ISSN 2228-9860 eISSN 1906-9642 CODEN: ITJEA8

International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies

http://TuEngr.com

Effect of Knowledge Management on Entrepreneurial Orientation Mediated by Strategic Clarity: A Field Study at Asia Cell Communications Company in Mosul

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Paper ID: 16A1G

Volume 16 Issue 1

Received 23 March 2025
Received in revised form 15 May 2025
Accepted 26 May 2025
Available online 26 May 2025

Keywords:
Knowledge Management Processes (KMP); SEM; Strategic clarity; Structural model; Kruskal-Wallis test; Entrepreneurial orientation; Asia cell Company; Sobel test; Mann-Whitney test; Path analysis; Baron & Kenny.

Abstract

The study assessed the impact of knowledge management processes (KMP) on entrepreneurial orientation at Asia Cell Communications Company, considering strategic clarity as an intermediary variable. The research utilized a questionnaire distributed to employees in senior, middle, and executive management at Asia Cell branches in Mosul Governorate, resulting in a final sample of 340 respondents, representing 11.6% of the total population. The response rate was 90.3%. Statistical analysis revealed a high level of the study variables as perceived by the company's respondents. KMP directly and indirectly influenced entrepreneurial orientation through strategic clarity. A one-degree increase in the application of KMP corresponded to a 0.367-degree direct increase and a 0.372-degree indirect increase in entrepreneurial orientation, totaling a 0.737-degree impact. Strategic clarity partially mediated the relationship between KMP and entrepreneurial orientation. The influence of KMP on entrepreneurial orientation via strategic clarity was 0.504. Strategic clarity's mediating effect was 1.015 times greater than the direct effect of KMP on entrepreneurial orientation, a consistent finding unaffected by sample size variations.

Discipline: Management Science.

Cite This Article:

Al-Tayyar, A.R.M., Mellouli, S. (2025). Effect of Knowledge Management on Entrepreneurial Orientation Mediated by Strategic Clarity: A Field Study at Asia Cell Communications Company in Mosul. *International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies, 16*(1), 16A1D, 1-22. http://TUENGR.COM/V16/16A1D.pdf DOI: 10.14456/ITJEMAST.2025.7

1 Introduction

Every era has its own strengths that distinguish it from the rest of the eras, and what distinguishes our current era is that its strength is represented in knowledge. The element of knowledge has never possessed the great importance and attention it has today. Organizations are constantly trying to control the knowledge they have, owned by individuals and groups within the organization, making it knowledge owned by everyone that can be accessed by all (Elias & Wright, 2006). Due to the lack of success of knowledge management (KM) programs focusing solely on information systems and technology, neglecting the human aspect, the topic of knowledge transformation has gained significant importance. This shift highlights the human element and its crucial role within KM.

Accordingly, the human resource in the organization plays a crucial role in the knowledge transformation process and overall functioning. Activities like recruitment, training, development, compensation, and performance evaluation have heightened the interest in HR management. It is now seen from a strategic perspective with a significant role in the organization (Wang & Liu, 2019).

The management of any resource involves doing everything necessary to achieve the best outcome and benefit from that resource. Therefore, KM can be defined as the actions required to acquire the best sources of knowledge. This definition applies to both individual and organizational levels, where knowledge sources are related to decisions, goals, and strategies. KM should have a positive impact on achieving goals for individuals or organizations, as it aims to enhance how knowledge helps in reaching these goals (Bai & Li, 2019).

Adapting to new technologies and their applications is a key factor driving business organizations towards embracing an entrepreneurial mindset. This is a result of the rapid pace of change in the external environment, necessitating organizations to offer innovation and keep up with new developments. The study aims to explore how KM influences administrative orientation through strategic clarity at Asia Cell Communications Company in Mosul.

2 Literature Review & Theoretical Background

2.1 Knowledge Management (KM)

KM involves leveraging collective wisdom to enhance responsiveness and creativity. It aims to implement structured administrative procedures for the organization's knowledge assets (Wright & Elias, 2015), facilitating the identification, selection, organization, dissemination, and transfer of knowledge and skills integral to the organization's heritage. To attain a lasting competitive edge, it is crucial to leverage existing knowledge effectively and establish a framework for utilizing contemporary knowledge.

One of the fundamental principles of KM is the selective conversion of tacit knowledge into explicit knowledge, which promotes the organization's collective learning and readiness for employee turnover. In essence, effective KM offers the following: *i*) It supports, develops, and

implements a strategy in organizations that are key sources of knowledge for the organization's mission, *ii*) it enables informed decision-making on the most valuable resources, and *iii*) it facilitates the measurement of knowledge and the contribution of knowledge assets to predefined goals.

Based on this premise, organizations should focus on establishing specific mechanisms for creating and managing knowledge as their most valuable assets, compared to other assets. Many organizations still struggle to effectively utilize knowledge, especially in managing the risks they encounter. While most leaders acknowledge the importance of knowledge and its management, they often fail to fully capitalize on their efforts. Building a knowledge-based organization is a challenging task that involves overcoming obstacles such as acquiring data from rival organizations and integrating it into a unified data warehouse, possibly through a KM system.

The significance of KM lies in providing a clear way to understand initiatives that aid in development and change to meet economic requirements, enhancing returns, employee satisfaction, and competitive position by focusing on intangible assets. Its impact is challenging to measure in the short term but crucial for managing risks and increasing intellectual capital for organizational success. Additionally, it enhances the organization's capacity to gather, store, and apply knowledge for strategic purposes (Abualoush et al., 2018).

KM is represented by various models that can be summarized as follows: *i*) employee training; Employee training is the process of enhancing employees' skills and acquiring new concepts, rules, and procedures to enhance job effectiveness and efficiency (Abomeh & Peace, 2015), ii) team culture; Team culture comprises norms, values, and procedures that team members develop and share (Dimas et al., 2019). Jamshed & Majeed (2018) noted that team culture is a subset of organizational culture that considers the political, geographical, ethnic, religious, or other dynamics of teams, *iii*) knowledge sharing and transfer; It involves transferring information within the organization, such as information management. This transfer aims to organize, create, capture, or distribute information and ensure its future availability to users (Gonzalez, 2016), *iv*) expertise and competency development. Developing expertise and competencies enhances individuals' internal factors, including knowledge, skills, and values they rely on to perform their work more effectively.

KM is characterized by several key elements (Abu Aloush, 2018): i) Information technologies encompass all electronic tools for information operation, transmission, and storage, including computer technology; *ii*) organizational culture defines the values, standards, behaviors, and attitudes shaping relationships within the organization; *iii*) organizational structure aims to enhance organizational frameworks through strategic cultural setups; *iv*) individuals are pivotal, requiring continuous skill development through training for organizational excellence and societal benefit; v) Operations emphasize cost, quality, and cycle times, crucial for value creation and competitive advantage (Gonçalves et al., 2018).

KM is characterized by important strategies: *i*) system-oriented strategy; Hsieh (2007) suggests acquiring external knowledge and sharing formally, ii) individual-oriented strategy; Hsieh (2007) mentions acquiring internal knowledge and sharing informally among individuals in the organization.

Finally, KM can be measured through several important processes: *i*) knowledge generation; Knowledge generation involves creativity in generating a large amount of ideas and information to build knowledge capital within the organization (Taeh & Al-Najjar, 2017), ii) storing knowledge; This includes the storage and retrieval of organizational knowledge, encompassing written records, administrative policies, and organized knowledge in databases or business intelligence tools, iii) knowledge distribution; This is essential for KM and innovation (Wang & Liu, 2019). Imran et al. (2016) noted that knowledge distribution is a voluntary act, with employees encouraged, trained, and rewarded for sharing knowledge.

2.2 Entrepreneurial Orientation

Entrepreneurial orientation involves the ability to create and innovate through new products, ideas, work methods, markets, and models. It focuses on strategic management and performance improvement through knowledge, risk-taking, incentives, and worker independence (Al-Sakarna, 2005). Three elements are essential in entrepreneurial-oriented organizations: entrepreneurial individuals for creativity; the organizational dimension for vision, trust, idealism, and creativity; and the environmental dimension for market diversification and knowledge acquisition at work (Al-Sakarna, 2005).

Several requirements are necessary in a business organization to engage in entrepreneurial activities, as outlined by El-Din (2014):

i) Entrepreneurial leadership, which emphasizes seizing opportunities, building, and innovating through temporary investments and meaningful interpersonal connections based on a medium-term strategy.

ii) Entrepreneurial thinking, involving a mindset geared towards adaptability, innovation, and creativity to drive growth processes at both macro and organizational levels. It involves conceptualizing entrepreneurial transactions and leveraging opportunities amidst uncertainty.

iii) Strategic resource management, crucial for attaining long-term competitive advantages by effectively overseeing unique and valuable resources.

Entrepreneurial orientation also consists of three main dimensions, which are as follows:

First, creativity is known as one of the challenging mental processes that involves generating new ideas. It is a mix of personal traits and abilities that can elevate mental processes to a level resulting in unique outcomes for organizations and individuals given the right environment (Denwood et al., 2008). Creativity is also described as a predisposition towards excellence stemming from research efforts by embracing unconventional ideas or work practices to enhance the overall atmosphere or functioning within the organization. This approach addresses

contemporary data in a manner that boosts the organization's competitive edge and secures a prominent position compared to rivals (Bahia, 2019). Denwood et al. (2008) outlined a set of characteristics of a creative organization, including:

1. Eliminating outdated administrative barriers to change, fostering adaptability and a willingness to embrace development and change, and maintaining a high capacity for change.
2. Demonstrating the courage to confront uncertain circumstances and embrace risk-taking.
3. Addressing challenges through innovative approaches, identifying links between diverse organizational trends, and leveraging knowledge in novel ways to steer the organization towards excellence.
4. Valuing diverse internal and external viewpoints, leveraging suggestions, honoring contributions from all staff members - particularly newcomers, and seeking to utilize them for organizational enhancement.

Researchers delineate various stages of the creativity process as follows: (Abu Jabbara, 2020)

1. The preparatory stage involves priming individuals for creativity by activating and stimulating them to enhance their skills and motivation.
2. The incubation stage entails the subconscious mingling of data and information to generate new ideas, leading to the emergence of creativity.
3. The stage of revelation and inspiration manifests as a burst of fresh insight, illuminating the creative individual and prompting a sense of discovery, gradually fostering attentiveness among colleagues.
4. The scrutiny and validation stage involves testing the creative concept to ensure its credibility and viability for organizational adoption and development.

The creative process is marked by various characteristics, such as: (Jabbar, 2018)

1. Discovering new relationships within and outside the organization.
2. Interrogating and revealing these relationships.
3. Connecting new relationships with previously discovered ones and utilizing them effectively.
4. Using new relationships to accomplish objectives.
5. Avoid copying from others unless it enhances and supports one's creativity.

Second: Proactivity is defined as the pursuit of opportunities and looking to the future from a perspective that sets organizations apart in the competitive market (Remo, et.al., 2021). The essence of proactiveness lies in organizations' ability to outperform competitors and seize a first-mover advantage in capitalizing on market opportunities, ultimately achieving competitive advantage.

The importance of being proactive is crucial when it comes to implementing innovative work. Proactiveness involves translating theoretical concepts into practical applications to drive the organization forward by seizing new opportunities. Proactive organizations keep a close eye on market trends, identify future customer needs proactively, and predict changes in demand that can lead to creating new opportunities. This approach fosters innovation, stimulates growth and development for both the organization and its customers, and positions the organization as a leader in its industry. By leveraging its resources effectively, the organization can strive to gain a competitive edge.

Third: Embracing risks involves taking bold actions, such as venturing into new, uncharted markets and investing a significant portion of resources in projects with uncertain outcomes (Noer, et.al, 2013). This leadership approach signifies the organization's readiness to stake a substantial share of its unique resources on risky endeavors. While there is a possibility of failure in such ventures, they also present opportunities and potential gains that can propel the organization towards leadership. Embracing risk is crucial as it compels organizations to stay vigilant and equipped to face any eventuality, safeguarding them against potential harm or missed opportunities. It necessitates a continual adaptation to various developments, particularly technological and industrial advancements relevant to the organization's operations (Abu Daoud, 2021).

There are three types of risks that the organization and its administrative leadership can face: (Noer et al., 2013)

1. Business risk: It is a form of risk associated with entering a new market before testing or using untested technology.
2. Financial risks: They appear in the form of expenses or a large loan without sufficient knowledge about the chances of success.
3. Individuals: Reflected in the form of managers' attitudes towards determining work and strategic moves that may subsequently affect their career advancement.

Fourth: The need for achievement. The need for achievement reflects individuals' orientation, aptitudes, and motivations toward feeling comfortable and satisfied, and this is demonstrated by making prolonged and repeated costly efforts to accomplish something difficult, whether through skill, practice, or perseverance (Siree & Moenik, 2010).

2.3 Strategic Clarity

Strategic clarity surpasses traditional strategic planning by integrating the organization in developing and implementing strategies aligned with its goals. It enables an organization to truly become strategic, requiring skills, leadership, seamless communication between management and employees, and efficient performance utilization (Al-Hakim & Al-Quseir, 2015). This facilitates flexibility and swift adaptation to potential risks. Managers utilize strategic clarity to create an organization capable of addressing environmental challenges by optimizing resource utilization, aligning structure, strategies, goals, and employee roles to maximize organizational value (Vakola & Nikolaou, 2005).

The significance of strategic clarity lies in aiding the organization in developing a cohesive approach that fosters unity within the organizational unit, enabling the achievement of organizational equilibrium and a shared understanding of goals. It also serves to enhance the performance of both individual employees and the organization by delineating key objectives, roles, and strategies, as well as establishing mechanisms for their implementation. Moreover, strategic clarity assists managers in defining work procedures and laying the groundwork for

strategic planning, thereby identifying and addressing performance gaps. Additionally, it plays a vital role in enabling the organization to transition from a conventional to a strategic one, characterized by flexibility, adaptability, and risk tolerance through the support of strategic initiatives. By empowering employees to voice their opinions freely, strategic clarity nurtures individual capabilities, ultimately enhancing overall organizational performance by improving employee skills and competencies in fulfilling their duties (Abeyrathna & Priyadarshana, 2019).

Strategic clarity enhances an organization's capacity to navigate change successfully. Experts must keep pace with external developments, aligning their internal adjustment speed with the changing environment. Individual resilience in the face of organizational challenges facilitates timely adaptation. Proficient change management skills, as noted by Vakola & Nikolaou (2005), empower experts to guide their peers through transitions. Attaining a high level of strategic clarity hinges on specific traits, including *i*) adept information processing, *ii*) diverse perspectives shaping data collection and interpretations, and *iii*) the ability to unify differing viewpoints toward a common strategic goal (Bantel, 1993).

The clarity of the organization's strategic plans can be measured through the following dimensions.

2.3.1 Clarity of Activities and Procedures

Business organizations today are prioritizing the creation of a clear guide outlining their procedures. This guide must offer a detailed explanation of all internal processes, emphasizing clarity, simplicity, comprehensiveness, accuracy, and alignment with organizational goals. This ensures practical implementation and prevents issues such as procedural overlap and ambiguity. Control activities and procedures are integral to safeguarding an organization's assets from waste and loss. According to Xue et al. (2018), these activities and procedures constitute a system that manages and controls the flow of resources. Yusof et al. (2020) further describe the control system as a collaborative framework of procedures aiding decision-making on product design and addressing operational shortcomings.

2.3.2 Clear Goals Are Crucial

This aspect pertains to understanding the organization's objectives when embracing new products. Businesses with a strong market orientation are more inclined to foster positive customer relationships and deliver superior value. Various studies have shown that market orientation plays a key role in achieving specific organizational benefits like fostering innovation and attaining financial success. DiZhang & Bruning (2011) emphasized that organizations aiming to adopt new products must coordinate efforts at the organizational level to gather market insights regarding present and future customer requirements, share this intelligence across departments, and act upon it effectively.

2.3.3 Resource Utilization Clarity

This aspect pertains to an organization's management of unique resources and the degree of transparency surrounding these resources. According to Hanson et al. (2016), strategic resources possess four key advantages: Firstly, the resource should be valuable, indicating it holds significant worth; secondly, it should be rare, making it scarce in the market and challenging for competitors to acquire easily. Thirdly, the resource should be difficult to replicate, preventing easy imitation. Lastly, the resource should be well-organized, enabling the owning organization to utilize it with optimal efficiency and effectiveness.

2.3.4 Clarity of the Organizational Structure

This dimension concerns the method used to clarify the organizational structure to determine the organization's size. Organization size is a key structural characteristic influencing the organizational structure. It drives decentralization to enhance efficiency, reduce centralized management, and enable cost savings. Larger organizations tend to boost profitability by leveraging resources to enhance total assets and sales. Studies indicate that organization size correlates with profitability, as larger organizations have the capacity to maximize sales and improve financial performance, measured by metrics like net income and return on assets ratios (Brammer & Millington, 2004; Abeyrathna & Priyadarshana, 2019).

Studies indicate that the size of the organization has an impact on profitability. A larger organization can sell a greater amount of its sales by investing in capabilities to enhance total assets and total sales (Abeyrathna & Priyadarshana, 2019). The use of net income and return on assets ratios serves as a measure of profitability. Additionally, the organizational structure defines the formal arrangement of work roles, management mechanisms, and integration of activities within the organization to achieve work goals. There are two types of organizational structures, as claimed by Bai & Li (2019).

2.3.4.1 Mechanical or Bureaucratic Administrative Structure

Refers to the strict division of labor, functional specialization, and selection of qualified workers based on objective criteria, not emotional influences.

2.3.4.2 Organic or Adaptive Structure

Business organizations following this approach do not have fixed roles or positions, allowing flexibility in operations.

1) **Clarity of leadership roles:** This dimension pertains to the leadership's role within an organization. Leadership plays a crucial part by influencing individuals towards accomplishing specific organizational goals, fostering cohesion and interconnectedness among members (Sharma & Jain, 2013).
2) **Employee role clarity:** This aspect pertains to the responsibilities that employees hold within the organization. Research by Zareei et al. (2014) suggests that employees play a crucial role in establishing a competitive edge by enhancing job performance through training and development, thereby enhancing the organization's competitive standing. Odhong and Omolo

(2014) noted that employees play a vital part in collaborating with their colleagues, fostering strong relationships to facilitate smooth, efficient, and effective task completion. Xesha (2014) affirmed that employees make substantial contributions to organizational success, benefitting both internal and external stakeholders.

3 Research Design and Methodology

The study utilized a quantitative approach to examine the research hypotheses. The research design comprised:

3.1 Metrics

Data collection primarily relied on a questionnaire, consisting of six questions. Additionally, an attitude scale with 64 statements, structured based on a five-dimensional Likert Scale, was employed. The questionnaire encompassed three main measures: *i*) KMP (independent variable) with five sub-dimensions: Knowledge diagnosis, knowledge generation, knowledge storage, knowledge sharing, and knowledge application. *ii*) Strategic clarity (mediating variable) comprising five sub-dimensions: Clarity of activities and procedures, clarity of goals, clarity in resource utilization, organizational structure clarity, and clarity of leadership roles. *iii*) Entrepreneurial orientation (dependent variable) with three sub-dimensions: Creativity, risk-taking, and proactiveness. Each sub-dimension included five statements, except for the knowledge diagnosis dimension, which had four statements.

3.2 Study Hypothetical Framework

Figure 1 shows hypothetical diagram of the study model.

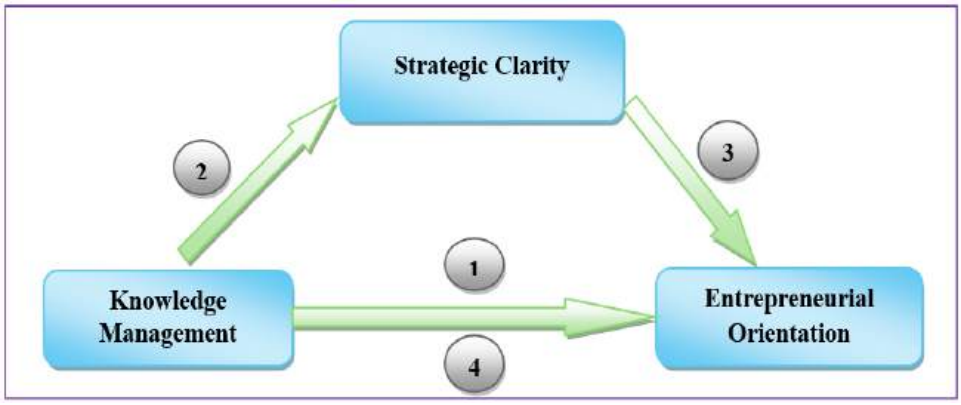


Figure 1. Hypothetical diagram of the study model

3.3 Population and Study Sample

The initial study group includes all staff across various administrative tiers (senior, middle, and executive) at Asia Cell Telecommunications Company in Mosul Governorate. Asia Cell Communications Company serves customers in Mosul Governorate via 20 branches managed through the firm's regional headquarters in Mosul. These branches employ 2,936 permanent workers as of the close of 2022. Due to the challenges of a full enumeration, a random selection of employees from these branches was undertaken, amounting to 307 workers surveyed, representing 10.5% of the total study populace, with a response rate of 90.3%. Table 1 outlines the breakdown of

the study population and sample by administrative level. Additionally, Table 2 details the key traits of the study sample, encompassing personal and educational details of participants, alongside work location and professional background of employees in the organization.

Table 1. Study population and sample distribution according to administrative level.

	Study population	Study sample			
		Distributed questionnaires	Excluded questionnaires	Final sample	Response rate
Higher management	56	34	4	30	88.2%
Middle management	172	71	6	65	91.5%
Executive management	2708	235	23	212	90.2%
Total	2936	340	33	307	90.3%
%	-	11.6%	1.12%	10.5%	-

Table 2. Personal and functional characteristics of responded sample:

Factorial variables	Category	Frequency	%
Gender	1) Female	192	62.3
	2) Male	115	37.5
Age	1) 30 years or less	47	15.3
	2) 31 - 40 year	140	45.6
	3) 41 - 50 year	77	25.1
	5) 51 - 60 year	17	5.5
	6) 61 years and more	26	8.5
Educational level	1) Preparatory school or less	0	0
	2) Technical Diploma	30	9.8
	3) Bachelor's	113	36.8
	4) Master's	73	23.8
	5) PhD	91	29.6
Professional Experience	1) 2 - 5 years	80	26.1
	2) 6 - 10 years	46	15
	3) 11 - 20 years	110	35.8
	4) 21 years or above	71	23.1
Job title	1) Employee	212	69.1
	2) Advisor	16	5.2
	3) Site administrator	30	9.8
	4) Head of the Department	19	6.2
	5) Assistant Director	21	6.8
	6) Manager	9	2.9
Professional Experience	1) Previously participated in courses	253	82.4
	2) He did not participate in any courses	54	17.6

Table 2 shows that most respondents were male (62.3%) compared to females (37.5%). The demographic characteristics align with the staff structure of these universities. The youth group (up to age forty) makes up 60.9% of respondents, decreasing as age increases. In terms of education,

most respondents have post-university education (53.4%), with others having university (36.8%) or intermediate (9.8%) education. Professional experience is varied, with 58.9% having over 11 years, 15% with 6 to 10 years, and 26.1% having under 5 years. In terms of positions, executive management comprises 69.1%, middle management 21.2%, and top management 9.7%. Moreover, 82.4% have attended training courses previously.

3.4 Testing the Questionnaire List

For us to have confidence in data collection and the suitability of methods to achieve study objectives, the validity and reliability of the questionnaire must be tested.

3.4.1 Testing the Validity of the Questionnaire Statements

The researcher validated the questionnaire statements through exploratory factor analysis, confirmatory factor analysis, and face validity. Results indicated high saturation values for statements defining KMP, strategic clarity, and entrepreneurial orientation constructs, demonstrating convergent validity. The bifactor loadings surpassed the standard (0.40) without reaching unity.

The Average Variance Extracted (AVE) showed substantial shared variance among saturated items within each latent factor, exceeding the threshold of 0.50. This affirms convergent validity across the studied measures. High correlation coefficients were observed among latent factors for each variable, below 0.90, with statistically significant Chi-square differences at the 1% level. The Heterotrait-Monotrait Ratio of Correlations (HTMT) value was below 0.90, ensuring discriminant validity between latent factors.

Despite some statements having saturation values exceeding 0.40, 13 were excluded to elevate the AVE criterion above 0.50 as per Hair's guidelines (2017), and the leadership role clarity dimension was removed from the strategic clarity scale.

3.4.2 Calculating the Reliability Coefficient for the Questionnaire

The researcher employed the internal consistency reliability method (Cronbach's Alpha) on each variable and the questionnaire in Table 3.

Table 3: Reliability for study variables (Alpha Cronbach).

Variables	No of items	Cronbach's alpha
Independent Variable (KM)	12	0.90
Mediator Variables (Strategic clarity)	17	0.93
Dependent Variable (Entrepreneurial Orientation)	13	0.93
The Questionnaire Overall	42	0.97

Table 3, the questionnaire and all its variables demonstrate high reliability. The Cronbach's alpha coefficient for the questionnaire list of variables significantly surpasses the standard value 0.7, indicating consistent results upon repeated use in the study. This confirms the questionnaire's reliability. The researcher has also affirmed the questionnaire's statements' validity and reliability,

ensuring confidence in its validity for analyzing results, addressing the study's questions, and testing hypotheses.

4 Econometrics and Results

4.1 Descriptive Analysis

In the study sample, Table 4 presents descriptive statistics like the arithmetic mean, a measure of central tendency, standard deviation (SD), a measure of dispersion, and the relative importance index. These statistics aim to show the respondents' opinions on study variables such as KMP, strategic clarity, and entrepreneurial orientation.

Table 4. Descriptive analysis for study variables

Variables	Descriptive statistics					Correlation matrix		
	Mean	SD	RII	Rank	Importance level	1	2	3
1. Independent Variable (KM)	3.82	0.65	0.764	2	Medium – High	1		
2. Mediator Variables (Strategic clarity)	3.85	0.56	0.771	1	Medium – High	0.752	1	
3. Dependent Variable (Entrepreneurial Orientation)	3.77	0.67	0.753	3	Medium – High	0.786	0.820	1

***Note*:** All correlation coefficients are statistically significant at the 1% level.

Upon reviewing the data's main features, it's evident that the average responses to the study variables were relatively close, with all of them being above average in relative importance. Specifically, they were 77.1% for strategic clarity, 76.4% for KMP, and 75.3% for entrepreneurial orientation. This indicates a high level of awareness among the respondents regarding the study variables at Asia Cell Telecommunications Company in Mosul Governorate.

To understand the strength and direction of the hypothesized relationships between the variables, we analyzed Pearson's zero-order bivariate correlations. The analysis revealed a large and statistically significant direct correlation at the 1% level between the study variables. KMP are associated with strategic clarity, with a value of 75.2%, and with entrepreneurial orientation of 78.6%. Additionally, strategic clarity is related to entrepreneurial orientation at 82%. These findings suggest that an increase in KMP and strategic clarity is likely to be accompanied by an increase in the company's entrepreneurial orientation, and vice versa.

Furthermore, the correlation coefficients between the study variables aligned with administrative logic and expected signs. This suggests a positive effect of KMP on entrepreneurial orientation, as well as a positive impact of strategic clarity. It's also possible that strategic clarity may mediate the relationship between KMP and entrepreneurial orientation. The correlation analysis presented strong relevant indicators.

To further examine and analyze the proposed relationships in the study model, we will employ the Structural Equation Model (SEM) to develop the best predictive model for the current relationship between the independent and dependent variables.

4.2 Testing the Variance in How Participants Perceive the Variables

In this analysis, we aim to determine if there are statistically significant differences in respondents' perceptions of study variables based on various factor variables such as gender, age, education level, professional experience, administrative position, and training courses. To achieve this, we will use the Kruskal-Wallis test, a non-parametric alternative to the one-way analysis of variance test. This test compares the medians of each group by ranking the results in ascending order. Its objective is to assess whether the average perceptions of the surveyed groups regarding the study variables are roughly similar and whether any differences between them are due to chance, or if significant differences indicate fundamental distinctions between these groups.

Table 5. Mann-Whitney and Kruskal-Wallis test for study variables

Factorial variables	Category	Test	KMP	Strategic Clarity	Entrepreneurial Orientation
Gender	1) Male 2) Female	Mann-Whitney	-0.532 (0.595)	-0.180 (0.857)	-1.730 (0.084)
Age	1) 30 years or less 2) 31 - 40 year 3) 41 - 50 year 4) 51 - 60 year 5) 61 years and more	Kruskal-Wallis	46.752 (0.000)**	19.276 (0.001)**	26.973 (0.000)**
Educational level	1) Preparatory school or less 2) Technical Diploma 3) Bachelor's 4) Master's 5) PhD	Kruskal-Wallis	13.924 (0.003)**	21.727 (0.000)**	24.623 (0.001)**
Job title	1) Employee 2) Advisor 3) Site administrator 4) Head of the Department 5) Assistant Director 6) Manager	*Kruskal-Wallis*	22.087 (0.001)**	39.329 (0.000)**	39.329 (0.000)**
Professional Experience	1) 2 - 5 years 2) 6 - 10 years 3) 11 - 20 years 4) 21 years or above	*Kruskal-Wallis*	11.645 (0.009)**	18.526 (0.004)**	11.984 (0.007)**
Participation in courses	1) Previously participated in courses 2) He did not participate in any courses	Kruskal-Wallis	-2.856 (0.004)**	-1.028 (0.304)	-1.104 (0.270)

Note: - ** indicate significance at 1%.

The Kruskal-Wallis test is used for comparing more than two groups, and it is applied to all factorial variables except for gender and "training courses". To assess if there are significant differences in respondents' perceptions based on gender or training courses, the Mann-Whitney test will be used. This nonparametric test is an alternative to the t-test and is specifically for comparing two groups.

The Mann-Whitney test (Z) statistic showed no statistical significance for gender and training courses, indicating acceptance of the null hypothesis. This suggests no significant differences in perception based on gender or participation in courses, except for KMP. The chi-square statistic (χ^2) was statistically significant at the 1% level for all study variables, showing significant differences in perception based on demographic characteristics.

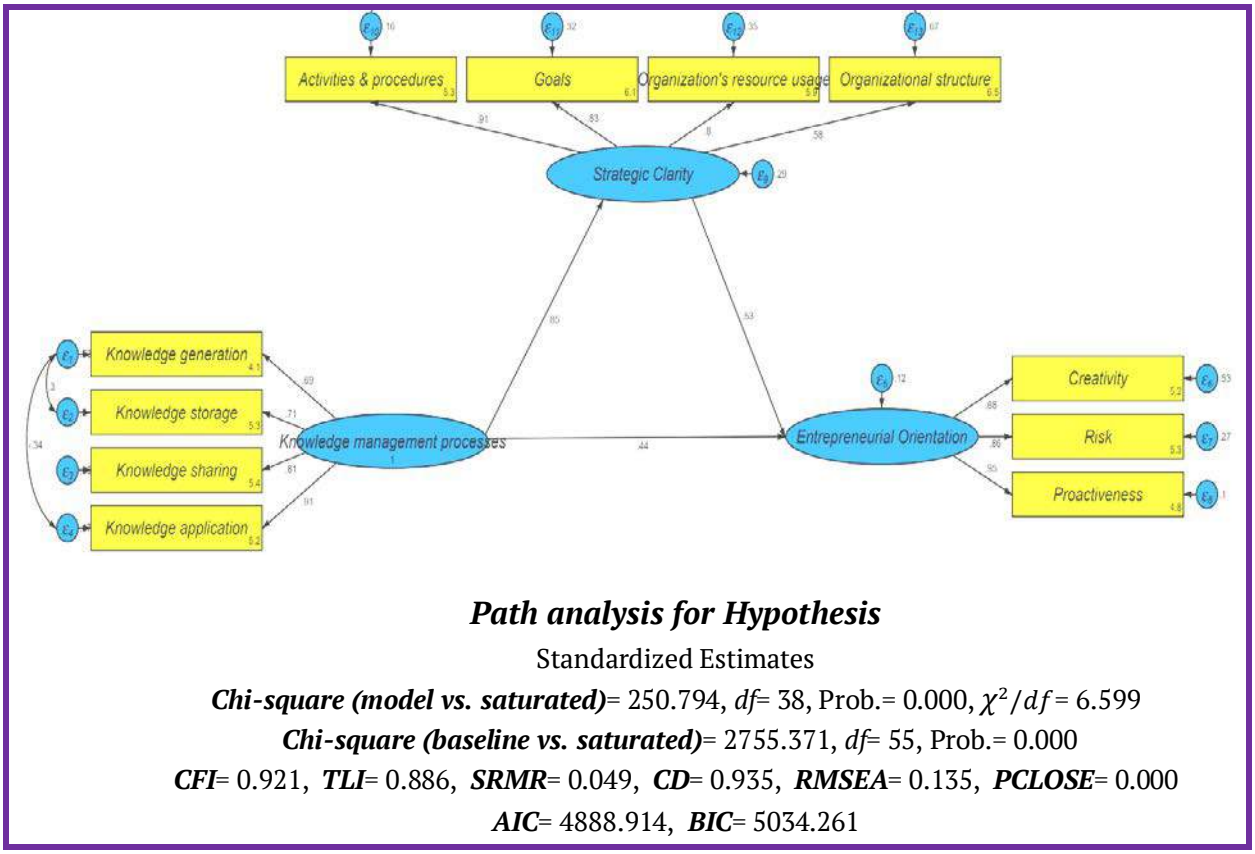
We observe that the respondents most familiar with these variables, as they agree more with the questionnaire statements, are older respondents with a university education or above, and those with little to moderate job experience, and who have taken training courses before. This suggests that younger and less educated respondents, as well as those with more job experience, tend to be more conservative in agreeing to the questionnaire statements compared to others.

4.3 Inferential Analysis (Hypothesis Testing)

The study model aims to address queries raised by the paper title. It investigates the influence of KMP as an exogenous variable on entrepreneurial orientation as an endogenous variable, either directly or indirectly through strategic clarity as a moderator. The model represents KMP as a latent variable comprising four aspects: knowledge generation, storage, sharing, and application. Strategic clarity is also depicted as a latent variable with four components: activities/procedures clarity, goal clarity, resource utilization clarity, and organizational structure clarity. Conversely, entrepreneurial orientation is portrayed as a latent variable with three aspects: creativity, risk-taking, and proactiveness.

To examine the study hypotheses, the structural model paths will be scrutinized using the Maximum Likelihood method, a popular approach for structural equation model estimation. This method estimates model parameters by maximizing the likelihood function, ensuring that observed data are most likely within the assumed statistical model. Maximum Likelihood methodology is both comprehensible and adaptive, emerging as a predominant method for statistical inference.

The goodness-of-fit indices rely on the presumption of a mutual normal distribution among observed variables, but the study model variables do not follow a normal distribution. Hence, adjusted versions of goodness-of-fit measures will be utilized, with statistics computed using Satorra-Bentler statistics. The finalized study model, optimized for excellent fit, will be presented as depicted in:



Path analysis for Hypothesis

Standardized Estimates

Chi-square (model vs. saturated)= 250.794, *df*= 38, Prob.= 0.000, χ^2/df = 6.599

Chi-square (baseline vs. saturated)= 2755.371, *df*= 55, Prob.= 0.000

CFI= 0.921, ***TLI***= 0.886, ***SRMR***= 0.049, ***CD***= 0.935, ***RMSEA***= 0.135, ***PCLOSE***= 0.000

AIC= 4888.914, ***BIC***= 5034.261

Figure 1: Results of the impact of KMP on entrepreneurial orientation considering the mediation of strategic clarity.

The goodness-of-fit indicators displayed at the bottom of the figure reveal conflicting results regarding the adequacy of the study model. The Comparative Fit Index (CFI) exceeded 0.90, while the Tucker-Lewis Index (TLI) surpassed 0.80, suggesting an acceptable fit. The Standard Root Mean Square Residual (SRMR) was under 0.09 (0.049), indicating a good fit. The Coefficient of Determination (CD) was notably high at 93.5%, signifying an excellent level of adequacy.

On the contrary, the Minimum Variance value, calculated by dividing (χ^2) by degrees of freedom (*df*), equaled 6.599, exceeding the standard value of 5, indicating a poor fit. The Root Mean Square Error Index (RMSEA) value exceeded 0.1, confirming a poor fit. The statistical significance of Pclose at the 1% level further supported this conclusion.

Given the poor fit indicated by most goodness-of-fit metrics, the model cannot be deemed accurate or suitable for the collected study data. To address this, the Robust Standard Error command will be used for model estimation to enhance accuracy and better align the model with the data. Once the structural model quality is ensured and the fit issue is resolved, further analysis can proceed to derive path coefficients, as detailed in Table 6.

Table 6. Results of the impact of KMP on entrepreneurial orientation considering the mediation of strategic clarity.

Endogenous variables: *Strategic Clarity, Entrepreneurial Orientation.*
Exogenous variables: *KMP.*
Method: *Maximum likelihood (ml) with Robust standard error.*

Paths	Expected sign	Unstandardized Coefficients	Standardized Coefficients	Std. Err.	z	P>|z|
▪ ***Strategic Clarity Equation:***						
KM → Strategic clarity	+	0.952	0.845	0.125	7.650	0.000**
▪ ***Entrepreneurial Orientation Equation:***						
Strategic clarity → Entrepreneurial orientation	+	0.390	0.532	0.049	8.000	0.000**
KM → Entrepreneurial orientation	+	0.366	0.443	0.064	5.710	0.000**
Measurements for creating the KMP variable						
KM ← Knowledge generation		1	0.657	(constrained)		
KM ← Knowledge storage		0.868	0.706	0.070	25.88	0.000**
KM ← Knowledge sharing		0.978	0.806	0.067	9.850	0.000**
KM ← Knowledge application		1.140	0.913	0.115	5.590	0.000**
Measurements for creating the "Strategic Clarity" variable						
Strategic clarity: Activities & procedures		1	0.915	(constrained)		
Strategic clarity ← Goals		0.763	0.827	0.029	25.88	0.000**
Strategic clarity ← Organization's available resources		0.801	0.805	0.081	9.850	0.000**
Strategic clarity ← Organizational structure		0.503	0.575	0.090	5.590	0.000**
Measurements for creating "Entrepreneurial Orientation" variable						
Entrepreneurial Orientation ← Creativity		1	0.682	(constrained)		
Entrepreneurial Orientation ← Risk		1.230	0.857	0.097	12.75	0.000**
Entrepreneurial Orientation ← Proactivity		1.546	0.948	0.079	19.50	0.000**

Note: - ** indicate significance at 1%.

It is evident from Table 6 that KMP have a direct positive impact on the strategic clarity level at Asia Cell Communications Company. The unstandardized regression coefficient indicates that a one-degree increase in applying KMP raises the company's strategic clarity by an average of 0.952 degrees. Strategic clarity, in turn, positively influences the company's entrepreneurial orientation by 0.390 degrees on average. Furthermore, KMP directly enhance the company's entrepreneurial orientation by an average of 0.367 degrees. This aligns with the correlation matrix, demonstrating strong direct relationships among the three variables studied and confirming the first three hypotheses.

In the path analysis results for the variables studied, the path coefficients reflect the weights used to establish the latent variable. Standardized coefficients, reflecting the variables' relative importance, highlight that the key components in measuring KMP are application (0.913),

knowledge sharing (0.807), knowledge storage (0.706), and knowledge generation (0.657). Similarly, for strategic clarity, the primary contributors are clarity in activities and procedures (0.915), goal clarity (0.927), resource utilization clarity (0.805), and organizational structure clarity (0.573). For entrepreneurial orientation, major factors are proactiveness (0.948), risk-taking (0.857), and creativity (0.682).

Table 7, the structural model is decomposed to reveal the direct impact of KMP on Asia cell's entrepreneurial orientation, the indirect influence through strategic clarity, and the total effect of combining both. This analysis clarifies the role of strategic clarity as a potential mediator in this relationship.

Table 7: Decomposition of effects into total, direct, and indirect for SEM

Paths	Direct effects	Indirect effects	Total effects
KM ⇝ Entrepreneurial orientation	0.366 [7.65]**	0.372 [7.11]**	0.737 [10.96]**

Note: - ** indicate significance at 1%.

From Table 7, it is evident that KMP directly impact Asia Cell's entrepreneurial orientation. Additionally, there is a positive indirect effect of KMP on entrepreneurial orientation through the strategic clarity variable at a 1% significance level. A one-degree increase in applying KMP results in a direct increase in entrepreneurial orientation by 0.367 degrees and an indirect increase of 0.372 degrees. Hence, KMP have a total impact of 0.737 degrees on entrepreneurial orientation from direct and indirect influences.

To analyze the mediation, we refer to Table 8 of the Baron & Kenny three-step test, which aims to examine the mediating role informally by investigating three paths:

i) **the first path;** the effect of the independent variable (X) on the proposed mediating variable (M),

ii) **the second path;** the effect of the mediating variable (M) on the dependent variable (Y), and

iii) **the third path;** the effect of the independent variable (X) on the dependent variable (Y).

For the mediating role to be established, there must be a statistically significant effect in both the first and second paths at a minimum. If either the effect in the first or second paths disappears, the mediating role is lost. The nature of the mediator is determined by the third path. If there is no effect in the third path, the variable (M) acts as a complete mediator; otherwise, it acts as a partial mediator.

Table 8. Baron & Kenny's approach to investigating the mediation role.

Paths	First step	Second step	Third step
	X ↛M	M ↛Y	X ↛Y
KM ↛Strategic clarity ↛Entrepreneurial orientation	[β = 0.952]**	[β = 0.390]**	[β =-0.366]**

Note: - ** indicate significance at 1%.

From Table 8, it is evident that the first and second paths (X↛M) and (M↛Y) have an effect. Additionally, there is an effect in the third path (X↛Y), indicating that KMP impact strategic clarity in the first path. Strategic clarity also influences the level of entrepreneurial orientation in the

second path, while KMP directly affect entrepreneurial orientation in the third path. Therefore, Baron & Kenny's test suggests that strategic clarity may serve as a partial mediator in the relationship between " KMP and entrepreneurial orientation," implying that strategic clarity conveys a portion of the effect.

To formally assess the mediating variable, the Sobel test, along with the statistics (RIT) and (RID), will be estimated and presented in Table 9.

Table 9. Mediation tests for the model

Paths	Sobel test	RIT	RID	Type of Mediation
KM. ☙Strategic clarity ☙Entrepreneurial orientation	0.370 [5.526]**	0.504	1.015	Partially Mediation

Note: - ** indicate significance at 1%.

Table 9 indicates that the Sobel test results confirm the findings of the three-step Baron & Kenny test, with the test statistic being significantly at the 1% level. This supports the fourth study hypothesis. Additionally, the *RIT* statistic shows that the influence percentage of KMP on entrepreneurial orientation through strategic clarity (the mediating variable) is 0.504. This suggests from the *RID* statistic that the mediating effect of strategic clarity is approximately 1.015 times greater than the direct effect of KMP on entrepreneurial orientation.

Furthermore, in the subsequent Table 10, general statistics of the structural model are presented, including the coefficient of determination (R^2) statistic, the Wald test statistic, and the model stability test.

Table 10. Equation goodness-of-fit statistics in SEM

depvars	R-squared	Wald tests for equations.			Eigenvalue stability condition	
		chi2	**df**	**Prob.**	**Eigenvalue**	**Modulus**
Observed:						
Strategic clarity equation	71.5%	58.48	2	0.000***	0	0
Entrepreneurial orientation equation	87.9%	409.06	1	0.000***	0	0
Overall	93.5%				Stability Index = 0	

Note: - ** indicate significance at 1%.

Table 10 shows that 71.5% of the changes in strategic clarity at the Asia Cell can be attributed to the implementation of KMP, with the remaining 28.5% likely stemming from uncontrollable administrative factors in the model. Together, KMP and strategic clarity explain 87.9% of the variance in the company's entrepreneurial orientation. The overall coefficient of determination for the model is 93.5%, indicating a high level of accuracy in describing the relationship between variables. Additionally, the $\chi 2$ test reveals statistical significance at the 1%

level, supporting the rejection of the null hypothesis and confirming the validity of the model. The stability test confirms the model's overall stability with a stability index of zero.

5 Conclusions

The study assessed the impact of KMP on entrepreneurial orientation at Asia Cell Communications Company, considering strategic clarity as a mediator between the two. Based on a final sample of 340 respondents (11.6% of the total population), the study noted an increase in the implementation of KMP, strategic clarity, and entrepreneurial orientation. Strong positive correlations were observed among these variables, indicating that enhancing KMP in the company will likely result in improved strategic clarity and entrepreneurial orientation, and vice versa. Perceptions of the variables were consistent across gender and training participation but varied based on demographic factors such as age, education, work experience, and job location.

The study revealed a direct positive impact of KMP on Asia Cell's entrepreneurial orientation, in line with administrative theory emphasizing the role of KM in augmenting intellectual capital and organizational success. It enhances knowledge acquisition for strategy building, sharing, and application, optimizes investment in knowledge, and fosters adaptability to the environment, thereby driving superior organizational performance. Emphasizing employee knowledge is crucial for efficient daily operations and organizational success.

Further, there was a positive influence of KMP on the company's strategic clarity and entrepreneurial orientation. Strategic clarity aids in unifying organizational efforts toward common goals, enhancing performance, clarifying roles, and facilitating strategic planning. It supports the shift towards a strategic organization characterized by flexibility, adaptation, and risk tolerance, empowering employees to contribute effectively.

Additionally, strategic clarity acts as a mediator between KMP and entrepreneurial orientation at Asia Cell. Through Baron & Kenny and Sobel tests, it was found that strategic clarity partially mediates the relationship between KMP and entrepreneurial orientation, with a mediating effect of 0.504. The mediating influence of strategic clarity is 1.015 times greater than the direct effect of KMP on entrepreneurial orientation.

Therefore, the study suggests enhancing the company's management of its work by exploring and developing new knowledge methods. It should also focus on consistently sharing available knowledge, improving individual knowledge through external partnerships, and leveraging existing employee expertise. Furthermore, the company should seize opportunities for innovation and proactively offer new products and services based on future customer needs. Lastly, establishing internal communication platforms and online communities can facilitate knowledge sharing within the organization.

6 Availability of Data and Materials

All information is included in this article.

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