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HIGHER EDUCATION INSTITUTIONS (HEIS) AS LEARNING ORGANIZATIONS: EFFECTS ON INNOVATION STRATEGIES AND INTERNATIONALIZATION

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Abstract

This research aims to study the role of Higher Education Institutions (HEIs) as learning organizations and their effects on innovation and internationalization strategies, with evidence from Portuguese HEIs. Higher Education Institutions are dynamic entities that play a critical role in knowledge creation, dissemination, and societal development. This article explores the concept of HEIs as learning organizations and investigates its impact on innovation strategies and internationalization. A learning organization culture within HEIs encompasses the characteristics of continuous learning, knowledge creation, collaboration, and adaptability. This culture supports the development and implementation of innovative practices and fosters an environment conducive to internationalization efforts. By examining the existing literature, this article elucidates the theoretical foundations and benefits of HEIs as learning organizations. It also explores the linkages between a learning organization culture and the ability of HEIs to effectively innovate and engage in internationalization activities. The insights gained from this article provide valuable guidance to HEI leaders, policymakers, and stakeholders in fostering a learning organization environment that stimulates innovation and supports internationalization in higher education. The survival of HEIs depends on how these institutions accept change, improve their practices and react to competitiveness. Nowadays, the most relevant aspects of education in higher education are translated by learning, dynamic structures, flexibility, quality, and innovation. Consequently, the higher education system will have to adapt to the continuous changes and new requirements, to achieve success and the proposed objectives. Regarding the methodology used, the data were obtained through a survey elaborated by the authors, and a structural equation model (SEM) was used to investigate the possible relationships between the different dimensions incorporated in the model. Concerning the results, this research concludes that HEIs as learning organizations have a positive influence on innovation strategies, namely, products and services innovation, and process innovation, as well as with internationalization strategies. This research is of enormous importance for the study of HEIs, considering their role in the development of any country and its impact on society as creators of knowledge and science.

Keywords: Higher Education Institutions (HEIs), Learning Organizations, Internationalization, Innovation Strategies, Product Innovation, Process Innovation.

1 INTRODUCTION

In today's landscape, Higher Education Institutions (HEIs) encounter escalating challenges brought about by competitive and dynamic markets. Higher education institutions (HEIs) are among the different types of organizations that are responsible for creating a sustainable future, thus, the effectiveness of the managers' performance is crucial [1]. Academic establishments must cultivate their adaptability and address these challenges and requirements akin to corporate entities. Such circumstances precipitate disruptive changes, compelling organizations to recalibrate their strategies for survival. Factors including the globalization of the economy, intensified global competition, ongoing advancements and innovations, swift technological progress, evolving customer expectations, rigorous quality management, demographic shifts, and a surging demand for specialized skills collectively pose formidable tests to an organization's agility within this milieu. In order to not only endure but thrive in this fiercely competitive and rapidly evolving environment, a commitment to perpetual learning becomes imperative [2-3].

Several Higher Education Institutions (HEIs) have adopted strategies and tools geared toward enhancing the competence of both their students and faculty. This strategic move is driven by the imperative to offer diverse community services and bolster their competitiveness. The intensifying competition among HEIs within the same sector has accentuated the need for such measures [2-3].

In this context, Kalsom and Ching [4] assert that the pursuit of academic excellence by HEIs necessitates their transformation into learning organizations. Given that one of the principal objectives of HEIs revolves around attaining academic excellence across their student body, faculty, and staff, it becomes imperative for these institutions to evolve into learning organizations. Such a transformation is poised to engender an overall improvement in organizational performance and the capacity for innovation. Consequently, HEIs are compelled to embrace the ethos of learning organizations, given that continual learning affords educators access to foundational knowledge, thereby preserving their competitiveness [3-4].

2 THEORETICAL FRAMEWORK

Learning organizations can be defined as organizations that facilitate the learning of all their elements, assuming themselves as learning entities that have certain characteristics to meet the changing needs of the environment. Currently, HEIs suffer great pressure to create significant learning environments, this is, learning spaces that can fully train their students, based on educational projects that take on and respond to the growing cultural, linguistic, ethnic, and socioeconomic diversity of students, their families, and their teachers. An educational organization that intends to establish itself as a learning organization will have to consider multiple dimensions, such as the individual behaviour of different educational agents, teamwork, and organizational culture, structured and fostered by factors such as trust, time, technology, and joint reflection. Learning organizations will be able to follow developments and improvements in the business environment to perform their actions successfully [2].

In the literature, we can find some associations of the concept of learning organizations with innovation [5]. The capacity for change and continuous improvement to face the challenges of the environment in which organizations are inserted has been associated with the learning capacity of these organizations [6-7]. Thus, learning organizations will be able to be in agreement with the developments and improvements in the business environment to perform their activity successfully. Innovation is closely related to organizational learning since organizational learning is associated with the development of new knowledge, which is crucial to the institution's capacity for innovation and its performance. Moreover, innovation emerges as a prerequisite for the creation of knowledge and is assumed as the essential key to knowledge management, because organizations learn mainly from innovations made or adopted. Most of the studies developed on this relation consider that the learning injects new ideas and strengthens the creativity and the capacity to discover new opportunities, which, consequently, leads to the definition of innovation strategies. Organizational learning helps the organization to acquire new knowledge, which leads to innovation, and helps organizations to introduce new products and services through innovations so that they can survive in a highly competitive environment [8].

Successful innovations are the result of gradual changes in concepts and methodologies continuously implemented over time [9]. This gradual process depends on the creation, search, acquisition, and sharing of knowledge, which in turn will lead to organizational learning, thus forming the basis for successful innovation. Product innovation is associated with the success of organizations and allows them to establish a dominant position in the competitive market [2; 9] Product innovation at HEIs is defined as the acceptance, development, and implementation of new products, such as research projects, courses, new resources and teaching materials, and curriculum development. On the other hand, process innovation covers aspects such as new methods of services and their provision, and the introduction of new equipment and information [9].

In this way, it is relevant to approach this relation to the HEIs context, which presupposes the definition of the following research hypothesis:

H1: *HEIs as learning organizations have a positive influence on products/services innovation.*

H2: *HEIs as learning organizations have a positive influence on processes innovation.*

The relationship between HEIs and internationalization strategies has been widely studied [10-12]. Many researchers point out that internationalization provides different experiences to organizations, and internationalization strategies allow them to learn or to develop new knowledge. In fact, some of these studies also considered that internationalization creates new knowledge, which encourages them to adopt new ideas and procedures. Organizations in international markets generate more knowledge than their competitors who do not adopt any internationalization strategy because organizations that adopt internationalization strategies learn more from the experiences gained across borders [10-13]. In this way, we consider the following research hypothesis:

H3: *HEIs as learning organizations have a positive influence on internationalization strategies.*

Completed the description of the fundamentals that led to the construction of the initial issues based on literature review, it is now presented the proposed research model as illustrated in Figure 1:

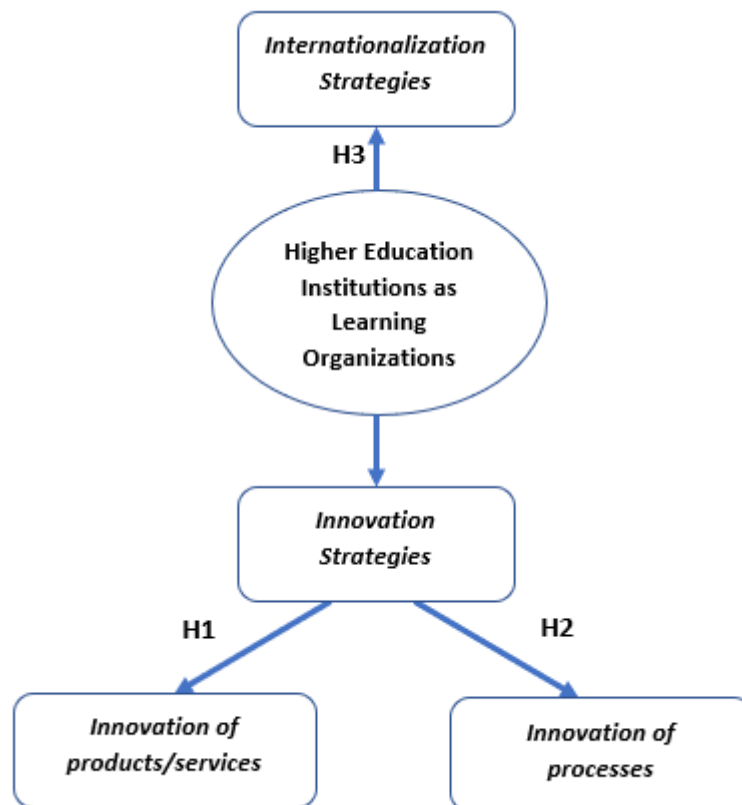


Figure 1. Conceptual Model and Research Hypotheses

3 METHODOLOGY

Regarding to methodology, this research is of a quantitative nature and the data were obtained through the application of a survey elaborated by the authors to evaluate the different dimensions of the proposed conceptual model, using a five-point Likert scale to evaluate the respondents' conceptions about the dimensions considered, where 1 represents "strongly disagree" and 5 represents "strongly agree". For the characterization of respondents and institutions, nominal and ordinal scales were used [2].

The survey was sent via email, which contained a brief explanation of the investigation and an access link to it. The survey was addressed to higher education teachers, namely from public and private universities and polytechnic institutes who, in addition to their teaching activity, simultaneously perform other institutional functions, such as belonging to the presidency or rector, being members of the scientific council, members of the pedagogical council, directors of undergraduate or master's degrees, etc.

In this study, the independent variable is the concept of learning organizations while the dependent variable is innovation strategies (products/services innovation and processes innovation), and internationalization strategies. In the treatment of quantitative data, a model of structural equations (SEM) was used, to investigate the possible relations between the different dimensions incorporated in the model.

4 RESULTS

According to the methodological framework, the results of the investigation are presented, resulting from a descriptive analysis of the data obtained with the application of the survey. The following Table 1 presents the socio-biographical characterization of the respondents.

Table 1. Socio-biographical characterization of respondents

GENDER	Fr.	%
<i>Female</i>	170	53,8
<i>Male</i>	146	46,2
AGE	Fr.	%
<i>Until 30 years old</i>	1	0,3
<i>Between 31 - 40 years old</i>	32	10,1
<i>Between 41 - 50 years old</i>	122	38,6
<i>Between 51 - 60 years old</i>	113	35,8
<i>More than 61 years old</i>	48	15,2
TEACHING EXPERIENCE - HEIS	Fr.	%
<i>Less than 5 years</i>	6	1,9
<i>5 - 10 years</i>	32	10,1
<i>11 - 20 years</i>	89	28,2
<i>More than 20 years</i>	189	59,8

n= 316

For the statistical treatment of the data, a structural equation model (SEM) was used to investigate the possible relationships between the different dimensions incorporated in the model. SEM is a multivariate statistical method that involves estimating parameters for a system of simultaneous equations. SEM is used to estimate a system of linear equations to test the fit of a hypothetical “causal” model [14].

In this way, the first step involves visualizing the hypothetical model or creating a “path diagram” based on previous knowledge or theories. In path diagrams, rectangles represent directly observed or measured variables, and circles or ovals usually represent latent or unobserved constructions that are defined by measured variables. Unidirectional arrows represent causal paths, where one variable directly influences another, and double arrows represent correlations between variables.

We opted for this methodology in the treatment of data from our research since SEM allows researchers to answer a series of interrelated questions in a simple, systematic, and comprehensive way. It achieves this goal by simultaneously modeling the relationships between multiple dependent and independent constructs [14].

Therefore, the independent or exogenous variable is one that acts only as a predictor or cause of an effect on another variable/construct in the theoretical model. It is determined outside the model and its causes are not specified in it. On the other hand, the dependent or endogenous variable is one that results from at least one causal relationship [14].

In this way, statistical treatment was started, analyzing the first two research hypotheses, namely, H1: HEIs as learning organizations have a positive influence on products/services innovation, and H2: HEIs as learning organizations have a positive influence on processes innovation.

Table 2 contains the variables studied for the first model, namely, the relationship between the independent variable, “Learning Organizations”, and the dependent variables represented by the innovation strategies, namely “Products/Services Innovation” and “Processes Innovation”.

Table 2. Variables (Dimensions) and questions for H1 and H2

Variables (Dimensions)	Question Number
<i>HEIs as Learning Organizations</i>	Q14, Q15, Q16, Q17, Q18
<i>Innovation Strategies</i>	
<i>* Products & Services - Courses and training offers</i>	Q75, Q76, Q77, Q78, Q79
<i>* Processes</i>	Q80, Q81, Q82, Q83, Q84

Figure 2 represents the final structural equation model obtained. Initially, a first model was calculated, whose adjustment values were not satisfactory. With the inclusion of covariance, the regression estimates presented in Table 3 and adjustment values within the values considered adequate were obtained (Table 4).

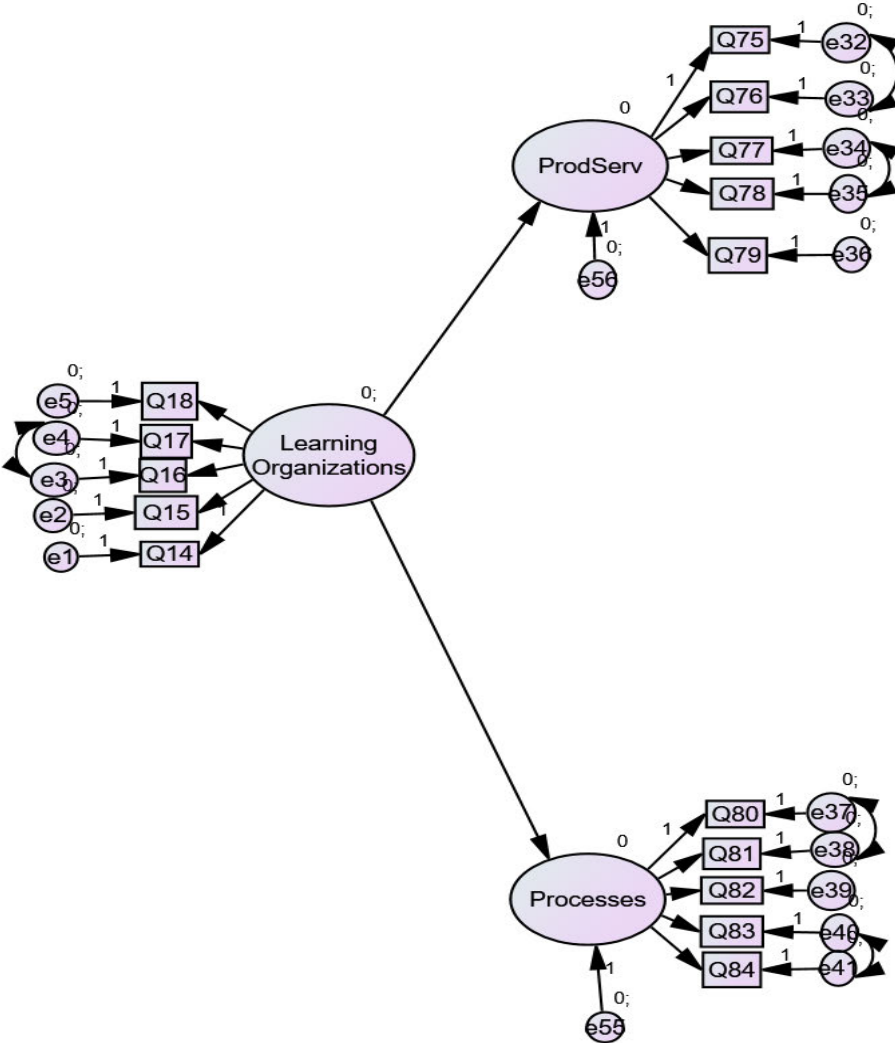


Figure 2. SEM final model (H1, H2)

Table 3 shows the values of the regression estimates, concluding that the variable “Learning Organizations” has a positive and significant influence on the variable “Products/Services Innovation” (B = 0.606, p <0.001), and “Processes Innovation” (B = 0.647, p <0.001).

Table 3. Regression Weights: Standardized estimates and unstandardized estimates Hypotheses 1 and 2

		Estimate	S.E.	C.R.	P
Processes	← Learning_Organizations	,647	,056	11,509	***
ProdServ	← Learning_Organizations	,606	,057	10,699	***

Notes: SE ___ Standardized estimates; Estimate ___ Unstandardized estimates; *** is significantly different from zero at the 0.001 level (two-tailed).

Finally, the adjustment values were analyzed, CFI = 0.956 (> 0.95), TLI = 0.944 (> 0.90), RMSEA = 0.079 (<0.08), and given that all are within the reference values, it means that the model is well adjusted to the data (Table 4).

Table 4. Adjustment Measures of the SEM final model

Model 1	CMIN/DF	TLI rho2	CFI	RMSEA
Default model	2,989	,944	,956	,079

Then, the third research hypothesis was analyzed, H3: HEIs as learning organizations have a positive influence on internationalization strategies.

In that sense, Table 5 shows the variables studied for the model, namely, the relationship between the independent variable “Learning Organizations” and the dependent variable represented by the “Internationalization Strategies”.

Table 5. Variables (Dimensions) and questions for H3

Variables (Dimensions)	Question Number
Internationalization strategies of HEIs	Q9, Q10, Q11, Q12, Q13
HEIs as Learning Organizations	Q14, Q15, Q16, Q17, Q18

Figure 3 represents the final SEM obtained. A first model was calculated whose CFI (<0.95) and RMSEA (> 0.008) adjustment values were not satisfactory (Table 6).

Table 6. Adjustment Measures of the first SEM Model

Model 1	CMIN/DF	TLI rho2	CFI	RMSEA
Default model	4,667	,898	,923	,108

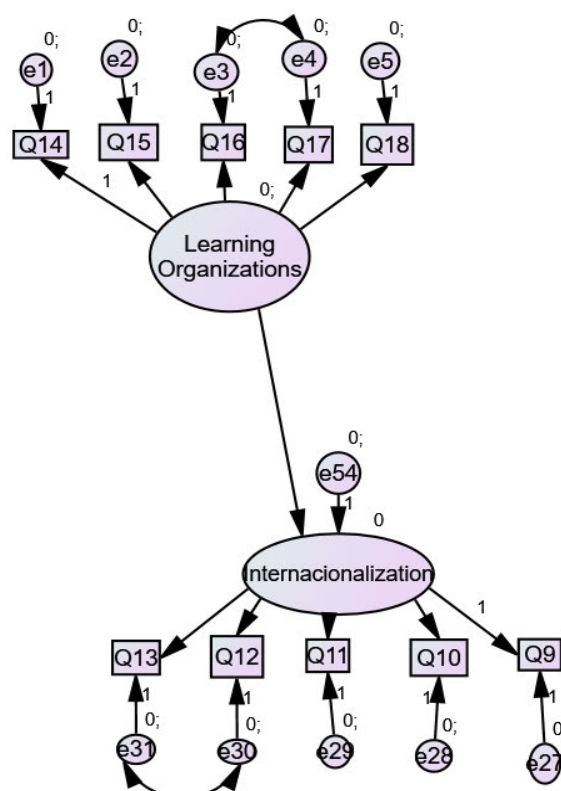


Figure 3. SEM final model (H3)

In an attempt to improve the adjustment values, the values of the Modification Indices (MI) were analyzed (Table 7). With the help of these indices, changes in the model can be detected in order to improve it. By including the covariance between e3 and e4 and e30 and e31, corresponding to the questions Q16 and Q17 and the questions Q12 and Q13, regression estimates for the model were obtained (Table 8) and the adjustment values obtained improved, CFI = 0.951 (> 0.95), and CMIN / DF <5 (Table 9).

Table 7. Modification Indices

Covariance			MI
e3	↔	e4	30,366
e30	↔	e31	14,110

Table 8. Regression Weights: Model H3

	Estimate	S.E.	C.R.	P
Internacionalization ← Learning_Organizations	,416	,050	8,325	<0,001

Thus, by observing Table 8, it is concluded that the variable “Learning Organizations” has a positive and significant influence on “Internationalization Strategies” (B = 0.416, p <0.001).

Table 9. Adjustment Measures of the Final SEM Model

Model 1	CMIN/DF	TLI rho2	CFI	RMSEA
Default model	3,466	,931	,951	,088

5 CONCLUSIONS

Nowadays, organizational learning, innovation, and internationalization have become increasingly important for organizations. Organizations are forced to eliminate their mental and physical barriers to learn to innovate and to become competitive in highly competitive markets. Continuous learning, new mental models, new products, new processes, new markets, and the question of globalization are issues that HEIs cannot ignore at all, being part of the dynamics of organizations. As already mentioned by several authors [4-9], innovation emerges as a prerequisite for the creation of knowledge and is assumed as the essential key to knowledge management, because organizations learn mainly from innovations made or adopted. Most of the studies developed on this relation consider that the learning injects new ideas and strengthens the creativity and the capacity to discover new opportunities, which, consequently, leads to the definition of innovation strategies [8].

The results of this research allow to confirm what is mentioned in the literature since it is verified the innovation strategies (both the innovation of products/services, as well as the innovation of processes). On the other hand, also regarding internationalization strategies, our results are supported in the literature presented. Internationalization strategies create new knowledge, which encourages HEIs to adopt new ideas and procedures [10-12].

We consider this research of enormous importance for the study of HEIs, considering their role in the development of any country and its impact on society as creators of knowledge and science, and also in order to assist the decision-making of these institutions to achieve the strategic objectives. Despite the limitations of the investigation, as it refers only to the reality of Portuguese HEIs since there is a generalized tendency of this type of institutions across Europe (and even all over the world) for the adoption of innovation strategies and internationalization, this investigation represents a great contribution to the enrichment of the theme of HEIs as learning organizations.

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