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Acquiring Strategic Management Knowledge in Open Organisations: An Importance-Performance Analysis

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Abstract. This research aims to analyse the factors that contribute to strategic management knowledge acquisition in open organizations using importance-performance analysis (IPA). To conduct this research, an educational research institution with open system characteristics was selected as the case study. A qualitative questionnaire was developed to gather data on strategic management knowledge acquisition factors. Based on the analysis of the data collected, 48 main factors of strategic management knowledge acquisition in open organizations were identified. These factors were categorised into four strategic ranges: "focus," "continue," "low priority" and "waste". The findings provide valuable insights into the factors that contribute to strategic management knowledge acquisition in open organizations. By understanding the importance and performance of these factors, organizations can prioritise their efforts and allocate resources effectively to improve their knowledge acquisition processes. Additionally, 20 executive proposals were presented as recommendations for open organizations seeking to enhance their knowledge acquisition practices.

Keywords: Knowledge management; knowledge engineering; knowledge acquisition; tacit to explicit knowledge conversion; open organizations.

1. Introduction

The international business literature recognises the crucial role of knowledge and learning in the globalisation of organisations. Acquiring knowledge is the first step towards organisational learning, and in today's competitive markets, knowledge

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can be created and transformed at various levels within an organisation. While the importance of knowledge and its management in organisational success is not a new topic, numerous studies have focused on this issue for nearly two decades (Iskandar *et al.*, 2017).

In simple terms, tacit knowledge refers to knowledge that is formed and enriched in the minds of its holders (i.e. knowledge workers). Access to tacit knowledge is not possible without the presence and intention of the individual possessing it, and to preserve and encode such knowledge, it must be acquired and then transformed into explicit knowledge (Kucharska and Erickson, 2023). If today's business managers assumed as knowledge workers who utilise their knowledge to navigate the organisation's ship in the turbulent sea of the environment, strategic management knowledge is a map for utilising strategies to create and maintain a competitive advantage for an organisation in a complex environment (Fuertes *et al.*, 2020). Such knowledge may be tacit or explicit.

Some perspectives highlight the significant role of managers' experiential knowledge. Learning from activities and decisions reduces perceived risk and improves commitment. This approach underscores how organisations rely on managers' risk perception and analysis of available options to carry out strategic activities in the international arena. Consequently, the analysis of experiential learning has become one of the primary sources of tacit knowledge acquisition (Agustí *et al.*, 2022).

In knowledge management, this intuitive knowledge is referred to as tacit knowledge of strategic managers, which can be converted into explicit knowledge through various knowledge acquisition methods and tools. Despite some new managers, particularly in public institutions, being indifferent or even opposed to reviewing past experiences, surveys of over a hundred companies have shown that knowledge gained from mistakes often serves as a platform for achieving tangible successes (Noruzy *et al.*, 2013).

Failure to document applicable and practical learnings from experts within an organisation leads to a loss of valuable knowledge capital. Considering the tacit nature of managers' knowledge and the intellectual capital hidden in their minds, the departure of expert managers and strategic specialists raises concerns about the loss of their experience and knowledge during changing managerial generations (Tavallaei *et al.*, 2018).

Research indicates that a significant portion of knowledge generated during work processes remains undocumented and solely resides within employees' minds. Without a conversion process, this knowledge cannot be recovered. Consequently, one of the key weaknesses of contemporary organisations is the loss of tacit knowledge and experience when experts who have worked in these organisations for many years depart. Neglecting the ownership of intellectual properties by introducing young employees into organisations and management positions often leads to a knowledge and experience gap in critical decision-making areas (Ahmadi *et al.*, 2020).

Acquiring knowledge from experts within an organisation can help develop new knowledge while preventing the repetition of past mistakes (Nezafati *et al.*, 2013).

The relationship between knowledge acquisition, management and strategic decision-making in business has been convincingly presented in the background discussions. Additionally, the relationship between knowledge management and strategic management is a field of extensive research among scholars. Huang (2009) argues that in today's highly competitive and global markets, knowledge is a crucial asset that provides a sustained competitive advantage. Strategy is often defined as a comprehensive and integrated program designed to achieve organisational goals. However, designing a strategic plan is impossible without accurate information for strategic planners. Therefore, analysing information related to the organisation's internal and external aspects, and processing this information for strategic decision-making, is vital. This process is often referred to as "strategic knowledge acquisition" (Pietrzak *et al.*, 2015).

Based on the above, the value of tacit knowledge possessed by senior managers and the benefits of acquiring and converting it into explicit knowledge are evident and strategic (Ahmadi *et al.*, 2021). However, acquiring such knowledge from managers is a complex matter and comes with challenges due to limited time, busy schedules and other contextual factors such as the nature of strategic management knowledge, cultural factors and organisational relationships. Therefore, the purpose of this study is twofold: first, to identify the factors influencing strategic management knowledge acquisition, and second, to conduct an importance-performance analysis (IPA) of these factors in an open organisation as a case study.

This research aims to address the following research questions:

(1) What are the factors that contribute to strategic management knowledge acquisition in open organisations?
(2) How do these factors perform in terms of importance and effectiveness in improving knowledge acquisition processes?
(3) What recommendations can be made to open organisations based on the findings of this research?

By answering these questions, this research seeks to provide insights and recommendations for open organisations looking to enhance their knowledge acquisition practices, particularly in the area of strategic management.

To address the research questions, in this qualitative–quantitative study, a set of factors influencing the acquisition of strategic management knowledge was identified and evaluated through interviews with selected managers and knowledge engineers. Subsequently, these factors were made available to a larger sample of managers and knowledge management experts in the form of an importance-performance questionnaire for pairwise comparisons. Finally, according to the IPA framework, the classification of factors was completed.

It is noteworthy that the research questions focus on open organisations, which possess distinctive characteristics involving systematic interactions with the environment. In this context, a specific case study involving an educational research

institution was chosen to investigate these questions. Such a case study serves to enhance clarity in research findings and aids in uncovering the underlying dimensions of the subject matter, thereby facilitating comprehension of knowledge acquisition as a socio-technical phenomenon. Additionally, in exploratory research endeavours aimed at comprehending phenomena, case studies offer a remarkable methodological advantage.

The significance of this research lies in its potential to contribute to the field of knowledge management and strategic management by providing a comprehensive understanding of the factors that influence knowledge acquisition in open organisations. This research can also serve as a practical guide for organisations seeking to improve their knowledge acquisition processes, ultimately leading to better decision-making and organisational success.

2. Literature Review

Knowledge is an organised combination of data obtained through study, research and experience. It is the individual interpretation of information based on personal experiences, skills and capabilities (Drucker, 2011). Knowledge management aims to identify, collect, categorise, organise, store, share, disseminate and make available knowledge within an organisation (Nonaka and Takeuchi, 2007).

Organisational knowledge can be divided into two forms: explicit and tacit. Tacit knowledge is hidden in the behaviour, opinions and views of experienced experts and cannot be accessed without access to those individuals (Polanyi, 1962).

The importance of knowledge acquisition has led to numerous studies on its antecedents and consequences in recent years (Xie *et al.*, 2018). Knowledge acquisition is part of organisational learning and involves disseminating and utilising knowledge to achieve organisational goals (Liao *et al.*, 2012). It involves extracting, transforming and transferring expertise from knowledge sources. Tacit knowledge management involves obtaining the experience of an organisation's employees and making it available to others who need it (Dalkir, 2017). Knowledge acquisition also includes learning, analysing and interpreting knowledge from experts to solve problems (Kidd, 2012).

While successful experiences related to the implementation of knowledge management systems exist, many organisations are hesitant to publish failure stories due to policies, brand image or privacy concerns. Studies have identified key factors of failure in knowledge management programs and estimated that a significant percentage of these programs do not have a significant effect on organisations (Akhavan and Pezeshkan, 2014; Martinsons *et al.*, 2017). Therefore, there is a need for comprehensive models of knowledge acquisition and management that consider the actual conditions and organisational environments to realise their implementation and benefits (Agrawal *et al.*, 2021).

Pyrko *et al.* (2019) present five epistemological challenges in acquiring expert knowledge, which are based on the existing literature on organisational knowledge

management. These challenges provide a basis for discussing the methodological requirements to address them.

(1) Sharing specialised knowledge with others: The first epistemological challenge in acquiring knowledge arises from the reluctance of experts to share their valuable knowledge. Organisational experts often perceive their knowledge as a source of power and may be hesitant to share it (Davenport, 2005). This is while researchers such as De Felice *et al.* (2023), fundamentally recognise the acquisition of new knowledge as a social process and consider learning as the acquisition of new knowledge that occurs through social interaction from and among others.
(2) Knowledge complexity: The second epistemological challenge in acquiring knowledge is the intricate nature of knowledge, which requires an understanding of its organisational context. Kucharska and Erickson (2023) also, in their cross-country study, referred to the complexity of the type and relationships among tacit knowledge resources, the applications of tacit knowledge and the nature of innovation. From their perspective, this complexity is evident even in presenting a unified definition of tacit knowledge.
(3) Time-consuming: The third epistemological challenge in knowledge acquisition is the limited availability of experts' time. Experts may not have sufficient time to devote to the knowledge acquisition process, emphasising the importance of allocating adequate time and resources for learning and sharing knowledge (Wickert and Herschel, 2001). Ahmadi *et al.* (2022) extensively addressed the issue of how time constraints hinder knowledge engineers' access to experts' tacit knowledge. It has been stated in this study that systematic solutions should be considered in acquiring knowledge to solve this problem.
(4) Integrating multiple perspectives: The fourth epistemological challenge is the need to integrate knowledge held by multiple experts. Effective knowledge acquisition involves incorporating diverse perspectives from different experts to create new knowledge through the sharing of multiple viewpoints (Ackermann *et al.*, 2016). The multi-disciplinary issue of knowledge acquisition and its rootedness in many psychological and sociological theories has been mentioned in many previous researches. The theories of Polanyi (1966), Ackoff (1989) and Nonaka and Takeuchi (2007) about organisational knowledge are only part of the theories that describe the multi-disciplinary foundations of knowledge acquisition.
(5) The subjectivity of knowledge: The fifth challenge in acquiring knowledge is the inherent subjectivity of knowledge, as it is influenced by personal constructs and meaning-making processes (Pyrko *et al.*, 2019). Although the nature of knowledge and the nature of knowledge acquisition are sometimes mentioned in new research, in a classic study such as Compton and Jansen (1990), a detailed review of the philosophical foundations of knowledge acquisition can be found.

Considering these definitions, the process of acquiring organisational knowledge from experts is complex and sensitive. Recent studies highlight the multidisciplinary nature of knowledge acquisition, which requires consideration of various organisational and personal factors to overcome these challenges.

In studies of organisational knowledge management, the required knowledge for various levels and processes within an organisation differs; this knowledge gap can be filled by leveraging knowledge resources (Durst *et al.*, 2023). Senior managers, at the highest level of the management hierarchy, are not exempt from this need. Senior managers regulate the relationships between the organisation and its environment by adopting a strategic perspective (Idrees *et al.*, 2023). One of the key sources of providing the necessary knowledge for senior managers is acquiring tacit knowledge from peer managers and understanding past successful experiences, alongside encoded resources (such as published strategic management books); eventually, this could lead to assist managers in decision-making in complex situations.

Strategic knowledge serves as a bridge between operational knowledge and contextual information, encompassing various interconnected domains such as finance, culture, politics, institutions, technology and law. It involves understanding complexity and complex events, providing insight into emergent properties. Strategic knowledge encompasses both retrospective coherence and the ability to determine "when" and "why" certain actions should be taken (Dalkir, 2017).

In today's competitive business environment, managers must make quick and accurate strategic decisions while adapting to new challenges. This necessitates a dynamic understanding of strategic management and the ability to acquire, retrieve, produce and disseminate strategic knowledge using information processing and knowledge management mechanisms. Supporting managers in acquiring and expanding their strategic management knowledge can enhance their perception of the strategic domain and facilitate conceptual analysis. While traditional structured knowledge on strategic management exists in books, extracting tacit knowledge visually can reveal deeper insights (Ertek *et al.*, 2017).

Even though access to knowledge (either explicit or tacit) is vital for all organisational managers to make correct and timely decisions, managers of different levels, depending on their decision-making scope, interact with specific parts of the organisation's body of knowledge. Strategic managers are the most important producers and users of strategic management knowledge, playing a crucial role in the applicability and development of strategic management knowledge by applying strategic theories and rules to achieve predetermined strategic goals (Hu, 2012).

According to the provided definitions, although strategic knowledge may exist at strategic, operational, tactical, or technical levels, the use of strategic management knowledge is specific to the strategic level, with managers and strategic management specialists as its clients. This knowledge is practical and systematic, with its practical aspects formed in the minds of strategic managers who make decisions regarding the organisation's macro goals and try to determine a general direction

for the organisation while monitoring and evaluating external opportunities and threats in light of internal strengths and weaknesses.

Today, the life of organisations has been completely transformed under the influence of information technology trends. The opportunities that arise from overcoming barriers to information sharing allow organisations to rely on human capital beyond the traditional workforce (Idrees *et al.*, 2023).

The emergence of concepts such as "open organizations", "open innovation" and "crowdsourcing" shows the participation of customers, suppliers, competitors and in general all stakeholders in the processes of innovation, learning, research and development and ultimately production and value creation (Pérez-López and Junquera, 2013). From this point of view, in open organisations, value creation strongly depends on the trust of different categories of stakeholders who exchange their knowledge across the boundaries of the organisation. These stakeholders include customers who contribute to the innovation, experts who contribute to technical solutions in the same domain, and even competitors who benefit by redefining the norms and standards of cooperation. It is in this sense that open organisations create special conditions in terms of managing their internal and external knowledge (Feijoo, 2011). Therefore, examining the issue of knowledge acquisition at the strategic level of open organisations can be a novel and useful case for knowledge managers and engineers.

In an effort to understand the characteristics of contemporary organisations, Whitehurst (2015) defines an "open" organisation as one that employs collaborative communities both inside and outside the organisation. It responds more quickly to opportunities, has access to resources and capacities outside the organisation, and inspires, motivates and empowers people at all levels to act responsibly.

"Openness" focuses on how groups of all sizes work together to achieve common goals. Forward-thinking organisations, regardless of their mission, embrace openness as a necessary orientation for success. They have found that openness can lead to greater agility, faster innovation and adequate participation. Transparency, inclusiveness, adaptability (to the environment), collaboration and participation are identified as the basic conditions for openness in most contexts (Behrenshausen, 2017). Organisational openness is considered a philosophy throughout the organisation that emphasises transparency in all areas and provides unlimited and free access to organisational information and knowledge.

Based on the research background, the innovation aspect of this study can be proposed as follows:

- The present research takes a new approach to studying knowledge acquisition at strategic levels and in the strategic management domain.
- A case study was chosen as an organisation that exhibits open characteristics, possesses rich organisational knowledge and faces key strategic management issues.
- A mixed method approach has been used to conduct the study.

3. Materials and Methods

This research is of a mixed exploratory type, where qualitative data was collected through semi-structured interviews and analysed using a coding method. Additionally, quantitative data were collected through a questionnaire and analysed using the IPA method.

The statistical population of the research included IT managers, KM managers, knowledge engineers, as well as strategic management experts in open organisations. For interviews, 15 managers and experts from an educational research institution were purposefully selected. This institution was chosen due to its open characteristics. For the questionnaire, a random sample of 50 managers and experts was selected.

In the qualitative section, data were collected using a semi-structured questionnaire. The interview sessions aimed to identify the main factors and indicators of strategic management knowledge acquisition. The Critical Appraisal Skills Programme (CASP) (2018) tool was used to validate the qualitative data and evaluate the validity of the quantitative part of the questionnaire.

This checklist is a research tool designed by the research foundation of the same name. The main experience of this foundation is the training of specialists in the field of healthcare (CASP, 2018). The way to use this evaluation tool is that when evaluating a qualitative study, three general issues should be considered

- Are the results of the study valid? (Part A)
- How are the results? (Part B)
- Will the results contribute to a specific issue? (Part C)

Ten questions are designed to help to think through these issues. The first two questions are screening questions and can be answered quickly. If the answer to both of them is "yes", then it is better to continue working with the remaining questions, and there is some degree of overlap between the questions (CASP, 2018).

CASP tool consists of 10 questions to assess qualitative research. Experts were asked to answer these questions with "yes", "no", or "can't say (unknown)".

After completing the coding stages and designing the quantitative part of the questionnaire, evaluation criteria were discussed with experts, and modifications were made to the questions and factors. The CASP tool was provided to several research experts to analyse the results. If the total number of "yes" answers was more than three-quarters (75%) of the answers, it was considered that the research and its findings were valid. The final validation score, calculated as the arithmetic mean of these scores, was 85%, indicating validity.

The questionnaire for the quantitative part of the research was designed based on the findings of the qualitative part. It consisted of 48 pairs of questions in 11 parts, assessing the importance and current performance of factors in open organisations.

For example, in the section "Process and Stages of Knowledge Acquisition" (one of the 11 sections of the questionnaire), the following two questions were asked regarding "Needs Assessment in Knowledge Acquisition":

- What is the importance of "Needs Assessment in the process of knowledge acquisition" in the desired status of the selected open organisation?
- How well is the performance of "Needs Assessment in the process of knowledge acquisition" in the current status of the selected open organisation?

Participants were able to answer these questions using a five-point scale (1, 3, 5, 7 and 9) where they could select one of the options according to their preference.

The questionnaire was set up on an online platform (DigiSurvey) and shared with participants for online completion. At the outset and before commencing the questionnaire process, participants were informed that beginning to respond to the questions signifies their informed consent to participate in this research project, and participants are not obligated to answer all questions. Additionally, participants were informed that the data and results of this study will not be published in any way that discloses their names or personal information, and all peripheral information including their online footprint will be kept confidential.

To evaluate the reliability of the questionnaire, Cronbach's alpha coefficient was used to measure internal consistency. The coefficient value after data collection and analysis was 0.813, indicating validity.

The IPA model, first presented by Martilla and James (1977), was used to evaluate and measure the quality of activity in various organisational fields and rank factors.

The increasing importance of IPA in pathology and identifying the strengths and weaknesses of a system and its performance in recognising priorities and adopting improvement strategies have led to the use of this method in various research and operational fields such as healthcare (Izadi *et al.*, 2017), finance (Mansouri Rad and Bagherian, 2023), information systems (Fatoni *et al.*, 2020) and education (Fan, 2022). IPA is an effective tool for evaluating the competitive position of an organisation or its subsystems, identifying opportunities for advancement, designing marketing strategies and providing targeted services. IPA is considered a multi-index model. The effectiveness of this model depends on its analytical indicators. In the IPA model, each indicator is evaluated in terms of two dimensions: "Importance (desired state)" and "Performance (current state)". The result is used to determine where resource allocation is more critical (Sever, 2015).

To start the IPA process, the criteria to be analysed must first be identified; therefore, the first step in this technique is to specify the quality components in the desired field. To identify these criteria, literature review and methods such as Delphi can be utilised. Subsequently, by forming a two-dimensional matrix where the horizontal axis represents stakeholders' perception of the performance (quality)

of each feature and the vertical axis indicates the importance of that feature in experts' view, effective suggestions can be made to managers. This two-dimensional matrix is called the IPA matrix. Since analysing data separately in two dimensions of performance and importance, especially when both sets of data are studied simultaneously, may not be meaningful, data related to the level of importance and performance of indicators are displayed on a two-dimensional grid. This matrix is divided into four quadrants, each with a specific strategy that ultimately assists in the decision-making process. This matrix is used to identify the priority level of indicators for improvement (Feng *et al.*, 2014).

In the IPA model, indicator assessment can be done on a 5, 7 or 9-point scale, and data related to the importance level and performance level of each indicator are collected using a questionnaire. For this purpose, stakeholders and experts are asked two questions about each indicator: one regarding the importance level of the indicator and the other about the performance level of that indicator (Mansouri Rad and Bagherian, 2023).

According to the explanations provided, in this study, the topic of strategic management knowledge acquisition is considered as a subsystem within open organisations, and then its most important factors were finalised based on experts' opinions. Subsequently, through the distribution of an online questionnaires among a larger number of managers and experts, the importance and performance level of each of these factors were determined. After performing the necessary calculations and averaging, these factors were ranked and placed within four strategic quadrants.

The graphs of the IPA method were drawn using the online tool "Coordinate Plane" of the GeoGebra platform, which is commonly used in schools and universities for algebra, statistics and mathematics drawing.

Some of the limitations of this research in data collection and analysis methods include the following: targeted sampling of 15 managers and experts, in line with researchers' relationships, had its constraints. The random sample of 50 managers and experts in the next phase also had limitations such as the sample size and compatibility, specially likelihood of errors in respondents' correct understanding of questions. In the first phase and interviews, researchers' bias was a possibility, and in the second phase and on the online platform, possible errors arising from converting qualitative data to quantitative data were present. These were limitations that hopefully future researchers in other related studies will surpass.

4. Results and Discussion

The findings of the study are presented based on the main steps of the IPA method.

- Step 1: The effective factors for strategic management knowledge acquisition in open organisations were identified through coding methods in text analysis. A total of 48 main factors (and in some cases indicators) were identified and listed in Table 1.

Table 1. Factors of strategic management knowledge acquisition.

No.	Factors	No.	Factors
1	Adaptability to the Environment	25	Needs-Assessment in KA[a]
2	Organisational Values	26	Sourcing in KA
3	Organisational Missions	27	Knowledge Refinement
4	Organisational Relations Dynamics	28	Sources/Knowledge Areas Prioritisation
5	Departments Flexibility	29	Effective Tools/Methods Selection
6	Innovation Development	30	KA Subtleties
7	Low Formality	31	Centralised Responsibility: Other-Writing
8	Organisational Goals & Strategies	32	Pervasive Responsibility: Self-Writing
9	Organisational Culture	33	Trust between Knowledge Owners & Knowledge Engineers
10	IT[b] Infrastructure	34	KA Discourse
11	Organisational Structure	35	Valuing KA
12	Organisational Opportunities	36	Organisational Maturity
13	Environmental Opportunities	37	KM[c] Skills
14	Overcoming Intra-Organisational Barriers	38	Mentoring Situations
15	Overcoming Environmental Challenges	39	Feedback Mechanisms
16	Organisation Members Participation	40	Cultural Beliefs
17	External Stakeholders Participation	41	Organisational Learning Cycles
18	Eliminating Experts' Time Limit	42	Alignment with HRM[d]
19	Removing Barriers to the Experts' Participation	43	Alignment with the Evaluation System
20	Experts Motivation	44	Alignment with R&D[e]
21	Eliminating the Vision of "Knowledge Hoarding Causes Empowerment"	45	Alignment with MIS[f]
22	Eliminating the Vision of "Knowledge is an Individual Property"	46	Alignment with Empowerment Programs
23	Strategic Management Essence	47	Alignment with Strategic Plans
24	Strategic Management Knowledge Essence	48	Alignment with the Organisational Communication System

[a]Knowledge Acquisition.
[b]Information Technology.
[c]Knowledge Management.
[d]Human Resource Management.
[e]Research & Development.
[f]Management Information Systems.

- Step 2: The degree of importance and performance value of each factor was determined using paired questions and a five-point Likert scale.
- Step 3: The geometric mean was used to integrate the opinions of all decision-makers and determine the final values of importance and performance for each factor. These final values can be seen in Table 2.

Table 2. Importance and performance values of factors.

Fac. no.	Final performance value	Final importance value	Fac. no.	Final performance value	Final importance value
1	3.459	6.511	25	3.988	7.772
2	4.734	6.761	26	3.730	6.272
3	4.013	6.876	27	3.134	6.767
4	3.016	6.999	28	3.532	6.654
5	3.627	6.536	29	3.474	7.516
6	3.371	7.870	30	2.945	6.764
7	2.713	6.705	31	3.048	6.479
8	4.775	7.579	32	2.696	6.939
9	3.955	7.870	33	3.978	7.328
10	2.967	7.401	34	3.415	7.675
11	3.446	6.307	35	2.611	7.452
12	3.187	6.323	36	2.952	6.850
13	3.455	6.818	37	3.016	7.237
14	3.254	6.622	38	2.644	6.071
15	3.542	6.403	39	2.753	6.598
16	2.516	7.718	40	2.752	7.297
17	2.421	6.253	41	2.373	7.579
18	2.978	6.226	42	2.412	6.543
19	2.978	6.484	43	2.421	6.793
20	2.896	7.969	44	3.576	7.675
21	3.735	6.623	45	2.648	6.680
22	3.082	6.540	46	2.507	6.993
23	3.176	5.180	47	2.246	5.795
24	3.617	7.029	48	2.312	5.848
		Threshold Value		3.164	6.858

- Step 4: The threshold value, which is the arithmetic mean of the final values of importance and performance, was determined to create the cells of the IPA matrix. The threshold values are listed at the end of Table 2.
- Step 5: The relative position of each factor on the IPA matrix was identified. The importance-performance matrix, or IP matrix, was created to display the data related to the level of importance and performance of the factors. This matrix consists of four quadrants, each with a specific strategy.
  - Quadrant 1 (Focus): Factors in this quadrant have high importance but low performance, indicating areas that need improvement and should be prioritised for enhancement.
  - Quadrant 2 (Continue): Factors in this quadrant have both high importance and strong performance, representing the organisation's main strengths that should be maintained as competitive advantages.

- Quadrant 3 (Low Priority): Factors in this quadrant have low importance and weak performance, suggesting areas that are not crucial for the organisation and should not receive excessive attention or resources. The IP matrix helps guide the decision-making process by highlighting areas for improvement, areas to maintain as strengths and areas of low priority.
- Quadrant 4 (Waste): In this quadrant, the factors have low importance, but the organisation's performance in these areas is high. This indicates a waste of resources, as the resources allocated to these factors are more than necessary and could be better utilised elsewhere. These factors have low importance but strong performance, resulting in inefficiencies within the organisation. Therefore, these factors should either be eliminated or utilised appropriately.

Finally, the IPA matrix for the studied factors of strategic management knowledge acquisition in the open organisation (case study) was extracted as follows (Fig. 1).

The factors "Experts Motivation," "Organization Members Participation," "Organizational Learning Cycles," "Valuing KA," "IT Infrastructure," "Cultural Beliefs," "KM Skills, "Organizational Relations Dynamics," "Alignment with

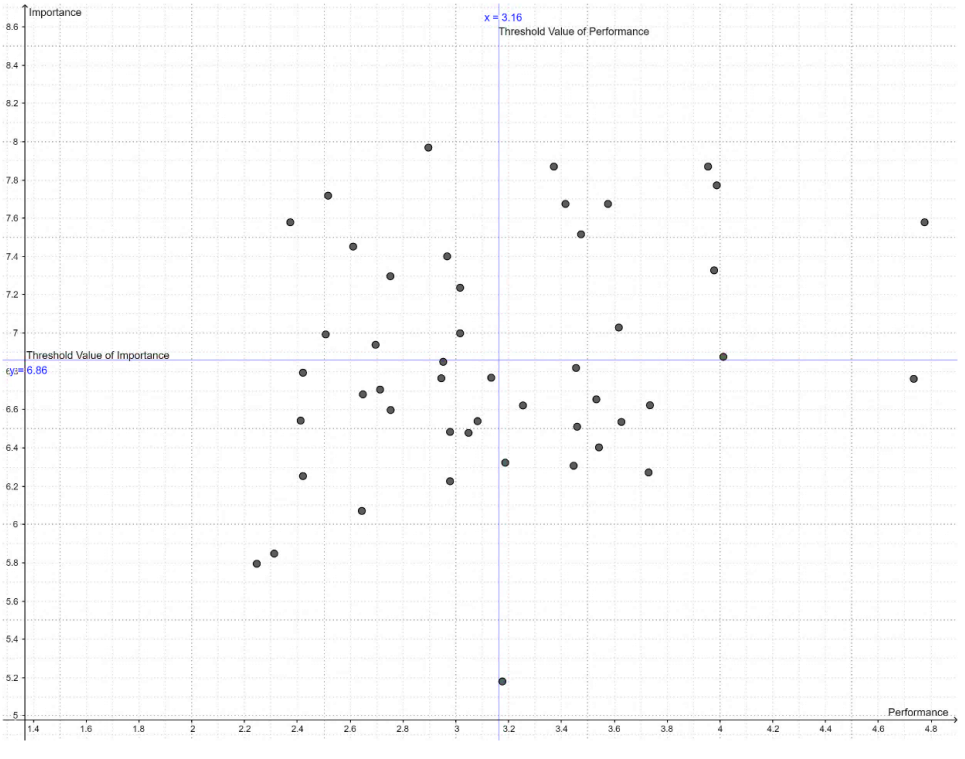

Fig. 1. IPA matrix of strategic management knowledge acquisition factors.

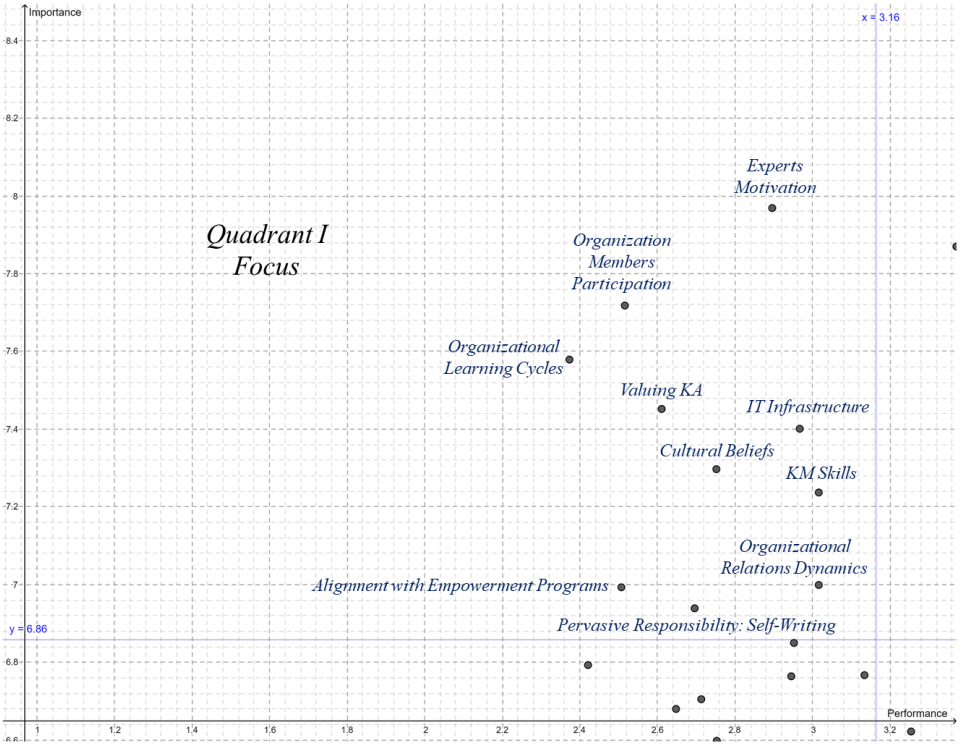

Fig. 2. Quadrant 1 of the IPA matrix.

Empowerment Programs," and "Pervasive Responsibility: Self-Writing" are placed in quadrant 1. Although these factors are very important for open organisations, their low performance has been reported. Therefore, it is necessary to focus on these factors. The full illustration of quadrant 1 can be seen in Fig. 2.

The factors "Innovation Development," "Organizational Culture," "KA Discourse," "Alignment with R&D," "Needs-Assessment in KA," "Effective Tools/Methods Selection," "Organizational Goals & Strategies," "Trust between Knowledge Owners & Knowledge Engineers," "Strategic Management Knowledge Essence," and "Organizational Missions" are placed in quadrant 2. This means that these factors are highly important and their performance has been reported as high in the studied open organisation. Therefore, the status of these factors should continue. The full illustration of quadrant 2 can be seen in Fig. 3.

The factors "Organizational Maturity," "Alignment with the Evaluation System," "Low Formality," "KA Subtleties," "Knowledge Refinement," "Alignment with MIS," "Feedback Mechanisms," "Alignment with HRM," "Removing Barriers to the Experts' Participation," "Eliminating the Vision of 'Knowledge is an

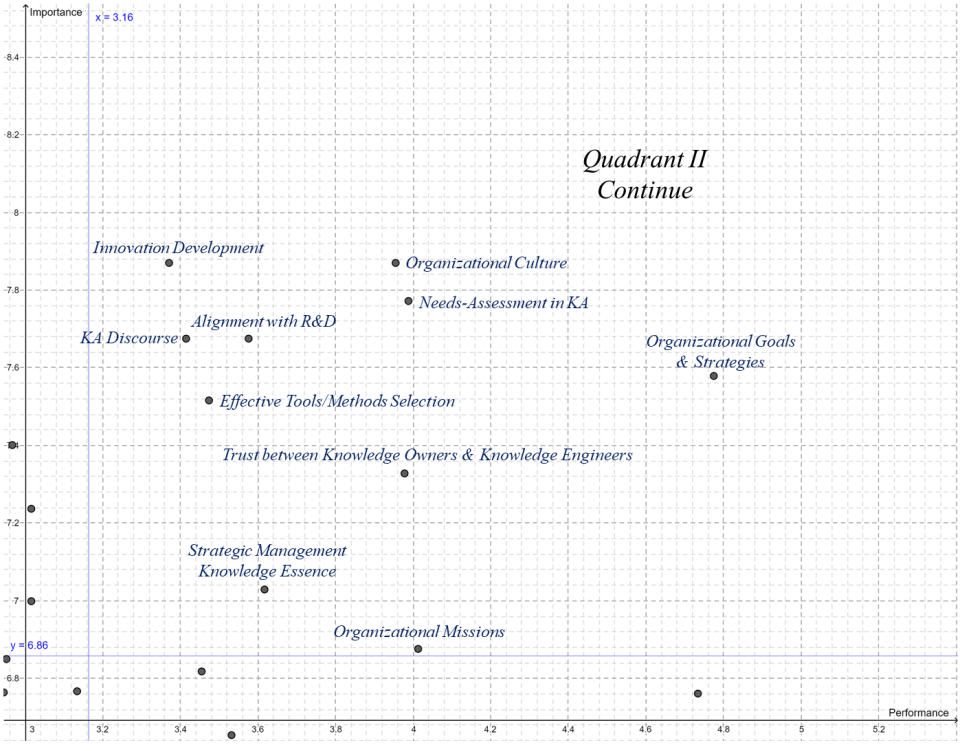

Fig. 3. Quadrant 2 of the IPA matrix.

Individual Property'," "Centralized Responsibility: Other-Writing," "Eliminating Experts' Time Limit," "External Stakeholders Participation," "Mentoring Situations," "Alignment with the Organizational Communication System," and "Alignment with Strategic Plans" are placed in quadrant 3. The performance of the studied open organisation is weak regarding these factors, but since the importance of these factors is also low, they are considered "Low Priority." The full illustration of quadrant 3 can be seen in Fig. 4.

The factors "Environmental Opportunities," "Organizational Values," "Overcoming Intra-Organizational Barriers," "Overcoming Environmental Challenges," "Sources/Knowledge Areas Prioritization," "Eliminating the Vision of 'Knowledge Hoarding Causes Empowerment'," "Adaptability to the Environment," "Departments Flexibility," "Organizational Opportunities," "Organizational Structure," "Sourcing in KA," and "Strategic Management Essence" are placed in quadrant 4. This means that the organisation's performance regarding these factors is high, while their importance is low, resulting in a waste of resources. The full illustration of quadrant 4 can be seen in Fig. 5.

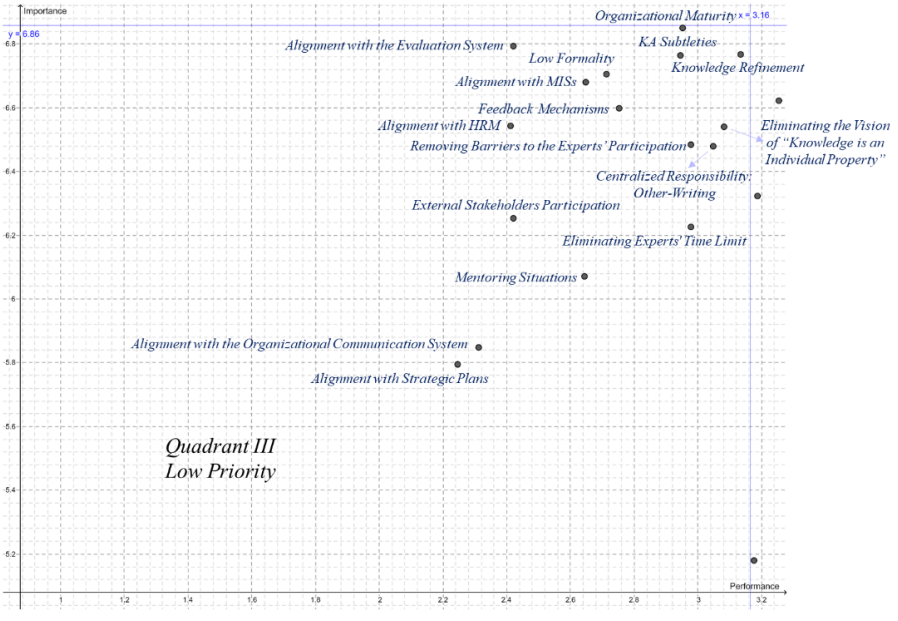

Fig. 4. Quadrant 3 of the IPA matrix.

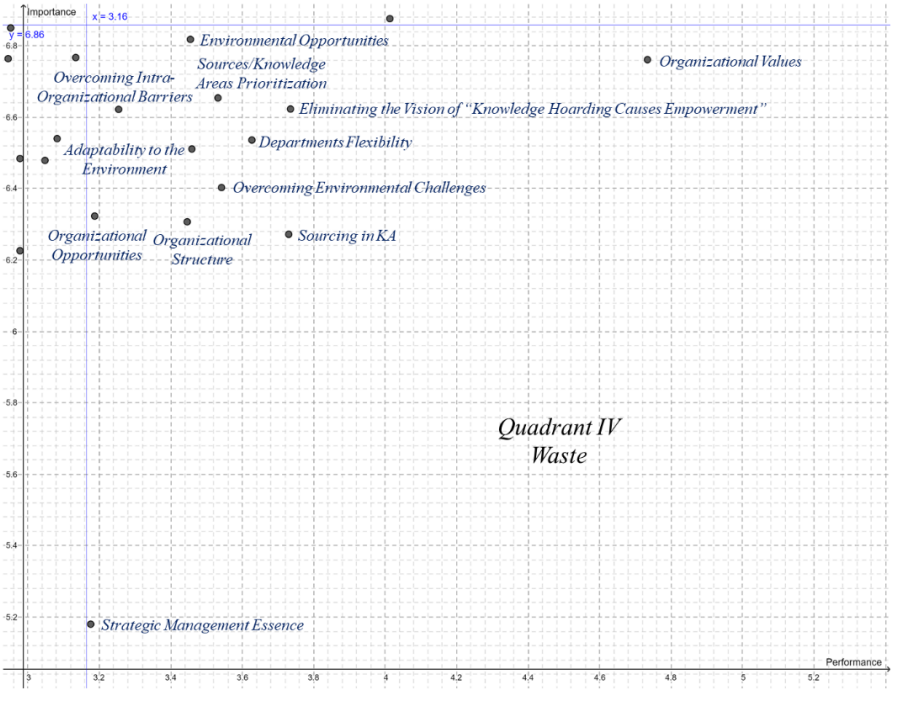

Fig. 5. Quadrant 4 of the IPA matrix.

- Step 6: In this step, the weight of each factor is determined by considering the absolute value of the difference between the importance value and the performance value, and then normalising the weights. Factors with higher weights should be given higher priority for improvement. The weight of each factor is determined using the following relationship:

$$\text{Factor weight} = |\text{Final importance value} \times (\text{Final performance value} - \text{Final importance value})|$$

  Additionally, the data were normalised using a linear method proposed by Saaty (1987), also known as eigenvector calculation. In this method, each number in a set is divided by the sum of that set, resulting in a sum value of 1 after normalisation.

The final prioritisation of factors (first 20 factors) for improvement can be seen in Table 3.

Table 3. Ranking and final weight of strategic management knowledge acquisition factors.

Rank	Factors	Final weight (Sum = 1)	Positioning quadrant
1	Experts Motivation	0.0329	Focus
2	Organisation Members Participation	0.0327	Focus
3	Organisational Learning Cycles	0.0321	Focus
4	Valuing KA	0.0293	Focus
5	Innovation Development	0.0288	Continue
6	Cultural Beliefs	0.0283	Focus
7	IT Infrastructure	0.0267	Focus
8	KA Discourse	0.0266	Continue
9	Alignment with R&D	0.0256	Continue
10	Alignment with Empowerment Programs	0.0255	Focus
11	Organisational Culture	0.0251	Continue
12	KM Skills	0.0248	Focus
13	Effective Tools/Methods Selection	0.0247	Continue
14	Alignment with the Evaluation System	0.0242	Low Priority
15	Pervasive Responsibility: Self-Writing	0.0240	Focus
16	Needs-Assessment in KA	0.0239	Continue
17	Organisational Relations Dynamics	0.0227	Focus
18	Alignment with HRM	0.0220	Low Priority
19	Alignment with MIS	0.0219	Low Priority
20	Low Formality	0.0218	Low Priority

5. Conclusion

Based on the findings presented in the tables and graphs, the following unique suggestions are made regarding the 20 most important factors identified to improve the performance of the knowledge acquisition process in open organisations. It is worth noting that due to limitations in the report presentation, the last 28 factors, which are often associated with Low Priority and Waste strategies, have not been addressed. The first 20 factors, as key success factors in acquiring strategic management knowledge in open organisations, have been comprehensively elucidated. These suggestions guide open organisations seeking to improve their knowledge acquisition processes and enhance performance.

Regarding the factor of "Expert Motivation," the strategy of Focus should be adopted. Strategic managers should be provided with material and non-material motivators to enhance their participation in the knowledge acquisition process. This can include attending specialised courses and documenting experiences in management textbooks.

Regarding the factor of "Organization Members Participation" strategy of Focus should be adopted again. Mechanisms should be implemented to make all employees responsible for acquiring and sharing knowledge. This can be achieved through the development of organisational social networks, and knowledge cafes, and by improving the culture and atmosphere of organisational communities.

According to the findings, the factor of "Organizational Learning Cycles" also requires the strategy of Focus. The organisation should prioritise the flow of learning cycles, especially double-loop learning. Attention should be given to improving education levels, coaching, in-service courses, empowerment and any educational agenda in various formats.

Also, to address the factor of "Valuing Knowledge Acquisition," the strategy of Focus must be incorporated into the agenda. Incentives, both material and non-material, should be provided to promote knowledge acquisition in the organisation. Members should understand that participation in knowledge acquisition is highly valued by the organisation. Utilising social values can be an effective approach in open organisations.

The factor of "Innovation Development", due to its placement in the related quadrant, is regulated through the Continue strategy. The organisation should continue to focus on addressing current challenges and developing innovations in products, services and processes. By fostering innovation, knowledge overflow will increase at all levels of the organisation, including strategic levels.

The factor of "Cultural Beliefs" necessitates the adoption of the Focus strategy. The cultural context of the organisation should be considered concerning knowledge acquisition. The organisational culture should support the management of intellectual assets, particularly the transformation of knowledge and the recording of lessons learned.

The "Information Technology Infrastructure" factor also demands the strategy of Focus. Managers should provide the necessary infrastructure, including software

and hardware, to facilitate knowledge acquisition and transform tacit knowledge into explicit throughout the organisation. This may involve internal and global networks, organisational social networks, messengers, computers, management information systems and artificial intelligence.

Regarding the "Knowledge Acquisition Discourse" factor, the organisation should pay attention to this factor with the Continue strategy. The organisation should continue to recognise and promote knowledge management. Sharing experiences of strategic managers in solving previous crises can support the development of the knowledge acquisition discourse. Honoring veterans, mentoring by experienced managers, and campaigns that highlight knowledge acquisition will be beneficial, particularly at higher levels of the organisation.

The "Alignment with Research & Development" factor is also included in the strategic area of Continue. Coordination with other systems within the organisation is an important aspect of knowledge acquisition. It is necessary to continue and strengthen coordination and cooperation with the R&D processes. R&D departments often have a functional relationship with IT management and knowledge acquisition departments.

"Alignment with Empowerment Programs" requires the Focus strategy. The organisation should prioritise mechanisms for training and empowering employees. Education can take various forms, such as formal or informal, academic or in-service, full-time or part-time, theoretical or practical. All types of education are needed and will have positive effects on the antecedents or results of the knowledge acquisition process. There is a close relationship between organisational knowledge management and employee training and empowerment, including managers.

The "Organizational Culture" factor can be followed by the Continue strategy. It is important to continue paying attention to organisational culture as an influential factor in knowledge acquisition. Senior managers need to actively participate in the process of converting tacit knowledge into explicit knowledge with a culture-building perspective for this issue to be considered within the organisation.

"Knowledge Management Skills" gives the best results by adopting the Focus strategy. The organisation should provide theoretical and practical training in knowledge management skills at three levels: top managers, knowledge engineers and other employees. This training should be included in annual plans and budgets.

The "Effective Tools/Methods Selection" factor goes with the Continue strategy. The organisation should continue considering a variety of tools and methods for knowledge acquisition that are tailored to the type of knowledge, expert characteristics and organisational requirements. Emphasis should not be placed only on a limited number of classic methods of knowledge acquisition.

The "Alignment with the Evaluation System" factor is included in the scope of the Low Priority strategy. Although not a high priority at the moment, it is suggested that a portion of the managers' evaluation system be dedicated to their ability to record experiences, lessons learned and tacit knowledge and transfer these intellectual assets to the organisation's sources. This criterion should be

considered in other evaluation situations as well, especially before promotion or retirement.

"Pervasive Responsibility: Self-Writing" should be followed by the Focus strategy. Everyone in the organisation should take responsibility for recording successful or unsuccessful experiences in organisational matters. This includes strategic management knowledge. Employees and strategic managers should not wait for someone else to come and write their experiences for them. Instead, they should consider self-documentation of knowledge and experience as part of their duties through continuous processes such as daily, monthly or annual notes, online or offline reports, or even paper memos.

The "Needs-Assessment in Knowledge Acquisition" factor achieves the best result with the Continue strategy. The organisation should continue to identify its knowledge needs in various levels and fields, including strategic management. Being sensitive to the organisation's knowledge gaps will enable the acquisition of knowledge from experts in each field to address these needs. The needs assessment process can involve the input of strategic managers.

"Organizational Relations Dynamics" needs to be considered with the Focus strategy. In an open organisation, interpersonal relationships play a crucial role in knowledge acquisition. The dynamics of intra-organisational relationships facilitate the process of knowledge acquisition between experts, managers, owners of strategic management knowledge, knowledge engineers and acquirers. Focusing on special relationships and informal procedures can enhance knowledge acquisition.

It seems that the "Alignment with Human Resource Management" factor does not have a high priority, at least at this stage, because it is included in the scope of the Low Priority strategy. Although not a top priority, coordinating the knowledge acquisition system with human resources management can improve organisational efficiency. Linking mechanisms such as recruiting, hiring, salary, wages and promotion with knowledge acquisition and management factors can enhance the process.

Likewise, "Alignment with Management Information Systems" is also considered the Low Priority strategy. While not a high priority, improving technological aspects of knowledge management and coordinating the knowledge acquisition system with management information systems can enhance knowledge sharing. All information systems can link to knowledge management infrastructures to record and share knowledge and experiences. Ideally, the output of downstream information systems will be the input of upstream information systems.

"Low Formality" should also be studied within the scope of the Low Priority strategy. Although not a high priority, informal aspects of some groups can facilitate knowledge acquisition. In open organisations, experts and owners of strategic management knowledge may spend more time in a constructive atmosphere recounting knowledge and experiences in informal settings than in formal organisational formats.

Managers in the IT field and organisations with open characteristics should also consider the other 28 identified factors according to their location in the importance-performance matrix and from the perspective of the four strategies to efficiently acquire strategic management knowledge in these organisations.

6. Practical Implications

Given the different and sometimes conflicting perspectives on the nature and components of strategic management knowledge within open organisations, acquirers of strategic management knowledge face challenges in interacting with experts and managers, organising knowledge trees, and shaping the output formats of the knowledge acquisition process. Different approaches may be preferred by strategic managers and owners of strategic management knowledge. Therefore, knowledge engineers and knowledge managers in open organisations need to be professional, creative and multi-skilled.

The growth trajectory of strategic managers in open organisations is primarily based on increasing their experience, providing a golden opportunity to link the promotion system with the knowledge acquisition system. Essentially, through the system of strategic management knowledge acquisition in open organisations, a basis can be designed for evaluating the performance of strategic managers.

Strategic managers in open organisations, due to the unique characteristics of these organisations, play various and multiple roles in missions and responsibilities, willingly or unwillingly. Therefore, to extract tacit knowledge from them, even in the specialised field of strategic management, attention must be paid to various information technologies, types of knowledge, diversity of management approaches and the differentiation of subject areas.

In addition to the diversity of responsibilities and missions of strategic managers in open organisations, strategic management knowledge itself in a specific field or subject may be scattered among multiple managers or specialists. Therefore, the knowledge engineer of strategic management knowledge always faces a chain of strategic managers and experts in this field whose mindset is interconnected, and acquiring strategic management knowledge involves acquiring this collective tacit knowledge.

Due to continuous changes and evolutions in open organisations seeking to align and adapt to environmental changes and respond to new needs, the system of strategic management knowledge acquisition often has limited opportunities to transform the tacit knowledge of predecessors into explicit knowledge and pass it on to newcomers. This situation may pose a serious challenge regarding the usefulness of the knowledge acquisition system and provide a strong reason for the necessity of flexibility, agility and speed required by the knowledge acquisition system. Avoiding bureaucratic processes and utilising information systems in this regard is important.

Essentially, tacit knowledge of strategic managers has a complex nature that becomes even more complex in open organisations considering their specific conditions. This knowledge is a combination of experiences, lessons learned, decision feedback, attitudes, wisdom, understanding, intelligence, human and social relationships, and beliefs that require attention to a wide range of factors for its encoding by the knowledge acquisition system. Social and cultural events, norms and collective values, and the development of knowledge management discourse throughout an open organisation are among these factors.

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References

Ackermann, F, C Eden and I Pyrko (2016). Accelerated multi-organization conflict resolution. *Group Decision and Negotiation*, 25, 901–922.

Ackoff, R (1989). From data to wisdom. *Journal of Applied Systems Analysis*, 16, 3–9.

Agrawal, A, C Kumar and SK Mukti (2021). Role of information and communication technology (ICT) to enhance the success of knowledge management (KM): A study in a steel plant. *Journal of the Knowledge Economy*, 12(4), 1760–1786.

Agustí, MA, E Ramos-Hidalgo and AM Moreno-Menéndez (2022). The role of international knowledge acquisition and absorptive capacity as a predictor of international performance. *Canadian Journal of Administrative Sciences*, 39(1), 81–96.

Ahmadi, MM, R Tavallaei and A Hasirchi (2020). Fuzzy cognitive mapping of factors influencing success of experts' organizational knowledge acquisition. *Academic Librarianship and Information Research*, 54(4), 113–131.

Ahmadi, MM, R Tavallaei, MM Mohtadi and A Taheri (2021). Investigating the trend of "Knowledge Acquisition" developments: A scientometric analysis of Iranian and global research. *Scientific Journal of Strategic Management of Organizational Knowledge*, 4(1), 1–49.

Ahmadi, MM, R Tavallaei, MM Mohtadi and A Taheri (2022). Semantic mapping of the pattern of strategic management knowledge acquisition in institutional organizations. *Business Intelligence Management Studies*, 11(42), 1–35.

Akhavan, P and A Pezeshkan (2014). Knowledge management critical failure factors: A multi-case study. *VINE: The Journal of Information and Knowledge Management Systems*, 44(1), 22–41.

Behrenshausen, B (2017). *The Open Organization Definition Book*. US: Red Hat. https://opensource.com/open-organization/resources/open-org-definition-book. Accessed on 7 July 2022.

Compton, P and R Jansen (1990). A philosophical basis for knowledge acquisition. *Knowledge Acquisition*, 2(3), 241–258.

Critical Appraisal Skills Programme (2018). CASP (Qualitative) Checklist. https://casp-uk.net/. Accessed on 07 July 2022.

Dalkir, K (2017). *Knowledge Management in Theory and Practice*. MIT Press.

Davenport, TH (2005). *Thinking for a Living: How to Get Better Performances and Results from Knowledge Workers*. Harvard Business Press.

De Felice, S, AFDC Hamilton, M Ponari and G Vigliocco (2023). Learning from others is good, with others is better: The role of social interaction in human acquisition of new knowledge. *Philosophical Transactions of the Royal Society B* 378(1870), 20210357.

Drucker, PF (2011). *Landmarks of Tomorrow: A Report on the New*. Transaction Publishers.

Durst, S, IR Edvardsson and S Foli (2023). Knowledge management in SMEs: A follow-up literature review. *Journal of Knowledge Management*, 27(11), 25–58.

Ertek, G, G Tokdemir, M Sevinç and MM Tunç (2017). New knowledge in strategic management through visually mining semantic networks. *Information Systems Frontiers*, 19, 165–185.

Fan, SC (2022). An importance–performance analysis (IPA) of teachers' core competencies for implementing maker education in primary and secondary schools. *International Journal of Technology and Design Education*, 32(2), 943–969.

Fatoni, A, K Adi and AP Widodo (2020). PIECES framework and importance performance analysis method to evaluate the implementation of information systems. In *E3S Web Conf.*, 202, 15007.

Feijoo, JP (2011). People and knowledge management in organizations: Challenges of the next decades. *JANUS. NET e-Journal of International Relations*, 2(1), 93–113.

Feng, M, J Mangan, C Wong, M Xu and C Lalwani (2014). Investigating the different approaches to importance–performance analysis. *The Service Industries Journal*, 34(12), 1021–1041.

Fuertes, G, M Alfaro, M Vargas, S Gutierrez, R Ternero and J Sabattin (2020). Conceptual framework for the strategic management: A literature review-descriptive. *Journal of Engineering*, 1–21, 6253013.

Hu, L (2012). Strategic management knowledge transfer, absorptive capacity and the attainment of strategic objective of MNCs' Chinese subsidiaries. *Modern Economy*, 3(4), 424–428.

Huang, JJ (2009). The evolutionary perspective of knowledge creation–A mathematical representation. *Knowledge-Based Systems*, 22(6), 430–438.

Idrees, H, J Xu, SA Haider and S Tehseen (2023). A systematic review of knowledge management and new product development projects: Trends, issues, and challenges. *Journal of Innovation & Knowledge*, 8(2), 100350.

Iskandar, K, MI Jambak, R Kosala and H Prabowo (2017). Current issue on knowledge management system for future research: A systematic literature review. *Procedia Computer Science*, 116, 68–80.

Izadi, A, Y Jahani, S Rafiei, A Masoud and L Vali (2017). Evaluating health service quality: Using importance performance analysis. *International Journal of Health Care Quality Assurance*, 30(7), 656–663.

Kidd, A (2012). *Knowledge Acquisition for Expert Systems: A Practical Handbook*. Springer Science & Business Media.

Kucharska, W and GS Erickson (2023). Tacit knowledge acquisition & sharing, and its influence on innovations: A Polish/US cross-country study. *International Journal of Information Management*, 71, 102647.

Liao, SH, WJ Chang, DC Hu and YL Yueh (2012). Relationships among organizational culture, knowledge acquisition, organizational learning, and organizational innovation

in Taiwan's banking and insurance industries. *The International Journal of Human Resource Management*, 23(1), 52–70.

Mansouri Rad, H and B Bagherian (2023). Importance-performance analysis (IPA) of banking factors affecting the improvement of business environment and prevention of corporate bankruptcy through the IPA model. *International Journal of Nonlinear Analysis and Applications*, 14(1), 459–471.

Martilla, J and J James (1977). Importance-performance analysis. *Journal of Marketing*, 41(1), 77–79.

Martinsons, MG, RM Davison and Q Huang (2017). Strategic knowledge management failures in small professional service firms in China. *International Journal of Information Management*, 37(4), 327–338.

Nezafati, M, M Rashidi and MT TaghaviFard (2013). Comparing knowledge extraction techniques and developing a structured methodology for documentation of knowledge. *Journal of Public Administration Perspective*, 14, 63–86.

Nonaka, I and H Takeuchi (2007). The knowledge-creating company. *Harvard Business Review*, 85(7/8), 162.

Noruzy, A, VM Dalfard, B Azhdari, S Nazari-Shirkouhi and A Rezazadeh (2013). Relations between transformational leadership, organizational learning, knowledge management, organizational innovation, and organizational performance: An empirical investigation of manufacturing firms. *The International Journal of Advanced Manufacturing Technology*, 64(5), 1073–1085.

Pérez-López, S and B Junquera (2013). The relation between IT competency and knowledge management processes and its mediators. *Tourism & Management Studies*, 9(1), 109–115.

Pietrzak, M, K Jałosiński, J Paliszkiewicz and A Brzozowski (2015). A case study of strategic group map application used as a tool for knowledge management. *Journal of Computer Information Systems*, 55(2), 68–77.

Polanyi, M (1962). Tacit knowing: Its bearing on some problems of philosophy. *Reviews of Modern Physics*, 34(4), 601.

Polanyi, M (1966). *The Tacit Dimension*. University of Chicago Press.

Pyrko, I, C Eden and S Howick (2019). Knowledge acquisition using group support systems. *Group Decision and Negotiation*, 28, 233–253.

Saaty, RW (1987). The analytic hierarchy process — what it is and how it is used. *Mathematical Modelling*, 9(3–5), 161–176.

Sever, I (2015). Importance-performance analysis: A valid management tool?. *Tourism Management*, 48, 43–53.

Tavallaei, R, P Haghighi Boroujeni and MM Ahmadi (2018). Designing a native methodology for experts' organizational knowledge acquisition using semantic cognitive maps. *Public Administration Perspective*, 9(4), 63–88.

Whitehurst, J (2015). *The Open Organization: Igniting Passion and Performance*. Harvard Business Review Press.

Wickert, A and R Herschel (2001). Knowledge-management issues for smaller businesses. *Journal of Knowledge Management*, 5(4), 329–337.

Xie, X, L Wang and S Zeng (2018). Inter-organizational knowledge acquisition and firms' radical innovation: A moderated mediation analysis. *Journal of Business Research*, 90, 295–306.