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Knowledge Management Practices and Organizational Innovation Performance of IT Employees among Selected Business Firms: A Structural Equation Modeling

By

Glenn S. Cabacang, DBA
Philippine Christian University/ Polytechnic University of the Philippines - College of Business Administration Graduate Studies / Bestlink College of the Philippines/ Ascendens Asia
https://orcid.org/0000-0002-9963-3128

Abstract

Experts in IT are investigating the link between effective knowledge management, organizational creativity, and economic growth. Examining how information technology (IT) professionals value knowledge management, organizational innovation, and business success was the focus of this study. A descriptive-correlational research technique was used to accomplish this. Using a method called online convenience sampling, we were able to collect information from 250 IT professionals all throughout the nation. Results show a connection between knowledge management, innovation in the workplace, and commercial success. Knowledge management (the act of collecting, categorizing, and sharing information) has proved to have a positive effect on economic outcomes, but only via the intermediary of creative problem solving inside an organization. A better understanding of an organization's IT department and how the knowledge management model may be leveraged to improve business performance via organizational innovation might be useful.

Keywords: Business performance, digitalization, knowledge management, oorganizational innovation

1. Introduction

1.1 The Research's Background

Using data analytics, cloud computing, and knowledge management systems, contemporary firms are able to streamline their processes and increase productivity (Ghasemaghaei, 2019). Two other factors are the implementation of knowledge-management systems and the development of leadership abilities (Imam & Zaheer, 2021; Markovic & Bagherzadeh, 2018). Knowledge management is a technique used by an organization to improve its internal problem-solving abilities, productivity, and the likelihood of reaching and maintaining its stated objectives (Mardani et al., 2018). Businesses' development of knowledge-intensive capacities may be attributed to a variety of internal and external stimuli. Maximum productivity is attainable if the organization's resources and skills are used to their fullest potential (Rajapathirana & Hui, 2018). Invention typically consists of two basic categories: product innovation and process innovation. Innovation may take various forms, from very little tweaks to completely new directions to a breakthrough in understanding (Nisar et al., 2019). Since most goods have a finite lifespan, a company's ability to speed up its actions and achieve its objectives is a critical difference. With the advent of new technologies and increased levels of competition, consumers now demand shorter product lifecycles, necessitating a more adaptable business landscape to suit their expectations. New ideas, products, procedures, and administration are all taken into account when scoring innovation.

Improving the quality of work and output inside an existing organization is what we call "organizational innovation." If the promised benefits of an organization's new innovations are realized, the business will see a considerable improvement in its bottom line (Salim et al., 2019). Therefore, it is essential to investigate the connections between managerial knowledge-gathering, storage, dissemination, and application, as well as organizational innovation and overall performance.

1.2 Problem Statement

Technology advancements in communication have allowed for virtual teamwork over great distances. Their use has been linked to a rise in company output (Dittes et al., 2019). As a further protection against the pandemic, several American companies have set up satellite offices in developing nations. The efficiency with which a company gathers, shares, and acts on information has a significant impact on its capacity to create products and services. When a company's activities are sustainable in the market, the company's distinctive advantages dwindle and are eventually lost. Fostering innovation and keeping a competitive advantage depend critically on effective knowledge management (the act of gathering, organizing, sharing, and exploiting information) (Geebren et al., 2021). Knowledge management that is both effective and systematic has been linked to higher financial returns in a number of studies (Di Vaio et al., 2021). To a considerable extent, the literature has ignored the pivotal part that organizational innovation plays as a mediator between knowledge management and company performance. The elements that affect the originality of companies are the focus of this research into knowledge management (comprising the four subfields of information acquisition, storage, dissemination, and application). Managers and business owners may get an understanding of knowledge management and organizational innovation by studying the inner workings of digital companies. As a result, employee output will rise across the board.

1.3 Research Objective

Employees in the information technology sector are the focus of our research as we look at how knowledge management contributes to organizational innovation and ultimately, business success.

1.4 Research Question

What is knowledge management, how does it function, and is there a connection between it, organizational innovation, and commercial success?

2. A Review of the Literature

2.1 Analytical data using PLS-SEM

Multivariate analytic techniques have altered studies in the social sciences and the commercial world by providing a means to empirically verify theoretical hypotheses. Several researchers have found it to be an effective strategy for estimating complex, hierarchical models using high quality data analytics (Tiwari et al., 2018). Structural equation modeling is a powerful method for evaluating conceptual models with several latent variables (SEM). Using the idea of authenticity and the method of modeling assumptions, PLS-SEM is shown to be a possible method for measuring the complexity of a hierarchical model in data analytics (Hair et al., 2021). This allows the model estimate to include both explanatory and predictive perspectives, a significant issue in business and social science research that PLS-SEM helps to address.

2.2 Business Performance

As previously said, business performance is defined as the organization's capability to operate in order to satisfy shareholder and survival expectations. A company's performance must be evaluated for this reason. Sahi et al. (2020) argue that knowledge management helps businesses succeed. Organizational structures and commercial enterprises have grown in significance during the last four generations. They had been subjected to a lot of environmental change because of who they were (Bozic & Dimovski, 2019). This theory proposes that a company's effectiveness results from its members, property, and capital pooling their resources to accomplish a shared goal. Simply said. It is possible to evaluate the efficacy of a business by comparing the outcomes of its many activities. The efficiency of an organization is crucial to its prosperity. To evaluate the degree to which a business has been successful in meeting its goals and objectives, it might look at a variety of metrics known as "business performance indicators" (Su & Swanson 2019). To achieve its goals, a company needs both tangible and intangible assets, such as knowledge management (Ode & Ayavoo, 2020). As a result, the results of the business are considered in this study.

2.3 Organizational Innovation

Many times, new designs for goods, services, or manufacturing processes deviate greatly from their forerunners' plans (Anzola-Román et al., 2018). Innovating ideas may result from combining mental and material methods. Dedicated innovation-driven organizations prioritize reorganizing their current knowledge assets and resources while also seeking to broaden their knowledge base (Xie et al., 2018). Innovation in every field requires constant refinement of current practices and the addition of fresh knowledge to accumulated wisdom (Martin, 2020). Technological and non-technological innovations, as well as new goods, processes, and marketing tactics, all make to a company's portfolio of innovations (Leonidou et al., 2020). It "has been shown that knowledge management has a close relationship to organizational innovation" (Abdi et al., 2018). The goals of "operational efficiency, quality control, education, new product and process development, and market expansion" are all achieved via the application of organizational innovation by businesses. Incorporating new ideas into an organization may help it grow. The ability of a firm to innovate depends on the availability of a supportive work environment and on leaders who are able to make effective use of available resources in the form of both technology and human capital (Hameed et al., 2021). Our focus in this analysis will be on the ways in which businesses modify to new circumstances.

2.4 Knowledge Management

In today's knowledge-based economy, information is the ultimate source of profit (Coombs et al., 2020). Strategic advantage and long-term sustainability are the ultimate goals of knowledge management, which is characterized by a collaborative and integrated approach (Kucharska & Bedford, 2019; Santoro et al., 2018). A company's knowledge management skills may be broken down into four categories: knowledge collection, storage, sharing, and application (Abubakar et al., 2019). Assimilating new information is the first step in the learning process. The ability to acquire new bits of information is crucial for businesses to monitor their surroundings in today's fast-paced world. As a result, people may increase their technical proficiency by reading widely and studying in-depth (Rikhardsson & Yigitbasiogl 2018). Knowledge storage was the term used to describe the processes and systems used to keep data safe and organized. Storage and retrieval systems for operational data are often implemented in the form of an information technology system (Ode & Ayavoo, 2020). Ideas may be sparked in large part by the act of sharing one's knowledge. A company has to change and use information in order to react to market demands with novel problem-solving strategies and solutions (Klofsten et al., 2019).

Organizations may enhance their operations, generate new products, and build intellectual property via "knowledge application" methods that make use of this information (Ode & Ayavoo, 2020). The "use of knowledge" may boost an organization's efficiency and productivity, allowing it to save money in the process. The protection of decision making, the execution of plans, and the resolution of issues are only few of the various applications of knowledge (Sievers et al., 2021). Knowledge management is a continuous cycle that sustains the practices by which businesses create new knowledge and sustainably provide products based on that knowledge (Ukko et al., 2019). It is important to evaluate knowledge management while trying to understand and aid knowledge workers so that they can provide better results and be more efficient (Shujahat et al., 2019). While this may be true, businesses still need to actively seek for relevant data that might be utilized strategically. To begin making advantage of this combination, we must first learn how the market responds when matter is present. Knowledge management systems may be implemented with the help of these factors (Nisar et al., 2019). For a business to function smoothly, it is crucial that all relevant data sources be included, and that efforts be made to cultivate and manage internal expertise. This research includes in its concept of knowledge management the activities of gathering information, storing it, discussing it, and using it.

2.5 Formulation of Research Hypotheses

2.5.1 How Organizational Innovation and Knowledge Management are linked

A study analyzed the relationship between knowledge management and the pace of innovation in a country (Ali et al., 2020). This theory was verified by research on the connection between knowledge management and innovation inside companies. Knowledge management and creative responses to workplace difficulties go hand in hand, as discovered by the 2018 study team lead by Mardani et al. There was a link established between spending money on knowledge management and coming up with new ways to improve procedures (Wang and Hu, 2020). According to studies, knowledge management practices significantly and positively impact new product development in the consulting sector (Akram et al., 2018). Three knowledge management techniques were examined in this study: social network, codification, and personalisation, and their influence on the creative processes of consulting businesses. Knowledge-oriented leadership was employed as a lens through which the outcomes of innovation-focused knowledge management initiatives could be analyzed (Naqshbandi and Jasimuddin, 2018). Knowledge management strategies are fundamental to organizational innovation (Naqshbandi & Jasimuddin, 2018). The ability of an organization to solve challenges creatively is intrinsically connected to its level of knowledge management.

A1: Organizational innovation is greatly influenced by effective knowledge management.

2.5.2 Knowledge Management and Business Performance have a complicated connection

(Singh et al., 2021) analyzed the effects of knowledge management strategies and systems on company output. The greatest impact on organizational performance came from disseminating information, followed by making use of that information. Implicit knowledge management was also demonstrated to have a beneficial effect on business outcomes (Swanson et al., 2020). Tactical knowledge management substantially impacted the efficiency of the organization. Knowledge creation, dissemination, and retention must be given top priority by every thriving business (Swanson et al., 2020). There is evidence from a number of research that suggest that knowledge management strategies may increase business output (Najmi et al., 2018). In this way, there is a connection between efficient knowledge management and higher financial returns.

A2: Organizational success is strongly influenced by effective knowledge management.

2.5.3 Innovation in Organizations and the Performance of Businesses

The capacity to innovate and run efficiently as a business is related to the attributes of an organization, as stated by (Muller et al., 2021). Adding additional product lines and markets boosted a

company's bottom line. Several studies have investigated how an insurance firm's level of innovation, the types of innovation it employs, and its financial performance are all intertwined. Companies who were able to innovate more effectively saw a dramatic change in their financial results (Rajapathirana & Hui, 2018). As a result, there is a connection between innovativeness inside a business and financial success.

A3: A company's success is greatly influenced by organizational innovation.

2.5.4 Organizational innovation connects Knowledge Management with Business Performance.

Research on the importance of innovation in knowledge management for small and medium-sized businesses (SMEs) reveals a positive correlation between the two (Abbas, 2020). Improved SMEs' ability to innovate was a direct result of better knowledge management. Also, innovation connected knowledge management and business results. Knowledge assets are acquired, shared, and used inside an organization to enhance product quality, production efficiency, and distribution channels (Abbas, 2020). The relationship between successful product and process innovation and operational outcomes was analyzed. Knowledge management led to huge improvements in new product and process development. Knowledge management, organizational performance, and intellectual capital were all investigated in research by Nisar et al. (2019). Not only that, but knowledge management enablers had a major effect on KMP operations. A company's operational efficiency is directly proportional to its knowledge management and innovation capabilities (Nisar et al., 2019). According to Hutahayan, organizational innovation is the connecting thread between several factors that determine a company's success (2021). As such, innovation in the workplace connects knowledge management with economic gain.

A4: Organizational innovation is an essential link between company success and knowledge management.

2.6 Theoretical Structure

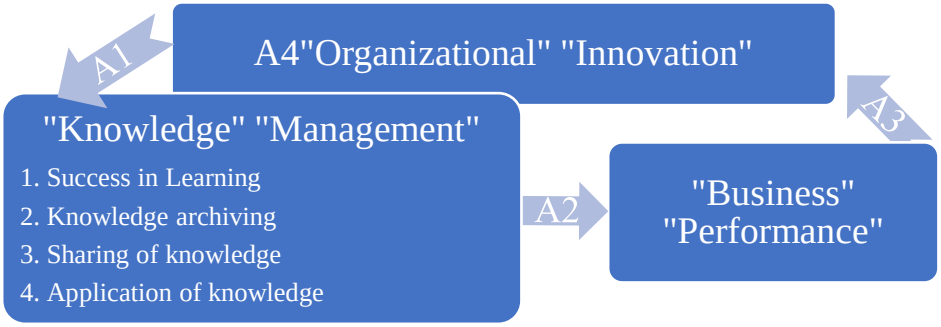

Figure 1. *Theoretical Structure*

3. Methodology of Research

3.1 Research Method

Knowledge management, organizational innovation, and business performance were investigated via a descriptive-correlational study approach with IT workers. Researchers used "closed-ended questionnaires (Likert's Rating Scale)" to collect information for this study; the questionnaires' questions were formulated on the basis of prior studies. Forty participants in the pilot test filled out a reliability survey. All buildings having an alpha less than 0.71 can't be used in the analysis of the Cronbach's alpha. For the purpose of this study, the Likert Scale was used to categorize the most important factors into the following five groups: "very agree with a value of 5," "strongly agree with a value of 4," "blend with a value of 3," "neutral with a value of 2," and "disagree with a value of 1." (Wei et al., 2021) conducted a study to learn more about the sample population. Knowledge acquisition, storage, sharing,

and application were the focus areas of the questionnaires used to measure organizational innovation, business performance, and knowledge management developed by (Mardani et al., 2018).

3.2 Sample and Population

The populace consisted entirely of individuals working in the information technology industry. No participants in the research were younger than twenty. At least six people need to answer each question (6:1). Researchers say they got their sample size of 150 people by multiplying 25 by 6. Because of this, the study's overall sample size was 250, rather than the minimum 150. Table 1 shows that 60% of respondents were female, 50% were between the ages of 36 and 45, 60% had at least a bachelor's degree, and the most frequent income brackets for those who replied were between $30,001 and $55,001 per month (35 percent).

Table 1. *A Breakdown of the Respondents' Demographics (N=250)*

Demographics		Frequency	Percentage %
Gender	Female	130	60%
	Male	120	40%
Age	20 years old	15	7%
	25 years old	40	14%
	35 years old	125	50%
	45 years old	63	26%
	55 years old or over	7	3%
Education	Associated degree	25	10%
	Bachelor’s degree	150	60%
	Above Bachelor’s degree	75	30%
Monthly Income	15,001- 30,000	37	15%
	31,001- 55,000	88	35%
	56,001- 75,000	75	30%
	More than 76,001	50	20.00%
Total		250	100%

3.3 Data Collection

The country's people were made up of IT employees. The population comprised IT workers who were at least 20 years old. The self-administered online survey gathered data from December 20th, 2021, to January 20th, 2022.

3.4 Data Analysis

The data was analyzed in SPSS using a Partial Least Squares Structural Equation Model. Descriptive statistics were used to inquire about people's personal characteristics (frequency and percentage). In addition to the questionnaire itself, statistical calculations were performed to ascertain central tendencies and dispersions in the values of the various variables. Using the consistency and reliability coefficient known as Cronbach's Alpha, we analyzed the data. The instrument's reliability and validity were determined by analyzing the factor loadings. The data were analyzed using Cronbach's Alpha to establish their trustworthiness. PLS-SEM was used to confirm the hypothesis at last.

4. Results

The researchers processed and analyzed data from 250 online surveys taken by IT workers around the nation to draw conclusions about their attitudes and behavior.

4.1 PLS-SEM Results

Table 2. *Summary Item Loads, Cronbach's Alpha, and Average Variance (n=250)*

Items	Factor Loadings	Cronbach's Alpha	Average
1. **Knowledge Management**		0.920	0.744
1.1. Acquisition (Mean=4.030, SD=0.505	0.896		
1. I'm inspired to go beyond the box for my current projects. (Mean=4.026, SD.=0.769)	0.749		
2. Best practices may be saved for future use, and I'm pleased. (Mean=4.016, SD.=0.649)	0.745		
3. To further my education, I'm urged to examine the aspects that contributed to my achievement. (Mean=4.006, SD.=0.820)	0.897		
4. To learn from my errors, I am urged to do so. (Mean=4.071, SD.=0.870)	0.830		
1.2. Storage (Mean=4.122, SD.=0.412)	0.774		
5. Whenever I need information, I know where to look. (Mean=4.286, SD.=0.427)	0.825		
6. I know who to turn to when I need information. (Mean=4.226, SD.=0.608)	0.797		
7. Routines and processes in my company are where knowledge is stored. (Mean=3.836, SD.=0.913)	0.761		
8. Access to sensitive and confidential data is limited. (Mean=4.141, SD.=0.846)	0.733		
1.3 Sharing (Mean=3.866, SD.=0.741)	0.904		
9. Mentoring younger or less experienced personnel is actively promoted in the company where I work. (Mean=4.121, SD.=0.831)	0.838		
10. Employees in my company are encouraged to share their expertise. (Mean=4.156, SD.=0.898)	0.867		
11. In my job, people are evaluated on their ability to share knowledge. (Mean=3.571, SD.=1.252)	0.872		
12. In my company, employees who share their expertise are rewarded and recognized. (Mean=3.616, SD.=1.244)	0.787		
1.4 Application (Mean=4.162, SD.=0.424)	0.873		
13. Knowledge that already exists is utilized to create new information. (Mean= 4.161, SD=0.618)	0.871		
14. Most of the challenges I experience at work may be solved with the help of my education. (Mean=4.076, SD=0.754)	0.697		
15. Knowledge and expertise gained from prior initiatives are encouraged to be used in future ones. (Mean=4.231, SD=0.671)	0.870		
16. Developing new goods and services is something I do use the information I have. (Mean=4.181, SD=0.551)			
2. Organization Innovation		0.916	0.798
17. Unlike our main rivals, our company is a lot more efficient at fixing problems. (Mean=3.771, SD.=0.872)	0.882		
18. Comparatively speaking, our company is fast to generating new concepts. (Mean=3.740, SD.=0.857)	0.889		
19. New product development is a stronger area for our company than our main rivals. (Mean=3.780, SD.=0.765)	0.890		
20. Compared to our main rivals, we do better when enhancing procedures. (Mean=3.771, SD.=0.872)	0.912		
3. Business Performance		0.935	0.781
21. The company's performance is superior to its main rivals. (Mean=3.851, SD.=0.883)	0.802		
22. The company's performance is superior to that of its main rivals when using resources. (Mean=3.811, SD.=0.809)	0.922		
23. Compared to its main rivals, the company's performance is characterized by quality-oriented internal procedures. (Mean=3.836, SD.=0.883)	0.914		
24. It boasts a higher level of creativity and innovation than its main rivals. (Mean=3.806, SD.=0.802)	0.894		

Table 3. *R-Squared (n=250)*

Theory	Ratio of Statistical Significance (R2)	Adjusted R2
Organizational Innovation	.526	.523
Business Performance	.736	.734

Table 4. *Effect Overview (n=250)*

Effect	Beta	Indirect Effect	Total Effect	Cohen's f ²
Knowledge Management → Organization Innovation	.725	0.455	.725	1.105
Knowledge Management → Business Performance	.288		.742	.146
Organization Innovation → Business Performance	.628		.628	.705

Table 5. *Total Effects Inference (n=250)*

Effect	Coefficient	Bootstrap Results					Percentile Bootstrap Quantiles		
		Mean Value	Standard Error	T-Value	P-Value (2-Sided)	P-Value (1-Sided)	1%	3%	96%
KM → OI	0.725	0.727	0.037	21.225	0.000	0.000	0.617	0.648	0.789
KM → BP	0.741	0.740	0.036	22.231	0.000	0.000	0.641	0.667	0.807
OI → BP	0.844	0.836	0.024	37.736	0.000	0.000	0.775	0.787	0.878

OI: Organizational Innovation
BP: Business Performance
KM: Knowledge Management

With an a =0.725, p 0.001 for predictability, knowledge management seems to be a promising predictor of organizational innovation. With effective knowledge management, one can forecast the financial success of a company with a p-value of 0.001, with two tails at 0.000 and one tail at 0.000. (Two nascent tails at 0.000 and a nascent edge at 0.000) Organizational innovation is positively related to financial outcomes for businesses (r=0.628, p0.001) (Two tails at 0.000 and one tail at 0.000). Knowledge management that is both efficient and effective is beneficial to a business' bottom line because it fosters innovation inside the organization. R2=0.527, or 53% of total variation, may be attributed to this. The coefficient of determination (R2) indicates a correlation of 74% between the two factors, allowing for an approximation of the performance of businesses using one or both of them.

4.2 Assumptions

Table 6. *Hypothesis Testing in Context*

Hypotheses	"Results"	"Actions"
A1: Knowledge Management" → Organizational Innovation	β=0.725 at p<0.001	Accepted
A2: Knowledge Management" → "Business Performance	β=0.288 at p<0.001	Accepted
A3: Organizational Innovation" → "Business Performance	β=0.628 at p<0.001	Accepted
A4: An essential link in the knowledge management chain is "organizational innovation."	R^2=0.527 at p<0.001	Accepted R2=0.736) adequately explains 74% of the observed occurrence.

5. Discussion and Conclusion

5.1 Discussion

The team's use of PLS-SEM to verify their assumptions was significant. The correlation between knowledge management and company success was weakened by the use of new organizational tactics. Knowledge management and organizational innovation are inextricably linked, as shown by studies such as (Ali et al., 2020), (Mardani et al., 2018), (Nashbandi & Jasimuddin, 2018), and (Ali et al., 2019). (Wang & Hu, 2020). Per the reports of (Akram et al., 2018). How effectively a corporation handles its information is a major factor in its capacity for innovation. Businesses may think more creatively when they have information management systems in place. As a result, businesses may broaden their understanding by coming up with novel methods for combining state-of-the-art technology with an entrepreneurial spirit and superior skill sets. Our findings corroborate those of earlier studies by (Singh et al., 2021) and (Swanson et al., 2020), which found that knowledge management has an impact on business success. The information management practices of a corporation are crucial to its long-term prosperity. It's important to track both financial and non-financial indicators of success, since a company's approach to knowledge management may have far-reaching effects on a variety of key performance indicators. Organizational innovation has been linked to financial success, according to studies by (Rajapathirana and Hui, 2018) and others (Muller et al., 2021). In recent years, there has been a shift in CEO consciousness about the importance of innovation in creating value and maintaining a competitive edge. In today's cutthroat marketplace, companies who specialize in areas like innovation, manufacturing, and delivery speed may discover lucrative niches. A company's degree of originality is also crucial. The broad adoption of a new product, technique, or approach by a corporation is a sure sign that the invention was a success. Knowledge management that is both efficient and effective is essential to a company's success, according to studies (Abbas, 2020). Knowledge management strategies have the potential to boost company performance by consolidating a wide variety of new products and services with established information assets.

5.2 Conclusions

Results show a connection between knowledge management, innovation in the workplace, and commercial success. Knowledge management (the act of collecting, categorizing, and sharing information) has proved to have a positive effect on economic outcomes, but only via the intermediary of creative problem solving inside an organization. Workplaces may benefit from improved knowledge acquisition and storage if they provide opportunities for employees to reflect on their mistakes, limit access to private information, and promote knowledge sharing. As an added bonus, the company may be able to boost knowledge application by encouraging the recycling of data and experience from previous endeavors. One way to evaluate a company's innovative prowess is to see whether it can come up with new goods at a faster rate than its major competitors. The success of a corporation may be measured by comparing its earnings with those of its rivals. It is essential that company owners and managers pay close attention to these factors.

6. Implications of Research

This study's findings demonstrated a correlation between knowledge management (the gathering, analyzing, and sharing of information), organizational innovation, and economic success in the United States' IT workforce. Business owners and managers may benefit from better business model analytics when they use a knowledge management system. The insights gained from this business analytics strategy may be used across sectors to improve creativity

and productivity. Consequentially, this will have a constructive effect on the financial outcomes of the business. Knowledge management, organizational innovation, and business success are all topics that have been explored in the past, but this research provides new insights. Therefore, academics may get an advantage by considering other possible elements. The questionnaire questions might aid in knowledge management, organizational innovation, and commercial success.

6.1 Research Implications

This study set out to answer the question, "What role does knowledge management play in the innovation and financial success of America's IT companies?" by looking at the topic from several angles. We shall restrict our analysis to these groups for the duration of this project. Future research with a larger sample size and more participants may provide light on the industry as a whole, or at the very least, aid a company greatly. The use of a sample frame consisting of businesses from different industries might be useful for future studies. Furthermore, the self-administered survey format utilized in this study makes it stand out from others. Quantitative procedures like surveys and polls may not provide as effective results as qualitative ones like interviews and focus groups.

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