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Intellectual Capital and Organizational Performance in Higher Education: The Mediating Role of Intrinsic Motivation

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Abstract

This study explores how intellectual capital influences organizational performance in higher education institutions, emphasizing the role of intrinsic motivation as a mediating factor. The research draws on survey data from 815 faculty and administrative managers across public and private universities in Ecuador, collected via a questionnaire adapted from prior studies. Structural equation modeling was employed to examine the direction and strength of the proposed relationships. Results reveal that intellectual capital has a significant positive effect on organizational performance, with intrinsic motivation partially mediating this link. Furthermore, the impact of intellectual capital did not differ significantly between public and private institutions. These findings highlight that managers can enhance organizational outcomes by fostering intrinsic motivation alongside intellectual capital. The study contributes to the literature by positioning intrinsic motivation as a critical mediator and applying Self-Determination Theory to explain the mechanisms underlying the intellectual capital–performance relationship, offering a novel perspective in the higher education context.

Keywords: Higher education institutions, Intellectual capital, Organizational performance, Intrinsic motivation, Self-determination theory

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Introduction

Organizations continually seek to achieve high performance that differentiates them in the market, satisfies stakeholders, and supports long-term growth [1]. Intellectual capital has emerged as a critical driver of organizational performance, providing a competitive advantage through accumulated knowledge, enhanced problem-solving capabilities, and process efficiencies [2]. Its relevance extends to higher education institutions, where scholars have highlighted its importance in improving institutional outcomes [3].

However, accumulating intellectual capital is not straightforward. It requires significant time, effort, and sound decision-making, which can entail measurable costs [4]. Despite these investments, many organizations fail to translate intellectual capital into tangible performance improvements [5-8]. This challenge is particularly pronounced in universities, which rely heavily on knowledge resources to generate value and maintain a sustainable competitive edge [9, 10]. Research suggests that intellectual capital can enhance a university's social reputation [11], improve rankings [12], boost academic outcomes [13, 14], and support institutional goal attainment [15, 16].

While intellectual capital is a vital resource for achieving competitive advantage, its effective acquisition and utilization require adaptive strategies responsive to dynamic environments [17]. Knowledge creation and sharing depend on employees, who not only possess the necessary expertise but also the willingness to apply and disseminate it [18, 19]. Consequently, understanding how to optimize the use of intellectual capital to impact organizational outcomes is crucial, yet literature on

the specific mechanisms for developing and leveraging intellectual capital in higher education remains limited [10, 13, 20, 21].

The knowledge-based view (KBV) posits that knowledge-derived resources are essential for sustaining competitive advantage, enhancing cost efficiency, fostering innovation, improving stakeholder relationships, and ultimately driving better performance [22, 23]. However, KBV often overlooks the human dimension, particularly the role of employee behavior in managing and applying these resources. Here, Self-Determination Theory (SDT) offers valuable insights [24], emphasizing the importance of nurturing intrinsic motivation to promote high-quality engagement and improved organizational outcomes. Employees who feel competent and adequately supported are more likely to perform effectively, with intrinsic motivation reducing negative behaviors and enhancing positive performance outcomes [25, 26].

Another gap in the literature concerns differences in the effectiveness of intellectual capital between public and private higher education institutions. Few studies have addressed this comparison [27, 28], and bibliometric reviews suggest a scarcity of research examining the differential impact of intellectual capital across these organizational types [10].

To address these gaps, the present study proposes a conceptual model in which intrinsic motivation mediates the relationship between intellectual capital—a second-order construct—and organizational performance, while also considering potential differences between public and private universities. This framework contributes to understanding the application and outcomes of intellectual capital in higher education [10, 17] and provides new evidence on the role of intrinsic motivation in enhancing organizational performance [29-32].

A quantitative, cross-sectional survey was employed to collect data from administrative and management staff at public and private universities across multiple Ecuadorian cities. Structural equation modeling was applied to test the proposed relationships. The following sections present a literature review and the theoretical rationale for the hypotheses, followed by a detailed methodology, data analysis, results, discussion, and implications, along with limitations and recommendations for future research.

Literature Review and Hypotheses

This study develops a theoretical framework in which intellectual capital positively influences organizational performance in higher education institutions, with intrinsic motivation acting as a partial mediator **(Figure 1)**. In this section, we examine the key constructs of the study, review relevant empirical and theoretical literature, and explain the hypothesized relationships that underpin the proposed model.

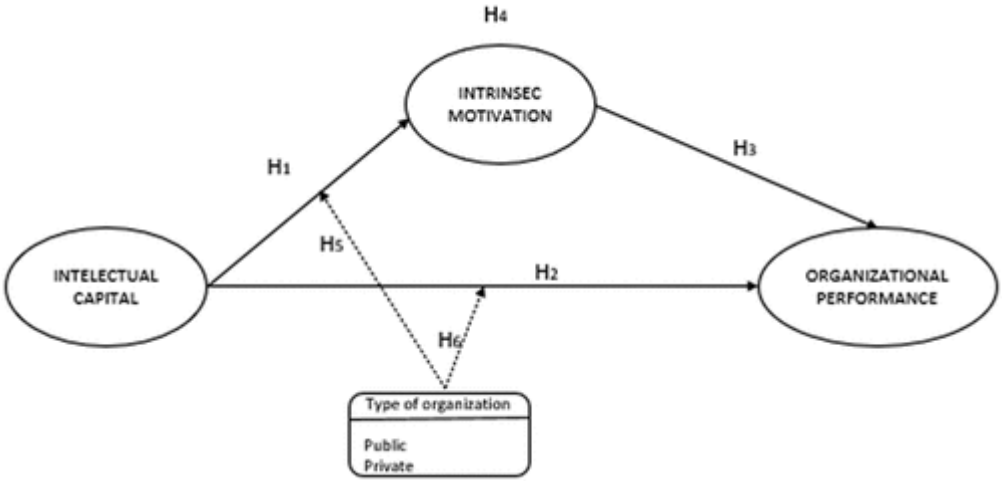

Figure 1. Proposed model of relationships between constructs

Intellectual capital

Intellectual capital refers to the collective knowledge, skills, and experiences of an organization's members, which, when combined with information and other resources, contribute to its growth and competitive advantage [33]. Agostini *et al.* [34] categorize intellectual capital into three core components: human capital, organizational capital, and relational capital. Human capital encompasses employees' problem-solving abilities, creativity, learning capacity, and accumulated experience. Organizational capital includes knowledge embedded in the company itself, such as processes, routines, and systems, independent of individual employees. Relational capital represents the network of relationships with external stakeholders, including suppliers, customers, and partners, along with associated assets like reputation, brand equity, and loyalty, which provide crucial resources and capabilities for the organization.

While intellectual capital can be examined as an aggregated construct, its individual components have also been studied separately to understand their distinct contributions [34]. Research indicates that human capital, in particular, often exerts a

stronger influence on outcomes such as innovation [17] and employee commitment [35], and it is frequently regarded by managers as a key predictor of workforce performance [36]. Human resources, due to their specialized and difficult-to-replicate knowledge, are considered strategic assets capable of providing a sustainable competitive advantage [37].

Intrinsic motivation

Self-Determination Theory (SDT) distinguishes between two primary forms of motivation: intrinsic and extrinsic. However, some scholars have noted challenges in analyzing these types together, recommending a separate focus on intrinsic motivation to better explain workplace outcomes [29, 38]. Intrinsic motivation reflects an individual's internal drive to engage in activities for personal satisfaction rather than for external rewards or pressures [31]. Employees who are intrinsically motivated tend to demonstrate higher-quality performance and enhanced well-being. In contrast, extrinsic rewards do not necessarily enhance intrinsic motivation and may, in some cases, reduce it as extrinsic incentives become more salient [39].

Although intrinsic and extrinsic motivation can coexist, they are distinct dimensions, and one may exert a stronger influence than the other [40]. Scholars have developed separate models to study their characteristics and organizational impacts [41]. Insights from behavioral economics further support the notion that extrinsic incentives do not automatically alter intrinsic motivation, a concept known as the presumption of separability [42].

Organizational performance

Organizational performance reflects the degree to which an organization achieves its objectives and goals [43, 44]. It is typically assessed by comparing actual results with expected outcomes. Performance measures can be financial, including metrics such as revenues, profits, and asset utilization [45], or non-financial, encompassing factors such as innovation, quality, competitive advantage, and continuous improvement [46]. However, establishing a universally applicable set of performance indicators remains challenging.

In higher education institutions, non-financial metrics are often more relevant, as they capture long-term value creation and competitive positioning [47]. While accreditation processes traditionally rely on academic achievements and peer evaluations, these metrics may not fully reflect the organization's performance from the perspective of external stakeholders. Consequently, comprehensive assessment should include multiple dimensions, such as student satisfaction, institutional responsiveness, curriculum development, research productivity, and university rankings [48].

Intellectual capital and intrinsic motivation

Intellectual capital serves as a key resource that can enhance employee motivation, which in turn influences organizational performance [49, 50]. Employees are more motivated when they perceive that they have access to the necessary resources and knowledge to perform their tasks effectively [51]. This awareness fosters a sense of competence and satisfaction, encouraging employees to actively utilize these resources to achieve organizational goals [5]. Based on this rationale, we hypothesize:

H1: Intellectual capital is positively associated with intrinsic motivation.

Intrinsic motivation and organizational performance

Intrinsic motivation not only increases the quantity of work but also enhances its quality [52]. Previous studies have demonstrated direct positive links between intrinsic motivation and employee performance [29], as well as self-efficacy [53]. In educational contexts, intrinsic motivation has been shown to improve academic outcomes and overall institutional performance [54, 55].

Motivated employees are more committed to organizational objectives and culture, possess greater capability to perform tasks, and thrive in environments that support personal development [56, 57]. Intrinsic motivation also enables employees to act creatively, take initiative, and contribute to higher performance through increased commitment and engagement [31, 51, 58, 59]. Consequently, we propose:

H2: Intrinsic motivation is positively related to organizational performance.

Intellectual capital and organizational performance

Research has consistently shown that the human, structural, and relational dimensions of intellectual capital positively influence organizational performance [34]. Beyond financial measures, intellectual capital enhances overall organizational effectiveness by leveraging employee skills and competencies (human capital), organizational knowledge and culture (structural capital), and internal and external relationships (relational capital) [22, 60]. Adequate levels of intellectual capital are expected to translate into improved organizational outcomes and increased competitive advantage [61]. Thus, we hypothesize:

H3: Intellectual capital is positively associated with organizational performance.

The Mediating role of intrinsic motivation

Organizational performance depends heavily on motivated employees, and effective management plays a central role in fostering this motivation [62]. Motivation not only strengthens employees' internal commitment but also allows them to exercise autonomy and fully apply their knowledge, thereby enhancing both individual and organizational performance [63-66]. Intrinsic motivation increases employees' engagement with their knowledge and skills, which is critical for improving collective performance [31, 40, 57]. Unlike extrinsic incentives, which can sometimes hinder proactive behavior if rewards are absent [67, 68], intrinsic motivation is closely linked to goal attainment and sustained performance [38]. Accordingly, we propose:

H4: Intrinsic motivation mediates the positive relationship between intellectual capital and organizational performance.

Public vs. private universities

Intellectual capital is composed of intangible resources that can drive competitive advantage; however, its effectiveness may differ between public and private institutions [10]. While private universities may leverage technology and organizational agility, public institutions often depend on policies and public funding, which can influence the application and impact of intellectual capital [28, 69-71]. Existing research presents mixed evidence on sectoral differences in intellectual capital outcomes [27, 72, 73]. Therefore, we hypothesize:

H5: The effect of intellectual capital on intrinsic motivation differs significantly between public and private universities.

H6: The effect of intellectual capital on organizational performance differs significantly between public and private universities.

Materials and Methods

Sampling and data collection

This study targeted personnel from higher education institutions in Ecuador, focusing specifically on faculty and administrative leaders responsible for planning and management, as these roles require sufficient expertise to provide informed responses. Data collection was carried out through an online questionnaire distributed via email between December 2021 and January 2022. Initially, 879 individuals from 59 officially recognized universities in Ecuador participated. The respondents had a mean age of 46 years (SD = 8) and an average professional experience of 12 years (SD = 8). Additional demographic and occupational information is presented in **Table 1**.

After screening the dataset for incomplete responses, outliers, and response biases, 64 entries were removed, leaving 815 valid cases for analysis. This final sample size surpasses the minimum requirement for conducting structural equation modeling (SEM), ensuring adequate statistical power for the proposed analyses [74, 75].

Table 1. Characteristics of the participants

		Men		Women	
		Frequency	Percentage	Frequency	Percentage
Level of education	Bachelor's degree	10	2.2%	21	5.8%
	Master's degree	314	69.2%	248	68.7%
	PhD	130	28.6%	92	25.5%
	Total	454	100.0 %	361	100.0 %
Type of Institution	Public	367	80.8%	270	74.8%
	Private	87	19.2%	91	25.2%
	Total	454	100.0 %	361	100.0 %

Instruments

The study employed measurement scales adapted from prior research. For intellectual capital and organizational performance, items were adopted from Iqbal *et al.* [48], while intrinsic motivation was measured using the scale developed by Kuvaas *et al.* [29]. Intellectual capital was conceptualized as a second-order construct composed of three first-order reflective dimensions: human capital (5 items), structural capital (7 items), and relational capital (5 items). Intrinsic motivation and organizational performance were treated as first-order constructs, measured with 6 and 5 items, respectively. All scales had been previously validated for reliability, as well as convergent and discriminant validity. Responses were recorded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

To ensure linguistic and conceptual equivalence, the questionnaire was translated into Spanish using a double-translation procedure. Two certified translators conducted the initial translation and a back-translation into English, which was compared with the original version. Subsequently, the Spanish version was reviewed by eight experts—four university faculty and four industry managers—who assessed the clarity, relevance, and content of each item. Minor modifications were made to improve comprehension, while no items were removed. A pilot test was then conducted to verify respondent understanding and assess internal consistency, which achieved Cronbach's Alpha values exceeding 0.70 [76].

To minimize potential common method bias due to self-reported data, procedural remedies recommended by Podsakoff *et al.* [77] were applied, including careful questionnaire design, psychological separation of measures, and appropriate item sequencing.

Method

The study employed structural equation modeling (SEM) with an unweighted least squares (ULS) estimation approach to test the hypothesized relationships. Following the steps outlined by Weston and Gore [78], the analysis began with preliminary data inspection, including measurement model evaluation, before testing the structural model. Confirmatory factor analysis (CFA) was conducted to assess reliability, convergent validity, and discriminant validity of the constructs. The structural model was subsequently evaluated to examine the hypothesized relationships and overall model fit.

Data Analysis and Results

An exploratory factor analysis (EFA) was conducted to assess the psychometric properties of the questionnaire and to evaluate the risk of common method bias. The three dimensions were extracted as expected, and no single factor accounted for more than 50% of the variance, suggesting that common method bias was not a major concern. Multivariate normality was tested using Mardia's coefficient, which yielded a value of 115, well above the threshold of 5 suggested by Bentler [79], indicating that the data did not follow a multivariate normal distribution.

Initial CFA results showed satisfactory composite reliability (CR) and average variance extracted (AVE), although discriminant validity was not fully met for the intellectual capital and organizational performance constructs. Goodness-of-fit indices were also suboptimal. Using modification indices, items with high cross-loadings were identified and removed: HC4, SC1, SC4, SC5, RC1, OP3, and OP5.

Table 2 presents Cronbach's Alpha and composite reliability values, all exceeding 0.7, indicating good internal consistency [76, 80]. AVE values were all above 0.50, confirming convergent validity [81]. Factor loadings were all significant and above 0.70, except for HC1 and RC4, which were close to the threshold. Item IM6 had a factor loading of 0.457; however, it was retained because the overall construct met the required reliability and validity criteria.

Table 2. Validity and reliability results

Constructs	Sub-constructs	Item	Factor Loadings	CR	AVE	α
INTELLECTUAL CAPITAL	Human capital	HC1	0.657	0.819	0.531	0.811
		HC2	0.744			
		HC3	0.738			
		HC5	0.740			
	Structural Capital	SC2	0.789	0.820	0.533	0.818
		SC3	0.744			
		SC6	0.669			
		SC7	0.725			
	Relational Capital	RC2	0.823	0.875	0.640	0.868
		RC3	0.831			
		RC4	0.694			
		RC5	0.819			
INTRINSIC MOTIVATION		IM1	0.837	0.881	0.561	0.862
		IM2.	0.770			
		IM3	0.700			
		IM4	0.809			
		IM5	0.830			
		IM6	0.457			
ORGANIZATIONAL PERFORMANCE		OP1	0.834	0.809	0.585	0.809
		OP2	0.744			
		OP4	0.722			

For assessing discriminant validity, the study applied the heterotrait-monotrait (HTMT) ratio approach [82], which evaluates the correlations among indicators within the same construct relative to correlations between indicators of different constructs. This method is considered more robust and reliable than traditional approaches [82, 83]. According to commonly accepted thresholds, HTMT values below 0.85 indicate strict discriminant validity, while values below 0.90 are acceptable for a more lenient criterion. As shown in **Table 3**, all HTMT values were below 0.85, confirming that the primary constructs in the study demonstrate adequate discriminant validity.

Table 3. Discriminant Validity using Heterotrait-Monotrait Ratio (HTMT)

	IC	IM	OP
IC			
IM	0.755 [0.706, 0.797]	-	
OP	0.841 [0.811, 0.866]	0.637 [0.578, 0.688]	-

Note: IC =Intellectual Capital, IM =Intrinsic Motivation, OP =Organizational Performance. Values in brackets are 95% confidence interval.

The final assessment of the measurement model indicated strong overall fit according to widely accepted criteria [84]: the Standardized Root Mean Square Residual (SRMR) was 0.036, Adjusted Goodness of Fit Index (AGFI) was 0.993, Relative Fit Index (RFI) was 0.992, Normed Fit Index (NFI) was 0.993, and Parsimony Normed Fit Index (PNFI) was 0.866. These indices confirm that the measurement model adequately represented the data, allowing us to proceed with the structural analysis.

For testing the hypothesized relationships, structural equation modeling was conducted using AMOS 26 with an unweighted least squares (ULS) estimator. This estimation method is appropriate for Likert-type responses and does not assume multivariate normality, as it relies on a polychoric correlation matrix [85, 86]. The structural model met all recommended thresholds for fit indices [74, 84], validating its use for examining the relationships among the study constructs. The model explained a substantial portion of the variance in organizational performance, with an R^2 value of 0.734, indicating that nearly 73.4% of the variability in performance could be attributed to intellectual capital and intrinsic motivation. **Table 4** presents the detailed results alongside the accepted cut-off values.

Table 4. Results of measure index in structural model using ULS

Goodness of Fit Measure	Acceptable Level	Obtained
CMIN/*df*: Relative chi square	<3	0.891
AGFI: Adjusted Goodness of Fit Index	>0.95	0.993
RFI: Relative Fit Index	>0.95	0.992
NFI: Normed Fit Index	>0.95	0.993
SRMR: Standardized Root Mean Square Residual	<0.05	0.036
PGFI: Parsimony Goodness of Fit Index	>0.5	0.866

The analysis revealed a significant, positive direct relationship between intellectual capital and intrinsic motivation (standardized β = 0.751, p = 0.003), supporting H1. Likewise, intrinsic motivation was found to positively and significantly influence organizational performance (standardized β = 0.657, p = 0.002), confirming H2. Additionally, intellectual capital demonstrated a strong, positive, and significant direct effect on organizational performance (standardized β = 0.830, p = 0.002), as presented in **Figure 2** and **Table 5**.

To examine the mediating role of intrinsic motivation, a bootstrapping procedure was conducted. The results indicated that both direct and indirect effects were significant, confirming that intrinsic motivation partially mediates the relationship between intellectual capital and organizational performance. Consequently, H4 was supported.

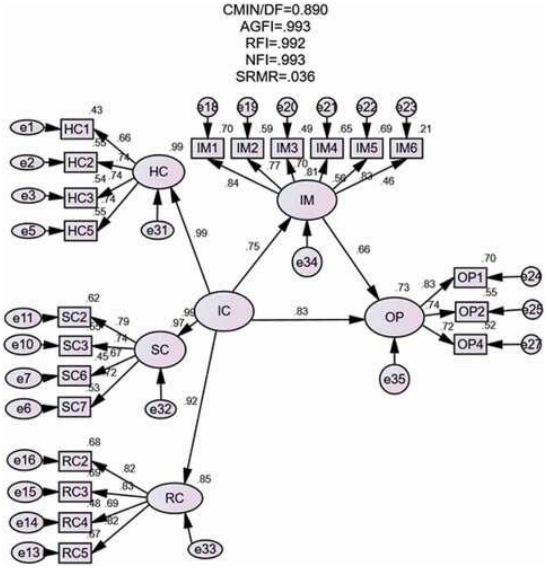

Figure 2. Final re-specified Structural Equation Model with ULS

Table 5. Test for direct effects between constructs with 95% confidence interval

Relationship	Direct effect	95 % CI	p	Conclusion

		Low	High		
IC– > IM	.751	.701	.789	.003	Positive relationship
IC– > OP	.830	.751	.914	.002	Positive relationship
IM– > OP	.657	.598	.703	.002	Positive relationship

Note: IC = Intellectual Capital, IM = Intrinsic Motivation, OP = Organizational Performance. Standardized coefficients reported. Bootstrap sample = 2,000 with replacement.

Table 6. Test for mediation using a bootstrap analysis with 95% confidence interval

Relationships	Direct effect	Indirect Effect	95 % CI		p	Conclusion
			Low	High		
IC– > IM– > OP	.988	.869	.862	1	.002	Partial mediation

Note: IC = Intellectual Capital, IM = Intrinsic Motivation, OP = Organizational Performance.
Unstandardized coefficients reported. Bootstrap sample = 2,000 with replacement.

To examine whether the influence of intellectual capital on intrinsic motivation and organizational performance differs between public and private universities, a multigroup analysis was conducted. This procedure allowed us to determine whether the factor structure of the model varied significantly across the two groups [87]. Prior to the multigroup comparison, we tested for both configural and metric invariance.

Configural invariance was assessed by applying the measurement model separately to the public and private university data sets and recalculating the goodness-of-fit indices. The results indicated satisfactory fit for both groups (AGFI = 0.974, NFI = 0.971, RFI = 0.970, SRMR = 0.039), confirming that the basic factor structure was equivalent across public and private institutions.

For metric invariance, following the approach suggested by Cheung and Rensvold [88], we compared the Relative Fit Index (RFI) and Normed Fit Index (NFI) between an unrestricted model and a restricted model with equal factor loadings across the two groups. Differences below 0.01 were considered evidence of invariance. As shown in **Table 7**, the differences were below this threshold, confirming metric invariance and indicating that the measurement items functioned equivalently for respondents from both public and private universities.

Table 7. Comparison of metric invariance indicators

Index	Unconstrained Model	Constrained Model	Difference
NFI	0.992	0.990	0.002
RFI	0.990	0.989	0.001

Note: NFI =Normal Fit Index, RFI =Relative Fit Index.

To explore whether the hypothesized relationships differed between public and private universities, we conducted a multigroup analysis comparing the path coefficients across the two groups. The analysis involved testing both the magnitude and significance of the paths. A chi-square comparison of the restricted and unrestricted models produced a value of 11.007 ($p = 0.088$), indicating minor differences between the models, primarily within the second-order construct of intellectual capital. Detailed results for each path are presented in **Table 8**.

The analysis revealed that the effect of intellectual capital on intrinsic motivation was consistent across both types of universities, meaning H5 was not supported. Likewise, the impact of intellectual capital on organizational performance did not significantly differ between public and private institutions, leading to the rejection of H6.

However, when examining the first-order dimensions of intellectual capital, notable variations were observed. The connections between intellectual capital and both human capital and structural capital were stronger in public universities, whereas relational capital showed a more robust relationship with intellectual capital in private universities. These findings highlight sector-specific nuances in how the different components of intellectual capital contribute to overall performance. **Table 9** summarizes the evaluation of all tested hypotheses.

Table 8. Differences in factor loadings according to type of institution

Path Name	Beta for Public	Beta for Private	Difference in Betas	P-Value for Difference	Interpretation
IC → IM.	0.743***	0.761***	−0.018	0.188	There is no difference.
IC → HC.	0.986***	0.887***	0.100	0.004	The positive relationship between HC and IC is strong for Public universities.
IC → RC.	0.900***	0.944***	−0.044	0.062	The positive relationship between RC and IC is strong for Private universities.

IC → SC.	0.988***	0.978***	0.010	0.017	The positive relationship between HC and IC is strong for Public universities.
IC → OP.	0.846***	0.898***	−0.052	0.364	There is no difference.

IC = Intellectual Capital, IM = Intrinsic Motivation, OP = Organizational Performance, HC = Human Capital, RC = Relational Capital, SC = Structural Capital, ***p <.0.01

Table 9. Summary of results of hypothesis tests based on the Structural Equation Model

Hypothesis	Relationship	Decision
H_1	IC has a positive relationship on IM	Supported
H_2	IM has a positive relationship on OP	Supported
H_3	IC has a positive relationship on OP	Supported
H_4	IM mediates the positive relationship between IC and OP	Supported
H_5	The positive relationship between IC and IM is different for public universities than for private universities	Not Supported
H_6	The positive relationship between IC and IM is different for public universities than for private universities	Not Supported

Note: IC = Intellectual Capital, IM = Intrinsic Motivation, OP = Organizational Performance.

Discussion

This study aimed to examine the relationship between intellectual capital and organizational performance, considering the mediating role of intrinsic motivation. The findings indicate that intellectual capital positively influences intrinsic motivation, suggesting that the organization's resources can enhance employees' internal drive. This can be attributed to key elements of intrinsic motivation, such as autonomy, competence, and trust. When employees recognize that they possess the necessary resources and skills, they are more likely to engage in tasks voluntarily and perceive their work as inherently motivating, without relying on external rewards [51].

Additionally, the results demonstrate a significant positive effect of intellectual capital on organizational performance. While this relationship has been widely explored in other sectors, evidence in higher education remains limited. Prior research supports these findings; for instance, Cricelli *et al.* [15] reported that Colombian universities with higher levels of human, structural, and relational capital exhibited better organizational outcomes. Similarly, Tjahjadi *et al.* [89] identified a positive link between intellectual capital and performance in Indonesian universities, emphasizing the value of integrating all three dimensions. These studies, conducted in developing countries, highlight that managing, disseminating, and leveraging intellectual capital strengthens universities' contributions to stakeholders and may enhance their societal impact over time [90].

The analysis further revealed a direct positive relationship between intrinsic motivation and organizational performance. Extensive research over the past century has confirmed that motivation, particularly when aligned with organizational goals and resource availability, consistently influences work outcomes [91]. Kuvaas *et al.* [29] emphasized that intrinsic motivation should be considered independently, as it directly contributes to improved performance. This is especially pertinent in higher education, where intrinsic motivation significantly shapes academic engagement and overall institutional effectiveness [92].

Importantly, intrinsic motivation was found to partially mediate the link between intellectual capital and organizational performance. This indicates that the intangible resources encompassed by intellectual capital not only provide employees with the means to perform tasks but also foster a sense of competence and autonomy that drives motivation. Consistent with Self-Determination Theory (SDT), when individuals perceive themselves as capable and self-directed, their intrinsic motivation and overall performance improve, benefiting the organization as a whole [40]. Curiosity, exploration, and learning behaviors encouraged by intrinsic motivation are independent of external incentives, contributing to both employee satisfaction and organizational growth [51]. The SDT framework is particularly applicable to higher education, where motivation and psychological well-being play a critical role in teaching, research, and administrative activities [31]. These findings align with studies suggesting that the interaction between organizational resources and employee motivation shapes performance outcomes [93].

Finally, the study found no significant differences between public and private universities regarding the effects of intellectual capital on intrinsic motivation and organizational performance. This is a novel finding, as previous research, such as Yeganeh *et al.* [94], reported sector-specific differences in the impact of intellectual capital in other contexts. In higher education, the strategic value of knowledge, expertise, and relational networks appears consistent across both public and private institutions, reflecting the critical role of faculty, researchers, and administrators in creating a unique, inimitable value that benefits students and society alike [10].

Conclusions and Implications

This study advances understanding of the interplay between intellectual capital, intrinsic motivation, and organizational performance within higher education institutions. Two key conclusions emerge from the analysis. First, while organizations may invest in building intellectual capital to enhance performance, the actual value creation depends on employees effectively applying these resources in daily operations. Without intrinsic motivation, the anticipated organizational outcomes may not materialize. Second, the influence of intellectual capital on its constituent elements varies depending on whether the institution is public or private. This observation not only raises new theoretical questions but also carries practical significance for institutional management.

The study contributes to theory by integrating insights from two distinct frameworks. The Knowledge-Based View (KBV) emphasizes organizational knowledge as a source of competitive advantage but does not explicitly account for human behavior as a driver of knowledge utilization. In contrast, Self-Determination Theory (SDT) provides the behavioral perspective, explaining why the presence of intellectual capital alone may not guarantee desired outcomes. By considering intellectual capital as a second-order construct, the study also highlights potential differences in the contribution of its components in public versus private higher education settings.

From a managerial perspective, these findings challenge the assumption that intellectual capital automatically translates into improved performance. Institutions should implement strategies that align employee motivation with organizational objectives. Such strategies may include targeted human resource policies in recruitment, selection, training, and task allocation, alongside ongoing monitoring of employee motivation and engagement. Moreover, managers should assess the individual contribution of each element of intellectual capital rather than assuming uniform impact, taking corrective measures to optimize overall performance outcomes.

Limitations and Future Research

This study was limited to higher education institutions and focused primarily on managerial perspectives. Future research could broaden the scope by including other key stakeholders, such as faculty and administrative staff in non-managerial roles, to capture a more comprehensive view of intellectual capital dynamics. Additionally, testing the proposed theoretical model in other organizational contexts would help establish the generalizability of the findings. Further investigations might also examine how characteristics such as institutional size, structure, or resources influence the effects of intellectual capital. Finally, analyzing the individual dimensions of intellectual capital separately could provide deeper insights into their specific contributions to organizational performance and employee motivation.

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