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Analysis of the Relationship between Knowledge Management and Scientific Creativity with the Mediating Role of Intellectual Capital among Literature Students

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Abstract

The purpose of this study is to examine the relationship between knowledge management and scientific creativity with the mediating role of intellectual capital among students of literature. This research was conducted using a descriptive–correlational approach and structural equation modeling. The statistical population consisted of 130 literature students, from whom a sample was purposefully selected and examined. Standardized questionnaires on knowledge management, intellectual capital, and scientific creativity were employed to measure the research variables. The findings indicated that knowledge management has a positive and significant effect on scientific creativity, and intellectual capital also exerts a considerable influence on scientific creativity. Moreover, the results revealed that knowledge management has a substantial impact on intellectual capital, and intellectual capital plays a strong and significant mediating role in the relationship between knowledge management and scientific creativity. Accordingly, a significant portion of the effect of knowledge management on scientific creativity is transmitted through the enhancement of human, structural, and relational capital. These results suggest that improving the mechanisms for knowledge creation, sharing, and application within the university environment, along with strengthening intellectual capital, can foster greater scientific creativity among literature students. The findings of this study are consistent with the results of previous domestic and international studies and highlight the importance of knowledge management and intellectual capital in the development of scientific creativity.

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Extended Abstract

Introduction

Scientific creativity, as one of the fundamental components of knowledge production and cultural development, plays a decisive role in determining the quality of universities' scientific outputs. In the field of humanities—and particularly in literature—scientific creativity is not limited to innovation in research methods or the production of scientific works; rather, it encompasses the ability to reinterpret concepts, critically reread texts, and offer new approaches to literary analysis. Therefore, understanding the factors that can foster scientific creativity among literature students is essential for enhancing the academic level of universities and expanding the capacity of literary research (Taheri Barmaei et al., 2020).

One of the most important of these factors is **knowledge management**—a systematic process through which knowledge is created, stored, shared, and applied (Azimi et al., 2020). Universities and educational settings can foster scientific creativity only when the knowledge management cycle functions effectively within them. Knowledge management not only facilitates students' access to reliable sources but also, by providing interactive platforms, creates opportunities for idea exchange, the emergence of new insights, and collective learning (Rahnaward Ahan & Mohammadi, 2009).

However, knowledge management alone is not sufficient. Its effectiveness largely depends on another factor that has recently gained substantial attention: **intellectual capital**.

Intellectual capital refers to a set of intangible assets such as specialized knowledge, skills, experiences, communication competencies, organizational culture, and structural capital—elements that can directly and indirectly enhance academic and research performance (Ozkan et al., 2017). In the academic environment, a rich human capital base, supportive structures, and effective social relationships can provide the foundation for transforming existing knowledge into new creativity. Hence, intellectual capital may play a mediating role in the relationship between knowledge management and scientific creativity—meaning that knowledge management can enhance scientific creativity only when the knowledge is absorbed and converted into value within an enriched framework of intellectual capital (Ali Mohammadi et al., 2020).

Theoretical Foundations of the Study

Knowledge Management

Universities, as centers for the production and dissemination of knowledge, require mechanisms that enable them to manage existing knowledge in a systematic manner. In this regard, knowledge management helps students not only access scientific resources but also share their knowledge with others, benefit from each other's experiences, and ultimately generate new ideas. Knowledge management processes typically include **knowledge creation, knowledge storage, knowledge sharing, and knowledge application**, each of which can play an important role in developing individuals' scientific capabilities (Hebibi et al., 2019).

Among literature students, knowledge management can be facilitated through studying diverse sources, participating in academic discussions, utilizing academic databases, and interacting with professors as well as fellow students. Such processes can lead to a deeper understanding of literary texts and theories. Ultimately, these activities may contribute to the development of novel ideas and the enhancement of scientific creativity.

Scientific Creativity

Scientific creativity refers to the ability to generate new and valuable ideas, theories, or solutions within scientific domains. This concept is considered one of the key drivers of scientific advancement and the development of knowledge. Scientific creativity typically

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emerges from the interaction among knowledge, cognitive skills, intrinsic motivation, and a supportive environment (Bahramzadeh, 2019).

In the field of humanities—and particularly in literature—scientific creativity often manifests through proposing new interpretations of literary texts, presenting innovative perspectives in literary criticism, or integrating different theoretical frameworks for the analysis of literary works. Students who possess a higher level of scientific creativity tend to demonstrate a greater capacity to present original viewpoints and conduct innovative research.

Various factors can influence scientific creativity, including the educational environment, access to academic resources, scholarly interactions, and the extent of knowledge sharing among individuals. In this regard, knowledge management can provide a platform through which students become familiar with diverse ideas and perspectives, thereby enhancing their creative capacities (Munir, 2016).

Intellectual Capital

In today's knowledge-based economy, intangible resources play a more significant role than physical assets in creating value and sustaining competitive advantage. One of the most important of these intangible resources is intellectual capital, which is defined as a combination of knowledge, skills, experiences, relationships, and organizational structures that contribute to value creation and performance improvement.

The concept of intellectual capital first attracted researchers' attention in the late twentieth century and gradually became one of the key constructs in the fields of knowledge management and human resource management. In academic and university settings, intellectual capital not only enhances scientific productivity but also provides a fertile ground for the emergence of creativity and innovation (Hosseini, 2019).

Intellectual capital generally refers to intangible assets manifested in the form of individuals' knowledge, organizational structures, and communication networks. Unlike physical capital—which is visible and directly measurable—intellectual capital is non-material in nature, and its value lies in its capacity to generate knowledge, solve problems, and foster innovation.

In organizations, particularly within universities, intellectual capital serves as a crucial driver of educational quality improvement, research development, and knowledge production. For this reason, many scholars have identified intellectual capital as one of the most strategic resources in knowledge-based organizations (Jalalian, 2019).

Research Methodology

This study is applied in purpose and descriptive–survey in method. The statistical population consists of literature students at Islamic Azad University, Tehran Branch. From this population, a purposeful sample of 130 students was selected, and the research questionnaires were distributed among them.

The data collection instrument used in this study was a standardized questionnaire. To test the research hypotheses and validate the conceptual model, Structural Equation Modeling (SEM) was employed using the Partial Least Squares (PLS) method and the Smart PLS software.

The PLS approach, which is variance-based, was selected because it imposes fewer restrictions compared to covariance-based SEM techniques such as LISREL or AMOS. Its primary advantage lies in requiring a smaller sample size while still providing reliable results for complex models. Therefore, considering the study's relatively limited sample and the exploratory–confirmatory nature of its conceptual model, PLS was deemed the most appropriate method for data analysis.

Research Findings

Intellectual Capital → Scientific Creativity

The path coefficient of **0.653** and the t-statistic of **5.55** indicate that intellectual capital has a very strong and positive effect on scientific creativity. In other words, as the level of students'

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intellectual capital (comprising human, structural, and relational capital) increases, their level of scientific creativity rises significantly. This path coefficient underscores the substantial impact of this variable on the outcome.

Research Findings

Knowledge Management → Scientific Creativity

The path coefficient of 0.305 with a t-statistic of 2.64 indicates that knowledge management also has a positive and significant effect on scientific creativity; however, the strength of this effect is lower than that of intellectual capital. This result suggests that the ability to create, store, share, and apply knowledge can enhance scientific creativity, but its independent effect is moderate.

Knowledge Management → Intellectual Capital

The very high path coefficient of 0.785 along with a t-statistic of 13.60 demonstrates a very strong and significant relationship between knowledge management and intellectual capital. This finding indicates that knowledge management is one of the most influential factors in strengthening students' intellectual capital. In other words, improving knowledge management processes significantly enhances students' knowledge base, structural resources, and academic interactions, which together constitute intellectual capital.

Indirect Effect of Knowledge Management on Scientific Creativity through Intellectual Capital

The path coefficient of 0.513 with a t-statistic of 5.64 indicates that knowledge management, beyond its direct effect, exerts a highly significant indirect effect on scientific creativity via intellectual capital. Notably, this indirect effect is stronger than the direct effect of knowledge management on scientific creativity.

Therefore, intellectual capital functions as a powerful mediator in this relationship, implying that a substantial portion of the impact of knowledge management on scientific creativity is transmitted through strengthening intellectual capital.

Discussion and Conclusion

The findings of this study indicate that knowledge management and intellectual capital play a significant role in explaining students' scientific creativity, and the relationships among the examined variables are statistically significant. The results show that intellectual capital has a positive and relatively strong effect on scientific creativity. This suggests that as students' levels of knowledge, skills, experiences, and academic interactions increase, greater opportunities are created for the emergence of novel ideas and creative scientific output. In academic environments, intellectual capital can serve as a foundation for fostering critical thinking, exchanging perspectives, and developing innovative approaches to scientific analysis. Therefore, strengthening the components of intellectual capital—particularly human and relational capital—can effectively enhance students' creative capabilities.

Moreover, the results demonstrate that knowledge management has a positive and significant effect on scientific creativity. This finding implies that processes such as knowledge creation, storage, sharing, and application can facilitate the generation of new ideas and scientific innovation among students. When students operate in environments that encourage knowledge exchange, access to academic resources, and intellectual interaction, the likelihood of scientific creativity increases.

The findings also reveal that knowledge management exerts a very strong and significant effect on intellectual capital. This indicates that improving knowledge management mechanisms leads to the enhancement of human, structural, and relational capital within the university context. Under such conditions, existing knowledge is more effectively organized and transferred, thereby strengthening individuals' intellectual and academic capacities.

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One of the most important findings of this study is the confirmation of the mediating role of intellectual capital in the relationship between knowledge management and scientific creativity. The results show that knowledge management not only has a direct effect on scientific creativity but also contributes to its enhancement indirectly through the development of intellectual capital. In fact, a substantial portion of the impact of knowledge management on scientific creativity is transmitted through intellectual capital. This suggests that while knowledge management provides the infrastructure for access to and exchange of information, the transformation of knowledge into creative ideas largely depends on the level of intellectual capital among individuals and the quality of the academic environment.