



# A study of knowledge management alignment with production management: A study of carpet manufacture in Kurdistan region of Iraq

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**Abstract**— *The manufacturing sector has been profoundly impacted by advances in project management knowledge. As a result, it is critical to optimize service development processes in every project. The aim of this research was to increase cement manufacturing production by applying knowledge management concepts and Knowledge management as a mediator. The study was conducted at various cement manufacturing facilities in Iraq's Kurdistan province. To quantify production improvement in cement companies, the researchers examined four facets of knowledge management: Knowledge creation, Knowledge storage management, knowledge sharing, and Knowledge application, with Knowledge management serving as a mediator. To conduct the current analysis, the researchers used a quantitative research approach in the form of a survey. The questionnaire was randomly distributed to 140 administrative employees of various cement manufacturing companies in the Kurdistan region. The researchers did, however, collect 128 completed questionnaires. To assess developed research hypotheses, the study used hierarchical multiple regression analysis and the Sobel test. The findings indicated that all knowledge management elements (Knowledge creation, Knowledge storage development, knowledge sharing, and Knowledge application) had a clear and important positive relationship with increased production at carpet manufacturers in Iraq's Kurdistan region. Additionally, the findings indicated that all knowledge management concepts with a mediator (project management development program) had an indirect positive and important relationship with increased production at cement manufacturing facilities in Iraq's Kurdistan region.*

**Keywords**— *Knowledge management, Production Management, carpet manufacture, Improvement.*

## I. INTRODUCTION

Now that the business situation is becoming more competitive, companies that are able to execute projects that are on time and on budget are becoming highly sought after or valued as suppliers. The foundation of this project is established with a solid infrastructure. In addition, the ability to rapidly and nimbleness are crucial. management as a variety of cost, (Ode & Ayavoo, 2020) also, as the marketplaces expand, various factors such as complexity, adaptability, scalability, strategy, and trade-specific needs are required to be considered for better strategic value

management (Sousa & Rocha, 2019). In addition, research should be done on concerns and problems that exist, and issues that need to be fixed. These measures are required to outline the research issue to be investigated, aims to be met, and motive to perform the investigation are the research is of significance. underlying traditional projects and activities by collecting relevant academic articles, news, blogs, industry publications, as well as general-interest internet sites, professional publications, and books and government reports that present project management information (Andavar & Ali, 2020). Therefore, the thesis critically

examines financial and project management theories and poses their use in the setting of Iraqi provincial change (Raudeliūnienė et al. 2018). As a result, the method of procuring the goods must be streamlined to accomplish the aim of the project. often guides the prospective contractors on what exactly they must include in a request for proposal in order to succeed (Anwar, 2017). This allows bidders to be more competitive with other firms and include necessary requirements in the RFP (Razzaq et al. 2019). We look at the opportunity based on these requirements and ask each company to design a proposal for meeting those criteria and then compare them on whether they can both meet them. though the project is dealing with the Iraqi government (Ali, 2021), in the Kurdistan region is in ailing due to the large numbers of startups and young populations that lack years of service in government (Iqbal et al. 2019).

An excellent source has validated this suggestion to implement project management strategies by providing strategies on project implementation: this second source provides rationale behind OPM recommends using a project management method that is known as programs as "programs" to conduct and advice has been shown to be sound. Managing benefits is something that's increasingly important in today's business world (Anwar, 2016), but in most companies it's still a dark matter about whom is to hold accountable for those benefits remains unclear. The good news, according to Anwar and Shukur (2015), is that long-term benefits have failed to keep pace with expectations and may even have decreased since nearly a decade ago. In order to meet the goals that are not being met today, firms must embark on a more challenging effort of transformative change, and include stakeholders that are further along in the process. A transformational change can only be made within a framework program management. To begin, any business program sets out with a set of expectations and a vision (Dayan et al. 2017). These expectations measure the benefits that the business will obtain from the vision. The established processes, structures, and technologies, together with the target value proposition, create a "blueprint" of the future state of things. Business and personal ventures as well as public infrastructure projects and services are developed by the program leadership to develop and enable the new state (Abdullah et al. 2017). This new or updated software provides the capabilities in coordination with an expansion of current ones, supporting them in a way that makes their use easier and in the current operations (Anwar & Balcioglu, 2016). A transformation program will cause tangible benefits as well as increase the achievement of the overall vision to be reached (Santoro et al. 2018).

Program managers are ideally suited to better understand the interconnections of importance and programs for OPM improvement, to say nothing of aligning them with project

goals and stakeholder needs to excellence in any sort of program, an organisation and key is finding is a partner with the appropriate power (Ali, 2021), where the programs believe in it, and a high levels of responsibility. the term "new organizational skills" here means capability is more than just something that exists, but also something that is used to explain as well as realized and then quantified as predicted outcomes and continual gain. The tangible and intangible benefits of a program objectives and goals should have in mind, in order to be profitable and meet or exceed the sponsor investment objectives (Abubakar et al. 2019). According to the classical model, a program manager is typically a central to the programs that they are managing. the issue with this model is that it attributes all the control and accountability to the same person or person/group rather than spreading them out equally among the various areas and departments Program-managed and projectized organizations should grant program manager and project manager the authority they oversee the maximum freedom to innovate and to enable full participation in change (Demir et al. 2020). While it is far more common to use a matrix for organizational management, the matrix is still present in many organizations. When the program manager is present, this tends to detract from the team's effectiveness in changing the company structure. In contrast to the program manager is a program typically follows a more conventional management pattern, responsible for developing, tracking, and controlling the overall lifecycle of the program. project management responsibilities in this model include designing the projects and facilitating the introduction of additional project functions that help programs to meet organizational needs (Martins et al. 2019). When it comes to delivering the capabilities as well as realizing the expected advantages, the improvement programs, the integrator is of key importance because he or she helps make the new system work processes develop and mature. this planning is generally speaking, prior to the pre-transition phase, post-transition, and transition; these tasks will include: (Anwar & Abd Zebari, 2015). In the above case, the program manager does not need to be an expert in project management. Instead, the controller is chosen from the outside of the business unit that will own and benefit from the capabilities for a period of time, but for a length of time that has an effect. Additionally, they are good sources for criteria for formulating and management change management as well as well as for engaging stakeholders and their communities. primarily of the program sponsor, program manager, and the integrator Involve subject matter experts as well as leaders in program leadership to ensure the advice and guidance offered in the program is correct A typical role for an OPM consultant will be assigned here is making recommendations about how to improve OPM

programs based on use of OPM evaluation tools (Gaviria-Marin et al. 2018). It is equally essential for the preparation and implementation of the program capabilities as for the roll-out of program benefits and value delivery. As a result, the manager of the program and the implementation team report to the sponsor in tandem. However, in reality, the program board is very efficient and gets the job done. It organizes the plan, ensures that a potential state capability is actually exists, and strengthens the idea of the program's benefit, and is the representative of the business environment or market place (Anwar, 2017). Resources will be restricted, and the latest capabilities which face varying degrees of OPM-process adoption issues. This committee offers a vehicle for programs continuity, a capability for adaptation, and flexibility. It also permits them to concentrate on merit and allows for adaptation (Ferraris et al. 2019).

## II. LITERATURE REVIEW

### Knowledge management

The methodology described by KM applies to even the most basic functions of firms. There are the most commonly occurring business processes that can be implemented with KM. It was assumed that only the structure of work behavior had influence on all aspects of work, including their existence and importance, in the analysis conducted by (Ali, 2020). while analyzing how certain work characteristics such as innovation and employee development influence one another, Al-Emran et al. (2018, on the other, evaluated the relationship between creation of employee creativity and overall efficiency Once functional and motivational characteristics were found to be the most important, the strengths were not listed in any way, but all of the qualities were still identified as related to the creative generation. Sustainable and competitive market needs regard for the needs in companies Filippetto et al. (Hameed & Anwar, 2018) noted a rise in KM training on the importance of skills such as the aforementioned elements has for effective ecosystems for ongoing growth, green product development, led them to state for mentioning KP development as an important ecosystem element. To build, store, and use routines, KM as argued by (Anwar & Ghafoor, 2017), is vital for acquiring and retaining operational expertise. As a result, these KM methods raise issues around supply-chain capacity and productivity, distribution, as well as firm knowledge development, storage, dissemination, and application. However, progress has been important in some areas but it appears that numerous and overlapping variables are at play in others, this kind of matrix (Anwar, 2017) as (is referred to as heterogeneous and complicated in the findings provided by

(Barley et al. 2018). KM can be defined as using the tools of record management, recording, record capture, regulations, or recovered knowledge, which involves simply bringing all that an employee encounters to light and the ability to log, rate, code, and harvest, and share, with people at the workgroup level of facts, regulations, details, and learn, to reduce the accumulation of missed information. An understanding and application of KM has often enables and increases a level of physical movement; that is, it improves one's knowledge by means of it, develops it by adoption, and broadcasts it by implementation (Zaim et al. 2019). It is required that an infrastructure- and operations modelling technique is applied to a KM architecture to ensure continued success. Lee and Choi state that KM enablers are measures that can be used by businesses to drive higher levels of consistency of information usage (Anwar & Qadir, 2017). After KM, then firms must focus on shared understanding. Every company has its own specific expertise, but understanding this information within the firm is tough to accomplish. to the extent that it is difficult to overcome this obstacle, it will significantly restrict how companies increase their overall performance and their competitive advantages can be recognized, codified, and then built upon (Muthuveloo et al. 2017). The Phase method has proved to be a valuable at a corporate levels as well, thus we have determined that SKM should be characterized as a conglomerate of measures taken. broadening KM emerged during the early on a variety of applications in business, government, the 1990s and was when knowledge management first appeared in the sectors like health, science, administration, and policy, and public sectors, and information technology and library science (Shujahat et al. 2019). The educational, cognitive, science, scientific, scientific, industry, information, technological, and technological, and algorithmic, computer science, scientific, and rational (or management) theories and behavioral measures of success, philosophies, and approaches, in turn, advocate and use computer technology (Anwar & Louis, 2017). While the latter half of the 20th century saw the introduction of the concept of information management in the business world, the second two decades were devoted to understanding and demonstrating it. the goal of knowledge management was to increase the market's productivity, open the market to competition, and foster innovation in the globalization era (Arpaci, 2017). an approach to systematically seeks out, gathers, organizes, ferrets out, and intensifies and shines with its own data in order to better equip the organization with the workforce for various roles (Ali & Anwar, 2021 ). However, in addition to those functions, management believes that product and process innovation, executive decision-making, and organizational change and renewal must all be linked with

knowledge (Friedrich et al. 2020). Expand on." One of the more recent developments in the information studies and information management is knowledge management, which is currently considered to be an extremely influential area in both. It supports an organization in better decisions and on the problem by addressing the challenge more efficiently (Abdullah & Anwar, 2021). This is called knowledge management because it involves both the three functions: collecting, making, and using (which is the role of the curator), and spreading the word of what you've learned (producers), and iii) activities which go along with these functions help you find new information (including obtaining, pooling, and organization), organize it, and release it (which is also refers to administrators) your knowledge. It is impossible to speak of something as being 'superior' to something else: it can only be better at fulfilling its objective than what came before. Although we currently lack a theory of information management theories in the field of applied science (Cerchione & Esposito, 2017). Knowledge in companies (or organizations) is focused on the concepts of knowledge development and knowledge transfer. Knowledge Management includes procedures, IT techniques, structures, abilities, and efforts that often include preparation and long-making all of which are areas of knowledge (Ramjeawon & Rowley, 2017). Information management (the application of holistic perspectives to all aspects of product handling) is an interdisciplinary field that deals with all kinds of information. People, machines, and technological, logistical, and organizational aspects of KMMs (key management machines management systems) all count as KMMs (Antunes & Pinheiro, 2020). Various corporations in the business world have found it necessary to incorporate knowledge management into their competition in order to keep up. right-hand lead diopter A knowledge management systems use information and communication technology (often referred to as ICT) to help handle information by providing the required information at the right time (Anwar, 2017). Often referred to as Keyword Mining, that is when writers are looking for key words to gain new concepts, ideas, or ideas to find new key words (Ardito et al. 2019). The approaches to information management vary greatly, since they arise from various perspectives and different fields of study based on their own interpretations of what is to be learned. all M isn't expanding. Although the surrounding areas are still being developed, existing approaches are unclear and competing methods have not yet converged (Abbas & Sağsan, 2019).

Management of information systems and processes' extends beyond the traditional areas of managing personnel, to include assistance with staff training, arranging operations, and projects, and encouraging individuals to use the resources effectively. IOPs can be described as something

that deals with the expansion of information such as patents and guidelines and documents such as the industry-best practices and expertise as well as well as data in electronic records, such as past problems and approaches, and all that which is relevant to an issue that is being worked on and that is known by teams and an organization, including their approach to solving it. All stages of information acquisition, processing, production, storage, and use are a part of the KM cycle (Israilidis et al. 2019). The company uses its information management function to monitor these procedures, generating methodologies and design philosophies to do so, as well as bringing participants in on board. the goals of management are to ensure that an efficient and productive flow of knowledge, raise awareness, maximize the understanding of knowledge processes, and improve business decisions by getting a handle on information Although individuals can implement all of the KM processes, it's all about increasing the capacity of managers to enable individuals to participate in these goals. An example of a social mechanism is self-organizing societies: larger communities are geared toward facilitating communication, while smaller ones aim to unite people with like mindedness, and groups that exist to unite people are created to bring those of different skill sets together. Social processes are needed because knowledge tends to come from the individual minds, but can only be spread through social teams and networks (Venkitachalam & Willmott, 2017). Although many people believe, KM to be purely relies on a modern information and communications Knowledge creation, in reality it relies on a great deal on its employees and those individuals, the implementation of KM technology makes it significantly more human-intensive (Velásquez & Lara, 2021). When knowledge is thought of as an important, the organization's assets, it is perceived as being a product. To expand on this: In advance, it can be referred to as "Intelligence, which can be built from information, is at least to an even greater level of comprehension of situations, causal relationships, and underlying rules (whether explicit or not) and fundamental, as well as well as it is to gain a better understanding of rules or theories that under said circumstances" (Anwar, 2017). It's also an expansive in that it's application, it assists all companies in growing and networking, including exchanging data, as well as dealing with issues in culture, so you can think about communication and finding answers to questions you might have (Ali, 2021). With an increasing awareness of the importance of information, techniques and resources for keeping the organization's knowledge growing, there has been an increase in strategy demand for both. KM is the most visible and most efficient means of facilitating change, most likely to be used in this process. On top of that, the fact that software development is a rapid-

which demands even greater physical agility. Second, the supply of resources are constantly increasing but business demands are on them are rising, making it more difficult for tech companies to do so. Processes, methodologies, people, people, history, and the working environment for the software process are as important as the software is for the company. When companies rely on multiple levels of software in the process, there is a need to be more accurately identify, better manage, and more efficiently define the interests of consumers and markets, as well as well as to promote cooperation between software developers (Anwar, 2016). A individual has either tacit or explicit knowledge of something when they know or when it is directly perceptible to them. You don't consciously realize that you have Tacit awareness until you are already used to it. Once you are accustomed to something, you can find it hard to transfer or communicate it to others. Although conventional information is often can be encoded, distributed, explicit data is not only codified, but is often easily interpreted and understood in any given situation. This theory holds that information is a company's most valuable resource, and thus provides a foundational definitions of KM: an organization's most important assets are knowledge and resources. among other things, how effective an agency is at disseminating information is also depends on the employees' ability to disseminate it within the company and use it to its maximum benefit. In a nutshell, we get stuff done by either knowing the answer or knowing a source of information on which the answer is based. Knowledge-based management is about the total workforce applied to an attempt to clarify priorities and measures is key to KM. Rather than being solely about the access, the kind of knowledge an organization can keep, the purpose of information management is to guide the most significant strategic uses of that knowledge. It's about providing people with the information, ensuring that they have it, and making sure they know when they need it (Abdullah et al. 2017). A larger objective is ensuring that people have the correct information, where it's appropriate, at the appropriate time. One unfortunate fact about knowledge management is that is, however much effort you put into managing it, you can't get it anywhere near enough to control. what we can do and what the KM elements are all about is helping people become creative, and in the effort to expand their capabilities and make their own ideas and then inspire them to develop, spread the word about, use, and receive knowledge for the benefit of the business and its personnel and customers (Anwar & Balcioglu, 2016). When it comes to many business cultures, information management is a very relevant issue. While the term "knowledge management know-how" has a simple definitions, there are several viewpoints and applications, at least three of which

do not use this skill. but as the pace of market growth increases, the importance of a method of profitable as well as a path to competitiveness (Demir et al. 2020).

### III. PRODUCTION MANAGEMENT

Furthermore, Martins et al. (2019) asserts that unique project requirements should bring with them their own project specifications such as milestones, technology standards, and limits, and limitations. They also left the question of which of which parts are to be used open to the contractor open to interpretation, but none of these is mentioned because the team has a stipulation that it's ok for them to do. Other studies also confirm that (Anwar & Abd Zebari, 2015) state that project planning also requires giving attention to end results, as well as management controls, to define project authority, too. The tasks, deadlines, scope, and responsibilities are specified in the PMI's organizational description, by corporation, department, and financial scope, respectively (Gaviria-Marin et al. 2018). The project, on the other hand, has complied with the best to tackle these criteria; however, the challenge is the management limit. For example, the project's sponsor has only the prime minister as a direct connection, meaning. Because of this, the project's progress is delayed. According to Anwar, (2017), a project's poor performance may be attributed to leadership and/caused as an excuse to have lesser sponsor support. If the project spectrum is defined, the ideas will be applied to it. increasing [the reach of] horizons in his ambitions there are also a few minor inconsistencies and contradictions in theories There are no requirements in the project at all the time for the program. In this situation, another problem is the project's management body, which is the Iraqi administration, who are responsible for overall project control. It has been authorised for the prime minister to be responsible for all the operations in Iraq's Kurdistan Region. This has caused problems, as the prime minister is deeply involved in the current situation in Iraq's Kurdistan. The prime minister would therefore would not have time to manage the project, and no meeting with sponsors would be scheduled. PMI: 'to include all of the required activities and exclude any unnecessary activities' the following: PMI would say that Project Scope Control is described as 'to include all of the required activities, as well as zero of the wasteful ones' (Ferraris et al. 2019). While the most progress is gained by implementing a project by using a careful approach and staying true to the life cycle, according to (Ali, 2020), this methodology must also be adhered to to if one is to want to succeed. Magnus, (20302030), development plan the importance of effective scope management is paramount as work will be wasted, money will be spent, and time used inefficiently, and resources

used incorrectly, if scope is not adequately planned. Other variables, such as the number of activities and the people who work on a project, affect the scope control value of a lot. Project, on the other hand, has been burdened with oversight of the project's scope. Aspects of scope include but are not limited to certain procedures and steps. Therefore, the first phase of the project is to engage stakeholders in the aim of collecting requirements to write a project charter or development documents that they support. The method required project requirements to be gathered by means of conducting interviews was found to be unsatisfactory, so the project needed to move on to the next step. Finally, it is then based on these interviews, the project plan for the project is decided on. However, this research intends to capture important qualities in the best way possible. However, interviews are planned to be used in the study to gather important data, but there are many other techniques that are better suited to collecting it. Two ways of accomplishing multiple tasks or linking various groups of people together and having them complete a project as a single unit is generally not the most efficient way to organize them (Al-Emran et al. 2018). As a result, the project has more resources to tap into, other strategies such as collective creativity approaches are used to increase the number of requirements. Investment decisions are driven by finances; according to (Hameed & Anwar, 2018), they are strongly impacted by the study of financial elements that provide advice to leaders as to decide whether they are doable or not. Also, in accordance with (Anwar & Ghafoor, 2017), financial forecasting is important in determining the project's target to calculate the net present value (NPV) and internal rate of return (IRR) using cash flow numbers derived from a project (Anwar, 2016). To this extent, the financial analysis concludes there is a financial benefit to the government may miss out on because the initiative's main focus is community systems enhancement. Gardeabal et al. found that the second stage of their net present value calculation (i.e., a calculation that takes into account both the time value of money and the rate of return on money) yields the results. Finally, Infrastructure (Barley et al. 2018) calculates "net present value" (which means future money in the cash equivalent) as the amount of a given stream of cash inflows, the estimated in the money's actual value at the moment, and the value in the money at which they were stated at the stated moment of "now". "The Net Present Value (or NPV) approach deals with capital budgeting for complicated ventures by figuring out how much the revenue will be generated by cash flows (or how much it cost to put in the bank)" (Abdullah et al. 2017). Because of this, NPV investing involves stakeholders in the investment

decision-making process, it is a good for individuals to have a thorough understanding of investment choices.

When one looks at the net present value, the intrinsic rate of return is equal to zero, in addition, Anwar and Baloglu state, (2016) maintains that IRR serves as a mechanism for determining whether a project is on schedule or ahead of schedule. IRR rising interest rates also affect the selection of investment opportunities. Project life cycle describes a sequence of projects that are directed toward the objective of fulfilling a number of management and control goals, and who or what is being involved, and is defined as part of, by the project, or projects are composed of the various elements that have been directed toward a set of goals of management and control and deployed in several contexts, as described by PMI (Zaim et al. 2019). In reference to the life cycle of a project, Anwar & Qadir, (2017) writes that the series of phases includes start-decisions, project evaluations, and conclusion (also referred to as a few places as process evaluations [start to end]). According to Anwar, the project's life cycle has many phases, which call for project stakeholders to establish project priorities and monitoring sources along the way; as a result, decisions must be made about project life cycle monitoring and achievement milestones.

#### IV. METHODOLOGY

The aim of this study was to increase carpet manufacturing productivity by combining knowledge management concepts with Knowledge management as a mediator. The researchers used four knowledge management aspects to assess production progress at cement businesses: first, Knowledge creation, second, human capital, third, knowledge sharing, and fourth, Knowledge application, with Knowledge management as a mediator. The researchers used a survey to assess the current study using a quantitative analysis approach. The questionnaire was given to 140 administrative employees from various carpet manufacturers in the Kurdistan region at random. The researchers did, however, manage to collect 128 completed questionnaires. All items in the questionnaire were graded on a five-point Likert scale, with 1 indicating Strongly Disagree, 2 indicating Disagree, 3 indicating Neutral, 4 indicating Agree, and 5 indicating Strongly Agree. Following the completion of data collection, all data was analyzed using SPSS to determine how to increase carpet manufacturing performance by applying knowledge management concepts and a project management development program as a mediator.

**Research Model**

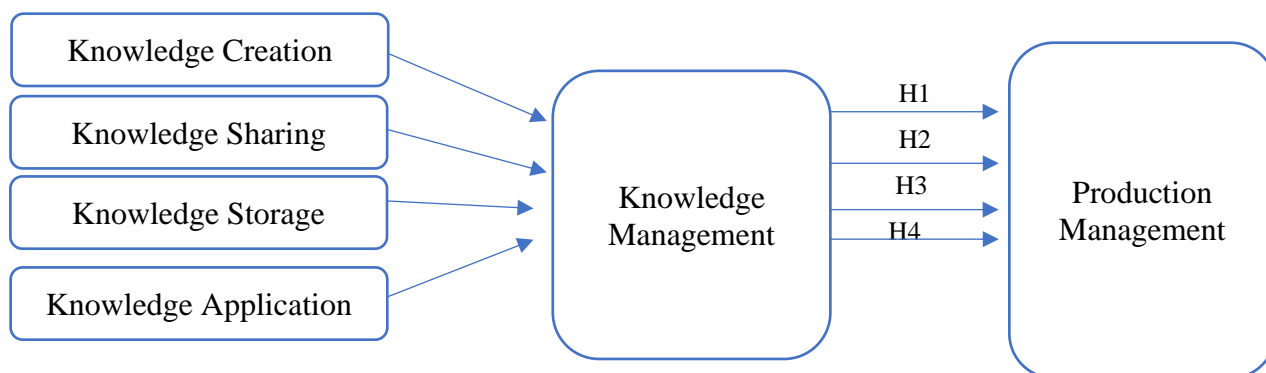


Fig.1: Research Model

**Research Hypotheses**

H1: Knowledge management mediates Knowledge creation as knowledge management element to production management of carpet manufacture.

H2: Knowledge management mediates Knowledge storage as knowledge management element to production management of carpet manufacture.

H3: Knowledge management mediates knowledge sharing as knowledge management element to production management of carpet manufacture.

H4: Knowledge management mediates Knowledge application as knowledge management element to production management of carpet manufacture.

Table 1- KMO and Bartlett Sphericity Test of Self-rating Items

Factors	N of items	n	KMO	Bartlett test	
				Chi-Square	Sig
Knowledge creation	8	139	.731	2.009	.000
Knowledge storage	10	139			
Knowledge Sharing	12	139			
Knowledge application	9	139			

As we can see in table (1), the result of KMO for all independent variables (Knowledge creation as knowledge management element, Knowledge storage as knowledge management element, knowledge sharing as knowledge management element, and Knowledge application as knowledge management element), knowledge management

as mediator and production management of carpet manufacture as dependent variable  $r$ ; is .731 which is higher than .001 this indicates that the sample size used for the current study was more than adequate. Furthermore, the result of Chi-Square is 2.009 with the significant level .000.

Table 2: Reliability analysis

Variables	N of items	n	Cronbach's Alpha
Knowledge creation	8	139	.731
Knowledge storage	10	139	.735
Knowledge Sharing	12	139	.729
Knowledge application	9	139	.761

Knowledge management	10	139	.775
Production management	10	139	.791

As seen in table (2), the reliability analysis for 60 items used to measure the influence of all independent variables (Knowledge creation as knowledge management element, Knowledge storage as knowledge management element, knowledge sharing as knowledge management element, and Knowledge application as knowledge management element), knowledge management as mediator and production management of carpet manufacture as dependent variable. The above questions were distributed as follow; 8 items for Knowledge creation as knowledge management element, 10 items for Knowledge storage as knowledge management element, 12 items for knowledge sharing as knowledge management element, 9 items for Knowledge application as knowledge management element, 10 items for knowledge management as a mediator, and 10 items for production management at carpet manufacture as a dependent variable. The researchers applied reliability analysis to find out the reliability for each factor, the findings revealed as follow: as for Knowledge creation as knowledge management element was found the Alpha to be .731 with the sample size of 128 for 10 questions which indicated that all 10 questions used to measure Knowledge creation as knowledge management element were reliable for the current study, as for Knowledge storage as

knowledge management element was found the Alpha to be .735 with the sample size of 128 for 9 questions which indicated that all 9 questions used to measure Knowledge storage as knowledge management element were reliable for the current study, as for knowledge sharing as knowledge management element was found the Alpha to be .729 with the sample size of 128 for 11 questions which indicated that all 11 questions used to measure knowledge sharing as knowledge management element were reliable for the current study, as for Knowledge application as knowledge management element was found the Alpha to be .761 the sample size of 128 for 10 questions which indicated that all 10 questions used to measure Knowledge application as knowledge management element were reliable for the current study, as for knowledge management as a mediator was found the Alpha to be .775 the sample size of 128 for 10 questions which indicated that all 10 questions used to measure knowledge management as a mediator were reliable for the current study, and as for Production management as a dependent variable was found the Alpha to be .791 the sample size of 128 for 10 questions which indicated that all 10 questions used to measure Production management as a dependent variable were reliable for the current study.

Table 3: Correlation Analysis

Correlations		IT	HR	KS	OC	Production Management	EP
Knowledge creation	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	139					
Knowledge storage	Pearson Correlation	.614**	1				
	Sig. (2-tailed)	.000					
	N	128	128				
Knowledge sharing	Pearson Correlation	.574**	.591**	1			
	Sig. (2-tailed)	.000	.000				
	N	128	128	128			
Knowledge application	Pearson Correlation	.619**	.614**	.614**	1		
	Sig. (2-tailed)	.000	.001	.000			



	N	128	128	128	128		
Knowledge management	Pearson Correlation	.654**	.544**	.591**	.622**	1	
	Sig. (2-tailed)	.000	.001	.000			
	N	128	128	128	128	128	
Production management	Pearson Correlation	.512**	.641**	.644**	.521**	.679**	1
	Sig. (2-tailed)	.000	.001	.000			
	N	128	128	128	128	128	128
**. Correlation is significant at the 0.01 level (2-tailed).							

As it can be seen in table (3), the correlation analysis among independent variables (Knowledge creation as knowledge management element, Knowledge storage as knowledge management element, knowledge sharing as knowledge management element, and Knowledge application as knowledge management element), knowledge management as mediator and production management of carpet manufacture as dependent variable. The finding revealed that the value of Pearson correlation ( $r = .512^{**}$ ,  $p < 0.01$ ), between Knowledge creation as knowledge management element this indicated that there is positive and strong correlation between Knowledge creation as knowledge management element and production management at carpet manufacture, the value of Pearson correlation ( $r = .641^{**}$ ,  $p < 0.01$ ), between Knowledge storage as knowledge management element this indicated that there is positive and strong correlation between Knowledge storage as knowledge management element and production management at carpet manufacture, the value of Pearson

correlation ( $r = .644^{**}$ ,  $p < 0.01$ ), between knowledge sharing as knowledge management element this indicated that there is positive and strong correlation between knowledge sharing as knowledge management element and production management at carpet manufacture, the value of Pearson correlation ( $r = .521^{**}$ ,  $p < 0.01$ ), between Knowledge application as knowledge management element this indicated that there is positive and strong correlation between knowledge sharing as knowledge management element and production management at carpet manufacture, and the value of Pearson correlation ( $r = .679^{**}$ ,  $p < 0.01$ ), between knowledge management as mediator this indicated that there is positive and strong correlation between knowledge management as mediator and production management at carpet manufacture.

H1: Knowledge management mediates Knowledge creation as knowledge management element to production management of carpet manufacture.

Table 4-Hierarchal Multiple Regression

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.005	.2021		2.326	.000
	Knowledge creation	.591	.029	.619	2.365	.000
2	(Constant)	1.235	.132		2.251	.000
	Knowledge creation	.619	.072	.629	1.3621	.000
	Production Management	.672	.025	.679	1.932	.000
a. Dependent Variable: Production management						

Table (4), demonstrates a hierarchal multiple regression analysis to investigate first research hypothesis which stated that Knowledge management mediates Knowledge creation as knowledge management element to production management of carpet manufacture. Concerning model (1) the direct relationship between Knowledge creation as knowledge management element and production management at carpet manufacture, the value of B = .591, the value of Beta = .619 with P-value =.000 this indicated that there is a significant and positive relationship between Knowledge creation as knowledge management element and production management at carpet manufacture and enhanced production at carpet manufacture. As for model (2) which applied multiple regression analysis to find both Knowledge creation as knowledge management element as independent factor and knowledge management as a mediator factor with enhanced production at carpet manufacture as dependent factor, the findings showed that

the value of B =.619, the value of Beta = .629 with P-value .001 as indirect relationship between Knowledge creation as knowledge management element and enhanced production at carpet manufacture, on the other hand, the value of B =.672, the value of Beta = .679 with P-value .000 as mediation between knowledge management and enhanced production at carpet manufacture. The findings proved that there is a positive and significant direct and indirect relationship between Knowledge creation as knowledge management element and enhanced production at carpet manufacture, moreover enhanced production at carpet manufacture has a positive and significant mediating role between Knowledge creation as knowledge management element and enhanced production at carpet manufacture.

H2: Knowledge management mediates Knowledge storage as knowledge management element to production management of carpet manufacture.

Table 5: Hierarchal Multiple Regression

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.112	.123		3.352	.000
	Knowledge storage	.519	.038	.544	3.251	.000
2	(Constant)	1.325	.121		2.369	.000
	Knowledge storage	.619	.015	.633	2.363	.000
	Production Management	.629	.031	.638	1.259	.000
a. Dependent Variable: Production management						

Table (5), demonstrates a hierarchal multiple regression analysis to investigate second research hypothesis which stated that Knowledge management mediates Knowledge storage as knowledge management element with enhanced production at carpet manufacture. Concerning model (1) the direct relationship between Knowledge storage as knowledge management element and enhanced production at carpet manufacture, the value of B = .519, the value of Beta = .544 with P-value =.000 this indicated that there is a significant and positive relationship between Knowledge storage as knowledge management element and enhanced production at carpet manufacture. As for model (2) which applied multiple regression analysis to find both Knowledge storage as knowledge management element as independent

factor and Knowledge management as a mediator factor with enhanced production at carpet manufacture as dependent factor, the findings showed that the value of B =.619, the value of Beta = .633 with P-value .001 as indirect relationship between Knowledge storage as knowledge management element and enhanced production at carpet manufacture, on the other hand, the value of B =.629, the value of Beta = .638 with P-value .000 as mediation between Knowledge management and enhanced production at carpet manufacture. The findings proved that there is a positive and significant direct and indirect relationship between Knowledge storage as knowledge management element and enhanced production at carpet manufacture, moreover knowledge management has a positive and

significant mediating role between Knowledge storage as knowledge management element and enhanced production at carpet manufacture.

H3: Knowledge management mediates knowledge sharing as knowledge management element to production management of carpet manufacture.

Table 7: Hierarchal Multiple Regression

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.112	.1551		2.021	.000
	Knowledge sharing	.491	.029	.509	2.195	.000
2	(Constant)	1.522	.325		1.932	.000
	Knowledge sharing	.507	.031	.539	1.252	.000
	Production Management	.577	.093	.619	1.298	.000
a. Dependent Variable: Production management						

Table (7), demonstrates a hierarchal multiple regression analysis to investigate third research hypothesis which stated that Knowledge management mediates Knowledge sharing as knowledge management element with production management of carpet manufacture. Concerning model (1) the direct relationship between Knowledge sharing as knowledge management element and production management of carpet manufacture, the value of B = .491, the value of Beta = .509 with P-value =.000 this indicated that there is a significant and positive relationship between Knowledge sharing as knowledge management element and production management of carpet manufacture. As for model (2) which applied multiple regression analysis to find both Knowledge sharing as knowledge management element as independent factor and Knowledge management as a mediator factor with production management of carpet manufacture as dependent factor, the findings showed that the value of B =.507, the value of Beta = .539 with P-value

.001 as indirect relationship between Knowledge sharing as knowledge management element and production management of carpet manufacture, on the other hand, the value of B =.577, the value of Beta = .619 with P-value .000 as mediation between Knowledge management and production management of carpet manufacture. The findings proved that there is a positive and significant direct and indirect relationship between Knowledge sharing as knowledge management element and production management of carpet manufacture, moreover knowledge management has a positive and significant mediating role between Knowledge sharing as knowledge management element and marketing experience.

H4: Knowledge management mediates Knowledge application as knowledge management element to production management of carpet manufacture

Table 9: Hierarchal Multiple Regression

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.925	.2315		1.362	.000
	Knowledge application	.569	.093	.522	1.521	.000
2	(Constant)	1.632	.052		1.362	.000

	Knowledge application	.529	.093	.591	1.635	.000
	PRODUCTION MANAGEMENT	.629	.093	.619	1.251	.000
a. Dependent Variable: Production management						

Table (9), demonstrates a hierarchal multiple regression analysis to investigate fourth research hypothesis which stated that Knowledge management mediates Knowledge application as knowledge management element with production management of carpet manufacture. Concerning model (1) the direct relationship between Knowledge application as knowledge management element and production management of carpet manufacture, the value of  $B = .569$ , the value of Beta =  $.522$  with P-value =  $.000$  this indicated that there is a significant and positive relationship between Knowledge application as knowledge management element and production management of carpet manufacture. As for model (2) which applied multiple regression analysis to find both Knowledge application as knowledge management element as independent factor and Knowledge management as a mediator factor with production management of carpet manufacture as dependent factor, the findings showed that the value of  $B = .529$ , the value of Beta =  $.591$  with P-value  $.001$  as indirect relationship between Knowledge application as knowledge management element and production management of carpet manufacture, on the other hand, the value of  $B = .629$ , the value of Beta =  $.619$  with P-value  $.000$  as mediation between Knowledge management and production management of carpet manufacture. The findings proved that there is a positive and significant direct and indirect relationship between Knowledge application as knowledge management element and production management of carpet manufacture, moreover knowledge management has a positive and significant mediating role between Knowledge application as knowledge management element and production management of carpet manufacture.

## V. CONCLUSION

In this article, the principle of knowledge and the KM method for achieving operational objectives are discussed. In several organizations, recognition and knowledge management have recently become both local and global challenges as a result of intensified international competition. Information management (KM) will help companies improve their productivity by creating, sharing, retaining, and enforcing knowledge, according to the findings of the study. We've looked at the past of information management (KM), as well as its processes and

models. We also added to the essay by discussing the implementation of an information management system, including its benefits, importance, and disadvantages. We tried to demonstrate how challenges and roadblocks to KM implementation in organizations can be overcome. Finally, the distinguishing characteristics of an information manager have been revealed. The study demonstrates the importance of information management (KM) for an organization's long-term viability, both now and in the future.

This study aimed to improve carpet manufacturing quality management by incorporating knowledge management elements and using knowledge management as a mediator. The researchers used four knowledge management aspects in the study to quantify output improvement at cement businesses: knowledge development, knowledge storage, knowledge sharing, and knowledge application, with knowledge management acting as a mediator. To assess developed research hypotheses, the researchers used hierarchical multiple regression analysis and the Sobel test. As for the first research hypothesis, knowledge management mediates knowledge development as a knowledge management function in carpet manufacturing production management. The findings revealed a positive and significant direct and indirect relationship between Knowledge development as a knowledge management element and enhanced carpet manufacturing production, as well as a positive and significant mediating function for knowledge management between Knowledge creation as a knowledge management element and enhanced carpet manufacturing production. As for the second research hypothesis, Knowledge management mediates Knowledge storage as a knowledge management aspect to carpet manufacturing production management. The findings revealed that there is a positive and significant direct and indirect relationship between increased carpet production and increased carpet production, and that cultural experience plays a positive and significant mediating role between increased carpet production and increased carpet production. As for the third research hypothesis, knowledge management mediates knowledge sharing as a knowledge management function in carpet manufacturing production management. The findings revealed a positive and significant direct and indirect relationship between Knowledge sharing as a knowledge management element and carpet manufacturing production management, as well

as a positive and significant mediating function for knowledge management between Knowledge sharing as a knowledge management element and carpet manufacturing production management. Finally, as for the fourth research hypothesis, Knowledge management mediates Knowledge application as a knowledge management aspect to carpet manufacturing production management. The findings revealed a positive and significant direct and indirect relationship between Knowledge application as a knowledge management element and carpet manufacturing production management, as well as a positive and significant mediating function for knowledge management between Knowledge application as a knowledge management element and carpet manufacturing production management.

### REFERENCES

- [1] Demir, A., Maroof, L., Khan, N. U. S., & Ali, B. J. (2020). The role of E-service quality in shaping online meeting platforms: a case study from higher education sector. *Journal of Applied Research in Higher Education*, 1-28
- [2] Martins, V. W. B., Rampasso, I. S., Anholon, R., Quelhas, O. L. G., & Leal Filho, W. (2019). Knowledge management in the context of sustainability: Literature review and opportunities for future research. *Journal of cleaner production*, 229, 489-500.
- [3] Anwar, G., & Abd Zebari, B. (2015). The Relationship between Employee Engagement and Corporate Social Responsibility: A Case Study of Car Dealership in Erbil, Kurdistan. *International Journal of Social Sciences & Educational Studies*, 2(2), 45.
- [4] Ode, E., & Ayavoo, R. (2020). The mediating role of knowledge application in the relationship between knowledge management practices and firm innovation. *Journal of Innovation & Knowledge*, 5(3), 210-218.
- [5] Anwar, G., & Surarchith, N. K. (2015). Factors Affecting Shoppers' Behavior in Erbil, Kurdistan-Iraq. *International Journal of Social Sciences & Educational Studies*, 1(4), 10.
- [6] Sousa, M. J., & Rocha, Á. (2019). Strategic knowledge management in the digital age: JBR special issue editorial.
- [7] Andavar, V., & Ali, B. (2020). Rainwater for Water Scarcity Management: An Experience of Woldia University (Ethiopia). ANDAVAR, V., ALI, BJ, & ALI, SA (2020). Rainwater for Water Scarcity Management: An Experience of Woldia University (Ethiopia). *The Journal of Business Economics and Environmental Studies*, 10(4), 29-34.
- [8] Anwar, G., & Shukur, I. (2015). The Impact of Service Quality Dimensions on Students' Satisfaction. *International Journal of Social Sciences & Educational Studies*, 76.
- [9] Raudeliūnienė, J., Davidavičienė, V., & Jakubavičius, A. (2018). Knowledge management process model. *Entrepreneurship and Sustainability Issues*, 5(3), 542-554.
- [10] Anwar, K. (2017). Analyzing the conceptual model of service quality and its relationship with guests' satisfaction: a study of hotels in Erbil. *The International Journal of Accounting and Business Society*, 25(2), 1-16.
- [11] Razzaq, S., Shujahat, M., Hussain, S., Nawaz, F., Wang, M., Ali, M., & Tehseen, S. (2019). Knowledge management, organizational commitment and knowledge-worker performance. *Business process management journal*.
- [12] Ali, B. J. (2021). Impact of consumer animosity, boycott participation, boycott motivation, and product judgment on purchase readiness or aversion of Kurdish consumers in Iraq. *Journal of Consumer Affairs*.
- [13] Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2019). From knowledge management to organizational performance. *Journal of Enterprise Information Management*.
- [14] Anwar, K. (2016). Comparison between cost leadership and differentiation strategy in agricultural businesses. *Custos E Agronegocio on Line*, 12(2), 212-231.
- [15] Dayan, R., Heisig, P., & Matos, F. (2017). Knowledge management as a factor for the formulation and implementation of organization strategy. *Journal of Knowledge Management*.
- [16] Abdullah, M. S., Toycan, M., & Anwar, K. (2017). The cost readiness of implementing e-learning. *CUSTOS E AGRONEGOCIO ON LINE*, 13(2), 156-175.
- [17] Anwar, K., & Balcioglu, H. (2016). The relationship between transformational leadership characteristics and effectiveness: A case study of construction companies in Erbil. *International Journal of Science Technology and Management*, 5(2), 250-256.
- [18] Gaviria-Marin, M., Merigo, J. M., & Popa, S. (2018). Twenty years of the Journal of Knowledge Management: A bibliometric analysis. *Journal of Knowledge Management*.
- [19] Anwar, K. (2017). The Role of Effective Leadership in Crisis Management: Study of Private Companies in Kurdistan. *Qalaai Zanist Scientific Journal*, 2(4), 326-338.
- [20] Ferraris, A., Mazzoleni, A., Devalle, A., & Couturier, J. (2019). Big data analytics capabilities and knowledge management: impact on firm performance. *Management Decision*.
- [21] Ali, B. (2020). Impact of COVID-19 on Consumer Buying Behavior Toward Online Shopping in Iraq. Ali, BJ (2020). Impact of COVID-19 on consumer buying behavior toward online shopping in Iraq. *Economic Studies Journal*, 18(42), 267-280.
- [22] Al-Emran, M., Mezhyuev, V., Kamaludin, A., & Shaalan, K. (2018). The impact of knowledge management processes on information systems: A systematic review. *International Journal of Information Management*, 43, 173-187.
- [23] Hameed, A. A., & Anwar, K. (2018). Analyzing the Relationship between Intellectual Capital and Organizational Performance: A Study of Selected Private Banks in Kurdistan. *International Journal of Social Sciences & Educational Studies*, 4(4), 39.
- [24] Anwar, K., & Ghaffoor, C. (2017). Knowledge management and organizational performance: A study of private

- universities in Kurdistan. *International Journal of Social Sciences & Educational Studies*, 4(2), 53.
- [25] Barley, W. C., Treem, J. W., & Kuhn, T. (2018). Valuing multiple trajectories of knowledge: A critical review and agenda for knowledge management research. *Academy of Management Annals*, 12(1), 278-317.
- [26] Anwar, K., & Climis, R. (2017). ANALYZING THE RELATIONSHIP BETWEEN TYPES OF ADVERTISEMENT AND CUSTOMER CHOICE: A STUDY OF RETAILER STORES IN ERBIL. *The International Journal of Accounting and Business Society*, 25(2), 43-52.
- [27] Anwar, K. (2017). Factors affecting stock exchange investment in kurdistan. *The International Journal of Accounting and Business Society*, 25(1), 32-37.
- [28] Zaim, H., Muhammed, S., & Tarim, M. (2019). Relationship between knowledge management processes and performance: critical role of knowledge utilization in organizations. *Knowledge Management Research & Practice*, 17(1), 24-38.
- [29] Anwar, K., & Qadir, G. H. A (2017). Study of the Relationship between Work Engagement and Job Satisfaction in Private Companies in Kurdistan. *International Journal of Advanced Engineering, Management and Science*, 3(12), 239944.
- [30] Alia, B. J. Consumer attitudes towards healthy and organic food in the Kurdistan region of Iraq. *Journal of Growing Science*, 1-8.
- [31] Muthuveloo, R., Shanmugam, N., & Teoh, A. P. (2017). The impact of tacit knowledge management on organizational performance: Evidence from Malaysia. *Asia Pacific Management Review*, 22(4), 192-201.
- [32] Anwar, K. (2017). Leading Construction Project Teams: The Effectiveness of Transformational Leadership in Dynamic Work Environments in Kurdistan. *International Journal of Advanced Engineering, Management and Science*, 3(10), 239925.
- [33] Shujahat, M., Sousa, M. J., Hussain, S., Nawaz, F., Wang, M., & Umer, M. (2019). Translating the impact of knowledge management processes into knowledge-based innovation: The neglected and mediating role of knowledge-worker productivity. *Journal of Business Research*, 94, 442-450.
- [34] Anwar, K., & Louis, R. (2017). Factors Affecting Students' Anxiety in Language Learning: A Study of Private Universities in Erbil, Kurdistan. *International Journal of Social Sciences & Educational Studies*, 4(3), 160.
- [35] Arpacı, I. (2017). Antecedents and consequences of cloud computing adoption in education to achieve knowledge management. *Computers in Human Behavior*, 70, 382-390.
- [36] Abdullah, N., & Anwar, G. (2021). An Empirical Analysis of Natural Gas as an Alternative Fuel for Internal Transportation. *International Journal of English Literature and Social Sciences*, 6(1) ; 479-485 <https://dx.doi.org/10.22161/ijels.61.64>
- [37] Cerchione, R., & Esposito, E. (2017). Using knowledge management systems: A taxonomy of SME strategies. *International Journal of Information Management*, 37(1), 1551-1562.
- [38] Ali, B., & Anwar, G. (2021). The Effect of Marketing Culture Aspects of Healthcare Care on Marketing Creativity. *International Journal of English Literature and Social Sciences*, 6(2); 171-182 <https://dx.doi.org/10.22161/ijels.62.25>
- [39] Ramjeawon, P. V., & Rowley, J. (2017). Knowledge management in higher education institutions: enablers and barriers in Mauritius. *The Learning Organization*.
- [40] Abdullah, N., & Anwar, G. (2021). Inspiring future entrepreneurs: The effect of experiential learning on the entrepreneurial intention at higher education. *International Journal of English Literature and Social Sciences*, 6(2) ; 183-194 <https://dx.doi.org/10.22161/ijels.62.26>
- [41] Antunes, H. D. J. G., & Pinheiro, P. G. (2020). Linking knowledge management, organizational learning and memory. *Journal of Innovation & Knowledge*, 5(2), 140-149.
- [42] Abdullah, N., & Anwar, G. (2021). The impact of Human resource management practice on Organizational performance. *International journal of Engineering, Business and Management (IJEEM)* 5(1) ; 35-47 <https://dx.doi.org/10.22161/ijeem.5.1.4>
- [43] Ardito, L., Ferraris, A., Petruzzelli, A. M., Bresciani, S., & Del Giudice, M. (2019). The role of universities in the knowledge management of smart city projects. *Technological Forecasting and Social Change*, 142, 312-321.
- [44] Ali, B & Anwar, G. (2021). Factors Influencing the Citizens' Acceptance of Electronic Government. *International journal of Engineering, Business and Management (IJEEM)* 5(1) ; 48-60 <https://dx.doi.org/10.22161/ijeem.5.1.5>
- [45] Abbas, J., & Sağsan, M. (2019). Impact of knowledge management practices on green innovation and corporate sustainable development: A structural analysis. *Journal of cleaner production*, 229, 611-620.
- [46] Abdullah, N., & Anwar, G. (2021). Global Financial Outlook during the COVID-19 Pandemic: The role of effective leadership styles on Financial outlook. *International journal of Engineering, Business and Management (IJEEM)* 5(2) ; 8-20 <https://dx.doi.org/10.22161/ijeem.5.2.2>
- [47] Israilidis, J., Odusanya, K., & Mazhar, M. U. (2019). Exploring knowledge management perspectives in smart city research: A review and future research agenda. *International Journal of Information Management*, 101989.
- [48] Ali, B & Anwar, G. (2021). An Empirical Study of Employees' Motivation and its Influence Job Satisfaction. *International journal of Engineering, Business and Management (IJEEM)* 5(2) ; 21-30 : <https://dx.doi.org/10.22161/ijeem.5.2.3>
- [49] Venkitachalam, K., & Willmott, H. (2017). Strategic knowledge management—Insights and pitfalls. *International Journal of Information Management*, 37(4), 313-316.

- [50] Shujahat, M., Hussain, S., Javed, S., Malik, M. I., Thurasamy, R., & Ali, J. (2017). Strategic management model with lens of knowledge management and competitive intelligence. *VINE Journal of Information and Knowledge Management Systems*.
- [51] Velásquez, R. M. A., & Lara, J. V. M. (2021). Knowledge management in two universities before and during the COVID-19 effect in Peru. *Technology in Society*, 64, 101479.
- [52] Ali, B., & Anwar, G. (2021). The balanced scorecard's evolution as a strategic mechanism at banking sectors. *International Journal of English Literature and Social Sciences*, 6(1); 471-478  
<https://dx.doi.org/10.22161/ijels.61.63>
- [53] Friedrich, J., Becker, M., Kramer, F., Wirth, M., & Schneider, M. (2020). Incentive design and gamification for knowledge management. *Journal of Business Research*, 106, 341-352.
- [54] Anwar, G., & Shukur, I. (2015). The Impact of Training and Development on Job Satisfaction: A Case Study of Private Banks in Erbil. *International Journal of Social Sciences & Educational Studies*, 2(1), 65.
- [55] Santoro, G., Vrontis, D., Thrassou, A., & Dezi, L. (2018). The Internet of Things: Building a knowledge management system for open innovation and knowledge management capacity. *Technological forecasting and social change*, 136, 347-354.
- [56] Anwar, G., & Shukur, I. (2015). Job satisfaction and employee turnover intention: A case study of private hospital in Erbil. *International Journal of Social Sciences & Educational Studies*, 2(1), 73.
- [57] Ali, B. J. (2021). Assessing (The impact) of advertisement on customer decision making: Evidence from an educational institution. Ali, BJ (2021). Assessing (The impact) of advertisement on customer decision making: Evidence from an educational institution. *Afak for Science Journal*, 6(01), 267-280.
- [58] Abubakar, A. M., Elrehail, H., Alatailat, M. A., & Elçi, A. (2019). Knowledge management, decision-making style and organizational performance. *Journal of Innovation & Knowledge*, 4(2), 104-114.
- [59] Anwar, G., & Shukur, I. (2015). the impact of recruitment and selection on job satisfaction: Evidence from private school in Erbil. *International Journal of Social Sciences & Educational Studies*, 1(3), 4-13.