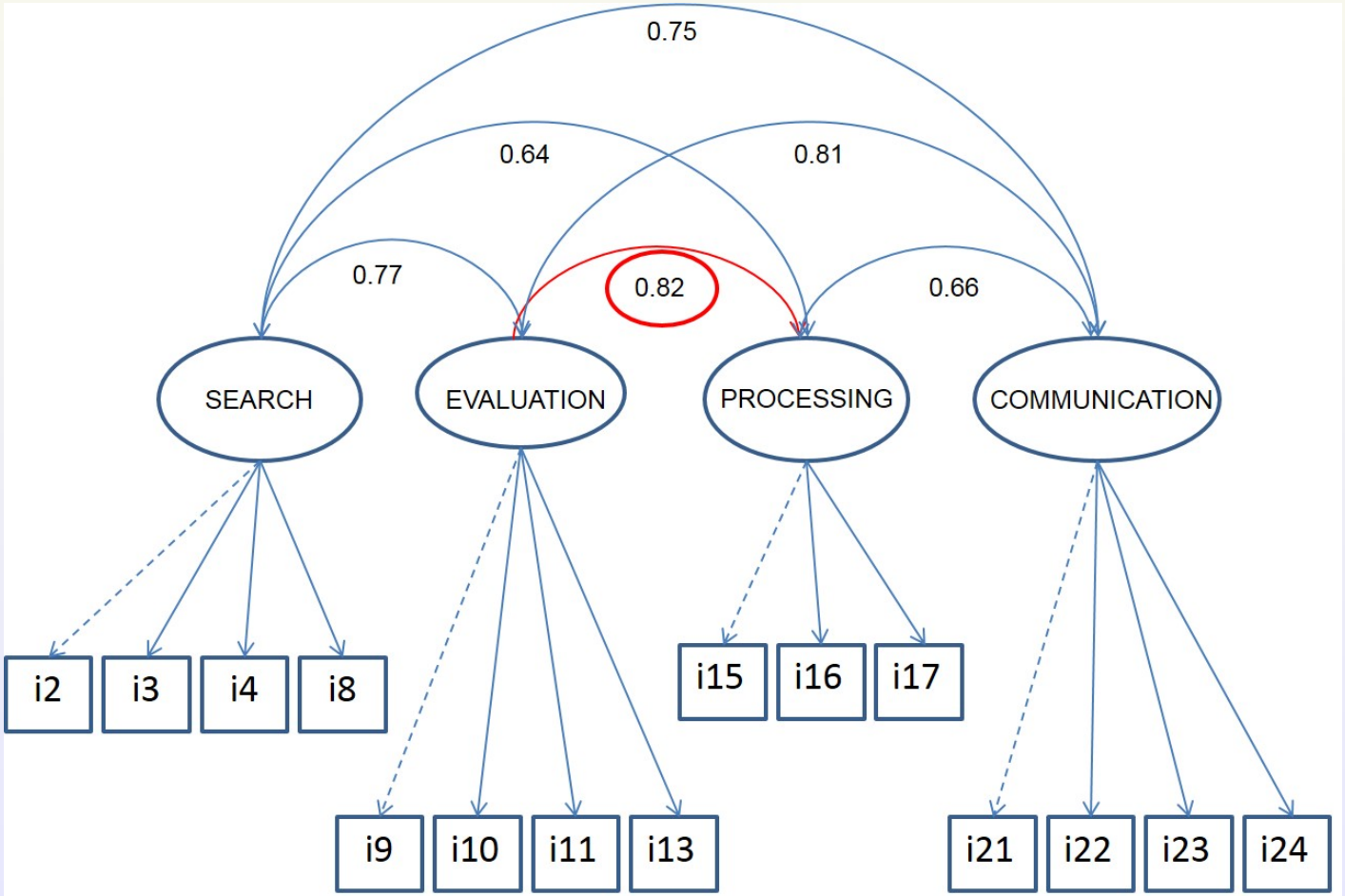

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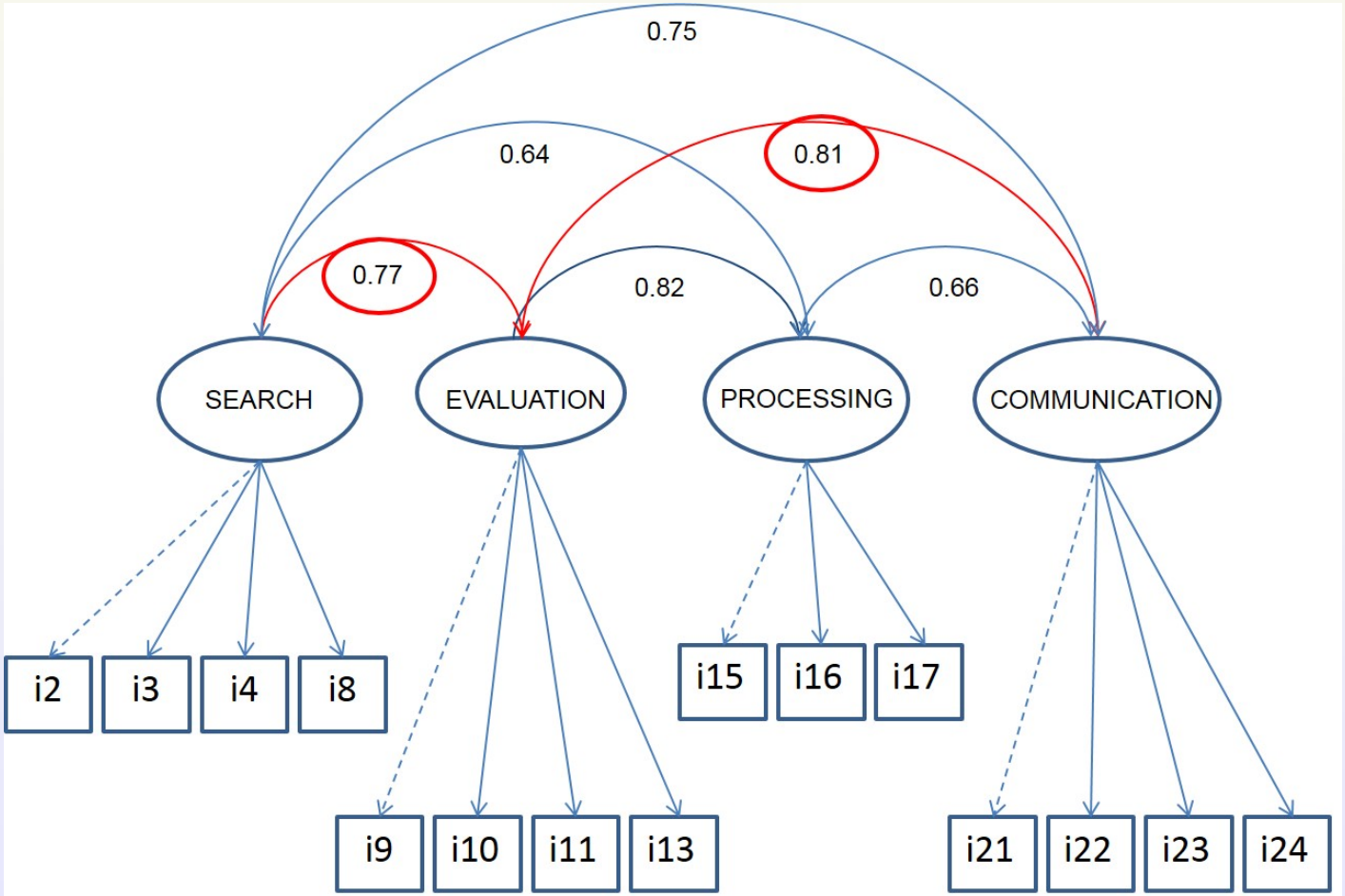
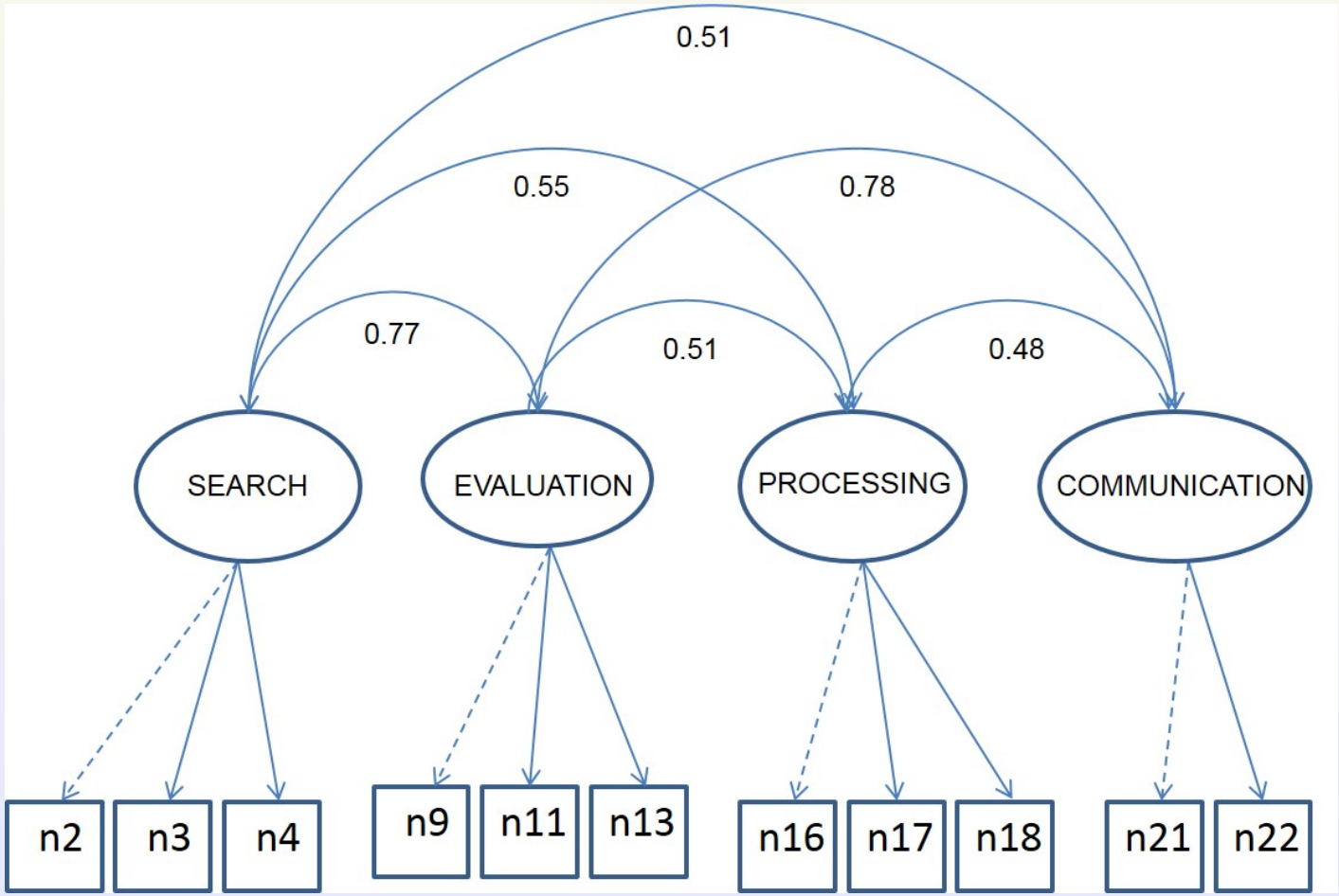


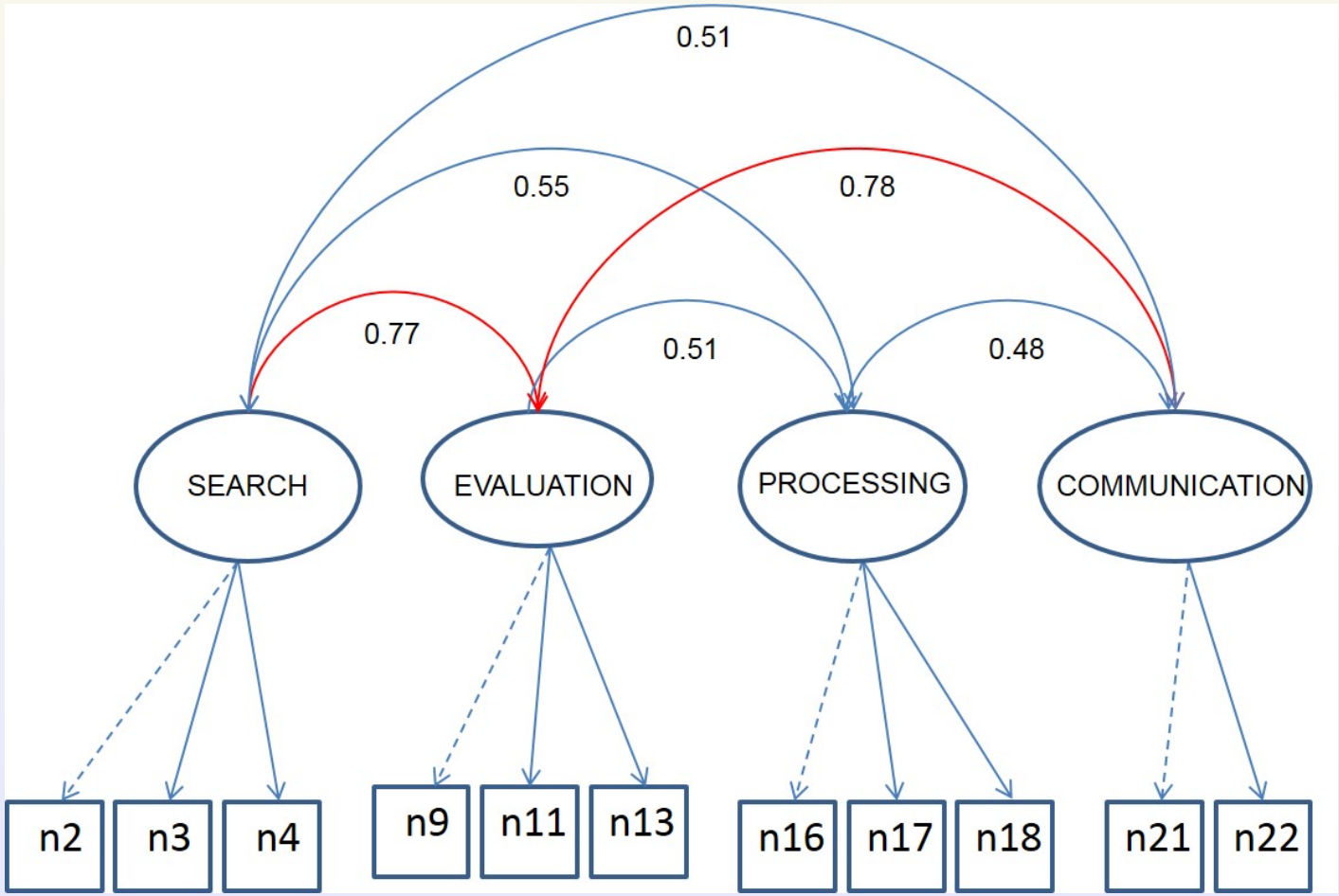
4. Results: SEM models

SEM model for Self-efficacy dimension



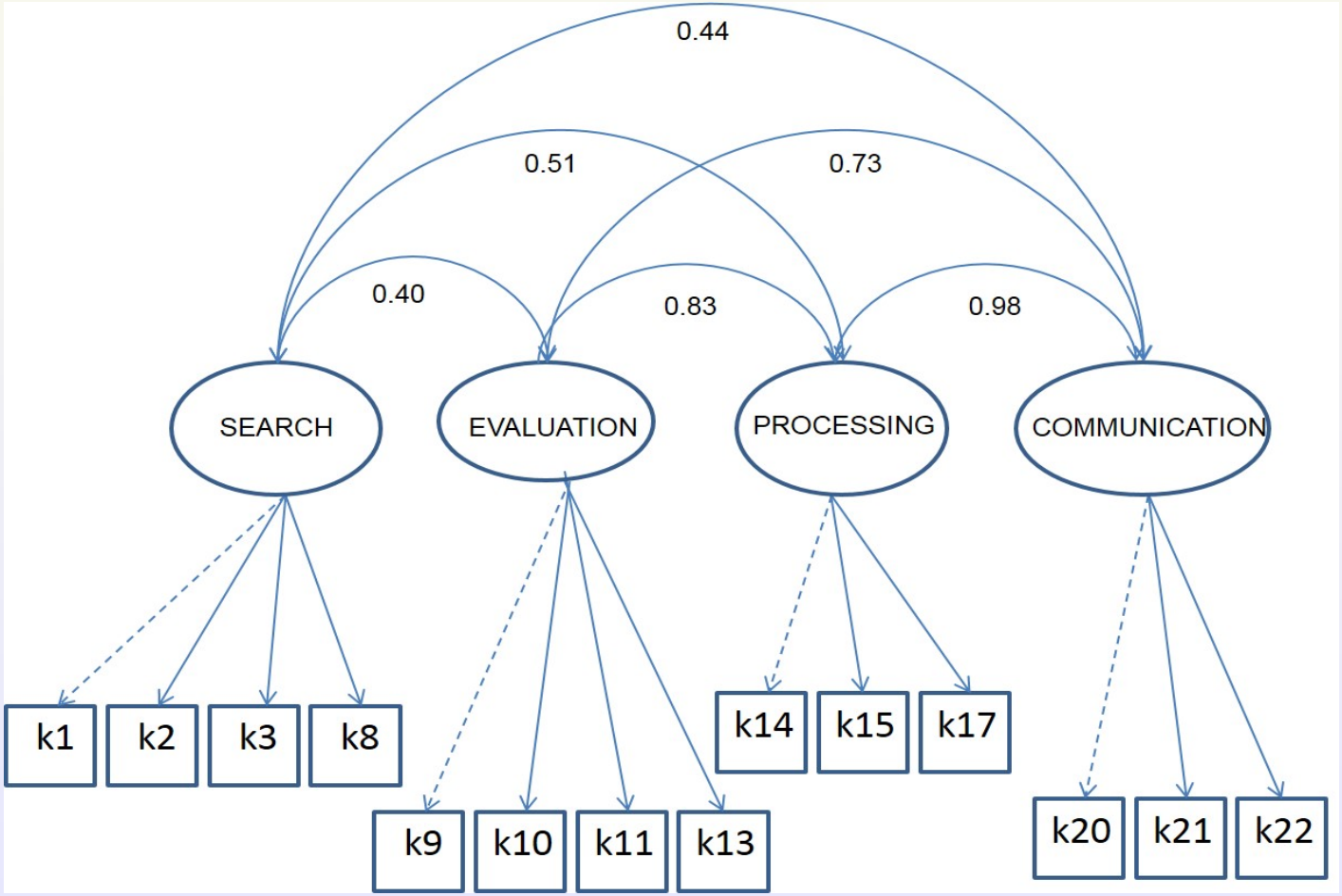
4. Results: SEM models

SEM model for Self-efficacy dimension



4. Results: SEM models

SEM model for Knowledge dimension



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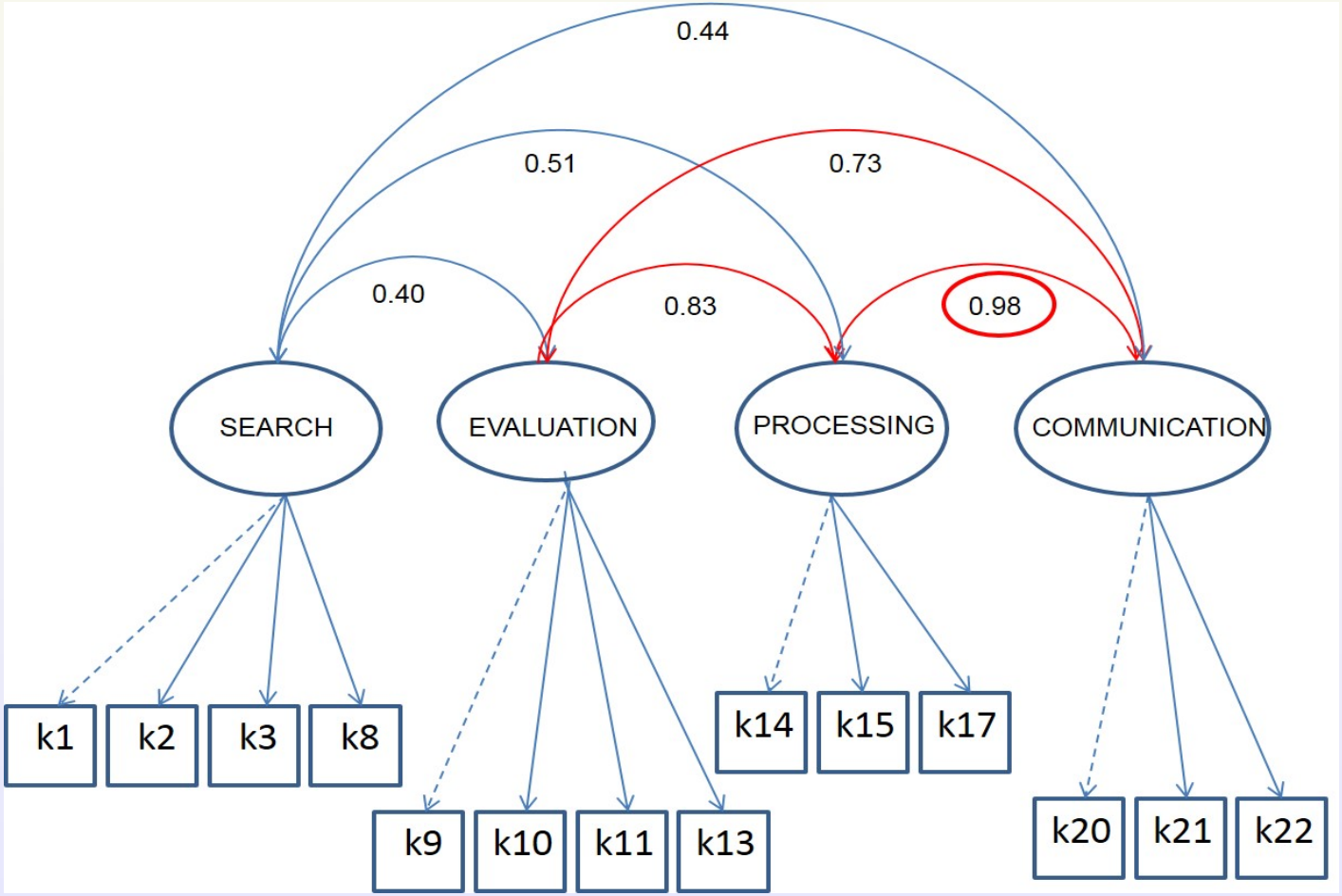
SEM model for Knowledge dimension



5. Conclusions

- The categories of Information Search and Information Evaluation show a similar global mean behavior.
- Regarding the results of the knowledge test, there is a higher variation in the mean results.
- In general terms, the greater the motivation an individual gives to a given variable, the higher the level of self-efficacy is declared.
- Global average results indicate high levels of motivation for most variables, but their levels of knowledge and skills are significantly lower.

5. Conclusions

SEM models are consolidated as a useful tool for modeling latent variables like the macro-competencies considered.
SEM allows us to estimate the existing correlations between latent competencies.

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- Results obtained reveal a strong correlation between the pairs of categories search-evaluation and evaluation-communication concerning **motivation** and **self-efficacy** scales.
- With regard to the **knowledge** scale, strongest correlations have been found among the categories of evaluation, processing and communication.
- On the contrary, the same comparison of categories regarding the **know-how** scale shows lower results.

5. Conclusions

- The analysis and evaluation of these correlation structures will contribute as a basis for future intervention strategies in Information Literacy teaching-learning in order to offer an effective academic response.
- The patterns of influence among competencies obtained from IL indicators, must be studied in order to prioritize the acquisition of competences for the success of educational programs.

6. Open lines

Five universities are participating in a further research focused on the study of the patterns in acquisiton of Information Literacy competences. 1645 data collected from:

6. Open lines

- IL-HUMASS learning habits. The criteria of inter-judge agreement is used to contextualize the importance of the source of learning.

  The posible influence of the optimal source of learning on the declared self-efficacy and levels of knowledge is under study.

The End

Thank you for your attention