T.C

BİNGÖL UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCE

BUSINESS ADMINISTRATION DEPARTMENT

THE ROLE OF INNOVATION MANAGEMENT IN CHANGE MANAGEMENT: AN EMPIRICAL STUDY IN THE PUBLIC UNIVERSITIES IN THE ERBIL CITY

PREPARED BY:

Narmen Wali ALI

Master's Thesis

SUPERVISOR

Assoc. Prof. Dr. Abdulvahap BAYDAS

BİNGÖL -2018

T.C

BİNGÖL ÜNİVERSİTESİ

SOSYAL BİLİMLER ENSTİTÜSÜ

İŞLETME BÖLÜMÜ

DEĞİŞİM YÖNETİMİNDE YENİLİK YÖNETİMİNİN ETKİSİ: ERBİL'DEKİ BİR DEVLET ÜNİVERSİTESİNDE LERİNDE AMPRİRİK BİR ÇALIŞMA

Hazırlayan

Narmen Wali ALI

YÜKSEK LİSANS TEZİ

Danışman

Doç. Dr. Abdulvahap BAYDAŞ

BİNGÖL -2018

TABLE OF CONTENTS

BİLİMSEL ETİK BİLDİRİMİ

Yokes Lisans tezi olarak hazırladığım "DEĞİŞİM YÖNETİMİNDE YENİLİK YÖNETİMİNİN ETKİSİ: ERBİLDEKİ BİR DEVLET ÜNİVERSİTESİNDE LERINDE AMPRİRİK BİR ÇALIŞMA" adlı çalışmanın öneri aşamasından sonuçlanmasına kadar geçen süreçte bilimsel etiğe ve akademik kurallara özenle uyduğumu, tez içindeki tüm bilgileri bilimsel ahlak ve gelenek çerçevesinde elde ettiğimi, tez yazım kurallarına uygun olarak hazırladığım bu çalışmamda doğrudan veya dolaylı olarak yaptığım her alıntıya kaynak gösterdiğimi ve yararlandığım eserlerin kaynakçada gösterilenlerden oluştuğunu beyan ederim.

16.01.2018

İmza

Narmen Wali ALI

SCIENTIFIC ETHICAL NOTICE

I have met with the scientific ethics and academic principles carefully until the conclusion of the proposal of the graduate work (The Role Of Innovation Management In Change Management: An Empirical Study In The Public Universities In The Erbil City). I declare that the works I have used and used as a source of each and every quotation I have made directly or indirectly in this work which I have prepared in accordance with the rules of thesis writing in the context of scientific ethics and tradition.

16 .01.2018

Signature

Narmen Wali ALI

THESIS ACCEPTANCE AND APPROVAL

BİNGÖL UNIVERSITY

SOCIAL SCIENCES INSTITUTE DIRECTORATE

This thesis entitled "**THE ROLE OF INNOVATION MANAGEMENT IN CHANGE MANAGEMENT: (AN EMPIRICAL STUDY IN THE PUBLIC UNIVERSITIES IN THE ERBIL CITY)** prepared by Narmen Wali ALI was found to be successful as a result of the thesis defense examination held on the date of [16/01/2018] and accepted by our juror as the Master Degree in the department of Business Administration.

THESIS JURY MEMBERS:

President: Doç. Dr. Ibrahim Ethem TAŞ

Supervisor: Doç. Dr. Abdulvahap BAYDAŞ

Member: Yrd. Doç. Halim TATLI

CONFIRMATION

This thesis has been accepted by the jury determined in the, 16/01/ 2018 Session of the Board of the Directors of the Institute of Sciences of Bingöl University.

Director of the Institute

Doç. Dr. Yaşar BAŞ

ACKNOWLEDGEMENTS

ÖZET

DEĞİŞİM YÖNETİMİNDE YENİLİK YÖNETİMİNİN ETKİSİ: ERBİL'DEKİ BİR DEVLET ÜNİVERSİTESİNDE AMPRİRİK BİR ÇALIŞMA

Çalışmanın amacı, inovasyon yönetimini ve Erbil'deki devlet üniversitelerinin değişim yönetimindeki rolünü öğretim üyelerinin bakış açılarından tespit etmektir. Araştırmacı betimsel yöntem İtnokiz kullanılarak çalışma örnekleri, Salahaddin Üniversitesi (Salahaddin University) Erbil Tıb Üniversitesi (Erbil medical university) ve Erbil Politeknik Üniversitesi (Erbil polytechnic university) olmak üzere üç kamu üniversitesinde (149) öğretim üyesini kapsıyor esas alınmıştır oluşturulmuştur.

Çalışmanın amaçlarını gerçekleştirmek için araştırmacı, ilişkinin doğası ve inovasyon yönetimi ile değişim yönetimi arasındaki etkileşim üzerine odaklanarak, problemin çeşitli sorularını inceleyerek sınıflandırma yapılmıştır. Bu nedenle, çalışma için kavramsal bir model tasarlanmış ve daha sonra Hipotezleri test edilmiş ve çeşitli istatistiksel testlere son verildi.

Bulgular, çalışma, yenilik yönetimi ile boyutları arasındaki olumlu anlamlı ilişkiyi yani; (akıcılık, esneklik, orijinallik, sorunlara duyarlılık, risk ve pozitıf) kamu yönetimi üniversitelerinde değişim yönetimi, değişim yönetimiyle en yüksek pozitif korelasyon elde edildi. Fakat akıcılık, değişim yönetimi en zayıf korelasyona sahip Olduğu tespit edilmıştır.

Ayrıca, regresyon analiz sonuçları istatistiksel olarak inovasyon yönetiminin ve tüm boyutlarının değişim yönetiminde önemli etkilerinin olduğunu, ancak yön, risk ve meydan okumanın yüksek etkilerini gösterirken, daha düşük olan inovasyon boyutları arasında akıcılık olduğunu göstermektedir. Sonuçlar, aslında, inovasyon yönetimi ve boyutlarının değişim yönetiminde dinamik bir rol oynadığını ortaya Çıkarmıştır.

Anahtar sözcükler: Yenilik Yönetimi, Yenilikçi Çevre, Akıcılık, Esneklik, Özgünlük, Risk ve Mücadele, Değişim Yönetimi ve Entellektüel Uyarım.

ABSTRACT

THE ROLE OF INNOVATION MANAGEMENT IN CHANGE MANAGEMENT: AN EMPIRICAL STUDY IN THE PUBLIC UNIVERSITIES IN THE ERBIL CITY

The purpose of the study is to identifying innovation management and its role in change management of public universities in Erbil from their faculty member's points of view. The researcher conducted descriptive method analysis and the study samples involve of the (149) faculty members in three public universities as salahaddin university, Erbil medical university, and Erbil polytechnic university.

To achieve the purposes of the study, the researcher organized the study's problem, over examining several questions, concentrated on the nature of the relationship and influence between innovation management and change management. Therefore, a conceptual model designed for the study, and then shaped the study hypotheses to test, and they endangered to various statistical tests.

Findings, the study found the positive significant relationship between innovation management and its dimensions namely; (fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction) in the public universities change management, while, maintaining the direction achieved the highest positive correlation with change management. But, fluency has the weakest correlation with change management.

Moreover, the regression analysis results demonstrate that statistically there are significant effects of innovation management and all its dimensions in the change management, but the high effects of the maintaining the direction, risk, and challenge, while the lower one was fluency between dimensions of innovation management. Then, the conclusions specify that actually, innovation management and its dimensions play a dynamic role in the change management.

Keywords: Innovation Management, Innovative Environment, Fluency, Flexibility, Originality, Risk and Challenge, Change Management, and Intellectual Stimulation.

DEDICATIONS

I dedicated this thesis is to my parents, father, and to my beloved mother your life teachings and endless support is always remarkable. Thank you for your beautiful and lovely existence, thank you for generous a sense of life.

LIST OF TABLE

LIST OF FIGURE

INTRODUCTION

The current time perceives the opening of the worldwide institutions that simplified access to knowledge, information, and the relatively high level of freedom in academic arena and mobility of individuals, high education services, and competence. Hence, institutions are facing a new approach to the globalized world that involves a larger and theoretically infinite amount of struggle.

Accordingly, a time of global perspective with opportunities open to many more factors, where institutions are not immune from technological, financial and cultural forces driven by the present economic system. Therefore, innovation and changes are a persistent issue in modern organizations and universities in particular that through motivating an innovating approach to uniqueness can navigate their success.

Consequently, Innovation management characterizes the introduction of new things and the way of doing them to normally bring advantage. It can relate to the fields of information technology, systems, knowledge production, academic services, processes, but also cultural behavior, institutional structures, and their management. Thus, effective change management can help to avoid crises. So, if crises have occurred, innovative attitude could help to survive.

The importance of understanding the concept of innovation and change management are beginning to be realized as the flawed logic that innovation is coincidentally linked to information and knowledge. Thus, this study determines that the role of innovation management in change management isn't about creating innovative interpretations but about the providing of an innovative environment in which solutions can be considered, established and applied.

Hence, the results of descriptive statistics expressive indicators state that the independent variable innovation management and its dimensions prove significant from the views of public universities faculty members. These significant dimensions are ordered as originality, flexibility, maintaining the direction, and sensitivity to problems and fluency, flexibility, risk, and challenge respectively.

This reproduces the significant of originality, flexibility, and maintaining the direction in providing the best change management practices within surveyed universities. Consequently, the results show that intellectual stimulation, building a

collective agreement on the university's goals and priorities, and developing a common vision for the university riches the public universities change management.

The study also found the positive significant relationship between innovation management and its dimensions namely; (fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction) in the public universities change management, while, maintaining the direction achieved the highest positive correlation with change management. But, fluency has the weakest correlation with change management.

Besides, the regression analysis results demonstrate that statistically there are significant effects of innovation management and all its dimensions in the change management, but the high effects of the maintaining the direction, risk, and challenge, while the lower one was fluency between dimensions of innovation management. Then, the conclusions specify that actually, innovation management and its dimensions play a dynamic role in the change management.

Also, it is predicted that the considerate gain from this study will lead to accurate attentive of those dimensions approachable to innovation management. Then, the results might contribute to public universities in the Erbil city by defining relevant innovation management dimensions and how these dimensions effect on public universities' change management. Besides, the study outcomes are contributing to the existing literature by providing the indication of the relationship between innovation management and public universities' change management.

However, the implication of this study covers a distribution and investing of the typical relationship between innovation management and change management in the public universities in the Erbil city, Iraq. Consequently, this indication can more public universities in the Erbil city understanding the innovation management impact on change management.

Hence, to reach the study purpose, this study is structured into three chapters. Chapter one and Chapter two of the study reviews the literature relevant to the study topics as it discourses the innovation management and change management respectively.

While chapter three the study background, which contains, the problem statement, the study significance, the purposes of the study, the study conceptual scheme, the study hypotheses, the study method, sample selection and sample size,

measurement, data collection methods, reliability and validity test, Construct validity, data analysis and the limitation of the study. Besides analysis and findings, the conclusions of the findings are presented along with recommendations, and implications.

CHAPTER ONE: INNOVATION MANAGEMENT AND INNOVATION DEFINITION

1.1. INNOVATION MANAGEMENT

1.1.1. The Concept of Innovation

The word of innovation originates from the Latin word "Innovate" meaning to make something new. The concept of innovation from the Oxford English dictionary described as a "new methods, new ideas".

Innovation as a term, Peter Drucker (1985: 30) maintains that innovation is systematic and focused and requires new knowledge and a change in perception. He goes on to state that Innovation takes (hard) work rather than genius.

According to Albury (2005: 51), successful innovation is the creation, and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes, efficiency, effectiveness or quality.

Innovation is a generic term: Hence, creation, development and introduction of new products/services or product/service dimensions, or a new procedure or process for doing things to benefit one or more of the stakeholders in the organization. The product/service procedure or process need not be completely novel but it must be new to the organization itself.

− A process, more specifically, a problem-solving process (Dosi, 1982: 147).
− A process involving the exchange of codified and tacit knowledge (Patel and Pavitt, 1994: 77).
− An interactive process of learning and exchange where interdependence between actors generates an innovative system or an innovation cluster (Edquist, 1999: 21).

The concept of innovation implies newness and introduction of novelty which is related to changing the existing forms, conditions, practices and creating new realities. However, these new realities are valuable to organizations, societies, economies and the environment only if they contribute, facilitate, help or enhance their development. In other words, the outcomes of innovations should add value to their recipients.

While, Drucker (1985: 50) states that an innovation is a change that brings a new dimension of performance, which generates benefits to the parties involved:

- Innovation is typically understood as the introduction of something new and useful.
- Innovation is the embodiment, combination, or synthesis of knowledge in original, relevant, valued new products, processes, or services.
- The invention is the first occurrence of an idea for a new product or process, while innovation is the first attempt to carry it out into practice.
- All innovation begins with creative ideas.

The European Commission Green Paper on innovation (1995) indicates that the term innovation is commonly used in two different ways:

1. To refer to the innovation process itself (i.e. the process of bringing any new, problem- solving and idea into use).
2. To refer to the result of the innovation process (i.e. a new product, process, service or work practice). An innovation in this sense may be a radical innovation/breakthrough or a product, process or service improvement or an adaptation.

Innovation, simply a good new idea acted upon. It can come from skunk-works or champions, from associates or customers, from assembly lines or loading docks, from reception desks or boardrooms.

1.1.1.2. Definition of Innovation

Innovation is generally understood as the introduction of a new thing or method. Also, innovation is the embodiment, combination or synthesis of knowledge in original, relevant, valued new products, processes or services (Luecke and Katz, 2003: 20). Therefore, creativity is often seen as the basis for innovation. For innovation to occur, there needs to be a creative idea and the ability to convert that idea into action to make a difference. The result is a specific and tangible change in the products, services or business processes provided by an organization.

As Amabile et al (1996: 1154) indicated the department of trade and industry (DTI) describes innovation as the successful exploitation of new ideas. Innovation is relevant in any organization and can be applied in a number of different ways:

- Product/service innovation – introducing new goods or services that are new or substantially improved. This could include improvements in functional use, convenience or technical capabilities.
- Process innovation – implementing new or significantly improved production or

delivery methods

So, we may define innovation as the successful implementation of creative ideas within an organization. In this view, creativity by individuals and teams is a starting point for innovation; the first is necessary but not sufficient condition for the second innovation is the lifeblood of any organization. Without it, not only is there no growth, but, inevitably, a slow death. Innovation, like many business functions, is a management process that requires specific tools, rules, and discipline.

There are many definitions of innovation, which were made according to the viewpoint of each researcher and the direction of the study carried out and can be limited to this concept within the four entries, each of which deals with one aspect of the phenomenon:

The first entrance: (Process)

Definitions that consider innovation as a process, and in this area known as (Tidd) Innovation is a process that turns new ideas into opportunities and puts these into widely used practices. (Tidd et al, 2007: 13).

While, Schermerhorn (1997: 377) defines it as 'the process of creating new ideas and putting them into practice', stressing that the best innovative universities are those that come up with any good ideas and then be able to implement them successfully. Innovation has the capacity to alter the distribution of power, the systems, and the structures of established organizations (Schon, 1973: 77; Shane et al, 1994).

However, organization members cannot know in advance the direction and magnitude of changes imposed by the innovation process since they cannot foresee the development of technical standards or the products and processes that will gain acceptance (Venkataraman et al, 1992). The capacity of innovation to impose unexpected changes on organization member creates resistance to new ideas by many institution members who are uncomfortable with the uncertainty of the innovation process (Van de Ven, 1986: 590).

The second entrance: (Knowledge Production)

It includes definitions that focus on innovation (knowledge) production where it is seen (Rogers). An innovation is an idea or object that is perceived to be new.

According to DOI, the rate of diffusion is affected by an innovation's relative advantage, complexity, compatibility, trial ability, and observability.

As Rogers (1995: 26-27) defines relative advantage as the degree to which an innovation is seen as being superior to its predecessor. Complexity, which is comparable to TAM's perceived ease of use construct, is 'the degree to which an innovation is seen by the potential adopter as being relatively difficult to use and under- stand'. Compatibility refers to 'the degree to which an innovation is seen to be compatible with existing values, beliefs, experiences and needs of adopters'. Trial ability is the 'degree to which an idea can be experimented with on a limited basis'. Finally, observability is the 'degree to which the results of an innovation are visible'.

The third entrance: (Personality)

This entrance contains definitions that focus on the qualities or characteristics that distinguish the innovative people such as broad imagination, and self-confidence, and the continuity of research and knowledge, and the tendency to risk, and independence in thinking. There are among the researchers focused on the characteristics of risk and independence and perseverance and openness and there are those who focus on Intellectual fluency, originality, and flexibility.

Conferring to Rogers (1983: 233) the innovation output as an idea, practice or object that is perceived as new by an individual or another unit of adoption. This suggests that an innovation is a cognitive interpretation with the user of the innovation being the judge as to whether the entity stands as an innovation in its own right against the individual's past experience. This makes an evolution of an innovation subjective – innovation in the eye of the beholder.

The need for innovation champions-people who take personal risks to overcome resistance to innovative ideas in established organizations (Schon, 1963: 77; Burgelman, 1983: 223; Van de Ven, 1986:590; Howell and Higgins, 1991: 40; Frost and Egri, 1991: 229). Recent research on championing has identified the process by which organization members champion new ideas, products, and technologies in American organizations.

The fourth entrance: (Ability)

The ability entrance holds definitions that focus on possibilities or innovative capacity and mental preparations individuals have, like independence and seek the truth, and the need for achievement.

Although, Smith (2010: 435) consider a successful innovation to be a new approach that brings an improved result. These innovations can be small or large, most recognizable or entirely new and different. As innovation writer and professor (Clay Christensen) describes some innovations are "disruptive" while others are considered "sustaining."

The ability to innovate was always one factor that contributed to the success of an organization. Organizations that dispose of the necessary resources, of a powerful motivation to innovate and of an organizational climate that would allow and encourage innovative ideas, are exactly those which will innovate quickly and successfully. Therefore, the capacity to innovate represents the ability of continuously making knowledge and ideas innovation process is very complex and multidimensional since many factors interact to make possible the emergence of this process.

Table 1: Defining Innovation according to the time perspective

S	Author, Year	Definition
1	Barnett (1953)	It is any thought, behavior or something new, because it differs qualitatively from the existing forms.
2	Regis Cabral (1983)	Innovation is a new element introduced in the network which changes, even if momentarily, the costs of transactions between at least two actors, elements or nodes, in the network.
3	Kanter (1984)	Innovation refers to the process of bringing any new, problem-solving idea into use.
4	Peter Drucker (1985)	Change that creates a new dimension of performance.
5	Van de ven (1986)	Innovation is the development and application of new ideas by a group of workers among them and among others dealing within the framework of the institutional system.
6	Daft (1986)	Technical innovations are described as innovations that produce changes in products or services, or in the way those products are produced or services are rendered.
7	Kenneth Simmonds (1986)	Basic creative process.
8	Smith and Ainsworth (1989)	Innovation includes the idea of invention and discovery, but goes beyond it. It is anything that provides usable, unique novel solutions to problems, opportunities or challenges – whether small or large.
9	By West (1990)	The deliberate introduction and providing for an individual, group or organization of ideas, processes, products or

		procedures, new to those users, all designed to bring substantial benefits to the individual, group or society as a whole.
10	Davenport (1991)	Complete a task development in a radically new way.
١1	Evans (1991)	The ability to discover new relationships, of seeing things from new perspectives and to form new combinations from existing concepts.
١2	Henderson and Lentz (1995)	Implementation of innovative ideas.
١٣	Rogers(1995)	Innovation is an idea or object that is perceived to be new.
١٤	Rogers (1998)	Involves both knowledge creation and diffusion of existing knowledge.
١٥	Barden, 2000	Innovation practice of successful creative ideas in the Organization.
١٦	Al-Quaid (2000)	Innovation is the scientific application of creative ideas
١٧	Singh (2011)	Suggested that innovation is the use of new technical and administrative knowledge to offer a new product or service to customers.
١8	UK DTI (2004)	Innovation is the successful exploitation of new ideas
19	Hartley (2006)	The successful development, implementation and use of new or structurally improved products, processes, services or organizational forms.
٢0	Nabil Javad (2007)	Make changes to the management, organization of the work and its conditions or manpower skills
٢1	Jacobs and Snijders (2008)	Something new being realized with (hopefully) added value.
٢2	Birkinshaw et al (2008)	Administrative innovations are new approaches and practices to motivate and reward organizational members, devise strategies and structures of tasks and units, and modify the organization's management processes.

Source: By researcher based on above literature.

Thus, often the literature indicates that the term of innovation and creativity have the same meaning, but some specialists authors tend to differentiate between the two terms, innovation discovery distinctive new idea, creativity relates to putting this idea into practice in the form of a process or product or service offered by the institution to its clients. Creativity has been used in many types of research in synonyms of innovation, and some have argued that the distinction between the two terms is related to their expression rather than the substantive differences between them (Job, 2000: 7).

However, researchers argue that creativity is a creative solution to a problem or new idea, while innovation is to apply appropriate and creative or that the creativity is the part associated with the new idea, while, innovation is the significant part associated with implementation or conversion of the idea to the product (Rami et al, 1994: 24).

As Shani and Lau (1996: 354) expand the concept and see that innovation is the 'idea' and 'innovation' (applying the new idea), and emphasize that the new idea may be new technology, new product, new organizational or administrative process, innovation is a tradition of a product, person or idea used elsewhere and its application becomes unique when placed in a new context.

The researcher believes that there is a strong relationship between creativity and innovation, innovation is the product of creativity, and there is no creativity without innovation, innovation helps to put creative ideas into practice.

We use the word innovation in the study, we are not concerned with innovation in education merely for the sake of novelty. We are concerned with innovation as a necessary ingredient in creating and sustaining a culture of performance in public education, one that is based on the kind of continuous improvement that we believe is necessary to bring about faster and better problem solving that can, in turn, increase student achievement results.

Accordingly, there is no doubt that there is an almost certain agreement among researchers that innovation is the creation of new ideas, useful and socially acceptable for implementation, and there is agreement that innovation is out of the ordinary.

Therefore, the researcher believes that innovation is: The process that leads to the creation of new ideas in the management of universities so that it is able to complete the new administrative processes, and achieve its goals and enable it to develop future visions of modern.

1.1.1.3. The Objectives of Innovation

What is the innovative objective? It is an objective that deals with other kinds of results. Innovative objectives deal with changes, with new things, with risks, with different outputs, either because they are the first time they try to reach them, or because they are unique to one occasion (Smith ,2010: 438).

Innovative objectives are corresponding to routine objectives because they are not expected to recur, and they are sometimes inspired by problematic situations because they sometimes contribute to the repair of unacceptable performance, but we are characterized by necessity described for new results. So, what are the distinctive

features of innovative objectives? It is change and risk with some important additional benefits if successful.

Therefore, to reach those objectives we should implement the following (Rogers, 1995: 28):

1. **Develop Innovative Objectives**

It seems natural to think about innovations when contemplating objectives. The characteristic feature of a routine goal is repetition because it belongs to the continuous result areas where the output is achieved repeatedly. The commitment contained in the routine goal statement is purely an explanation of the standards or performance levels that are average to work.

The problem-oriented targets deal with the areas of those results where the current performance levels are lower than the accepted standard and the commitment sought in this objective statement is to resolve (Rami et al, 1994: 26).

2. **Form Innovative Objectives**

Distinctive innovative objectives contain three items should be included in the innovative goal statement (ideas, results, method, and schedule) each of them requires consideration and negotiation (Luecke and Kate, 2003: 25).

First: The ideas

Write your creative idea in the innovation idea worksheet using these questions: What new idea do you plan to develop, propose, develop, and study, etc. within your authority during the next operational period? What's the new project that goes on in your mind and goes beyond the repetitive processes of your business? Note that this is not the goal, but just the innovative idea you have, or one of the daughters of your ideas that results when thinking about your responsibilities. It is the name of the project that is going on with you, or the innovative idea that came to your mind as you headed for work, or thought about it when you were eating your breakfast this morning, or awakened as a light that would appear in the middle of the night (Shani and Lau ,1996: 355).

Second: Results

The actual goal or exit is the desired improvement that drives you to think, what fruit do you expect? What improvements/curriculum development do you

consider a justification for spending time, training and energy in the search for a new idea? Outputs are the only justification for university spending, which is the only way to determine the success of programs - routine or innovative ideas - and whether or not to continue.

Thus, we think that a program is valuable, but we only know it if it produces the desired results. Innovation can enter and succeed in making a change, but fail to achieve the expected results and then fail to achieve the goal (Edguist,1999: 30).

Third: Method and Schedule

The method should include all the steps necessary to implement innovation and follow-up, any actions taken-written step by step, where, time scheduled connect us to achieve innovative objectives. Next to each item in this list under the word 'schedule', a time period or expiration date should be noted. It is not enough to write down an end date only for the entire project if we assume that the objectives include a way to monitor progress during that period. Accordingly, it is important to know when to abandon projects. Often, the idea that looks good turns into something useless for one reason or another. We must know when things lose value or when they do not achieve what is expected of them. The idea may fail even after the results are achieved because the costs are too high. Therefore, the need to review them regularly (Cooper,1984: 245).

You have to pay attention to the difference between the idea and the goal. For example, you are busy for a while, the service level is deteriorating in a certain area. After much discussion, you decide that the good idea is to experiment with new procedures. No, it's the idea while the goal is to improve research.

Due to the status of the university management in the university system, and its impact in the different answer negatively or positively, according to its effectiveness in achieving the objectives envisaged. The development to fit the requirements of the era ordered efficiently and effectively. Lecturers will develop an ability to design innovative strategies that can successfully take advantage of innovation opportunities. They will also learn how to evaluate different options, formulate and develop strategy, assess and resolve managerial challenges. Hence, when you have completed this study, you will be able to (Jones, 2004: 430):

- Recognize the importance of innovation.

- Explain the meaning and nature of innovation management.
- Provide an introduction to a management approach to innovation.
- Appreciate the complex nature of the management of innovation within universities.
- Describe the changing views of innovation over time.
- Recognize the role of key individuals in the process.
- Recognize the need to view innovation as a management process.

1.1.1.4. Types of Innovation

There is no doubt that evolution is the most prominent feature in the lives of individuals, institutions, and universities. This evolution has since then accumulated at varying rates because of the great mental ability that man has over all other beings that this earth shares, being capable of developing and inventing new things. Then, there are two types of innovation Quintane et al (2011: 30):

1. Innovation talent: It depends on special abilities show theirs produces in the form of great works.

2. The innovation of self-realization: which expresses the ability to express ideas without fear of ridicule of others and on a continuous basis and this kind of innovation is synonymous with sound mental health, becoming a characteristic of the integrated human being.

Innovation as a new produce: The innovative process is what creates a new product as a result of the interaction between the individual in his distinctive style and what he faces in his environment.

Innovation as a mental process: Walgriri alzoubi (2007: 6) states that innovation is the process that involves a sense of problems and gaps in a field, then renewing some ideas and hypotheses that address these problems, testing the validity of error of these assumptions, and communicating the results to others. Zhuang (1995: 14) described innovation as a dynamic mental process requiring that innovative thinking be one of its inputs to develop new ideas or create new uses for existing products, emphasizing that innovation should be better. The dynamics of innovation can be described as a cycle of innovation and change so that this cycle is not linear.

But, Amer (1991: 399) demonstrates that knowledge is controversial and has varying boundaries. Finally, innovation in labor relations often changes. There are three broad divisions of innovation: Organizational structure arrangements, so, innovation management is a first or first change, hence, innovation in the process of creating and applying knowledge (innovation) into two types: (Technical innovations and Management innovations). While, Shusha divided into two types (Shusha, 1993: 11):

1. Technical innovations are the innovations related to the production technology used and the products produced by the organization and aims at this innovation to develop technical performance in the organization:

- Adding new activities or areas to information systems, sustainable research and training of students or services at the university.

- Providing new studies, research or services not produced by the university before.

2. Innovation management relates to the social system of the university. The social system of the university means all that is related to the relationships between individuals who interact together to achieve a specific goal.

However, innovation management includes rules, roles, procedures and structures related to communication and exchange between individuals and the environment.

Although, Quintane et al (2011: 30), states that a clear understanding of what innovation represents is crucial to what innovativeness means to universities. Innovation can be described as the university's ability to innovate continuously, and it entails significant institutional results.

Understanding the degree of innovation of universities is necessary and vital for managers, and this requires a precise description of what innovation is about. The categories of innovation can be divided or categorized, with some of them classifying innovation into four types, figure (1) shows. The following is an explanation of each category separately (Al-Sarafi, 2003: 14):

1. Expressive innovation: It means the traditional way of distinguishing one person from the other in the proficiency of the work of a certain thing or practice or professional research or specific capabilities.

2. Composite innovation: It depends on an unusual society among things, such as that different ideas are compiled and put together in one template in order to be introduced and new information.

3. The invention: It is through which the creation of something new for the first time, however the features and parts of the machine exist before, but the addition and introduction of some amendments and developments on them in order to give a new appearance with a distinctive task.

4. Development of innovation: this is the kind of innovation in the use of something on the ground, but is applied in new areas, such as the process of developing and improving on theories or principles or bases of previous scholars.

Figure 1: The Innovation types.
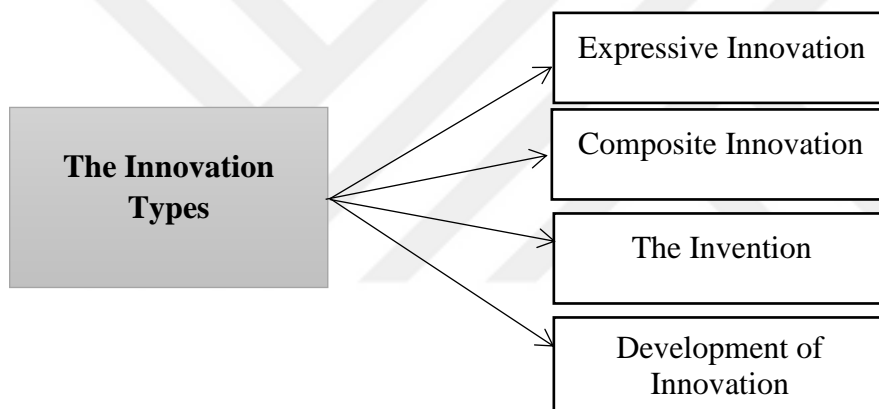
Source: Prepared by the researcher based on (Al-Sarifi, 2003: 14) Lead management.

While, Jones (2004: 425), argued that innovation is classified into two types:

1. Radical innovation: is to reach new ideas and research, which is completely different from the previous innovations, so it works to achieve a competitive advantage.

2. Progressive innovation: is to arrive at new ideas and studies in part and gradually through the improvements and additions of many and small successive that are introduced on successive developments, which thus lead to radical innovation.

However, within this classification (Solomon and Stuart, 1997: 307) innovations are convened into three types:

a) Continuous innovations: They are the result of gradual small changes as in the changes of the curriculum or invention in the side of continuous studies or training students.

b) Continuous dynamic innovations: Changes are greater in the scientific aspect and have a reasonable impact on the way people research, studies and achieve certain behavioral changes.

c) Intermittent innovations: They create major changes in their prior technology or scientific aspect and in some cases change the lifestyle we live in such as research innovations or postgraduate studies.

Consequently, there are different types of innovations in public administration, including the following ,United Nations (2006: 11-12):

1. Institutional innovations, focusing on the renewal of existing institutions and / or the establishment of new ones.

2. Organizational innovation, involving the introduction of new working procedures or management techniques into public administration.

3. Operational innovation, which focuses on improving the quality of delivery of public services.

4. Conceptual innovation, which focuses on introducing new forms of management (e.g. interactive policy-making, committed management, population budget reforms, and horizontal networks).

Innovation also varies, including human resources development and management, public service delivery and technology applications, information and communication in government processes, decentralization and so on.

1.1.2. The Concept of Innovation Management and its Definition and Importance

1.1.2.1. The Concept of Innovation Management

According to the concept presented by Birkinshawn (2008: 825), innovation in concepts, principles, processes and management practices that ultimately change the real process of what managers do, and the way they do it. Besides, the concept of innovation management as rational decision-making processes, the development of the human mind and the development of the organizational structure, all of which affect the behaviors that relate to the actual aspects or innovative thinking.

In the area of creative thinking, the leader's ability to visualize distant and close results and invent solutions is evident. The creative leader does not rely on

traditional solutions. He or she has the courage and the ability to take new ideas and solutions that differ from conventional and traditional.

However, in general, it can be said that innovation is; creative idea involving implementation and different from the invention, a process of conceptualization and implementation of a new way to achieve the result and/or performance of work. Thus, innovation administrative in the public sector can also be defined as; Public institutions develop new policy designs and new standardized work procedures to address public policy problems. Hence, innovation in public administration is a successful, creative and unique solution to new problems or a new solution to old problems (United Nations, 2006: 11).

1.1.2.2. Definition of Innovation Management

Innovation management is an increasingly covered topic in scientific and management literature over the past 35 years the reason for this interest is likely to be the realization that innovation is of key importance for survival public organizations that need improve their services (Hartley 2005: 50; Mulgan and Albury 2003: 3).

While, Hamel and Mol (2005: 845) have set out some conditions for defining innovations management, as following:

1. Innovation must be a new management practice, processor management structure, a new management approach that changes the value-added activities of the institution (university) to help activities related to the transfer of resources to added value.
2. Innovation must be new to the whole institution (university) that will adopt it.
3. It must include some practical aspects.
4. It must contribute to the achievement of the objectives of the institution (university).

Yet, Jacobs and Singer (2008), defined the innovation management as the development and selection of ideas for innovation and the transformation of these ideas into innovation. However, in Coopers words, "it's war: Innovate or die" (Cooper, 1984: 247), so, innovation management can be defined as a difference in the form, quality, or state over time of the management activities in a university, where the change is a novel or unprecedented departure from the past (Hargrave and Van de Ven, 2006: 864; Van de Ven and Poole, 1995: 512).

Thus, innovation management is the process that encompasses the whole

range of decisions, activities, and measures in order to facilitate the transfer of an idea into the business value. This process can be applied for all kind of ideas, whether it is about a product, process or a service.

The focus of the innovation management is to provide the set of measures and tools which will facilitate the inventors to respond to the challenges in the whole innovation cycle and to turn their ideas into successful innovations. Hence, innovative organizations often employ an idea management system. Idea management is the practice of handling ideas in a structured fashion. It is the aim to select the best ideas with the most potential for further development and implementation.

Obviously, the innovation process comprises more than just the creation and management of new ideas, the process starts with the generation of new ideas and results in a critical assessment of the total project. This "Stage Gate Model" is based on empirical findings of numerous "New Prod-Studies" conducted by (Coopere, 1984: 250). Comparing new product successes with failures, a standardized procedure concerning innovative projects was identified as a critical success factor.

1.1.2.3. The Innovation Management Importance

Nowadays, in a rapidly changing business environment, innovation has become essential for survival, and the survival of the organization or institution a major objective, the organization that does not have the ability to innovate in their face – definitely – big and difficult challenges, because its competitors do innovation and continuous improvement of their products and services and operations. This innovation a priority attention in all areas without exception for survival and innovation has many studies in the second half of the twentieth century. At the highest level, innovation is one of the most important human qualities that change history. Society cannot be changed qualitatively through planning, But through the work of creators

To the importance of creative people (Conant, 1964: 213) refers to any of the creators, are not offset by ten men, second class in science. It is pointless to give man of the second class the task of solving the problem of the first level. Therefore, the talented and creative are now the greatest hope in solving the problems that threaten humanity, which varied in quantity and quality, and became talented in any society

are the national wealth and the energy driving towards civilization and progress; Human wealth is a key factor of change and development and progress, through the talented and creative. To reach modern inventions in various fields and fields, through which civilizations flourished and humanity made great strides forward.

Learning is the true basis for innovation, and learning can be innovative, which is what Peter Drucker (1985: 30) called innovative tradition. Learning transforms innovation from a specialized activity and an individual practice of the innovator. Drucker emphasized what he called adaptive learning of behavioral learning organization Senge exercise as a whole as well as the Singh by responding to the events facing universities, which represents the first step towards a learning organization.

However, the most important learning point Singh is supporting the organization and assist in the overall process of change and change the assumptions and its foundations. And it certainly can't be an open perception of workers and their ability to develop the organization, departments or senior management alone is not responsible for this development and innovation alone.

1.1.3. The Innovation Management Elements

According to Nasr (2008: 27), innovation management consists of three basic elements as follows:

1. Creative thinking skills: Having the leader of this skill enables him or her to break out of the traditional range of thinking and to gather the greatest number of good, unique and unexpected ideas in order to accurately identify the problem, approach it, and make the leader more sensitive to problems.

2. Experience: It is contains knowledge, understanding, and represent the background that enables managerial leaders to reach creative solutions, which make their ideas more powerful and push others to adopt the vision of the leader at work, as well as this knowledge helps them in their professional lives as decision makers, so experience is a key dimension of the dimensions of innovation, as the lack of availability drives administrative leaders to kill new ideas instead of strengthening them, and not understanding the innovative behavior of some of their professors, reflected in their failure to strengthen innovative ways of teaching, because they see it as waste and waste of time.

3. Motivation: Innovation requires intensive behavior from the leader. A motive stems from a person's desire to reach the optimal solution by exploiting opportunities.

Consequently, in order to achieve innovation management and achieve its objectives, there must be three core innovation that; the skills of the creative thinking, experience, and motivation, and no shortage or loss of one could affect the work of creative leader and land targets. If these basic ingredients but there are a set of principles is necessary.

1.1.3.1. The Innovation Management Stages

Innovation management as an activity or process goes through multiple stages or steps until its end. The study of the parameters of managerial innovation and its effects is to determine the stages of innovation management. Hence, many of the educational literature agreed on the analysis presented by the psychologist Walsh, who says that innovation management is carried out through four basic stages:

1. The preparation stage, in this stage, the problem will be identified and all related aspects will be identified, compared with similar problems, and the methods of their previous solutions will be identified for use in solving problem solutions (Nasr, 2008: 28).

2. Incubation stage, at this stage the individual leaves the problem or position and turns away from it to another position or activity to leave room for ideas to brew in his mind (Titi, 2001: 56).

3. The Illumination stage, this represents the sudden drop off the idea to the mind (Jarwan, 2008: 95).

4. The verification stage is to verify the accuracy of the solution or the production that was reached in the light of known or logical facts or in the light of the results of experiments (Titi, 2001: 56).

The innovative process in the field of management is based on the model of problem-solving according to certain stages, followed by each other with a specific system, and each stage of the beginning and end, despite what we observe from the system of this process may occur overlap between these stages, what then, the return of universities to an earlier stage, there is flexibility in the system that is the process of innovation management, as shown in Figure (2).

Figure 2: Stages of the innovation management process.
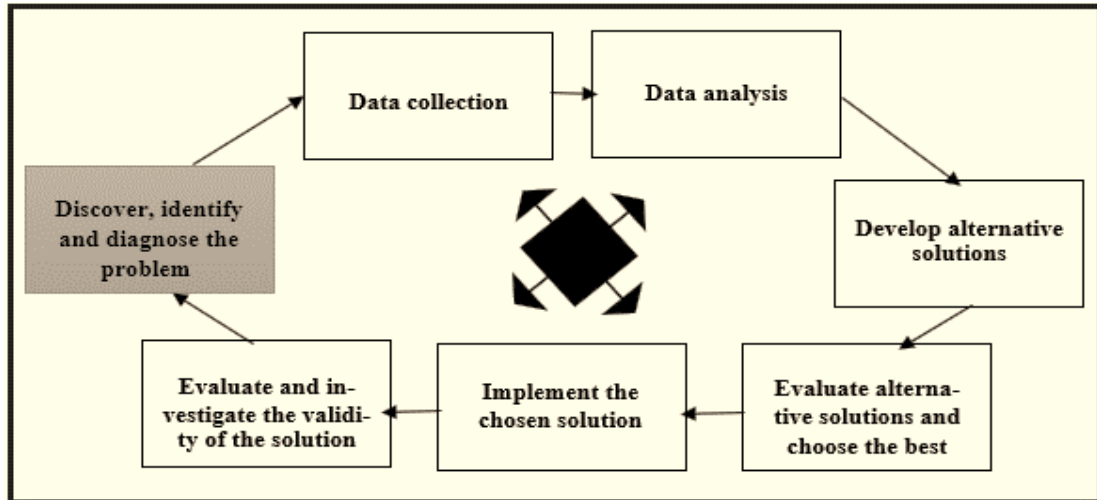
1. Discover, Identify and Diagnose the Problem

The stage of discovering and identifying the problem is one of the most important stages of the innovation management process. The discovery of problems is the essence of originality in innovative thinking. The creative mind is the one who discovers the problems.

It begins with a sense of deviation or deficiency and ends with a clear definition of it. Diagnosing and correcting the problem requires the need to distinguish between the phenomena and the real causes of the problem. Therefore, this may be confused with the university in a way that makes it difficult to differentiate between them. At this stage, the innovator is supposed to enjoy the concept of cognitive openness, it is clear to us that there are a number of mental processes that occur during the stage of discovery and identification of the problem, there are awareness processes, remembered, and cognitive processes, There is my work calendar entries (Titi, 2001: 56).

2. Data Collection

At this stage, data related to the problem are collected, either primary data or secondary data, that may; Historical data, current data, future data, descriptive data, quantitative data, official data, and informal data, etc. The nature of this stage is that it involves certain mental processes. There are processes that identify what is in the area of the problem of facts and data, and processes remember (Jarwan, 2008: 95).

3. Data Analysis

The thinker analyzes the data collected and develops the relationships that may seem to be related to his or her study. So, examines the possible reasons for the management to cause the problem and examines the relations between these reasons until the university reaches the real reasons that led to the deviation or deficiencies, and the causes of the problem may be easily discovered, and this may be difficult in many cases, due to the disappearance of some of the causes and lack of appearance or overlap and intermingling of others.

Also, noted at this stage are the existence of certain mental processes: processes, relationships, and orthodontics. These processes undoubtedly require a large number of mental abilities (Nasr, 2008: 28).

4. Alternative Solutions

The thinker tries clearly to identify the problem and after collecting and analyzing the data associated with it, he or she proposes solutions to the problem and its treatment. It seems that the basic mental process and the new variables represent the new ideas or the new solutions. Other mental factors, it works to increase the new ideas generated, the flexibility that works on the divergence of solutions and ideas, and there are factors of originality, which are working to devise all the new and distinct solutions. Thus solutions and ideas are generated. After identifying alternative solutions to the problem, the advantages, disadvantages, cost and expected outcomes of each of these alternatives are identified (Titi, 2001: 57).

5. Evaluate Alternative Solutions and Choose the Best

Alternative solutions reached in the previous stage, are subject to an evaluation or monetary consideration process in view of their advantages, disadvantages, costs and expected results. Each alternative is evaluated in light of the following criteria (Jarwan, 2008: 96):

− Agree with the institution's objectives, policies and resources.
− Goals achieved.
− Gains.
− The efficiency of the alternative.
− The degree of risk it carries.
− Consistent with time and speed factor.
− Compatibility with external environmental conditions.

In the light of the results of the previous evaluation, an appropriate alternative is chosen which effectively contributes to the solution of the problem. It is very difficult in cases of new problems, which include a high degree of risk and uncertainty, that the universities reach the appropriate solution.

6. Apply Selected Solution

Subsequently, at this stage, an action plan is developed to implement the chosen solution and to design a timetable for the specific tasks to be performed with a certain amount of material and human resources. The University must be returned to its real causes. The solution may not be applied for many reasons: It is very difficult, and the staffs may be unwilling to cooperate. It may prove that the solution is inefficient and may be the cause of changing external environmental conditions (Titi, 2001: 57).

7. Evaluate and Investigate the Validity of the Solution

The selected solution must be followed after implementation, and reports on the final results and the implications of its application. The final achievement resulting from the selected solution must be evaluated by comparing this achievement with the desired results. In addition, to the university knowledge of problems that may occur or arise during apply the solution and develop appropriate solutions (Nasr, 2008: 30).

1.1.3.2. The Most Important Features and Abilities of Innovative Managerial Leader

Innovative Leadership, the group of ideas and practices provided by managers and employees, which requires the creation of more efficient managerial processes, approaches and methods in achieving the objectives of companies, institutions and government departments and more service to society (Al-qouss, 2004: 50).

According to Najim (2003: 20) Innovative leadership is based on the establishment of nearby and mutual relations among the employees of the organization, and is based on the development of working methods, policies, and systems in the organization, and characterized by flexibility of systems, rules, and

innovation, and all channels of communication be open in any direction. As Imaaldin (2003: 43) described the innovative leadership as a leadership style characterized by innovative creativity, self-confidence and the ability to deal with the requirements of change, the tendency to experiment and innovate, and the tendency to express opinions and proposals, Work and thinking.

Therefore, the characteristics of innovative managers creative making depends not only on the process of innovative thinking, but is a complex work has other requirements besides the ability to think innovative, and requires such work from the manager to a certain way of perception, and special sensitivity to the shortcomings and weaknesses in our attitudes, Then he or she needs a serious and continuous work, as well as a specific way of expressing what he/she ends up with, in addition to his ability to think in a certain way. Such effort cannot be done by the director without having certain characteristics, Najim (2003: 22):

– To be permanent search, outlook, and a wide imagination.
– Have a high degree of ability to sense the problems that revolve around it and identify them accurately.
– Have a high degree of awareness of deficiencies or defects to attitudes, systems or things.
– To have mental flexibility in dealing with problems.
– To take care of the meanings and indicators without entering the details of little importance.
– To be characterized by the originality of thinking and non-imitation unconscious, and the depth of things and distance from the surface.
– Be open-minded to all the experiences that are available to him.
– Be aware of his/her goals and perseverance to achieve them.
– To be independent opinion and objective in his judgment.
– Be confident of himself and believe in his abilities but without arrogance.
– To be able to deal freely with concepts and elements and not subject to what is being.
– Accept what challenges his abilities and insists on overcoming difficulties that arise in his way.
– To be independent and independent of others.

− Be enthusiastic about his ideas, his work and make great time and effort to achieve the goals he seeks.

− Have a distinct ability to organize and express his ideas.

− To be characterized by high level of ambitions.

While, Amabile (1996: 1165) during her study over twenty-two years, she found that creativity and innovation are sometimes eliminated and in the cradle, and believes that there are six entrances to activate the practices of the innovative leader through the following points:

1. Challenges: The leader can make comparisons between individuals and their functions that represent their experiences and practices in creative thinking. This comparison requires that the leader have sufficient information and details about his/her staff and the tasks available to them. Good comparisons may be rare because most leaders are destroying the creative process because they are not keen on the necessary information.

2. Freedom: Employees are more creative if given the freedom to decide how to carry out difficult tasks or to accomplish important things so that the leader to determine those tasks for them in advance and does not specify how to accomplish them.

3. Sources: There are two important sources of time and money. These dimensions affect the process of innovation. Leaders must divide these two sources. They must decide the period of time the team leader gives to the work team.

4. Teamwork: If you want to reach creative and creative ideas, you must create mutually supportive groups mutually and the leader must make sure that the team's composition of the work has the following advantages:

a) Members should show a desire to help their team overcome the obstacles and difficulties of upgrading the organization.

b) Every member must understand the ambiguous information and think in all respects with the other teams to sit together at the negotiating table.

c) The staff members of the team should move away from their personal interests and work in a team spirit.

5. Supervisory encouragement: the leader should encourage the process of creativity, so, reward the staffs who propose new ideas and to adopt those ideas, and not to criticize them in case of failure of those ideas.

6. Organizational support: The organizational structure of the organization encourages creativity and innovation through the official establishments in the organization and through the regulations and policies followed in it. In order to support the creative process, we must involve the employees, delegate the powers and participate in the information, support, and maintenance.

The educational leadership plays a prominent role in the performance of staffs in educational institutions in their duties and in the achievement of the educational process for its objectives. It is not brief on those who occupy the leadership position by virtue of their function. Rather, it stems from the group. The attitudes and initiatives may change. The leadership in the group may move from the official leader to the hands of those who follow him/her through their creativity and their effective roles (Karakra, 1987: 35). Thus, the educational leadership must realize that many important variables must be taken in any educational system. If this system is to compete in a global society characterized by a high degree of increasing diversity, the key to success in management will be the extent to which the diversity requirements imposed on education.

Therefore, this educational leader must consider change on the basis that it is a continuous and controllable process, and consequently he/she is prepared to accept the problems that accompany change, and in what others may not do. He/she adopts projects that may be rejected by many (Hilali 2001: 34).

1.2. THE PRINCIPLES OF INNOVATION MANAGEMENT, OBSTACLES, AND DIMENSIONS

1.2.1. The Basic Principles Innovation Management

According to Al-sakarneh (2011: 122), many managers of international companies and organizations have put together a range of entrepreneur ideas in the field of innovation and creativity. In order to develop and our methods innovative and creative, some basic principles should be taken into consideration whether we are managers or decision makers, as follows:

1. Gave way to any idea to generate and grow as long as in the right direction. As long as we have not yet broken the error or failure, many possibilities turned to facts and turned the prospects for success to our benefit. In other words, do not kill any idea,

but give it space, and give it care, to stay in the right direction and in the service of the common good. Innovation is based on creativity, not on imitating others. Therefore, individuals must be given great freedom to innovate, but this freedom must be concentrated in the main areas of work and in the most important goals.

2. Individuals are the source of our strength, and caring for their development and care makes us the biggest, the best, the most innovative and the profitable, and the reward is based on merit and fitness.

3. Respect individuals, encourage and develop them by providing opportunities for them to participate in the decision and achieve the success of the institution. It is possible to do their best to do things to the completest, and is the institution only a group of efforts and solidarity of their children?

4. Abandon routine, decentralization in dealing develop the creative ability, which is equal foot stability in order to progress and success.

5. Turn the effort into something fun, not just a job, but also if we turn the activity into responsibility and ambition.

6. Continuous renewal of self-thought, and ambitions. This can only be achieved if the individual feels that he/she is integrated into his/her work and that the work is not only a function but builds self and personality as well, this sense of the real push to blow the creative energy inherent within, and employment in the service of goals. The manager must discover the keys of motivation and movement in order to make from its members already creative and from its institution a creative block.

1.2.2. The Innovation Management Obstacles

The contemporary and modern management require the maintenance times and dramatic shift in the present management to move from crawling strategy and freezing problems and challenges raised to the new management jumping strategy capable of creativity and innovation, modernization and growth (Al-okwa, 2011: 30-31) and there are many obstacles that usually restrict innovation in government and which shortened as follows:

1. The increased interest in inelastic managerial formalities (such as the introduction of innovation for being booked and had no substance, he/she acquires some managers of information technology as computers just decorations boasting).

2. Information technology without the need to inform us of the need to make similar

changes in laws, regulations, and procedures.

3. Adhering to reality or heritage without risk in discovering the benefits of change and innovation.

4. The characterization of personality on innovation by the leader as well as the disinterest of staff who view innovation as the sole responsibility of senior managers in the organization.

According to some other researchers and authors there are other obstacles such as:

Cognitive obstacles: traditional view of things or problems and multiple opinion and individual look that only banner on the right, and the rest is a mistake, don't bother thinking about the opinions of others, and the difficulty in isolating and figure out the real problem.

Expressive obstacles: the inability to communicate ideas to others and to the individual oneself, such as the individual's sense of failure and frustration as a result of his inability to communicate with a particular foreign language when trying to use them (Hassan, 2004: 131).

Organizational obstacles: lack of atmosphere, lack of encouragement, lack of support for teamwork, excessive reliance on experts, and lack of fun (Awad, 2005: 31).

Psychological and emotional obstacles: people often have new ideas, but they expel or do not follow them, for fear of failure or criticizing others. Or lack of self-confidence or belief in the inability to take responsibility for their implementation, or fear of mistakes and inability to store the idea lack of challenges results (Higgan, 1999: 417).

Urban and environmental obstacles: problems stemming from the environment and non-departure from customs and traditions.

Cultural obstacles: Lack of necessary information and lack of expression of ideas.

Consequently, according to Al-omayyim (2005: 401), innovation is a key factor in bringing about change and the source of excellence of organizations that seek development and progress. However, there are many obstacles facing innovation, preventing development and preventing the benefit of different organizations.

1. Fear of change and resistance of organizations has a preference for stability and acceptance of the status quo.
2. Managers are worried about daily tasks routine, rejecting new ideas and considering them a waste of time.
3. Adhering to the literal laws and regulations and strict emphasis on formalities without content.
4. Lack of belief in the importance of participation by employees.
5. Inefficient of administrative leadership, the change management has the key role in motivating employees, directing them, and involve them in the implementation of organizational goals and the creation of cooperation. If the efficiency of this administration has been weakened, it would have been heavy in the face of innovation among staffs.

However, according to Al-qaryuti (2000: 308), the obstacles to innovation management are:

1. The resistance of the administrative authorities and their unwillingness to change.
2. Verbatim compliance with laws, instructions, procedures, and fear of failure.
3. Some managers do not trust themselves.
4. Poor organizational climate and early criticism of new ideas.
5. Lack of qualified administrative leadership.
6. The prevailing social values.
7. Economic conditions.
8. The double standards of the organization.

Therefore, the researcher believes that the most important innovation management obstacles at the university include:

1. Deficiency of material and human resources and lack of effective incentive systems.
2. Lack of abandon the managers of the authoritarian manner in their administration.
3. The weakness of the ability of the director to recognize, analyze, and confined his/her thinking in the limits cannot be fixed out of them, and use the style of dependency in thinking.
4. The lack of clarity of goals in managers.
5. The lecturers neglect the initiatives of the creative director and suppress them with negligence or rejection, this is what gives us the skills needed for the university director.

1.2.3. The Innovation Management Dimensions

There are key dimensions of innovative capacity through the literature on innovation, it was noted that there was almost an agreement between most of the researchers and writers to identify these dimensions and behind the innovative thinking individuals without which there cannot be talk about innovation for its importance in measuring and determining the level Innovation both at the level of the individual or the group or organization, and administrative innovation essential dimensions appear on creative behavior when their development. Hence the researchers agreed on the existence of the following dimensions of innovation (Titi, 2001: 56):

1.2.3.1. Fluency

Emancipate the mind and thinking outside the boundaries of time, place, circumstances, challenges, and previous ideas in multiple directions and varied, and it gives the mind the ability to generate a large number of ideas, alternatives, and the multiple, and varied perceptions which can be fitted together to arrive at the end of creative ideas innovation. So, it means the ability to generate a large number, synonyms, ideas, problems or uses when responding to particular incentives, and the speed and ease of generating them. Mind is essentially a process of recall and optional recall of previously learned information, experiences or concepts (Jarwan, 2008: 84).

According to Abu-Jalal (2007: 31-32), Fluency includes the quantitative aspect of innovation and is meant to be fluent. The multiplicity of ideas that the learner can come up with and the creative ideas are characterized by their dictates to the real environment. Therefore, random ideas should be excluded. And (Torrance, 1962: 36) demonstrates fluency as the ability to call as many appropriate responses as possible to a specific problem or issue within a specified period of time. We may find that fluency is the ability of the innovator to put as many ideas as possible to solve the problem in the shortest possible time.

As Mohammed (2009: 50) states, a test that gives ten solutions to a problem within a minute is more fluent than a person who gives seven solutions to the same problem within a minute. There are those who do so because the creative person produces the most ideas within a particular unit and time, so the creative person is

likely to have a good sense of thought. Al-shammari (2002: 65), then, there are four types of fluency:

a) Verbal fluency: It means a person's ability to generate as many words, phrases, and meanings according to certain parameters. And evidence of cognitive richness and richness of verbal words and meanings that enable the manager of verbal manipulation with confidence and knowledge of the meanings of the problems, situations, and crises both according to the requirements of language, words, and meanings that serve the purpose or goal. (Al-itum, et al, 2011: 140-141). Verbal fluency means speed produce spoken words, expressive units, and evocation in a suitable position (Al-nativat, 2006: 23). Or the plains in the production of words under the conditions of a particular composition does not play the factor of meaning an important role in them, such as the production of words begin or end with a certain character (Suwaidan and waladloni, 2004: 57).

b) Intellectual Fluency: innovation management needs an abundance of ideas, many of which may not be suitable for implementation, but it is important that the innovator does not reject an idea that comes to his/her mind. Rather, he/she has the task of gathering as many ideas as possible, and then begins to examine, assess and filter them. Also is the ability to quickly produce as many ideas that belong to a certain type of thoughts in a specific time (Moawad, 2002: 53). That intellectual fluency is the summoning of a large number of ideas at a specific time (Titi, 2001: 55). Intellectual fluency means generating ideas or units of information about a particular problem over a specified period of time (Losi, 2002: 20).

c) Expressive fluency: Is the ability to express the thoughtfulness fluently or formulated in useful phrases and (Guilford) described as capable of quick thinking on appropriate related words (Al-Maghazi, 2002: 16). And Titi (2001: 55) states that produce the maximum amount of meaningful words. Fluently expressive means the ease of expression and the formulation of thoughts in words so that they are inter-connected and make them compatible with each other (Al-nativat, 2002: 23).

d) Correlative fluency: It is the speed with which the greatest number of relational units of interconnectedness between different objects are achieved by a new relationship (Loussi, 2002: 24).

1.2.3.2. Flexibility

Means to look at things with a new perspective other than what people used to flexibility a major role in the inventions that we touch, and see, for example a policy of career enrichment that achieve good work and satisfy with the need for self-affirmation of the employee (Al-serafi, 2003: 18). Also, it is the ability to generate ideas that are not of the kind that are usually expected and to guide or transform the thinking process with the change of stimuli or position requirements. This is the opposite of mental inertia, which means the adoption of predetermined and unchangeable mental patterns (Jarwan, 2014: 85). Therefore, flexibility refers to the degree to that a person expresses a certain attitude or view of a particular mentality towards this position if it requires a change of ideas, and the transition to other ideas that lead to control and control of the situation away from the usual or the typical and inertia.

According to Al-zahrani (2003: 63), the most important characteristics of a person who possesses flexibility as an innovative feature are:

- Respond quickly and adapt to new variables.
- Conversion of thinking to a new spatial dimension.
- Adaptation of thinking to a new page.
- Self-assessment and review.
- Adjustment and development crisis if necessary.
- Upgrading from other types of qualitative path.

Therefore, flexibility is the opposite of mental inertia, which means adopting predetermined and unchangeable mental patterns as needed, flexibility forms are: automatic flexibility, adaptive flexibility, flexibility of redefining, or abandoning an old concept or relationship to address a new problem (Jarwan, 2014: 85):

a) Automatic flexibility: The flexibility that appear when the individual without necessity required for the position, it gives a person a number of responses do not belong to one category but belong to variety (Alazmi, 2006: 53). Hence, it is the individual's speed to produce as many different kinds of ideas as possible that relate to an interesting problem or situations determined by the specially designed measure or test (Al-maaytah and Al-Buwailizah, 2004: 185).

b) Adaptive flexibility: the ability to change the thinking and mindset to face new situations and changing problems. (Moawad, 2002: 54). Also, means an individual's ability to change the destination of mind through which looks to solve a specific problem, meaning they reverse mental rigidity or mental inertia, Adaptive called because the individual needs to modify intentional behavior in line with the proper solution (Al-Serafi, 2006: 69).

Accordingly, it refers to the ability of a person or manager to change the mental orientation through which the solution of a specific problem is considered. In this sense, it can be considered the positive pathway to mental rigidity. Hence, it means the ability of the individual or manager to change or transform old interpretations or analyzes of other modern information to new uses in the way of use and to build new methods in dealing with problems.

1.2.3.3. Originality

Originality is the ability to bring new rare ideas, useful, and not related to the repetition of previous ideas, producing unusual and long range, representing the authenticity of the most important factors in the ability of innovative thinking and innovative individual with originality is who can banish from the ordinary or common and thus realizes relationships, and fashioned it, as well as original solutions, there is originality synonymous with innovation itself, it means renewal or uniqueness of ideas, innovative person with genuine thinking which shrinks from the ordinary or common. So, good understanding of heritage and good employment for current and future service with no repetition, good knowledge and understanding of the theories of education and innovative experiences throughout history, with pride in this rich store of values and principles, with good visibility to current reality and develop heritage to fit reality (Al-sumairi, 1994: 118). Either the person who moves from others without adding or modifying or development of any kind is not creative but imitative (Abdel Wahab, 1994: 118).

Also, Al-itum et al (2006: 143) states that originality is the ability to express unique ideas and produce far more than common ideas, namely, the uniqueness and uniqueness of the idea and the ability to penetrate beyond the direct and familiar ideas. While Al-zmzmi (2007: 182) consider that originality does not indicate the

amount of innovative ideas offered by the individual but depend on the value and quality of ideas.

According to Al-Azmi (2006: 54), the originality is one of the most important capabilities of innovative thinking. Given the originality in the light of the factors of fluency, flexibility and sensitivity to problems, they differ from each other as follows:

a) Originality does not refer to the quantity of innovative ideas, but depends on the value of these ideas and quality and granny, and this is what distinguishes it from fluency.

b) Originality does not indicate to a person's reluctance to repeat his/her thoughts or ideas personally, as in flexibility. Rather, refers to the aversion to repeating what others do, which distinguishes them from flexibility.

c) Originality does not include conditions of evaluation in the consideration of the environment, and does not need a large amount of conditions of the evaluation of self-criticism and this is what distinguishes them from the sensitivity to problems that need a high degree of evaluation, whether in the assessment of the environment or self.

1.2.3.4. Sensitivity to Problem

It means awareness of the existence problems, needs, or elements of weakness in the environment or position. This means that some individuals are quicker than others to observe the problem and to investigate their presence in the situation. Finding the problem is a first step in the search process, and then adding new knowledge or improvements and modifications to existing knowledge or products. This ability is associated with the observation, re-employment, use, or questioning of unusual, abnormal, or perplexing things around the individual (Jarwan, 2008: 86). Torrance believes that innovation is a process that begins with sensitivity to problems and shortcomings (Torrance, 1990: 408).

While, Al-shafi, reveals that the sensitivity to aesthetic values, the ability to respond to things in art or nature, and to derive and distinguish them from ordinary and less beautiful things, is the ability to discern the evaluative thing Abdel-Aal (2004: 99) states that sensitivity to problems means the ability to identify the greatest number of problems associated with a subject. This ability varies from one individual

to another. This ability plays an important role in shaping the foundations of creativity in individuals. Or it is the ability to identify the problem accurately and to identify its dimensions, its exterior and its shortcomings.

Moawad (2002: 54) believes that it is the ability to confront a certain situation that involves a problem or several problems that need to be resolved and that this situation may be beset by a deficiency or a problem or need to be changed.

1.2.3.5. Risk-Taking and Challenge

It is meant to be willing to take risks from the actions of the individual when adopting new ideas or methods to take responsibility for its consequences (Al-namr, 1994: 99). So, it is intended to take the initiative in adopting new ideas and methods and seeking solutions at the same time as the individual is able to take the risk of his actions and has the willingness to face the responsibilities involved.

1.2.3.6. Maintaining Direction

The ability of the individual to focus his/her attention on the problem without the dispersion of the effect on his/her thinking, and its interaction with the problem be stronger than external influences, which strengthens the chances of success in reaching the correct solution, and it is flexible (Zeitoun, 1987: 125). Also, the ability to continue the thinking of the individual in a particular problem for a long period of time without the shift between his/her thinking and the problem until it reaches a satisfactory solution (Abdel-Aal, 2004: 99).

Hence, Moawad (2002: 55), explained that it was Suif who suggested another factor to the Gilford factors found it necessary in innovative thinking and call it retention trend factor for the innovative person looks like he/she has the ability to focus its attention and thinking on a specific problem for a long time.

Accordingly, the above dimensions are adopted by the researcher in her study of the first variable innovation management.

Consequently, the researcher believes that faculty members can innovate and acquire those dimensions or skills, so that, the university can move from an unacceptable situation to a desired situation, keeping the progress, and acceleration in all areas of life.

CHAPTER TWO: CHANGE MANAGEMENT AND INNOVATION MANAGEMENT

2. CHANGE MANAGEMENT

2.1.1. The Concept of Change

The change has become a reality and the current era is the era of changes, hence, the rapid changes the human binges faced, led to the need monitor all changes in the surrounding environment, and that desire to counter the effects of this change and keep-up with updates. Thus, since the beginning of human life, change is constant, and it was only ways to find the means to cope with these changes and face them in the right direction, consequently, the writers and researchers determine the concept and meaning clear in this regard. And multiple concepts of change and vary depending on the perspectives of researchers, some known reasons for the change of angle change, the other knows it from the corner of the results change. So, the concept of change is still not clear, there is the nature of the change in terms of content and form, and there is relationship change in terms of coherence and entanglement, and in terms of reciprocal relationships, causality, and in terms of direction and influence, there are scalability in terms of flexibility they accept change (Al-Salmi, 1996: 226).

Therefore, scientists, experts and specialists did not agree on a single definition of change. Change as a conversion from a certain situation than it was before, and this transformation may be in form, quality or condition (Al-Salmi, 1996: 225). According to (Al-atiyat, 2006: 94), change as the process of transformation from the current reality of the individual or institution to another reality desired to reach within a specified time, methods and known approaches, to achieve long-term and short-term goals, to benefit the individual or institution or both together.

2.1.2. Definition of Change

As Al-amayin, (2002: 243) defined the change is intentional, purposeful and intentional change that seeks to achieve environmental adaptation (internal and external) to ensure a transition to a more structured and problem-solving state. The change is a sign of the difference between two cases. Ford and Ford (1999) states

that change is the process of introducing improvement or development on an organization that is different from its present state and so that it can achieve its objectives better. (Bechard) defined change as a planned effort, encompassing the entire organization and managed from the top, in order to increase the effectiveness of regulation and through improvements and deliberate interventions in organizational processes, using behavioral science systems. However French and Bell, define change as a long-term effort and activity aimed at improving the organization's ability to solve its own problems and renew itself through a participatory, cooperative and effective management of the organization's climate, giving special emphasis to collective action Robinson (2000: 22) defines change as moving from the present state of life to a more efficient and effective future Al-Shaloot (2002: 142) defines it as the transition from a somatic state to a different state that may have been tried in the past or may be a new case (renewal) to be applied to supportive situations and daily practices.

As change is a process, this definition of development tends to denote a process towards a desirable state in society. Whether this state is achieved in the short or long-term, change has several implications for society. Disruption may occur in the established patterns of living within the society as it moves towards good change, and thus reflect a contradiction to its intended meaning, and generate a discourse on what constitutes this good change.

As a result, the term development in both academic and non-academic fields has enjoyed an ambiguous position of being alluded to a diversity of meanings defining or evaluating what good change is and who this good change belongs to. Changes to the project can threaten the success of the project. Minor changes can have a domino effect on the project and introduce significant risks. All proposed changes must be examined for any possible risks the change may introduce to the project's ability to reach its objectives. This change may be spontaneous by nature, without planning or directing, or it may be a systematic, organized change that we can adjust and direct towards predetermined goals, Robinson (2000: 25).

In the light of the previous definitions, the researcher defines change as the purposeful plan, planned after reading the past and present and seeing the indicators of the future in order to improve and develop and reach what we want to be in the organizational work. After the narration of some definitions of change, it can be said

that change must be clear and planned, and that change should not be a mere change. If we look at the administrative approach to the process of change in institute, we find that change management is the scientific application of change, which expresses the best ways to bring about change (Al-Shaloot, 2002: 144).

2.1.3. The Types of Change

1. Strategic Change: Focuses on key long-term issues, it is a step forward and called the strategic vision, and includes the organization's goal, mission and philosophy on the development, quality, innovation and values of employees, the needs of society and the technologies used. Strategic change takes place under several factors: the external competitive, social and economic environment, the internal resources of the institution, the available material and human resources, culture, organizational structures and systems. Successful implementation of the strategic change process requires a thorough analysis and understanding of these factors in the planning and formulation phases.

2. Career Change: Functional change is related to new systems, procedures and structures, and methods that have a direct impact on the organization of work within the institution. These changes have a significant impact on institution's staffs, they are more influential than strategic changes, which requires careful handling and care (Al-Hariri, 2011: 71).

3. Change at the state level and change at the regional level: Change at the state level includes the entire geographical area, which extends to all the establishments administrative of education, while the change at the level of the regions are limited to a particular region only (Khatib, 2003: 55).

While Al-amayin (2005: 350) lists other types of change according to the criteria used in the classification as follows:

1. **Comprehensive change and partial change:** If we look at change by degree of inclusiveness, we can distinguish between two types of change, the partial change, which is the change that deals with one aspect of the organization, such as technological change only without change in other areas, and a comprehensive change that addresses all aspects and areas of the organization. The risk of partial change is that it may cause some sort of imbalance within the organization. Some

areas are sophisticated and others lagging behind, reducing the effectiveness of change.

2. **Physical change and moral change:** If we take the topic change basis for possible discrimination between physical change such as structural and technological change, and moral change (psychological and social change). For example, some institutions have modern equipment and devices, but the patterns of behavior and methods of work are traditional, and that type of change configurable and superficial and ineffective.

3. **Rapid change and gradual change**: There is another division of types of change depending on the speed of change, change may be slow and gradual and may be a quick change. Although slow-moving gradual change is usually more entrenched than sudden rapid change.

4. **Planned and random change:** The planned change is deliberate change, so, there is a clear plan to bring about change, aiming at concrete goals. Random change does not follow a plan and no attempt is made to anticipate its results or to know its effects.

According to Dave and Noy, change is based on three types:

- Change in strategy and organizational structure.

– Change in work processes and environment: This type of change involves a series of changes (four groups): implementation of a quality programs, work life, change in work design and communication processes, introduction of new technology and changes in the physical environment of work.

– Cultural change: refers to a change in the values, standards, attitudes, beliefs and behaviors of individuals (Jalab, 2011: 672). While Al-Khudairy (2003: 32), classified the change into several subdivisions by different fields, which are illustrated in the following Figure:

Figure 3: the types of change

According to field and activity	→	Economic, political, social, legislative, intellectual-technological change
According to scale	→	Full or comprehensive change / Limited or partial change
According to time	→	Short-term and average-Term change
According to stage	→	Primary, Secondary, Supplementary, final and cosmetic change
According to necessity and urgency	→	Urgent change / Change can be delayed 'not urgent'
According to the content and depth	→	Profoundly or structural change / Formality or superficial Change
According to the degree of complexity	→	Complex and interlocking change / Simple change
According to the rules	→	Origins and self-motivation Change / Origins and external incentives Change
According to Philosophy	→	Change carries a certain philosophy / Change does not carry philosophy

Types of change

Source: Al-Khudairy (2003) Change Management, An Economic Approach to Administrative Psychology to Deal with Current Variables to Achieve Excellence and Excellence in Future Projects.

Thus, the researcher believes variety in the partition of change, and that each of us makes the change, but most essential that this change is planned until the goal is reached at the lowest cost and effort.

2.1.4. The Concept of Change Management

The change management has become one of the most important tasks that organizations are currently focusing on. The majority of organizations have realized that preparation and planning are much better than not planning based on the assumption that business development is through gradual growth. A precise plan of action that focuses on the current situation of the organization and how to move from it to a better position in the future. This requires the organization to move beyond the

familiar work's context, thinking and analysis of all elements that create the desired change (Robbins, 2000: 81).

Accordingly, the change concept and its management is a modern administrative concept, because it focuses on transforming any institution from its current reality into a better future reality. This is only by following a clear concept that guides all those who submit to any process of institutional change.

According to Smith (2001: 7) change management is process of transforming the institution through the application of a comprehensive scientific approach gradient from the current reality to the reality to be achieved through business development and behavior by practical methods to promote the change to be achieved. So, the change management means to plan that contain; realize, control, and finally stabilize change processes on both corporate and personal level.

Therefore, it is the process that controls how change is proposed, evaluated, implemented, and released. Tushman and Anderson (1997), argues that change management involves moving the organization from its present state to another desirable situation during a transitional period. In change management, there is a need to find a state of dissatisfaction with the current situation and a serious desire to move to a future situation and adopt a clear strategic vision (Kotter, 1997: 20).

Al-Lawzi (1998: 338) defines change management as a process of altering, modifying, canceling or adding plans to some of the objectives and policies of institutions, the values and trends of individuals and groups in them, or the possibilities and resources available to them, managers in various forms and methods for the purpose of increasing the efficiency of the performance of the institutions and achieving their efficiency.

However Amer (1995: 607) believes that the change management is the effective treatment of the changing pressures that a person is exposed to as a result of progress and development in the material and intangible aspects of life and the interaction with them inside and outside the business through the exercise of administrative processes efficiently and effectively to reach the desired position. As (Imad Eddin, 2003: 18) defines the change management; as a managing planned and organized effort to reach the desired goals for change through the proper scientific recruitment of the human, material, and technical resources available to the educational institution.

Therefore Al-Otaibi (2002: 62), claims that the change management is a managerial approach which means monitoring indicators of change in the environment of business organization, and sort those indicators that are related to the activity of the organization within the priorities of management to adapt in the exercise of the functions of the administrative process with the variables expected to improve their views and behavior. Hence, it could be consider as:

- Change management is a systematic approach to dealing with change both from the perspective of an organization and the individual.

- It is an important part of project management, the project manager must examine the proposed change and determine the effect the change will have on the project as a whole before allowing the change request to be implemented

- The discipline that guides us how we prepare, equip and support individuals to successfully adopt change in order to drive organizational success and results.

- Change management provides a structured approach for supporting the individuals in organizations to move from their own current states to their own future states

According to llsern (2002: 339), management moves to meet the new situation and rearrange things so as to benefit from positive change factors and to avoid or reduce factors of negative change, that is how they use the best methods and effectiveness to bring about change to serve the desired goals. The researcher defines change management is predisposed through the provision of technical skills, behavioral, administrative and cognitive use of available resources (human, legal, material and time).

So, after recounting some definitions of the change management, we believe that the primary responsibility for change lies on the omnibus officials through the exercise of their functions as educational leaders working on the process, professional, and humanitarian grounds, to keep with them and following them to constant changes and accelerated around them and they also have the conviction managing change and know their goals when you know to target that going through the change in management will have to transform them to change management.

2.1.5. The Change Management Objectives

According to Maher (2005: 416), the change is a planned process with specific objectives as follows:

1. Continuous examination of the growth or decline of the organization and the opportunities surrounding it.

2. Develop the organization's methods in dealing with the problems it faces.

3. Increase confidence, respect and interaction among the members of the organization.

4. Increase the enthusiasm and ability of the members of the organization in the face of their problems and self-discipline.

5. Develop the innovation management and willing as the leaders capabilities.

6. Increase the organization's capacity to maintain the authenticity of the characteristics of individuals, groups, departments, work and production of the organization.

7. Building a climate conducive to change, development and creativity.

As Hariri (2001: 142), indicates the change management in educational institutions aims to achieve a set of objectives:

1. Making positive change bearing scientific, educational, administrative and moral values to improve the outputs of institution according to legal legislation, the framework of professional ethics stems from the values, customs and traditions of the surrounding society.

2. Ambition the reality and enrich the new scientific approach, intellectual and technical environment through channels of communication formal and informal media, the press, radio, and television.

3. Assist management to meet the change in management and address the problems of education, education and management in a serious and effective.

4. Reviewing how to prepare the lecturer and training during the service effectively with the latest developments in this field.

5. Reviewing the curriculum and adapting it to suit all individual differences, and linking the theoretical side with the applied scientific aspects in the curriculum activities.

6. Review the design and size of the university buildings and their equipment according to the overall quality standards in education.

7. Attempt to reconcile the objectives of the educational institution. The objectives of the staffs to achieve staffs satisfaction and satisfaction of the institution at the same time.
8. Updating and developing behavioral patterns in educational institutions.
9. Developing human and material resources.

In light of the above, the researcher believes that the main objectives of the change management in educational institutions (university) are as follows, Hariri (2001: 146):

1. Achieving the goals of the educational institution at the level of the world.
2. Fully adapt the learning institution to the global, regional and local environment.
3. To explore the future of educational science and to reformulate vision, mission and strategic objectives.
4. Transforming the managers of the university in their administration from a traditional administration to a change management that matches the requirements of the times.
5. Creating a climate suitable for solving problems and accepting differences of opinion among employees.

2.1.6. The Change Management Importance

According to Wilson (2001: 21) the concepts and approaches to change have permeated every aspect of organizational behavior and emphasizing the importance of change management that the dominant idea of modern management theory is to understand, create and adapt to change. So, change is seen as the key fundamental to the success and excellence of organizations.

While, Scott and Jaffe (2001: 30) advice to managers who wait for instructions from their superiors to tell them what to do, that they should stop waiting, take the lead in their groups, and if they are stuck in the waiting seats, the waves of change may distract them. They remain on the surface of water, they must learn to manage change. Also, it is a complex of social, political, and economical phenomenon whose importance transcends the limits of what it achieves in the present and extends to the future and we can take note of some of these importance aspects (Khudairi, 2003: 23):

1. Maintaining active dynamics

    The change brings about a renewal of vitality to institutions, organizations, and nations. Change leads to the recovery of hopes, the movement of constants, the spirit of optimism, the emergence of individual and collective initiatives, the emergence of opinions and suggestions, the sense of the importance of positive participation, and the spirit of indifference and negativity. The pessimism caused by the stability extended for a long period of time.

2. Developing innovation capacity

    Change requires an effort to deal with it, whether positive adaptation, or negative treatment of refusal, both types of dealing needs and requires the creation of innovative means, tools and methods, and then change the development of the ability to innovate in methods, form and content.

3. The desire to develop and improve

    The change works on the explosion of demands and the creation of desires and the development of motivation towards the advancement and progress, and the call for the development and improvement of interdependent in everything, therefore, the change works as a huge volcano rippling within it and fused with all currents, desires, and motivations, and all tend to reject what is and work to develop it and improve it through:

a) Reforms and remediation of the defects, errors and shortcomings that have occurred and the problems that have resulted from them.

b) The process of renew, and replaces productive forces that have been destroyed, consumed, and rendered unable to produce or work.

c) Comprehensive and integrated development based on the application of new production methods based on completely new technology and almost completely different from what was previously used.

4. Compatibility with variables

    Where change is about increasing the adaptability and compatibility with life variables, with the institutions, companies, countries and individuals of different conditions, unstable situations, but also an environment where many interacting factors, ideas, trends, forces, interests, and rights, and then the change management

become important, effective, and necessary and at the same time necessary for good administrative organizations of any size to function, but become necessity required continuity and permanency that require adaptation to life and environmental variables surrounding the organization.

5. Reach a higher degree of strength

Where change works to achieve a better degree of strength in operational performance and operational practice through two axes:

The first axis: the detection of points and areas of weakness and gaps that led to the decline of this performance, such as: Areas of waste, waste, damage, exhaust, defects, waste, etc.

The second axis: knowledge and emphasis areas and strengths such as: stimulate areas that encourage production and productivity, improve the working environment, and increase the desire for positive interaction with employees, loyalty and engagement with work. Figure (4) shows the importance of change.

Figure 4: The basic aspects of the change management importance
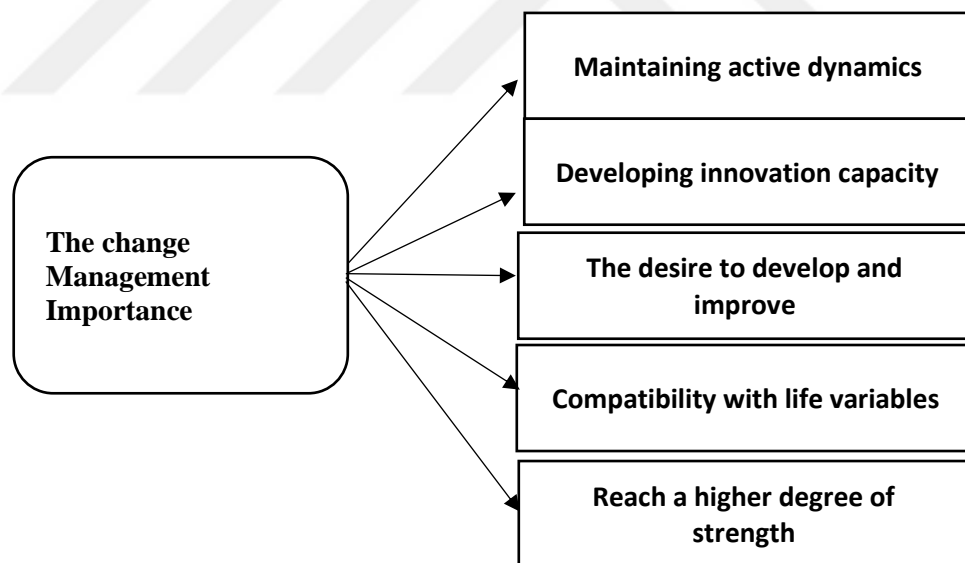
Source: Khudairi (2003) Change management, an economic approach to administrative psychology to deal with current variables to achieve excellence in the future of projects.

2.1.7. The Principles of Change Management

According to Amer (1996: 288), change management has the below principles. However, they don't represent fixed rules. In some cases, they may not be valid in other cases depending on the situation, circumstances, timing, and other factors that make the application of change different from one situation to another:

1. The change material at a faster than ideas of change. Hence, the change management is governed by the simplicity of change movement in the quality of the subject of change itself in terms of being physically or mentally.

2. Entering innovations into the organization at a faster rate the upper levels of management.

3. The existence of an organizational learning curve for most of the changes: learning the practice of new methods and approaches in addition to dealing with the modern technology is undergoing gradual stages governed by willing intern and instructor capacities, learning costs, and time element

4. Acceptance of the changes faster than the smaller size, segmentation strategy is therefore better change projects in terms of effectiveness in the application under the minimum technical and human issues.

5. The bureaucratic director is considered an obstacle to efforts to change.

6. The availability of specialists, with knowledge of the organization's efforts to change the greater the images of change.

7. The rates of change in large and complex organizations are rising and the human resistance is rising.

8. Individuals accept changes more quickly whenever they have the opportunity to discuss them before applying them. The persuasion is in line with the latest and best administrative and behavioral approaches.

9. Don't take natural weakness or changes become effective only after practice and get used to it.

2.1.7.1. The Change Management Characteristics

1. The change management has several important characteristics that need to be identified and captured Figure, Al-aman (2005: 347):

2. Targeting: Change is a movement of intelligent interaction that does not occur randomly or improvised, but in the context of an organized movement that goes to specific goals. Therefore, change management seeks to achieve a specific goal, known objective, approved, and accepted by the forces of change.

3. Realism: Change management must be associated with the practice of the institution, within its possibilities and available resources, and conditions.

4. Harmonium: There must be an appropriate degree of compatibility among the change process and between the wishes, the needs, and aspirations of the different forces of the change process.

5. Effectiveness: Change management must be efficient, which has the ability to move freely, and has the ability to influence others, and directing the forces already in the target systems and managerial units changed.

6. Participation: Change management needs positive interaction, and the only way to achieve this is the informed participation of the forces and parties that are affected and interact with the leaders of change, and then to inform them of the variables, constraints, and controls that surround the process of change, (Khudairy, 2003: 20).

7. Legitimacy: the change must be done within legal and ethical legitimacy, since the existing law in the organization may contradict the trends change, it should first amend and change the law before making the change, in order to maintain legal legitimacy.

8. Reform: To succeed change management must be characterized by reform, in the sense that it must seek to reform existing defects, and to address the existing imbalances in the organization.

9. Rationality: is a prerequisite for every administrative action, especially in the change management. Thus, every decision, action is subject to cost and return considerations. It is unacceptable that the change will cause huge losses that are difficult to cover.

10. The ability to develop and innovate: It is a practical characteristic of change management. Change needs to create better development capabilities than exists or is currently used.

11. The ability to adapt quickly to events: the strong interest in change management the ability to quickly adapt to events, and from here they don't interact with events only, but also correspond to adapt and try to control them and control the direction and course, and may lead and create standalone events to maintain the vitality and effectiveness of the organization, those properties can be illustrated through the following Figure (Al-aman, 2005: 345).

Figure 5: Change management characteristics

Targeting	Ability to adapt quickly to events	Ability to develop and Innovate
Realism	**Change Management Characteristics**	Rationality
Harmonium		Reform
Effectiveness	Participation	Legitimacy
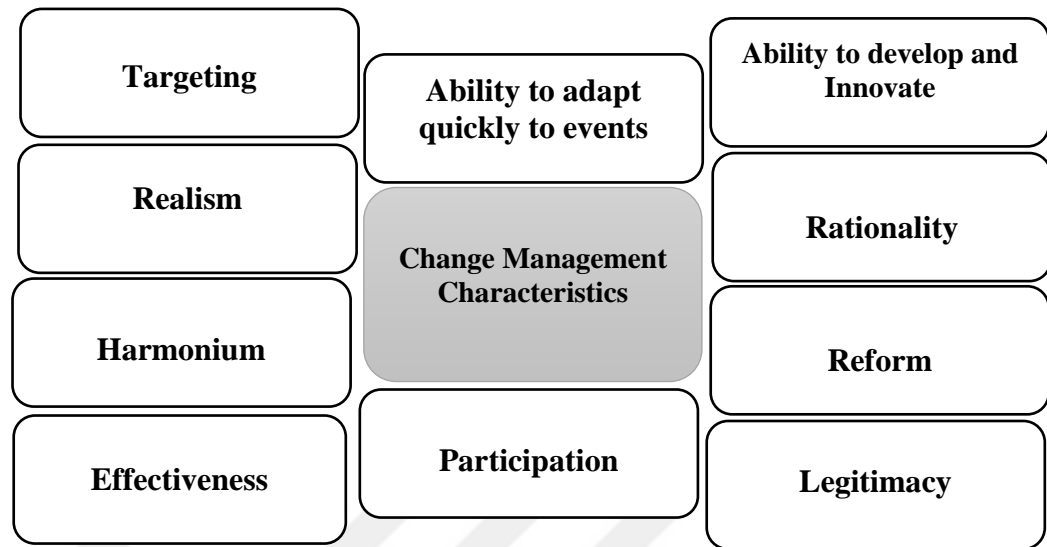
Source: Developed by researcher

Hence, it is worth revealing that change in every organization must be accompanied by social change, and therefore it will affect the community, and that's where the education system is an important part of society, it is facing challenges from accumulating information and enter the modern broad space technology (Al-Hariri, 2011: 125).

However Imadeldin (2003: 18), refers to a number of characteristics that are required to be met by the change management in higher educational institutions, notably:

1. Serious management able to convert to a serious leadership seeking to make a difference in terms of conscious absorbed to the present, and the conviction that change and its justifications.

2. Proactive capability, creativity and innovation to bring about change and development elements of the higher educational institutions and activities: such as all the methods of its dominion, work methods, and administrative behavior patterns.

3. The ability to provide an appropriate climate for change, to develop effective strategies for its implementation, and follow-up its implementation through the human, material and technical resources available to achieve institutional performance and achieve the desired goals.

4. Upgrading the capabilities of the organization and its performance to be able to cope

49

with successive developments and to accommodate their requirements and deal with them positively.

Accordingly, the researcher consider that the change management is a planned and purposeful scientific process that requires participation and is based on a set of laws and ethical rules where compatibility for innovation, reform, and development.

2.1.7.2. The Reasons for Change Management

When the methods and practices are no longer suitable for the intended goals, so, because time has exceeded them or they were not appropriate at all in future, here the reasons for change increase and become more urgent than ever before (Fahmi, 2004: 378):

1. Globalization and its economic, political, cultural and social challenges to societies and countries.
2. The scientific, technological and industrial revolution that imposes change on all societies and countries in terms of comprehensive reconstruction in all fields.
3. Acceleration of global and regional changes, which have imposed a reality that states must race to deal with consciously in order to protect the interests of their people.

While Abdullah et al (2001: 7) argues that the bases invite the rector to various changes to the political, social, and economic, and technological reasons and these reasons might be caused by internally within the University, or may be individuals as following:

1. Social and political reasons: The social and political, or societal conflicts that affect every individuals in societies, whether small or large, have inevitably contributed to the transformation of the social lifestyle based on individualism and humanism collective view, there is no doubt that the work is affected by these conflicts.
2. Economic reasons: Economic changes have become a characteristic of this age and are occurring very quickly or very slowly, complicating the chances of overcoming or stopping them. The change in price volatility or cash flows may lead to a change in activities and services and ways of providing them. So, the modern technical

factors and elements of modernization led to the most important patterns that were fixed for long periods of time.

3. Technological or technical reasons: Information technology revolution affect heavily on governance and provide services in addition to sale and purchase operations, and these effects are mounting day after day and very quickly because information technology has become part of the trend towards more efficient tasks.

Nevertheless, the researcher believes that the below are some reasons for change in the universities: Accelerated progress and renewal in all fields in this world. Besides, the speed of change and coverage of all sectors of life and accept its effects and adaptation. Then, demanding the best results in the outcomes of educational process and the pursuit of quality in education.

2.1.8. The Methods of Change Management

Sometimes it may require to keeping up with changes in a thoughtful manner and seek to take advantage of new opportunities in developing working methods that guarantee the survival of the University and change. Hence, no matter how simple it is a new opportunity for management, the management should be in a state of willingness to continue change and avoid the negative effects. There are several methods that help the management on how to face change and these methods are (Zakri et al., 2006: 55; Al-Lozi, 2002: 231).:

a) **Traditional method**: Which is the effort by the management in order to moderate the negative effects of change, a defensive approach is to try to fill the changes and reduce the damage caused by change and traditional management does not believe in the need to change or not have the courage to foot it originally, the wisdom paid to fill the gaps and shortcomings that result from the change process because in its view and it is the best method that preserves to a certain extent the whole entity with less losses.

b) **Inclusion method**: It is the best way to deal with change, and it is expected that changes will also occur, also called the prophetic approach. The department prepares and develops strategies to deal with change and requires management to take plans to change or organize and change it in the public interest. Therefore, this requires managers to anticipate change and even to predict it so that they can deal with it and

achieve the best results. Differs from the method of containment and organization and achieve a good balance of the University.

Hence, this shows the fundamental difference between the traditional method and the containment, the first depends on the controls for the return of things to the monument, if exceeded the quorum has escaped the leadership of the hands and returned to harm, while, the method of internal study is correct, reversed and the error is avoided and avoids that it bend in the middle of keeping up with ambitions and aspirations, take the right and avoid corrupt. Thus, it is a better way to keep the institution and to maintain its supremacy and management

2.1.9. The Change Management Prerequisites

There are a number of factors that must be taken into account by the change leader. So, the idea of change can be accepted and interacted by individuals and change becomes more effective Robinson (2000: 30) believes that productive change occurs if it is built on five rules:

A. Individuals do not respond to change unless they have a common motive for change.
B. Individuals do not respond to change unless they are partners in the change decision.
C. Individuals do not retort to change unless their leaders are living models of change, and serious about it.
D. Individuals do not react with the change unless they have a clear picture of what would change for them personally.
E. Individuals cope with change when receive administrative support for that change.

According to Durra (1986: 372), there should be certain factors that allow change in learning institutions to succeed in their efforts, the most significant of these factors are:

− Availability of the general climate in which to accept the change and does not oppose it.
− Support the administrative leaders in the organization, and their support for efforts of change ensure continuity and achievement of goals.
− The presence of change leaders with intellectual and technical skills associated with change and help them to form a comprehensive perception of change and rules.

- Focus on more groups of individuals, to the standards and values and expectations of the groups in the organizations a clear impact on the behavior of individuals.
- Diagnosing the organization's problems in a scientific manner, as well as diagnosing the factors of resistance to change and how to deal with them.
- The availability of human, material and technical resources for change and help to implement it.

As Khawaja (2004: 28), states that professor (Edson Hovel) of Anthropology at the University of Minnesota, USA, points out, four values prevail in American educational philosophy that have led to its development and prosperity, as follows:

1. The idea of progress: There is a restless activity to get a better education.
2. A reasonable world: based on the application of the scientific method in research and thinking, and there is no room for chance.
3. The equal opportunities between individuals: which is a motive for each individual to gain and succeed, it is self-sufficient and fruitful for its society.
4. Always look forward: no spaces for the positive results of the change, but continuing belief that the best will come in the future.

Consequently, the researcher believes that the participation of individuals in the process of change management is useful and achieves the desired results and grow their level of organizational commitment, the leader of change should take the following points into account (Scott and Jeff, 2001: 110):

1. The theme of participation is appropriate to the ability and experience of individuals.
2. The participation should not be a goal in itself, be worthless superficial involvement, as, (Scott and Jeff, 2001: 110) states that many leaders had tried the process of participation, but failed because it was a sham that was intended only to protect the leaders themselves are critical, and the real purpose was not to identify the nature of the feelings of individuals, or to benefit from their ideas.
3. Participation should not increase the internal conflict between individuals, since there is no prejudice to the views of a class without the other.
4. Set the controls to participate without expansion and exaggeration, so aren't those reasons in lost time.

2.1.10. The Obstacles to the Change Management

The change can be a success, if its holders realize that it can achieve their goals, and change the reality around them. However, sometimes it is a powerful barrier to change. It is the obstacles that resist all that change seeks. This is the natural reaction to change. These obstacles to breaking the arms of change management in their efforts to achieve the goals of the change process, and there are many obstacles to change management and the most prominent of these impediments to change resistance, while, (Al-dhan, 1992: 168) argues that change resistance is a negative feedback to individuals to changes that may occur or you already got in The organization felt its negative impact on them.

According to Sharif (2004: 104) constraints to change management are normal, so, any change must be a form of resistance, hence, might be resisting and might be concealed, both presidential and parliamentary designations not less dangerous than the other, already public resistance behavior must moderate it, otherwise turned into a break, and the resistance disguised with frustration or resentment must be found to breathe in order to turn into tasks and rumors and blocs between those who are with and against the process of change. Hareem (1997: 512) claims that resistance is the nature of human beings. Human often resists changing the status quo. This is because the change causes anxiety and psychological tension to the individual because the consequences are not known, which are usually seen as negative for them, and defined resistance to change as a behavioral emotional response to a real or foreseeable threat that threatens the present mode of action.

Besides Juhar (2001: 404) states that resistance to change are known as behavioral emotional response to real danger or unexpected threatens the current working method, there are a range of challenges confronting leadership in educational organizations because of the increasing speed of change: Poor absorption of educational leadership to the requirements change, and the spread of some behavior patterns that impede change and development paths, and lack the flexibility to adapt to change.

Consequently Noah (2007: 108) conducted a study on change, and found a number of obstacles to change, most notably:

1. Obstacles related to behavioral aspects and most important: The desire for change and renewal as a result of frustration and multiple inhibitors, and loss of confidence in those who will change, and caution from dealing with things is unknown results.

2. Obstacles connected to social aspects: : staff fear of being unable to adapt to change requirements, poor staff relationships with change implementers, frustration and despair of staff as a result of past failures of change.

3. Obstacles linked to organizational aspects: the scarcity of incentives and rewards to encourage employees to engage in change processes, and the lack of powers granted to the departments to make the appropriate change and the routine aspect of the creative and creative side of the work.

Although, Al-Qariuti (2008: 342) pointed to other reasons for resisting to change:

1. **Change in job content**: This kind of change requires some staff to relearn new skills, which raises concerns and fears among some of them and creates a sense of loss of some of their prestige.

2. **Change the composition of existing groups and create new groups**: This procedure requires employees to adapt, build new relationships, which adversely affects social status for some staffs and raises adversely affects performance.

3. **Change in effort locations**: Such as transferring staff from their current places of work to other places where they do not have the same facilities or will incur expenses or changes they do not like or are not prepared for.

4. **Change in working conditions and working hours**: Work in clinics is often in the morning, while working in hospitals is around the clock.

5. **Change in prevailing beliefs**: This includes changing the employee from one authority to a service provider.

In light of the above, the researcher finds that one of the most important obstacles to the change management in the higher education institutions are the following:

1. The fear of wandering that change occurs.
2. The employees fear of losing their job status or losing their colleagues.
3. Functional burdens staffs fear, or add new tasks which the employee.

4. Lack of skills and abilities needed by higher education institutions to change and lack of knowledge of modern developments in universities management.

5. The lack of appropriate resources that assist in the implementation of actions and activities that need change process.

2.1.11. The Change Management Dimensions

The dimensions of change management in universities can be emphasized in the light of the results of researches and field studies conducted on the nature of change management and according to the view of (Emadeddin, 2003: 27):

2.1.11.1. Develop a Common Vision for the University

This dimension includes administrative behavior aimed at searching for a vision and future prospects for the university, and that the director works to disseminate this vision and disseminate it among its employees. It also means to what degree the director can create the enthusiasm of his/her employees for change, and make them aware of the main goals that the university seeks to achieve, and help them to understand the broader social role of the University, and to spread throughout the organization of the university a sense of mission and vitality, (Emadeddin, 2003: 27).

This dimension includes administrative behavior aimed at searching for a vision and future prospects for the university, and that the director works to disseminate this vision and disseminate it among its employees. It also means to what degree the director can create the enthusiasm of his/her employees for change, and make them aware of the main goals that the university seeks to achieve, and help them to understand the broader social role of the University, and to spread throughout the organization of the university a sense of mission and vitality (Emadeddin, 2003: 30).

Also Leithwood (1994: 498), highlights the development of a common vision for the institution, requiring a kind of meeting its goals and priorities and maintaining high levels of performance to achieve the best results.

2.1.11.2. Build a Collective Agreement on the University's Objectives and Priorities

It is up to the director of change to encourage collaboration among university staff and to work together to formulate common goals that are clear and achievable, a real challenge for them to achieve, and a collective agreement on the priority of achieving these goals. This dimension includes the development of appropriate means and mechanisms to identify the tasks and duties of university staff and to help them identify and review their objectives. As Emadeddin (2003: 28) argues that it's providing support to individuals and stimulating their thinking, and modeling good practice at all levels of the educational institution (Leithwood, 1994: 498).

2.1.11.3. Build a Common Culture within the University

This dimension contains a set of rules of behavior, values, theories, and beliefs shared by all members of the university. A strong and shared institutional culture usually contributes to supporting development initiatives and trends and promoting educational projects and innovations.

The culture building, established by the director of change, includes behaviors and practices aimed at developing the general rules of conduct, the institutional system and the values that guide the programs and educational projects to prepare and develop comprehensive and integrated growth. The common values that prevail in the organization's climate are usually invested and the common values that predominate the organizational climate and encourages employees to work (Emadeddin, 2003: 30). Besides, encourage participatory leadership in decision-making, and thus be collectively responsible for activities to encourage the institution to achieve the goals (Leithwood, 1994: 498).

2.1.11.4. Mental Stimulation or Intellectual Stimulation

This dimension refers to the degree to which the director provides the employees of the university with guidance that emphasizes the development of the method of scientific thinking and the methodology of solving their problems, besides, motivating them to reflect on new methods of learning, education, and encourage them to question and review their hypotheses, values, beliefs. However, discuss them and motivate them to support their views and suggestions good and

logical and work to develop their own abilities and competencies (Emadeddin, 2003: 33).

More, enhance the culture of the educational institution by using a range of bureaucratic mechanisms to stimulate and promote cultural change, highlight cultural values and beliefs, and share responsibility and authority with others (Leithwood, 1994: 498).

2.1.11.5. Structural Change

This dimension includes the appropriate infrastructure to support innovation and development initiatives and improve the working environment, providing opportunities for university members to contribute to planning and decision-making, (Emadeddin, 2003: 33).

Figure 6: the change management dimensions
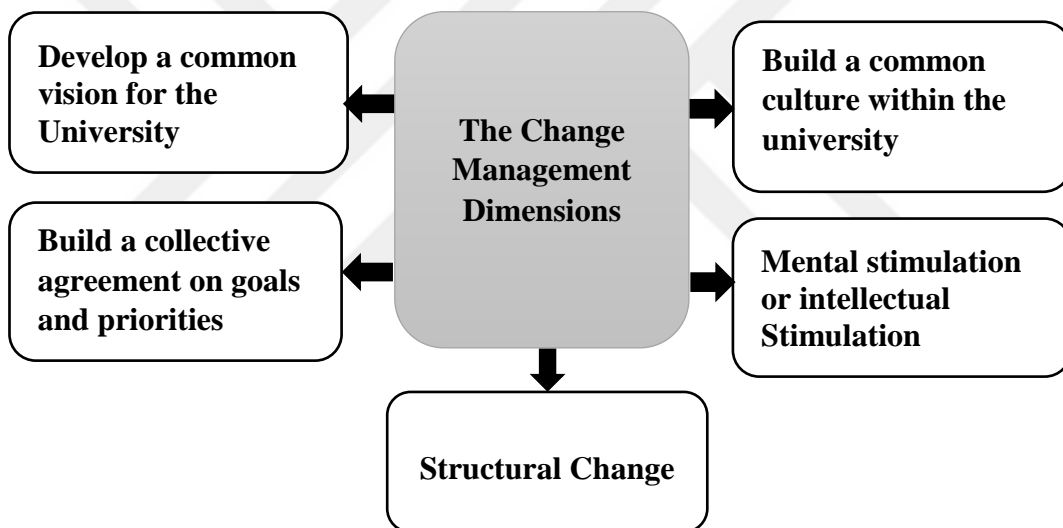
Source: Imadeddin,(2003) Evaluation of the Effectiveness of the School Management Development Program in the Preparation of the Director of the School in Jordan for the Leadership of Change.

2.2. THE THEORETICAL RELATIONSHIP BETWEEN INNOVATION MANAGEMENT AND CHANGE MANAGEMENT

According to Naughton (2004: 2) the change management agents are renovating today's workplaces, allowing the staffs in innovation leadership points to take their seat at the table beside with top managers. Therefore, change is a result impact of innovation management that is regularly deliberate complementarily to the institution of the innovation itself. So, an actual and efficient innovation and change

management includes support, by getting the institution's staff on the side of the change. Before and during every changes.

Hence, there is a need to examine the key subjects and interest but also what kind of concerns are due to a different participant. The power of a participant is not proportional with his/her control over a change and/or the universities in general, in fact the influence might be very great but the control might be reduced to a smaller range of action in association to managerial environment (Covey, 1989: 203).

Accordingly, innovation can be described as the outcome of a compound set of processes, which also depends on the establishment's marketing ability, its strategy, the resources, networks and processes it builds, together with the culture and leadership in the firm (Doyle and Bridgewater, 1988: 314).

Consequently, the concept of innovation management today is essential to university success. It is also regularly viewed as being exceedingly significant for professional survival. In today's rapidly changing occupational environment an establishment cannot long maintain its market share or profits unless it is innovative (Doyle and Bridgewater, 1988: 314).

Though Naughton (2004: 3) maintenances this view and confirms that the concepts upon which the modern theory of innovation is based can be attributed mainly to advances in technology, changing client needs, shorter product life cycles and global competition which have converted the definition of innovation from one of luxury to practical necessity.

While Drucke (1985: 218); Woodman et al. (1993: 301) argues that the essential nature of the present day world underlies a very fast and competitive society where the ability to dictate changes and amendment adds the utmost value, thus, a competitive advantage in managing innovation and creativity is the key to this ability. Besides, the role of endogenous organizational forces including technological change, interests and power in shaping organizational transformation, societal values and capacity for learning were also considered as important variables in the management of organizational innovation (Hage, 1999: 603).

According to Balogun and Hailey (2004: 323) among the many studies on innovation management leading to change, the stage models are much argued but yet

the most common study and investigated change is not indeed a process which can be easily achieved through a steps and stage recipe, nor is it a process considered by a fix degree of linearity. Also Lewin (1951: 194) synthesis the innovation and change theory in three necessary steps:

a) Unfreezing the organization, getting rid of the assertiveness that individuals have against the change, creating a vision of a better future by providing information and forming the urgency to change.

b) Shaping, moving through the change process by getting the staff engaged, creating equilibrium among the driving and restraining forces inside the university.

c) Refreezing: creating and maintaining a new innovative situation.

However, Hayes' theory identifies the need to implement the three steps of change into a model with five stages (Hayes, 2010: 214):

1. Recognizing the need for change and starting the process by analyzing the reason and need for change.

2. Diagnosis by reviewing the actual state and designing a possible future, creating the urgency and the expectation on the members of the organization.

3. Preparing and planning for implementation by creating the timing, the management plan and the team of leading members.

4. Implementing and reviewing by taking the steps to lead to the change and review the outcomes.

5. Sustaining, which can be seen as the refreezing model of Lewin where the new behaviors are established among the organization member.

Though Dirks et al (1996: 16) have made a transformation between self-initiated as an innovative step and imposed changes. So, a self-initiated change means that the individual makes a transformation as a result of his/her own initiative and volition, but an imposed change is change initiated by others so that the individual is forced to act, sometime innovatively.

According to Alexander et al (2004: 134) deconstructing the innovation process contains concern of a chain of common and numerous internal complex processes providing function and support to sustain organizations and respond to change. However, in the context of technological changes and radical environmental

shifts, innovation is considered as a capacity to respond to changes in the external environment, and to influence and shape it (Child, 1997: 66).

Besides, the value of resources may change over time becoming unpredictably, and knowledge development and study replication is difficult without understanding of the specific activities underlying capabilities, and many resources are complementary and it often complicated to identify which resources could account for effective performance (Teece and Pisano, 1994: 545).

Hence, the researcher believe that significantly the relationship between innovation management and change management is substantial for the development of university's ability to innovate and utilize new knowledges and inventive properties as managerial and scientific innovations that are interweaved and the embracing of new technology can bring manifold prospects and challenges for universities, uttering changes within institutional forms and managerial practices.

CHAPTER THREE : THE ROLE OF INNOVATION MANAGEMENT IN CHANGE MANAGEMENT: (AN EMPIRICAL STUDY IN THE PUBLIC UNIVERSITIES IN THE ERBIL CITY)

3.1. THE STUDY BACKGROUND

In this section, the study background, we aim to reveal the previous studies on the topics that related to the study variables innovation management and change management. So, the main theories are reviewed first, followed by some thoughts that may afford different backgrounds and validations for the study variables through discussing the previous studies and areas of benefit.

1. **Devann and Tichy, (1990), the study effort to examine the nature of change leadership.**

    The purpose of this study is to examine the nature of the change leadership and highlights its characteristics, practice, and understanding the dynamics of successful change, and change processes in large institutions. The sample consisted of (12) leader of change worked to change leadership in their organizations successfully, after interviews and field observations for the leaders of these institutions, the study found a set of characteristics shared by these leaders and their distinction from traditional leaders, including:

a) They see themselves as drivers of change in the organization, and believe that their personal and professional development is the need for change.

b) They have the courage and the willingness to take calculated risk. Besides, the ability to take a certain position and prepare to defend it and transfer it to members of the institution.

c) The leaders appreciate the energies of individuals working with them and have confidence in their abilities, and are seeking to enable them to complete their work and develop it to perfection and excellence.

2. **Scott, (1994), the study is about determinants of Innovative Behavior: A path model of individual innovation in the workplace.**

    The study aimed to combine a number of innovative researches to develop innovative behavior model selection. Since these interdependent systems: individual, workgroup, leadership, and innovative climate. Therefore, study involved all

employees of a central unit of an industrial institution in the United States, and the researcher used the descriptive analytical method.

However, the study found some findings, most notables: The Leadership, innovation support, management's expectations for the role and career stage and formal method to solve problems are clearly related to large innovative behavior. Besides, the quality of the relationship between supervisor and subordinate affect innovative behavior. Further, the supervisor's expectation of the role of the workers and especially the technicians leads to support the innovative behavior.

3. **Ekvall, (1996), the study is effort to reveal the organizational climate for creativity and innovation.**

The purpose of this study is to design the creative climate, and see the impact of this tool when the application, and the extent of its implementation of the institutional system, and to provide guidance for use for the purpose of intervention to stimulate innovation and institutional innovation.

The most important outcomes the study reached are: Climate is the most important of these institutional variables for innovation. The official tendency effect mind or makes inhibitor reduces the innovative capacity of the institution. Besides, there is a very strong relationship between leadership style and innovative climate. However, the central decision-making systems associated with climate that suppresses creativity and innovation.

4. **Daniels, (2002), the study entitled the change management in six Victoria high schools, Australia.**

The aim of this study is to identify successful models of positive school change practices by exploring the change that took place in this school from the level of its own development and to achieve the organizational development of the school. The programs were designed by a professor in South America in the management and applied programs School principals have been trained on this program and as a result entered the future schools. Hence, as a results the study reached to the following conclusions:

- It is important to change the school culture from the organizational point of view and individuals to the success of the change process.

- When planning for change, consider the external and internal elements that affect change.
- Driving quality has a great impact on the change process.

5. **Al- Shammri, (2006), the study is about the Innovative leadership performing degree for educational leaders in Saudi-Arabia.**

   The purpose of the study is to identify the innovative leadership performing degree for educational leaders in Saudi-Arabia. So, the study samples were (465) of educational leaders. Hence, to achieve the study objectives, a questionnaire scale of three fields (Managerial, Technical, and Imaginative) was designed. The most important conclusions of the study are:

- The educational leaders practice the innovative leadership in the managerial and technical field in a medium degree, whereas in the imaginative field in a high degree.
- There was not statistical significance variances in the practicing degree of educational leaders for innovative leadership related to the demographic data of (gender and experience) and (experience and qualification).
- There was not statistical significance differences in the practicing degree of educational leaders due to the interaction between demographic data of (gender and experience) and (experience and qualification) and between (gender, experience and qualification).
- The results revealed that there are statistical significance differences in the practicing degree of educational leaders for the innovative leadership according to the interaction between the variables of gender and qualification.
- The sources of differences were for the sake of males having bachelor and diploma as well as for the sake of females having the master degree or higher than that.

6. **Al-Qurashi, (2008), the study entitled the creativity management and its relationship to change management among the managers and assist managers of primary schools in Holy Makkah.**

   The study aimed to improving the availability degree of innovation management of primary schools female administrators and vice administrators in Holy Makkah and their practicing degree of change management styles. Thus, the researcher used the descriptive methodology, besides, prepared a survey

questionnaire to collect data from the study community (347) that are primary schools female administrators and vice administrators.

The most significant findings revealed the realization of correlation between innovation and change, to know whether there are statistically significant variances between the study community opinions about the availability of creativity management skills according to the variables (job, years of experience, and scientific qualification), to know whether there are statistically significant variances between the study community opinions about the availability of change management skills according to the variables (job, years of experience, and scientific qualification).

7. **Shaqura, (2012) the study is about to analyze the change management and its relationship to creativity management in Gaza governorates secondary schools from the viewpoint of teachers.**

This study purpose to identifying change management and its relationship to creativity management of secondary schools in Gaza governorates. Consequently, the researcher used descriptive analysis method and the study community consists of the (5303) teachers in the secondary schools in governorates for the academic school year 2011- 2012, (2633) of them are male teachers and (2670) are female teachers. The study sample mounted (522) men and women teachers, and they were selected randomly.

Thus, to achieve the aims of the study, the researcher prepared two tools, the first one was to measure the degree of practicing the secondary schools principals, in governorates, practice the styles of change management. The second was to measure the level of availability of the creativity management skills for secondary schools principals, to analyses the data, the researcher used the following statistical styles (mean, deviation, ratio-weight, Person correlation coefficient, T test, one way Anova, test, (Scheffe). However, as a results the study reached to the following conclusions

a) The results prove that the secondary schools principals' practice, to change management styles was good and rated (76.1%).

b) The available level of creativity management skills revealed that the secondary schools principals in Gaza was good at a rate (76.4).

c) The results also showed that there is no significant statistical variances among the practices of secondary schools principals in the first domains, styles of change

management, according to the following variables: gender (males–females), years of service, and specialization. While, the variable relating to the education area showed a significant statistical in all aspects of change management styles.

d) There was no significant differences among means of teachers estimations for secondary principals practices concerning creativity management skills to the following variables: gender (males – females), years of service, and specialization.

e) The results also indicated that there was a positive relation at alpha (0.01) among all styles of change management and its total degree and among all creative management skills and its total degree.

8. **Abdullah, (2015), the study is about the human resources management and analyze its impact on creativeness and innovations.**

The study aimed to evaluating the impact of human resources management performance on innovation and creativeness together with merit as medium variable. It is also intended to demonstrate the significance of human resources performance as exercised by the Sudanese banks and highlight its role in enhancing the innovation and creativeness of staff. In this regard, six banks have been selected to represent the population of the study. Consequently, a survey questionnaire was designed and randomly distributed to 150 respondents. The analytical descriptive approach was used and the collected data and information were tested and analyzed through SPSS program.

The most significant findings show that some of the human resources performance dimensions including (compensation, benefits, recruitment, strength and human resources planning) would have positive impact on innovation. On the other hand, compensation, benefits, recruitment, training and development have also positive impact on creativeness. Further, the human resources management performances have positive impact on the merit, too.

Discussing the previous studies and areas of benefit

The previous studies dealt with the topics of innovation management and change management. So, the researcher reviewed eight studies, four of which are foreign studies and other four Arab studies in other word conducted in Arabic

countries, which are related to the current study variables. Moreover, the researcher noticed that the studies reviewed mostly use descriptive analytical methods.

Accordingly, As far as the researcher is aware, there is no study on the role of innovation management in change managing. Hence, the differences between this study and the previous studies in terms of being the first study linking the two variables, as well as the society in which it was applied.

Thus, the chronological area of previous studies differed from the time-based domain of current study. So, previous studies were conducted between 1990 and 2015. While, the current study was carried out between 2016 and 2017. In addition, the objectives sought by each of the previous studies differed from the current study objectives due to the different topics discussed in previous studies. The Areas of benefit from previous studies include:

Build the idea of the study by focusing on the topic to be studied and enriching the theoretical side, as it provides information as well as ready to help in the identification of references and studies that can be utilized. Furthermore, the current study's survey questionnaire scale benefited from previous studies for the preparation of the questionnaire form, drafting of paragraphs and developed, and superiority, the questionnaire has been prepared as a unit of measure different from previous studies.

Besides, the researcher benefited from previous studies in the selection of methods and the identification and analysis of statistical methods. In addition, Identify, present, discuss and interpret the results, and make recommendations and proposals.

3.1.2. The Study Problem Statement

In light of the rapid and successive changes in all sectors of life, and with the emergence of new trends, inventions, new sciences and knowledge, the university's management must adapt to the global, regional and local environment in which it is present by studying the situations and circumstances surrounding it and predicting future changes, and foreseeing the future. In addition to accelerated and unstable living and steady political situation, which is reflected on the institution by imposing many overlapping issues and the many burdens on stands of university management.

Therefore, the university management must avoid traditional methods of work that make it a source of boredom, for the spirit of creativity and innovation. As management is a process of innovation and change, it is the duty of the university management to keep abreast of this progress, innovation and the change required by the era in a practical and well thought-out manner, because if we look at some our university management objectively, we could find that it still lives ideas and methods that are not in line with the requirements of the present age and its data. As conditions of life become renewed and no longer allow us to indolent, silence and eliminate ideas, but must be creative and innovation to turn obstacles and problems to opportunities for success and excellence. The innovation is one of the modern managerial concepts through which the university management is allowed to participate in the information, and the freedom to act in the submission, and control their functions in order to reach the positive results in the work and achieve the goals of the university.

The current study deals with innovation management and a course in change management, which is an indication of the success of the university and its failure. The innovation management efforts leads to the improvement of the performance of this university efficiently and effectively and show change management for the faculty members, management and the university. Therefore, the researcher chose this subject because of its significance in finding the leader of the innovator who can face the challenges imposed on him or her in this age and elevates university. The study's problem lies in the lack of the universities management investigating the availability of adequate elements of innovation management on the one hand, and its close relationship with the subject of the dimensions of change management. Consequently, the study's problem can be posed by several questions:

1. Does the survey universities management have the necessary competences and capabilities to implement the dimensions of innovation management and the dimensions of change management?

2. Is there a variance in the dimensions of innovation management and the change management in accordance with the personal characteristics of the survey population?

3. Does the survey universities management have the necessary competences and capabilities to implement the relationship between the dimensions of innovation management and the change management?

4. Is there a personal ability to apply the effect of innovation management in the survey universities?

5. Does the survey universities management have the physical possibilities to apply the dimensions of innovation management and the change management?

6. Are there necessities and requirements needed to implement the dimensions of innovation management and the change management?

3.1.3. The Study Purposes

The purpose of this study is to examine the role of innovation management in change management in the public universities in the Erbil city. Besides, classify the bases and guidelines necessary to form an affected scheme for fluency, flexibility, originality, sensitivity to problems, risk and challenge and maintaining the direction adapt to the demands of innovation management. Then diagnose the processes and methods of a successful of public universities' innovation management and its impact in motivating change management. Also, the current study purposes are to achieve the following aspects:

1. The reality of the surveyed universities to identify the strategies or policies followed by the faculty members, as well as the extent to which these universities support innovation management.

2. Investigate the views and directions of the members of the teaching staff at these universities to know their direction, ambitions and desires to implement the elements of innovation management.

3. Describe the dimensions of innovation management as: (fluency, flexibility, originality, sensitivity to problems, risk and challenge and maintaining the direction) and their contribution to promoting and achieving change management dimensions.

4. Test the relationship and impact between dimensions of innovation management and change management in the public universities in the Erbil city.

5. Presenting some suggestions and recommendations to the universities concerned with regard to the dimensions of innovation management for the purpose of

stimulating individuals toward achievement in investigating the dimensions of change management.

3.1.4. The Study Significance

As a result of the comprehensive development witnessed in all fields, including the field of higher education, the interest of faculty members is increased by the university presidency. Thus, the global trends highlighted the significance of change leadership as leading pattern necessary to direct the higher educational institutions to better driving change requires having the ability of innovation and creativity to bring about change. The significance of study stems from the following:

1. Highlighting the concept of innovation management and its requirements and its relation to change management in order to keep stride with developments in management sciences.

2. Take the advantage of previous applied studies and research to know the importance of implementing the innovation management in universities, and its environment.

3. Demonstrate the dynamic impact of innovation management in achieving change management. So, the innovation management is a safe way to effectively change management.

4. Trying to prove that innovation management has an effective role in change management for public universities in Erbil city.

5. To reveals the significant role played by innovation management that make faculty members have the ability, skills and abilities to take responsibility and respond quickly to the needs and desires of the community.

6. To enrich the management thought and scientific heritage in this field by recognizing the reality of the level of innovation management among faculty members and the significance of change management in public universities.

7. To primer to more similar field studies that can address this issue in many aspects and hopes that the concerned authorities and relevant parties will benefit from the outcomes of this study.

3.1.5. The Study Conceptual Scheme

In accord with the theoretical literature reviewed, a conceptual scheme is drawn which includes two main variables; the dimensions of innovation management

as the independent variable, and the second is the dimensions of the change management as a dependent variable.

Consequently, observance that deportment in mind, the study requires to examine the role of innovation management in change management: an empirical study in the public universities in the Erbil city. Which provides a conceptualization of the rudimentary model relate to the topics of this study and the relations between them. Hence, the conceptual scheme clarifying the hypotheses as the relationship and impact between the study variables, as illustrated in figure below.

Figure 7: The Study Conceptual Scheme

Innovation Management Dimensions					
Fluency	Flexibility	Authenticity	Sensitivity to problems	Risk taking and challenge	Maintain the direction

Effect ... **Relationship**

Change management Dimensions				
Develop a common vision for the university	Build a collective agreement on university goals and priorities	Build a common culture within the university	Mental stimulation or intellectual stimulation	Structuring change

3.1.6. The Study Hypotheses

Hypothetically, the study is evidence of the scheme that the innovation management dimensions as; fluency, flexibility, authenticity, sensitivity to problems, risk taking and challenge, and maintain the direction have relationships and impact in change management in public universities in Erbil city. Hence, this study efforts to testing the following hypothesis base on the above study problem and purposes:

H$_1$: **There is a positive relationship between the dimensions of innovation management and change management in public universities in Erbil city:**

H$_{1.1}$: There is a positive relationship between fluency and change management.

H$_{1.2}$: There is a positive relationship between flexibility and change management.

H$_{1.3}$: There is a positive relationship between originality and change management.

$H_{1.4}$: There is a positive relationship between sensitivity to problems and change management.

$H_{1.5}$: There is a positive relationship between risk-taking and challenge and change management.

$H_{1.6}$: There is a positive relationship between maintain the direction and change management.

H.2: There is a statistically significant impact of innovation management dimensions in change management in public universities in Erbil city.

$H_{2.1}$: There is a statistically significant impact of fluency in change management.

$H_{2.2}$: There is a statistically significant impact of flexibility in change management .

$H_{2.3}$: There is a statistically significant impact of originality in change management.

$H_{2.4}$: There is a positive relationship between sensitivity to problems in change management.

$H_{2.5}$: There is a statistically significant impact of risk-taking and challenge in change management.

$H_{2.6}$: There is a statistically significant impact of maintain the direction in change management.

3.2. THE MATERIALS AND METHOD

The purpose of this section is to demonstrate the material and method implemented in this study. In order to analysis the role of innovation management in change management in the public universities in the Erbil city. Besides, identify the processes and methods of a successful of public universities' innovation management and its influence in motivating change management. Hence, the study applied a statistical method. A statistical method is presented suitable for the study purpose. Accordingly, the section discourses the study approach and design, sources of data, source criticism and the limitation of the study

3.2.1. The Study Approach and Design

Regarding the study approach and design, this study engagements the quantitative approach. So, a quantitative approach is revealed suitable as the purpose of the study is to analysis the role of innovation management in change management in the public universities in the Erbil city. However, the quantitative approach is

usually practical in the study when employed with statistical data. Hence, a quantitative research normally comprises quantities and statistical procedures that help clarify, describe, search and illuminate the relationships between the study variables. Moreover, the measureable study can be realized as a study process that through statistical and quantified outcomes that are established on the actuality attempts to measure the study purpose. Besides, the study design is more appropriate as it permitted respondents to provide their related information on the subject of interest to the study, over survey questionnaire scale which is used five-point Likert scale that is more appropriate for data gathering.

3.2.2. Study Population and Sample

The study population involved (3) public universities in the Erbil city as Salahaddin University-Erbil, 12 Departments, Erbil Medical University, 5 Departments, and Erbil Polytechnic University, 5 Departments.

So, the public universities are selected as the study population, while they are more likely to better recall on innovation management and change management, as they have knowledgeable on the innovation management presentation. However, the public universities are the particular targeted population size, where the study pursues to discover their professors and assist professors' approaches and opinions on their innovation management repetition and change management. Accordingly, the study sample procedure is offered as well as the sampling arrangement. Hence, the purpose of sampling procedures is, by organizing a range of approaches, to narrow down a study population to categorize the appropriate sample. Consequently, (149) public universities professors and assist professors' contributed over answering to the survey questionnaire statements which is self-administered and distributed in the departments of public universities in particular, to the professors and assist professors' who cheerfully accepted the request to contribute in the study. As the below table demonstrate the population and sample.

Table 2: Study Population and Sample

S	Population	Samples	
	Public University's Name	**Contributes**	**Valid Responses**
1	Salahaddin University- Erbil, 12 Departments	115	114
2	Erbil Medical University, 5 Departments	30	30
3	Erbil Polytechnic University, 5 Departments	6	5
Total Sample			**149**

3.2.3. Data Collection Procedures and Scale

As revealed in the Table (3) the analytical features of the study variables, the researcher collected the primary data by directing a survey scale. Consequently, a questionnaire is established reliant on the literature reviewed. The developed questionnaire scale reflected as a key procedure of data collection for the study, subsequently this was precisely designed for this purpose and spread to professors and assist professors' in the public universities departments.

Besides, the study chose the survey questionnaire for data collection because of its importance for the study approach and design and for the possible assistances it offers. However, the questionnaire is divided into three sections. While, each section of the questionnaire limited to statements and items that could measure the sample's opinions specified in the questions and hypotheses of the study. See appendix (1) show the survey questionnaire structure.

Table 3: The questionnaire scale structure

Main Variables	Dimensions	No of items	Scale Symbol	
First: Demographical Variables	Gender, Age, Academic Degree, Scientific Title, Overall Academic Career experience, The No. of scientific conferences that participate within the country and The No. of scientific conferences that participate outside the country.	**7**	**-**	**The researcher**
Second: Innovation Management	Fluency. Flexibility. Originality. Sensitivity to Problems. Risk and Challenge. Maintaining the Direction.	**5** **5** **5** **5** **5** **5**	**X1-X5** **X6-X10** **X11-X15** **X16-X20** **X21-X25** **X26-X30**	**Al-Shammari, (2006)** **Abdel-Wahab, (2012)**
Third: Change Management	Developing a common vision for the university. Building a collective agreement. Building a common culture. Intellectual stimulation. Structure change.	**5** **5** **5** **5** **5**	**Y1-Y5** **Y6-Y10** **Y11-Y15** **Y16-Y20** **Y21-Y25**	**Al-Qurashi, (2008)** **Al-Subaie, (2008)** **Al-Chakoura, (2012)**

The survey questionnaire divided into three sections, as demographic variables; Gender, Age, Academic Degree, Scientific Title, Overall Academic Career experience, The No. of scientific conferences that participate within the country and The No. of scientific conferences that participate outside the country. Then first scale, innovation management which has 30 items those are adjusted from (Al-Shammari, 2006; Abdel-Wahab, 2012). Accordingly, second scale change management that has 25 items are adjusted from studies questionnaires of (Al-

Qurashi, 2008; Al-Subaie, 2008; Al-Chakoura, 2012). Consequently, all innovation management and change management items are measured by using a five-point Likert scale reaching from "Strongly Disagree "1 to "Strongly Agree" 5.

3.2.4. Reliability and Validity Tests

3.2.4.1. Reliability Tests

According to Plano and Creswell (2015: 242) the scale reliability means that scores from a survey questionnaire are constant and reliable. So, the scores should be virtually the same when the researchers manage the data collection procedures multiple times to the same contributors. Therefore, Cronbach's alpha is one of the most used reliability techniques in the research, as check for scale's internal reliability.

Table 4: Reliability Statistics

Variables	Cronbach's Alpha	No. of Items	N	%
Innovation Management	**0.901**	**30**	**149**	**100.0**
Fluency	0.826	5	149	100.0
Flexibility	0.847	5	149	100.0
Originality	0.834	5	149	100.0
Sensitivity to Problems	0.831	5	149	100.0
Risk and Challenge	0.846	5	149	100.0
Maintaining the Direction	0.860	5	149	100.0
Change Management	**0.918**	**25**	**149**	**100.0**
Developing a common vision	0.828	5	149	100.0
Building a collective agreement	0.864	5	149	100.0
Building a common culture	0.877	5	149	100.0
Intellectual stimulation	0.879	5	149	100.0
Structure change.	0.900	5	149	100.0
Overall	**0.904**	**55**	149	**100.0**

As summarized in a Table (4) the Cronbach's alpha scores for the all questionnaire statements is (0.904>0.60), which specified a high level of internal reliability in the whole set of items of the questionnaire. Besides, its total scores for the innovation management is (0.901>0.60), also the scores for fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction are (0.826, 0.847, 0.834, 831, 846, and 0.860) respectively.

Furthermore, change management and its dimensions (developing a common vision, building a collective agreement, building a common culture, intellectual stimulation, and structure change) scores are (0.918, 0.828, 0.864, 0.877, 0.879, and

0.900) respectively. Consequently, the questionnaire scale that used to data collection could be considered highly reliable.

3.2.4.2. The Study Validity

According to Plano and Creswell, (2015: 242) the term of validity states to the scores from a questionnaire scale are accurate indicators of the variables being measured and allow the examiner to draw good clarifications, therefore, the validity of the survey questionnaire is tested by a range of conducts, so it is essential to revealing that almost all of the items in the questionnaire are modified from similar studies that were previously validity checked, but subsequently some of the items were improved or reordered, hence, the researcher tested the validity of the questionnaire by constructing it check and evaluated by experts which are called contented validity, appendix (2) shown experts of questionnaire scale.

3.2.5. Factor Analysis

Factor Analysis is a components reduction method that looks at replies to numerous variables and reviews them into compound variables, known as factors that make evaluating. Consequently, innovation management has a total 30 statements under 6 dimensions and change management has a total 25 statements, which is highly composite to take and compare the results. Hence, to make additional evaluation and analysis easier the factor analysis test has been applied and is offered in the following subsections.

The KMO and Bartlett's Test for Innovation Management

As it is shown in a table (5) the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy is applied to test the appropriateness of factor analysis. Though the high values (between 0.5 and 1.0) indicate that the factor analysis is appropriate. Accordingly, values below 0.5 show that factor analysis may not be proper. The KMO measure of sample sufficiency is (0.877) so, it is means presented high level and significant at ($p<0.05$). While, the Bartlett`s test of sphericity is (2735.073) df (435), thus factor analysis is appropriate for innovation management.

Table 5: The KMO and Bartlett's Test Innovation Management

KMO and Bartlett's Test	
	Innovation Management
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.877
Bartlett's Test of Sphericity (Approx. Chi-Square)	2735.073
Df	435
Sig.	0.000

Rotated Component Matrix for Innovation Management

As shown in a Table (6) rotated component matrix used, rotation is required when extraction procedure suggests two or more factors. Consequently, the rotation of factor is considered to give a knowledge of how the factors primarily extracted differ from each other and to provide a clear image of which element loads on which factor. However, the total has the factor taking values (the lowest value is 0.450 and the highest value is 0.801).

Table 6: Rotated Component Matrix for Innovation Management

	Component						
	1	2	3	4	5	6	7
X28	.774						
X30	.746						
X29	.738						
X27	.650						
X26	.548						
X18		.795					
X17		.722					
X16		.680					
X19		.555					
X25		.536					
X2			.765				
X3			.765				
X5			.607				
X4			.603				
X1			.572				
X7				.750			
X8				.722			
X10				.640			
X9				.618			
X6				.560			
X11				.450			
X13					.801		
X14					.682		
X12					.680		
X15					.625		
X23						.760	
X22						.729	
X24						.487	
X20							.726
X21							.697

As revealed in a Table (7) the eigenvalue is earmarked as one, and as a result of frequent factor analysis seven factors of innovation management determined. Thus, the total variance explained over these seven factors is (69.34%). Also, percentage of eigenvalue and variance explanations of the determined factors for innovation management listed as (38.75%, 7.54%, 6.48%, 4.96%, 4.39%, 3.71%, and 3.48%) respectively. Therefore, the variance developed at the end of factor analysis. The higher value is the stronger the factor construction of the scale and very high in innovation management.

Table 7: Percentage of Eigenvalue and Variance Explanations of the Determined Factors for Innovation Management

Factors	Eigenvalues	variance explanation%	Cumulative%
1	10.808	38.758	38.758
2	2.103	7.542	46.300
3	1.809	6.488	52.789
4	1.385	4.966	57.755
5	1.225	4.394	62.149
6	1.035	3.711	65.860
7	0.973	3.488	69.348

Statistical indicators for Innovation Management

As realized in the Tables (6 and 8), all seven factors of innovation management were positive. The first factor: "maintaining the direction" involved 5 items (28, 30, 29, 27, and 26) with factor loads (0.774, 0.٧٤٦, 0.٧٣٨, 0.٦٥٠, and 0.548) respectively, and have high load on it. The second factor: "sensitivity to problems" is comprised 5 items (18, 17, 16, 19 and 25) with factor loads (0.795, 0.٧٢٢, 0.٦٨٠, 0.٥٥٥, and 0.536) respectively, have high loadings on it as well. The third factor: "fluency and developing the scientific process" is contained 5 items (2, 3, 5, 4, and 1) with factor loads (0.765, 0.٧٦٥, 0.٦٠٧, 0.٦٠٣, and 0.572) respectively, then have high load on it. However, the fourth factor: "flexibility of management" included items (7,8,10,9,6 and 11) respectively, with (0.750, 0.٧٢٢, 0.٦٤٠, 0.٦١٨, 0.٥٦٠, and 0.450). However, the fifth factor: "originality" included 4 items (13, 14, 12, and 15) with factor loadings (0.801, 0.٦٨٢, 0.٦٨٠, and 0.625) respectively, the sixth factors: "ability" is contained 3 items (23, 22, and 24); with factor loads (0.760, 0.729, and 0.487) respectively, the factor seven: "risk and challenge" contained (20, and 21) with factor loads (0.726, and 0.697) respectively.

Table 8: Statistical indicators for Innovation Management

Items	A.1 Factor: Maintaining the Direction	Factor Loads
X28	University management defends innovative ideas rather than to seek the approval of faculty members.	.774
X30	The university management adopts innovative ideas that suit the overall interest.	.746
X29	The university management insists on defending its objectives and achieving them effectively.	.738
X27	The university management has a strong motivation for success and continuity in university effort.	.650
X26	The university management focuses on completing work more accurately and with dedication by faculty members.	.548
	A.2 Factor: Sensitivity to Problems	
X18	The university management is keen on knowing the shortcomings or weaknesses of his work.	.795
X17	The university management has precise sensitivity for detecting problems experienced by others.	.722
X16	The university management has the ability to anticipate problems before they occur.	.680
X19	University management looks forward to everything new in the educational administration to increase its ability to face future problems.	.555
X25	The university management encourages innovative individual and collective initiatives.	.536
	A.3 Factor: Fluency and Developing the Scientific Process	
X2	The university management employs as much of its faculty as possible to adopt ideas for faculty members.	.765
X3	The university management offers several innovative ideas for developing the scientific process within a short period of time.	.765
X5	The university management can study issues related to the development of faculty members.	.607
X4	The university management sets several proposals to solve the problem.	.603
X1	The university management has the ability to propose quick solutions to address work problems.	.572
	A.4 Factor: Flexibility of Management	
X7	The university management accepts criticism and offers ideas and suggestions even if it is contrary to the work.	.750
X8	The university management provides an opportunity to others in order to express their opinion and to benefit from them.	.722
X10	The university management has the ability to see things from different viewpoints.	.640
X9	The university management adapts itself to different situations at work.	.618
X6	The university management has the ability to adopt new innovative ideas to develop work spontaneously and easily.	.560
X11	The university management is constantly looking for new ideas and innovations.	.450
	A.5 Factor: Originality	
X13	The university management encouraging scientific skills in conducting discussion and dialogue among faculty members.	.801
X14	University management avoids routine methods as much as possible.	.682
X12	The university management is developing new ways of solving administrative problems.	.680
X15	The university management has the ability to convince others while dealing with innovative ideas.	.625
	A.6 Factor: The Ability	
X23	The university management has the ability to defend its ideas with argument and proof.	.760
X22	The university management accepts failure as the experience which precedes success.	.729
X24	The university management implements new ideas and methods and seeks solutions to problems.	.487
	A.7 Factor: Risk and Challenge	
X20	The University administration monitors opportunities and threats affecting university effort.	.726
X21	The university management takes the responsibility for its effort.	.697

The KMO and Bartlett's Test for Change Management

The table (9) show the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy is applied to test the appropriateness of factor analysis. However, the high values (between 0.5 and 1.0) indicate that the factor analysis is appropriate.

Accordingly, values below 0.5 display that factor analysis may not be proper. The KMO measure of sample sufficiency is (0.865) so, it is means presented high level and significant at (p<0.05). While, the Bartlett`s test of sphericity is (2575.111) df (300), therefore factor analysis is appropriate for change management.

Table 9: The KMO and Bartlett's Test Change Management

KMO and Bartlett's Test	
	Change Management
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.865
Bartlett's Test of Sphericity (Approx. Chi-Square)	2575.111
Df	300
Sig.	.000

Rotated Component Matrix for Change Management

As revealed in a Table (10) rotated component matrix used, rotation is vital when extraction process proposes two or more factors. Accordingly, the rotation of factor is considered to give an acquaintance of how the factors primarily extracted differ from each other and to provide a clear representation of which element loads on which factor. However, the total has the factor taking values (the lowest value is 0.567 and the highest value is 0.838).

Table 10: Rotated Component Matrix for Change Management

	Component				
	1	**2**	**3**	**4**	**5**
Y23	.829				
Y22	.789				
Y21	.776				
Y24	.772				
Y25	.759				
Y17		.789			
Y18		.780			
Y19		.736			
Y16		.671			
Y20		.581			
Y8			.793		
Y9			.737		
Y10			.725		
Y7			.704		
Y6			.634		
Y1				.737	
Y2				.723	
Y4				.710	
Y3				.695	
Y5				.693	
Y13					.838
Y12					.799
Y14					.663
Y11					.589
Y15					.567

shown in Table (11) the eigenvalue is reserved as one, as a result of frequent factor analysis five factors are determined. Thus, the total variance explained over these five factors is (69.6%). Also, for the five factors the variance sizes listed as (40.68%, 9.06%, 8.16%, 6.30 %, and 5.38%) respectively. Hence, the variance developed at the end of factor analysis. The higher value is the stronger the factor construction of the scale and very high in change management.

Table 11: Percentage of Eigenvalue and Variance Explanations of the Determined Factors for Change Management

Factors	Eigenvalues	variance explanation%	Cumulative%
1	9.751	40.686	40.686
2	2.172	9.064	49.751
3	1.958	8.169	57.919
4	1.511	6.303	64.222
5	1.290	5.382	69.604

Statistical indicators for Innovation Management

As comprehended in the Tables (10 and 12), all five factors of change management were positive. The factor eight: "structural change" contained items (Y23, 22, 21, 24, and 25) with factor loads (0.829, 0.٧89, 0.٧76, 0.772, and 0.759) respectively, so have high loadings on it. However, factor nine: "sensitivity to problems" is comprised (Y17, 18, 19, 16 and 20) with factor loadings (0.789, 0.٧80, 0.738, 0.671, and 0.581) respectively, with high loadings. Besides, factor ten: "fluency and developing the scientific process" is comprise items (Y8, 9, 10, 7, and 6); with factor loadings (0.793, 0.٧٣٧, 0.٧٢٥, 0.٧٠٤, and 0.634) respectively. Yet, the factor eleven: "developing a common vision" included (Y1,2,4,3 and 5) with (0.737, 0.٧٢٣, 0.٧١٠, 0.٦٩٥, and 0.693) respectively, the factors twelve named "Building a Common Culture" contained (Y13, 14, 12, 11, and 15) with factor loadings (0.838, 0.799, 0.663, 0.589 and 0.567) respectively, that have high loadings on this factor.

Table 12: Factor analysis and statistical indicators for change management

Items	B.1 Factor: Structural Change	Factor Loads
Y23	The university management has the structure of change to help manage change.	.829
Y22	The university management is making substantive changes to the structure to improve performance.	.789
Y21	The university management periodically and systematically reviews the structure of change.	.776
Y24	The university management is developing new units to keep inevitable with environmental changes.	.772
Y25	The university management has a flexible structural change	.759
	B.2 Factor Intellectual Stimulation	
Y17	The university management encourages practical ideas that further enrich the curriculum and contribute to increased innovation.	.789
Y18	The university management offers new initiatives and proposals for mental stimulation.	.780
Y19	The university management provides incentives to faculty members and students to achieve innovation in education.	.736
Y16	The university management is encouraged to participate in educational conferences and meetings and to visit leading universities.	.671
Y20	The university management provides the university climate conducive to innovation and modernization.	.581
	B.3 Factor: Building a Collective Agreement on the University's Goals	
Y8	University management adopts methods which develop scientific march in an institution.	.793
Y9	University management takes the clear goals and achievable.	.737
Y10	The university management involves faculty members in training courses on how to connect the university with the local environment.	.725
Y7	University management engages in the faculty at all stages of change implementation planning and university calendar.	.704
Y6	The university management is seeking to reach a collective agreement regarding the university's goals.	.634
	B.4 Factor: Developing a Common Vision	
Y1	The university management is involved in building a common vision for the university.	.737
Y2	The university management invests opportunities to clarify the common vision of the university and its objectives.	.723
Y4	The university's management enhances the abilities of the participants in the vision setting that they aspire to achieve.	.710
Y3	The university management takes into account the university's previous plans when developing future programs.	.695
Y5	The management of the university will create the common vision in a way that will involve all members of the teaching staff.	.693
	B.5 Factor: Building a Common Culture	
Y13	The university management consistently emphasizes the provision of a climate for change and the conviction of others.	.838
Y12	The university management explains the elements of the joint culture of the university to work on making the desired change in the university.	.799
Y14	The university management believes in the importance and commitment of change and development by acting in a manner consistent with a new common culture on all occasions.	.663
Y11	The university management maintains a set of core values shared within the university.	.589
Y15	The university management encourages relationships and refrains that express the values of the new culture on all occasions.	.567

3.2.6. Data Analysis

The statistical tests are applied to examine the study planned hypotheses. Consequently, the descriptive statistics (mean, standard deviation, and ratio-weight) are used to quantitatively describe the variables and their dimensions important features. also, the spearman's correlation matrix used to categorize the relationship between the innovation management and its dimensions namely; (fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction) as the independent variables, and the change management dimensions (developing a common vision, building a collective agreement, building a common culture, intellectual stimulation, and structure change) which is dependent variable.

Accordingly, T-test, one way ANOVA used to decide if there is a significant difference between the responses, thus, multiple linear regression analysis also used to exam the hypotheses and to clarify the effect of the innovation management and its dimensions on change management, which measures by observing the effect of some particular independent variables. Then the SPSS V-24 software is used for analysis and the results are shown in tables and figures.

3.2.7. The Study Boundaries

The study is bounded through spatial, time-based, and human boundaries as follows: Frist, the spatial boundaries, the study items and questions are applied on a study population that is public universities in Erbil city.

Second, time boundaries: signified by the period of the study realistic to the public universities in questions, which started by preliminary visits to universities to classify the study statements or questions and questioning the faculty members to confer their thoughts and ideas regarding the study purpose, moreover allocating the survey questionnaires and then return them back. Finally, the human boundary, the application of this study was confined to the faculty member's professor and assist professor in the public universities in Erbil city, to examine the role of innovation management dimensions in change management.

3.3.THE ANALYSIS AND FINDINGS
3.3.1. Description of the Demographic Data

This section elevations with a descriptive statistics for the demographic data collected from the respondents. The study demographic data are collected and measured to concession a compacted of respondent's data. Consequently, the following demographic data are collected from public universities: gender, age, academic degree, scientific title, and overall academic career experience, the no. of scientific conferences that participated within the country and the no. of scientific conferences that participated outside the country.

As specified in the Table (13), the male faculty member's professor and assist professor constituted 69.8% or (104) individuals of the sample comparing to 30.2 % female faculty members or (45) individuals.

Table 13: The Gender

Group of Gender	Frequency	Percent
Male	104	69.8
Female	45	30.2
Total	**149**	**100.0**

As the table (14) summarizes the contributor's ages, 40.9% of the total sample or (61) faculty members aged between 51-60 years old, 36.9% or (55) members aged 41-50 years. Also, 13.4% were aged 61 and above. While 8.7% or (13) faculty members aged 31-40 years old.

Table 14: The Age Groups

Age Groups	Frequency	Percent
31-40	13	8.7
41-50	55	36.9
51-60	61	40.9
61 and above	20	13.4
Total	**149**	**100.0**

As revealed in a Table (15) the spreading of the contributors based on their academic degree, it is presented that of the total respondents: 55.7% faculty members are PhD degree holders; as well as 44.3% of the sample contributors are master degree holders.

Table 15: The Academic Degree

Academic Degree	Frequency	Percent
PhD	83	55.7
Master	66	44.3
Total	**149**	**100.0**

As selected in a Table (16) the scientific titles of faculty members, it is offered that of the total respondents: 77.2% or (115) members are assist Professor. While 22.8% or (34) members are faculty Professors.

Table 16: The Scientific Title

Scientific Title	Frequency	Percent
Professor	34	22.8
Assist. Professor	115	77.2
Total	**149**	**100.0**

As it can be seen in a Table (17) the respondent's career experience, it is offered that the 31.5% and 30.2% respectively of the total respondent's career experience between (16-20), (21 and above) years respectively, that the maximum academic working experience, while the lowest 6.7% of the total respondent's career experience less than 5 years.

Table 17: The Overall Academic Career Experience

Overall Academic Career Experience	Frequency	Percent
Less than 5 Year	10	6.7
5-10	17	11.4
11-15	30	20.1
16-20	47	31.5
21and above	45	30.2
Total	**149**	**100.0**

As selected in a Table (18) the number of scientific conferences that faculty members participated within the country, it is presented that of the total respondents: 45.6% or (68) faculty members participated in three and more scientific conferences. Whereas, 23.5% or (35) members participated in two conferences within the country.

However, 16.1% and 14.8% respectively of total respondents participated in only one scientific conference, and didn't participated, respectively.

Table 18: The number of scientific conferences that participated within the country

	Frequency	Percent
Did not participate	22	14.8
Participate in one	24	16.1
Participate in two conferences	35	23.5
Participate in three and more scientific conferences	68	45.6
Total	**149**	**100.0**

As shown in a Table (19) the number of scientific conferences that faculty members participated outside the country, it is presented that of the total respondents: 42.3% or (63) faculty members participated in three and more scientific conferences outside the country. Though, 27.5% or (41) members participated in two conferences outside the country. Accordingly, 16.1% and 14.1% respectively of total respondents participated in one scientific conference, and didn't participated, respectively.

Table 19: The number of scientific conferences that participated outside the country

	Frequency	Percent
Did not participate	21	14.1
Participate in one	24	16.1
Participate in two conferences	41	27.5
Participate in three and more scientific conferences	63	42.3
Total	**149**	**100.0**

3.3.2. Descriptive Statistics

The purpose of this section is to reveal statistical analyze on contributors answers to the questionnaire's statements, whose are invited to rate the significance of the innovation management and dimensions as well as change management and its dimensions on the five-point Likert Scale. Accordingly, descriptive statistics used to calculate the (mean, deviation scores, and rate of agreement) of each variables, besides to find if there are any variables and their dimensions vital of significant.

As shown in a Table (20) the descriptive statistics results mean, standard deviation scores, and rate of agreement for innovation management are (3.26 and 0.5955) respectively. Thus, 65.22% of the whole survey respondents conform that innovation management and dimensions in public universities from faculty members are important.

If we look at the same Table (20) we can see that mean scores results of the innovation management dimensions as fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction are: (3.236, 3.343, 3.244, 3.267, 3.17 and 3.31) respectively, and standard deviation scores (0.746, 0.750, 0.765, 0.734, 0.778, and 0.738) respectively. While (64.72%, 66.86%, 66.88%, 65.34%, 63.56%, and 66.26%) respectively of the total responses indicated that public universities' fluency, flexibility, originality, sensitivity to problems, risk and

challenge, and maintaining the direction significant. **Accordingly, the results indicates that originality, flexibility, maintaining the direction, and sensitivity to problems riches the public universities innovation management**.

Table 20: Result of descriptive statistics of innovation management

No. of items	N	Mean	S.D	Rate of Agreement
X1	149	3.34	.977	66.8
X2	149	3.21	.919	64.2
X3	149	3.14	.952	62.8
X4	149	3.17	.989	63.4
X5	149	3.32	1.022	66.4
The Fluency		3.236	0.746	64.72%
X6	149	3.42	1.060	68.2
X7	149	3.29	.939	65.8
X8	149	3.30	.948	66
X9	149	3.35	.869	67
X10	149	3.37	.940	67.4
The Flexibility		3.343	0.750	66.86%
X11	149	3.28	.992	65.6
X12	149	3.22	.876	64.4
X13	149	3.26	.940	65.2
X14	149	3.23	1.085	64.6
X15	149	3.23	1.029	64.6
The Originality		3.244	0.765	64.88%
X16	149	3.34	1.031	66.8
X17	149	3.19	.961	63.8
X18	149	3.25	.986	65
X19	149	3.30	.919	66
X20	149	3.27	.843	65.4
Sensitivity to Problems		3.267	0.734	65.34%
X21	149	3.16	.987	63.2
X22	149	3.04	.914	60.8
X23	149	3.10	1.002	62
X24	149	3.22	1.012	64.4
X25	149	3.38	1.023	67.6
Risk and Challenge		3.178	0.778	63.56%
X26	149	3.40	.957	68
X27	149	3.38	.927	67.6
X28	149	3.22	.936	64.4
X29	149	3.25	.907	65
X30	149	3.26	.931	65.2
Maintaining the Direction		3.313	0.738	66.26%
Innovation Management		3.261	0.5955	65.22%

As seen in a Table (21) the mean and standard deviation scores for change management are (3.246 and 0.6179) respectively, however 64.92% of the entire answers identified that the public universities change management is significant, besides 35.2% of the answers sample didn't agree. As table below summarizes the mean scores results of the change management dimensions namely; developing a common vision, building a collective agreement, building a common culture, intellectual stimulation, and structure change are: (3.256, 3.267, 3.247, 3.288, and

3.17) respectively, and standard deviation scores for the same dimensions are (0.7048, 0.7667, 0.8051, 0.820, and 0.830) respectively.

However (65.12%, 65.34%, 64.94%, 65.76%, and 63.4%) respectively of the complete answers specified that public universities' change management dimensions. **Thus, the results shows that Intellectual stimulation, building a collective agreement on the university's goals and priorities, and developing a common vision for the university riches the public universities change management**.

Table 21: Result of descriptive statistics of change management

No. of items	N	Mean	S.D	Rate of Agreement
Y1	149	3.34	.985	66.8
Y2	149	3.23	.938	64.6
Y3	149	3.23	.841	64.6
Y4	149	3.28	.892	65.6
Y5	149	3.20	.915	64
Developing a common vision		3.٢٥٦	0.٧٠٤٨	65.12%
Y6	149	3.35	.993	67
Y7	149	3.23	.916	64.6
Y8	149	3.26	.926	65.2
Y9	149	3.19	.903	63.8
Y10	149	3.31	1.019	66.2
Building a collective agreement		3.٢٦٧	0.٧٦٦٧	65.34%
Y11	149	3.34	1.058	66.8
Y12	149	3.31	.900	66.2
Y13	149	3.15	.957	63
Y14	149	3.18	.987	63.6
Y15	149	3.25	1.013	65
Building a common culture		3.٢٤٧	0.٨٠٥١	64.94%
Y16	149	3.40	1.077	68
Y17	149	3.37	.982	67.4
Y18	149	3.25	.929	65
Y19	149	3.26	1.081	65.2
Y20	149	3.21	1.015	64.2
Intellectual stimulation		3.٢٨٨	0.٨٢٠	65.76%
Y21	149	3.23	1.074	64.6
Y22	149	3.15	1.003	63
Y23	149	3.11	1.024	62.2
Y24	149	3.15	1.013	63
Y25	149	3.17	.989	63
Structure change		3.١٧٠	0.٨٣٠	63.4
Change Management		3.٢٤٦	0.٦١٧٩	64.92%

Therefore, regarding the innovation management's dimensions, properties that all the dimensions of innovation management will have influence on public universities change management particularly surveyed universities. Consequently, the variables of the innovation's originality, flexibility, maintaining the direction, and sensitivity to problems, respectively the most significant feature motivating to an

influence on change management. But risk and challenge dimension scored the lowest significant influence compared to other five innovation management dimensions with a rate of (63.56%) covenant.

3.3.3. ANOVA Test According to the Demographic Data for Variables

Table 22: ANOVA Test Results According to the Demographic Data for Innovation Management

Innovation Management		Sum of Squares	DF	Mean Square	F	Sig.
By Gender						
	Between Groups	.372	1	.372	**1.048**	**.308**
	Within Groups	52.114	147	.355		
	Total	52.485	148			
By Age Groups						
	Between Groups	.236	3	.079	**.218**	**.884**
	Within Groups	52.249	145	.360		
	Total	52.485	148			
By Academic Degree						
	Between Groups	.234	1	.234	**.659**	**.418**
	Within Groups	52.251	147	.355		
	Total	52.485	148			
By scientific title						
	Between Groups	.001	1	.001	**.002**	**.965**
	Within Groups	52.484	147	.357		
	Total	52.485	148			
By Overall Job Experience						
	Between Groups	2.454	3	.818	**.371**	**.473**
	Within Groups	50.031	145	.345		
	Total	52.485	148			
By the no. of scientific conferences that participated within the country						
	Between Groups	2.454	3	.818	**2.371**	**.073**
	Within Groups	50.031	145	.345		
	Total	52.485	148			
By the no. of scientific conferences that participated outside the country						
	Between Groups	3.619	3	1.206	**2.579**	**.055**
	Within Groups	48.866	145	.337		
	Total	52.485	148			

The ANOVA test applied to select if there is or not a significant variance among faculty members responses of the public universities in Erbil city, in according with demographic variables namely; (gender, age, academic degree, scientific title, and overall academic career experience, the no. of scientific conferences that participate within the country and the no. of scientific conferences that participate outside the country). The ANOVA outcomes states that for all demographic variables in regards the Innovation Management (Sig>0.05), hence, there isn't a variance in the scores between male and female faculty members, F (1.048; Sig0.308> 0.05). Then for (age, academic degree, scientific title, and overall academic career experience, the no. of scientific conferences that participated within the country and the no. of scientific conferences that participated outside the country)

respectively, there isn't a difference in the scores between them, where (Sig>0.05). As shown in Table 22.

Consequently, the ANOVA outcomes display that for all demographic variables in regards change management (Sig>0.05), so, there isn't a variance in the scores between male and female faculty members responses, F (0.093; Sig0.761> 0.05) and for other groups (Sig>0.05). Moreover, for other groups such as (age, academic degree, scientific title, and overall academic career experience, the no. of scientific conferences that participated within the country and the no. of scientific conferences that participated outside the country) respectively, there isn't a variance in the scores between them, where (Sig0.476>0.05, Sig0.432>0.05, Sig0.474>0.05, Sig0.762>0.05, Sig0.088>0.05 and Sig0.014>0.05) respectively, However, F (0.836, 0.620, 0.513, 0.465, 1.083, and 2.648) respectively.

Table 23: ANOVA Test Results According to the Demographic Data for Change Management

Change Management	Sum of Squares	DF	Mean Square	F	Sig.
By Gender					
Between Groups	.036	1	.036	**.093**	**.761**
Within Groups	56.482	147	.384		
Total	56.517	148			
By Age Groups					
Between Groups	.961	3	.320	**.836**	**.476**
Within Groups	55.556	145	.383		
Total	56.517	148			
By Academic Degree					
Between Groups	.238	1	.238	**.620**	**.432**
Within Groups	56.280	147	.383		
Total	56.517	148			
By scientific title					
Between Groups	.197	1	.197	**.513**	**.475**
Within Groups	56.321	147	.383		
Total	56.517	148			
By Overall Job Experience					
Between Groups	.720	4	.180	**.465**	**.762**
Within Groups	55.797	144	.387		
Total	56.517	148			
By the no. of scientific conferences that participated within the country					
Between Groups	4.402	3	1.467	**1.083**	**.088**
Within Groups	52.115	145	.359		
Total	56.517	148			
By the no. of scientific conferences that participated outside the country					
Between Groups	3.966	3	1.322	**2.648**	**.014**
Within Groups	52.551	145	.362		
Total	56.517	148			

3.4. CORRELATION ANALYSIS OF THE VARIABLES

The spearman's correlation coefficient test explains that the innovation management positively correlated with change management through R (0.649**) it

means that the correlation is significant at the 0.01 level (2-tailed) and the p-value (0.000), which is less than (0.05). Therefore, the first main hypothesis (H_I) could be accepted. As indicate in table below.

Table 24: Correlation coefficient between innovation management and change management

Variables			Innovation Management	Change Management
Spearman's rho	**Innovation Management**	Correlation Coefficient	1.000	.649**
		Sig. (2-tailed)	.	.000
		N	149	149
	Change Management	Correlation Coefficient	.649**	1.000
		Sig. (2-tailed)	.000	.
		N	149	149

**. Correlation is significant at the 0.01 level (2-tailed).

As summarized in a Table (25) that the results of correlation matrix analysis simplifies that the dimensions of innovation management namely; (fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction) all have positive correlation with change management, through R (0.389, 0.503, 0.510, 0.459, 0.584, and 0.610>p0.000) respectively, being less than (0.05). Moreover, the table demonstrates that maintaining the direction achieved the highest positive correlation with change management. While, fluency has the weakest correlation with change management. Therefore, the hypotheses ($H_{1.1}$, $H_{1.2}$, $H_{1.3}$, $H_{1.4}$, $H_{1.5}$, and $H_{1.6}$) could be accepted.

Table 25: Spearman Correlation analysis between innovation management dimensions and change management

Variables			Fluency	Flexibility	Originality	Sensitivity to problems	Risk and challenge	Maintaining the direction	Change Management
Spearman's rho	Fluency	Correlation Coefficient	1.000	.520**	.421**	.467**	.414**	.487**	**.389****
		Sig. (2-tailed)	.	.000	.000	.000	.000	.000	**.000**
	Flexibility	Correlation Coefficient		1.000	.539**	.426**	.507**	.442**	**.503****
		Sig. (2-tailed)		.	.000	.000	.000	.000	**.000**
	Originality	Correlation Coefficient			1.000	.573**	.528**	.512**	**.510****
		Sig. (2-tailed)			.	.000	.000	.000	**.000**
	Sensitivity to problems	Correlation Coefficient				1.000	.622**	.558**	**.459****
		Sig. (2-tailed)				.	.000	.000	**.000**
	Risk and challenge	Correlation Coefficient					1.000	.720**	**.584****
		Sig. (2-tailed)					.	.000	**.000**
	Maintaining the direction	Correlation Coefficient						1.000	**.610****
		Sig. (2-tailed)						.	**.000**
	Change Management	Correlation Coefficient							**1.000**
		Sig. (2-tailed)							.

**. Correlation is significant at the 0.01 level (2-tailed).
b. Listwise N = 149

3.5. REGRESSION ANALYSIS OF THE VARIABLES

The study used a multiple linear regression test to explore and find the effect of the innovation management and its dimensions in the change management. Whereas, R square which is the proportion of variation in the dependent variable is 0.513. The adjusted R square is 0.510 presenting the effect and correlation between the experimental and predicted values of the dependent variable.

This shows that (fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction) accounts for 51.3% of the change management of public universities in Erbil city, as revealed in table (26) below.

From a Table (27) ANOVA results of examine of variance, sum of squares, degree of freedom (*df*), mean square, regression and residual values obtained from regression analysis. The mean square which is the sum of squares divided by the degrees of freedom was (29.019). Besides, the **F** static which is regression mean square divided by the residual mean calculated was (155.132), and *DF* is (1,148). Statistically, the overall model is significant, with significant value, P value = 0.000, (P < 0.05), Then the hypotheses (*H₂.*) can be accepted. As shown below:

Table 26: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.717[a]	.513	.510	.43251

a. Predictors: (Constant), Innovation Management
b. Dependent Variable: Change Management

Table 27: ANOVA analysis

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	29.019	1	29.019	155.132	.000[b]
Residual	27.498	147	.187		
Total	56.517	148			

a. Dependent Variable: Change Management
b. Predictors: (Constant), Innovation Management

As the outcomes of regression coefficients offered in Table (28) explains that statistically there are a significant effects of innovation management and its dimensions as fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction in the change management, as cleared over the amounts of (0.464, 0.577, 0.572, 0.512, 0.634 and 0.651) respectively, the high effects of the maintaining the direction, risk and challenge, while the lower one was fluency between dimensions of innovation management.

Furthermore, the same Table (28) also indicate multicollinearity inspect. Thus, the persistence of this test is to identify whether any correlation among independent variables was found or not. A good regression model should be free from correlation between variables. As above table shows the tolerance values and VIF values for each variable were; 1.000 and 1.000, respectively for innovation management, besides 1.000 and 1.000 respectively and same values for the rest dimensions. It means that VIF <5 and tolerance value >0.1, so it means multicollinearity does not exist.

Additionally, the t-test (4.156) for innovation management as the independent variable, it means significant effect and support the results, accordingly, the t (6.344, 8.571, 8.458, 7.273, 9.931 and 10.404) respectively, for other five dimensions, besides p<0.05 for all dimensions. Then the hypotheses (*H2.1, H2.2, H2.3, H2.4, H2.5, and H2.6*) can be proven.

93

Table 28: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.821	.198		4.146	.000		
Innovation Management	.744	.060	.717	12.455	.000	1.000	1.000
Fluency	.384	.060	.464	6.344	.000	1.000	1.000
Flexibility	.475	.055	.577	8.571	.000	1.000	1.000
Originality	.462	.055	.572	8.458	.000	1.000	1.000
Sensitivity to problems	.433	.060	.514	7.273	.000	1.000	1.000
Risk and challenge	.503	.051	.634	9.931	.000	1.000	1.000
Maintaining the direction	.545	.052	.651	10.404	.000	1.000	1.000

a. Dependent Variable: Change Management

Also, as it clearly can be seen in a figure (8) the outcome of Normality test presented that there is normality distribution in study contributions answers. It means that the results are reliable.

Figure 8: Normality test
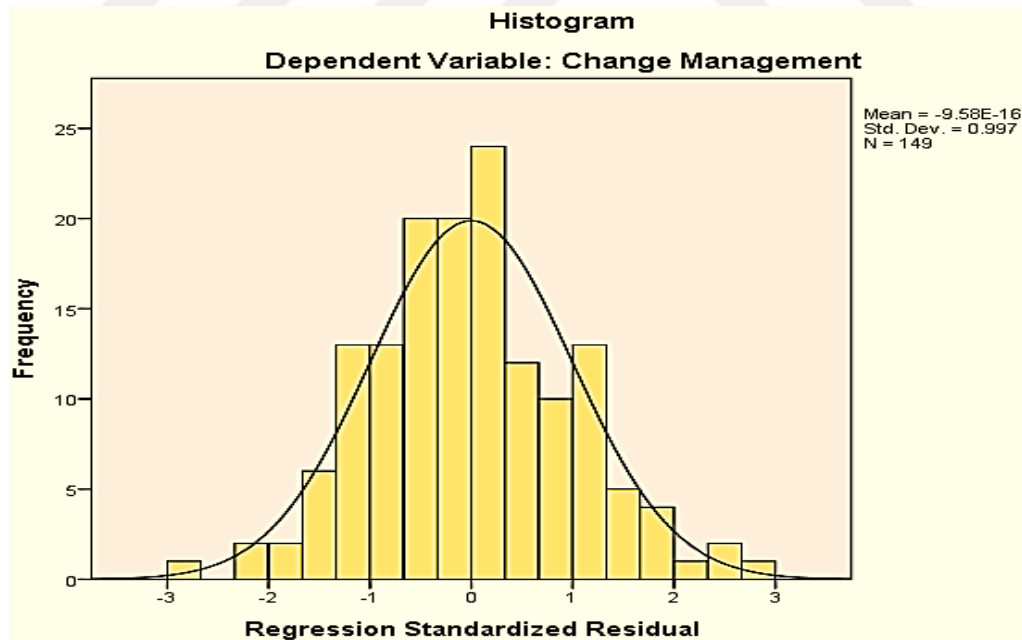
However, figure below (9) proves that the Linearity test results that there is linearity relationship between the innovation management and change management of public universities in Erbil city.

Figure 9: Linearity test

3.6. RESULT OF HYPOTHESES TESTING

As demonstrated in the Table (29) the results of examine model the role of innovation management in the change management of public universities in Erbil city and it's suggest hypotheses which all the hypotheses proved thus, all can be accepted. As indicated in table below.
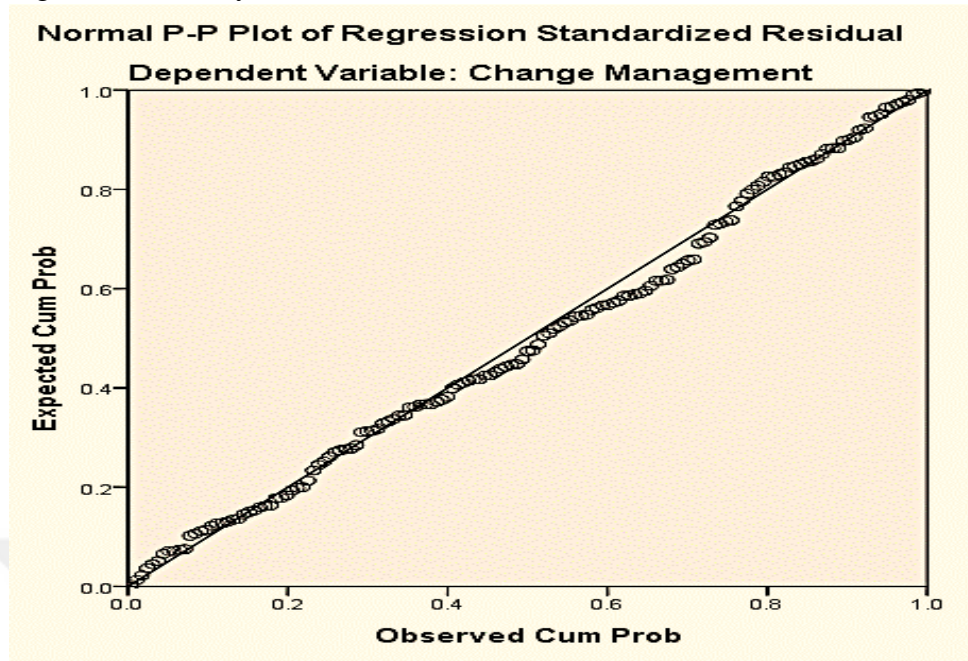
Table 29: The results of hypotheses testing

	Hypotheses	Results
H_1	There is a positive relationship between the dimensions of innovation management and change management in public universities in Erbil city	**Accepted**
$H_{1.1}$	There is a positive relationship between fluency and change management	**Accepted**
$H_{1.2}$	There is a positive relationship between flexibility and change management	**Accepted**
$H_{1.3}$	There is a positive relationship between originality and change management.	**Accepted**
$H_{1.4}$	There is a positive relationship between sensitivity to problems and change management.	**Accepted**
$H_{1.5}$	There is a positive relationship between risk-taking and challenge and change management.	**Accepted**
$H_{1.6}$	There is a positive relationship between maintain the direction and change management.	**Accepted**
H_2	There is a statistically significant impact of innovation management dimensions in change management in public universities in Erbil city.	**Accepted**
$H_{1.1}$	There is a statistically significant impact of fluency in change management	**Accepted**

$H_{2.2}$	There is a statistically significant impact of flexibility in change management	**Accepted**
$H_{2.3}$	There is a statistically significant impact of originality in change management.	**Accepted**
$H_{2.4}$	There is a positive relationship between sensitivity to problems in change management.	**Accepted**
$H_{2.5}$	There is a statistically significant impact of risk-taking and challenge in change management.	**Accepted**
$H_{2.6}$	There is a statistically significant impact of maintain the direction in change management.	**Accepted**

THE CONCLUSIONS AND RECOMANDATION

Conclusions

The main purpose of the study is to analyze the role of innovation management in change management of public universities in Erbil city. Therefore, the thesis examined the relationships between innovation management and change management by getting indication and suggestion from selected public universities. Consequently, in accord with the study concerns, it is performed that innovation management has a significant impact on change management.

Hence, the results of descriptive statistics expressive indicators state that the independent variable innovation management and its dimensions prove significant from the views of public universities faculty members. These significant dimensions are ordered as originality, flexibility, maintaining the direction, and sensitivity to problems and fluency, flexibility, risk, and challenge respectively. This reproduces the significant of originality, flexibility, and maintaining the direction in providing the best change management practices within surveyed universities.

Consequently, the results show that intellectual stimulation, building a collective agreement on the university's goals and priorities, and developing a common vision for the university riches the public universities change management.

The study also found the positive significant relationship between innovation management and its dimensions namely; (fluency, flexibility, originality, sensitivity to problems, risk and challenge, and maintaining the direction) in the public universities change management, while, maintaining the direction achieved the highest positive correlation with change management. But, fluency has the weakest correlation with change management.

Moreover, the regression analysis results demonstrate that statistically there are significant effects of innovation management and all its dimensions in the change management, but the high effects of the maintaining the direction, risk, and challenge, while the lower one was fluency between dimensions of innovation management. Then, the conclusions specify that actually, innovation management and its dimensions play a dynamic role in the change management.

Recommendations and Implications

The necessity for surveyed public universities in Erbil to concentrating on the dimensions of innovation management in their faculties and the importance of developing change management skills for the university to be able to apply change policy and to take out the best results of the academic processes. Consolidation the relationship between the public universities in Erbil and the local community to give hand and support to facilitate the universities principals' task to define university aims and its academic priorities.

The necessity of the effective participation of all the faculty members in the innovative environment, and different administrative situations particularly in developing a common vision for the university and building a collective agreement on the university's goals and priorities. This helps in bearing the responsibility towards what is happening in university and building a common culture within the university.

The researcher endorses that, it is crucial for public universities in Erbil to have sustainable and constant use of innovative and changes rules which will help to maintain the direction, sensitivity to problems and practice an effective risk and challenge management.

The researcher recommends that the public universities in Erbil city should develop training programs for their faculty members, programs should purpose to improve university management awareness of innovative culture, norms and act as a base on knowledge of the strong effect of innovation management dimensions in change management.

Finally, the Iraqi Kurdistan region's authorities and in particular the ministry of higher education and scientific research should come up with awards for public and private universities that practice effective innovative and change management to encourage the universities to better practice innovation management and accordingly improve the change management.

However, the present study's implications comprise the spreading the nature of the relationship between innovation management and change management in public universities and probably private once. Also, engaging and increasing innovation dimensions practices to achieve effective change management implementation.

Consequently, this suggestion can promote the thoughtful of universities and academic establishments of innovative management and its relationships with the change management in the wider framework of Iraqi universities. Additionally, this study contributes to innovative management literature.

REFERENCE

Abdel Wahab, A. (1994): *Human relations in production and services*. Cairo: Ain Shams library.

Abdel Wahab, B. (2012). The role of innovation in supporting the competitive advantage of the economic institution: Case Study of the Algeria Mobile Telecommunications-in Mobilis. University of Mentori.

Abdel-Aal, H.I . (2004): *Creative Education Necessity of existence*, T1, Dar Al-Fikr, Amman.

Abdullah, M. at all. (2001): *Change to Confront Changes. The Ideal Management Series.* Beirut: Lebanon Library.

Abu-Jalala, S.H. (2007): *Curriculum of Science and Development of Creative Thinking*, 1, Dar Al-Shorouk, Amman.

AL- Hariri, R.O. (2011). *Managing change in educational institutions*. P.71-142.

AL- Khudairi, M. (2003). *Change Management, An Economic Approach to Administrative Psychology to Deal with Current Variables to Achieve Excellence and Excellence in Future Projects* (Syria, Damascus: Dar Al-Redha Publishing.

Al-amayin, M. (2002). *Organizational Behavior in Business Organizations*, Amman: Dar Wael Publishing and Distribution.

Al-atiyat, M.Y.A. (2006). Change Management and Contemporary Challenges of the Director: A Contemporary Vision for the Director of the 21st Century: An Applied Study on Arabian Saudi Airlines Amman: Dar Hamed Publishing and Distribution.

Al-Azmi, M.B.H.T. (2006). Transformational Leadership and Its Relation to Administrative Creativity, a Survey Study of Civil Servants in the Ministry of Interior, *Unpublished Master Thesis*, Graduate School, Administrative Sciences Department, Naif Arab University for Security Sciences.

Albury, D. (2005): Fostering Innovation in Public Services. *Public Money & Management*, 25 (1): p.51-56.

Al-Chakoura, M.H.A. (2012). Change management and its relation with innovation management for principals of secondary schools in Gaza governorates from the Teachers points of view. Al-Azhar University - Gaza.

Al-dhan, P.O. (1992): *Theories of Business Organizations*, I 1, Amman: Safadi Press.

Alexander, K;Atkin.B, Brochner,J. and Haugen, T. (2004) *Facilities Management Innovation and Performance*. Taylor & Francis.

Al-itum ,A.Y, Surgeon, A. D. and Bishara, M. (2006): Development of Thinking Skills Theory Models and Practical Applications, 1, Dar Al-Masirah, Amman.

Al-itum, A.Y, and at all, (2011). *Development of Thinking Skills, Theory Models and Practical Applications*, Dar Al-Sira for Publishing, Distribution and Printing, Amman (2011), Third Edition.

Al-Lawzi, M. (1998). Trends of Employees in Jordanian Government Institutions

towards Change Management. Studies in Administrative Sciences.

AL-Losi, S. (2002): Development of Creative Thinking, Dar Al-Manhal, First Edition, Amman-Jordan.

AL-Lousi, M. (2002). *Administrative Development*, II, Dar Wael Publishing, Amman.

Al-maaytah, K.A. and Al-Buwailizah, M. .l S. (2004): Talent and excellence, T 2, Dar El Fikr, Amman.

Al-Maghazi, I.M. (2002): How to be Creative, I 1 Library of Faith, AL Cairo.

Al-Namr, S, and at all. (1994): General Administration: Foundations and functions.

Al-nativat, M.A. (2006): Organizational changes and their relation to the level of creativity in the security services, field study on officers working in Riyadh city police, *unpublished master's thesis*, Graduate School of Science, Administrative Sciences Department, Naif Arab University for Security Science.

Al-okwa, K.M. (2011): Contemporary Public Administration.

Al-omayyim, M.S. (2005). *Organizational Behavior in Business Organizations*, T3, Jordan, and Amman: Wael House for Publishing and Distribution, p: 345-401.

Al-Otaibi, S.J. (2002). *Development of thought and administrative activities*. Amman: Dar Al-Hamd for Publishing and Distribution, Jordan .

Al-Qaryuti, M. (2000). *Organizational Behavior*, Dar Al Shorouk for Publishing and Distribution, Third Printing, Amman-Jordan.

Al-Qouss, N. (2004): Teachers 'Assessments of the Degree of Principals' Leadership of Innovative Leadership and their Relation to the Degree of Teacher Satisfaction with these Practices, *Unpublished Master Thesis*, Mutah University, Karak, Jordan.

Al-Qurashi, A.A.A. (2008). Innovation management and its relationship to change management to the managers and assistance managers of primary schools in the city of Mecca, Umm al-Qari University, Saudi Arabia.

Al-Sakarna, B.K. (2011). *Management creativity*, Dar Al - Massirah for publication and distribution Amman.

Al-Salmi, A. (2005). The features of serious management in the era of variables and their implications for change management. Research presented to the third administrative forum: development management and development requirements in the administrative work "Towards effective variable management" Jeddah.

Al-Sarifi, M.A. (2003): *Leading Management*, First Edition, Amman: Dar Al Safa Publishing.

Al-serafi, M.A.F. (2003): *Leading Management*. Amman: Dar Safa Publishing and Distribution.

Al-Serifi, M.A. (2006). Ideas Management, Horus International Foundation for Publishing and Distribution, Alexandria.

Al-Shaloot, F.M. A. (2002). *Theories in Educational Administration*, Al-Rashed

Library for Publishing and Distribution, Riyadh.

Al-Shamiri, F.A. (2002): The Creative Approach to Crisis and Disaster Management. Riyadh: Indexing of the King Fahd National Library.

Al-Shammari, S.D. (2006). The degree of innovative leadership practice of educational leaders in Saudi Arabia. Mutah University.

Al-Subaie, U.A.B. (2008). The leadership roles of education managers in the light of change management requirements. Umm Al-Qura University, Saudi Arabia.

Al-Sumairi, H.M. (2003). Factors Affecting Creativity in Public Organizations, Field Study on Public Organizations in Jeddah Governorate. *Unpublished Master Thesis*, King Abdulaziz University, Jeddah, Saudi Arabia.

Al-zahrani, T.S.M. (2003): *Strategies for the Detection and Care of Existing People and Creators between Authenticity and Modernity*, Dar Taibah Al Khadra for Publishing and Distribution, Makkah 2003, First Edition.

Al-Zoubi ,A.F. and Al-Jariri, M. A. (2007) The Role and Importance of Accounting Innovation in Achieving Economic Competitive Advantage in Jordanian Business and Financial Institutions, Scientific Research Submitted to the Fifth Scientific Conference of the Faculty of Administrative and Financial Sciences, Philadelphia University.

Amabile, T.M. (1996): *Creativity in context*, Westview Press, New York, p: 1154-1165.

Amer, S. (1995). Management and Speed of Change, Administrative Development Service Center, Cairo p. 286-295 (607).

Amer, S.Y. (1991): About Innovation and Creativity, The Fourth Annual Conference on Change Strategies, Waid Service Center for Administrative Consultancy and Development ,Cairo.

Awad, A. (2005). The reality of administrative innovation and methods of development in the private security forces from the point of view of private security officers. *Unpublished Master Thesis,* Naif Arab University for Security Sciences, Riyadh, Saudi Arabia.

Ayoub, N.H. (2000). Factors Affecting Innovative Behavior among Managers in the Commercial Bank of Saudi Arabia. *General Administration Magazine*, Riyadh.

Balogun J. and Hailey, VH. (2004). *Exploring Strategic Change*. London: FT/Prentice Hall.

Birkinshaw, J.G.and. Hamel, M.J. M. (2008). Management Innovation, *Academy of Management Review*, 33(4): p. 825-845.

Child, J. (1997). Strategic Choice in the Analysis of Action, Structure, Organizations and Environment: Retrospect and Prospect. *Organization Studies*, 18(1): pp. 43-76.

Conant, J.B. (1964). The Education of American Teachers, *British Journal of Educational Studies* Vol. 12, No. 2 (May, 1964), p: 213-214 .

Cooper, R.G. (1984): The strategy–performance link in product innovation. *R&D Management*, 14, 247–259.

Covey R. (1989). *The Seven Habits of Highly Effective People – Powerful lessons in Personal Change*. Simon & Shuster Inc.

Dirks, K.T. Cummings, L. L., and Pierce, J.L. (1996). Psychological Ownership in Organizations: Conditions under which individuals promote or resist change. In Woodman, R.W, Pasmore, W.A. (Eds.) *Research in Organizational Change and Development*, Vol. 9. JAI Press, Greenwich, pp. 1-23.

Dosi, G. (1982): Technological paradigms and techno- logical trajectories. *Research Policy*, 11, 3, p; 147-162.

Doyle, P. and Bridgewater, S. (1988). Innovation in Marketing. *The Charted Institute of Marketing*. Elsevier Butterworth Heinemann.

Drucker, P. (1985): Innovation and Entrepreneurship, UK: *Pan Business Management*.

Drucker, P.F. (1985). *Innovation and entrepreneurship: practice and principles*. New York: Harper and Row, Publishers.

Durra, A. (1986): *Change in Organizations - Research in organizational behavior in the Arab countries*. Kuwait: Dar Al-Qalam for Publishing and Distribution.

Edquist, C. (1999): Systems of innovation: theory and policy for the demand side, Technology in Society.

Fahmi, A.F. (2004). The Systemic Approach and Change Management. Future of Arab Education, 10 (35), Alexandria, the Modern University Office.

Frost, P. and Egri, C. (1991). The political process of innovation. P. 229-296 in B.M. Staw and L.L. Cummings (Eds.), *Research in organizational behavior*, Vol. 13. Greenwich, CT: JAI Press.

Geoff, M. and David, A. (2003). Innovation the Public sector (ver 1.9 October 2003)..

Hage, J.T. (1999). Organizational Innovation and Organizational Change. *Annu. Rev. Sociol*. 25: pp. 597-622.

Hareem, H. (1997). Organizational behavior, Amman, Dar Zahran.

Hargrave, T, and Van de Ven, A. (2006). A collective action model of institutional innovation. *Academy of Management Review*, 31: 864–888.

Hartley, J. (2005). Innovation in Governance and Public Services: Past and present. *Public Money and Management*. 25(1): 27.

Hassan, M.M. (2004). Leadership fundamentals, theories and concepts. Irbid: Dar Canadian.

Hayes J. (2010). *The Theory and Practice of change management*. 3rd Ed. New York: Palgrave.

Higgan, A. (1999). Obstacles of Administrative Innovation in Saudi Organizations, Issue 1 and *Public Administration*.

Hilali, H. (2001). The processes and administrative skills necessary to increase the effectiveness of secondary school principals in the performance of their duties, a special number for the annual conference of the Department of Education, Faculty of Education, Mansoura University, Egypt.

Howell, J. and Higgins, C. (1991). Champions of change: Identifying, understanding,

and supporting champions of technological innovations. Organization Dynamics, IO (l) p. 40-55.

Imaaldin, M.M. (2003): Evaluation of the Effectiveness of the School Management Development Program in the Preparation of the Director of the School in Jordan for the Leadership of Change. Dissertation, Academic Book Center, Amman. P. 18-60.

Jacobs, D. and Snijders, H. (2008). Innovation routine. How managers can support repeated innovation [in Dutch], Stichting Management Studies, Van Gorcum, Assen.

Jalab, I.D. (2011): Management of organizational behavior in the era of change.T1. Oman: Dar Safa for publication and distribution.

Jarwan, F.A. (2008). Talent and excellence and creativity.T3.Jordan: Dar Al Fikr for publication and distribution.

Jarwan, F.A. (2014). *Talent and excellence and creativity*, T1. Thought, Amman, Jordan. P .85.

Jones, G.R. (2004). *Organizational Theory Design and Change*, 4th Ed. New Jersey: Pearson Education Inc.

Juhar, S. (2001): Methods and Techniques of Educational Management in the Light of the Communication and Information Revolution, Cairo, Arab Thought House.

Karakra, M. (1987): Towards a conscious educational management, Dar Fikr Al-Libani, First Edition – Lebanon.

Khatib, A.Y. (2003): *Philosophy of Education - Theories and Applications*. Gaza: Al-Azhar University .

Khawaja, A.F.M. (2004): Development of school administration and administrative leadership, Amman, House of Culture for publication and distribution.

Kotter, J. (1998). *Leading Change: Why Transformation Efforts Fail*. In Harvey and Business Review on Change, P: 1-20. Boston, MA: Harvard Business School pres.

Lee Zhuang, (1995) "Bridging the gap between technology and business strategy: a pilot study on the innovation process", *Management Decision*.

Leithwood, K (1994). Leadership for School Restructuring. *Educational Administration Quarterly*, p. 498-518.

Lewin K. (1951). *Field Theory in Social Science*. New York: Harper & Row.

Llsern, R. (2002). *Administrative Development Industry in the 21st Century*, Syria, Damascus: Dar al-Redha Publishing.

Luecke, R.and Katz, R. (2003): *Harvard business essentials*: managing creativity and innovation. Harvard Business School Press.

Maher, A. (2005): *Organizational behavior skills building entrance*, Alexandria: University House, 2005, p. 416.

Moawad, K.M. (2002). *Capabilities and Qualities of the Talented*, T 4, Alexandria Book Center.

Mohammed, M.H.O. (2009): The ability of reasoning, creative thinking, problem

solving and its relation to academic achievement in a sample of sixth grade students in Makkah, *unpublished doctoral thesis*, Faculty of Education, Umm Al Qura University, Saudi Arabia.

Najim, A.N. (2003): *Managing Innovation, Concepts, Characteristics and Modern Experiences*, Darwael Publishing, First Edition.

Nasr, A.G. (2008): Administrative Creativity and Self Development, *National Research Center*.

Naughton, D. (2004) Innovation & Learning – Value through Innovation. *Facilities Manager, 20* (6) Nov.-Dec. article featured in www.appa.org/facilitiesmanager, accessed on 18/09/2017.

Noah, H.M.A.W. (2007): Obstacles to Change Management in the Heads of Departments and Staff at Umm Al-Qura University, *Unpublished Master Thesis*, Faculty of Education, Umm Al-Qura University.

Patel, P. and Pavitt, K. (1994): National Innovation Systems: why they are important and how they might be measured and compared, *Economics of Innovation and New Technology*, 3, p. 77-95.

Plano, C.V., and Creswell, J.W. (2015). *Understanding research: A consumer's guide.* New Jersey: Pearson.: Upper Saddle River.

Quintana,G.J.C. (2011): Chatter in machining processes: A review, *International Journal of Machines Tools Manufacture*.

Rami, A.B. Shani and J. Lau, pm15-9 And Andrew J. Dubrin (1994). Contemporary Applied Management, Irwin, Burr Ridge, IIIinois, p.24.

Robbins, P.S. (2000). *Organizational Behavior*, San Diego State University, Prentice Hall International, Inc.

Rogers, B. (1983): A process model of internal corporate venturing in the major diversified firm. *Administrative Science Quarterly*, p. 28: 233-244.

Rogers, E. (1995): *Diffusion of Innovations*. The Free Press, New York, USA.

Schermerhorn J.R. (1997). *Management*, Hohn wiley and Sons, Inc.

Schon, D. (1963): Champions for radical new inventions. *Harvard Business Review*, 41, p. 77-86.

Schon, D. (1973): *Beyond The Stable State*. New York: W.W. Norton.

Scott and Cynthia De Jaffe, D.T. (2001). *Managing Change in Action*. Translation: Bashir Al-Barghouthi, Dar Al-Maarafa for Human Development, Riyadh. P. 30-110.

Senior, B. and Fleming,J. (2006). *Organizational Change*. 3rd ed. London: FT/Prentice Hall.

Shani, A.B. and Lau, J.B. (1996). Behavior in organizations: An experiential approach. Chicago, IL: Irwin

Sherif, B. (2004): *Culture of Change Management*, Amman, Dar Ro'a.

Shusha, F.M. (1993). Innovation management models in high-tech business organizations, Sadat Academy for Administrative Sciences, *Journal of Business Research* (Volume V: Issue III).

Smith, A., Voß, J.-P. and Grin, J. (2010). Innovation studies and sustainability

transitions: The allure of the multi-level perspective and its challenges, Research policy 39 (4), p. 435–448.

Solomon, M.R. and Stuart, E.W. (1997). *Marketing prentice Hall International*, Inc-New Jersey.

Suwaidan, T.M,and Adwani, M. A.(2004). Principles of creativity.

Teece, D.J. and Pisano, G. (1994). The dynamic capability of firms: An introduction. *Industrial and Corporate Change*, 3 (3): 537–556.

Tidd,I, Bessant, J. and Pavitt, K John Wiley & Sons, Ltd. (2007). *Innovation and Entrepreneurship*.

Titi, M. (2001): *Development of creative thinking abilities*. Amman: Dar Al Masirah for Publishing and Distribution.T1.

Torrance, E.P. (1962): Guiding creative talent NJ, Prentice Hal .

Torrance,E.P.(1990). Torrance Tests of Creative Thinking. Scholastic Testing Service. Bensenville, IL.

Tushman, M.L.and Anderson, P. (2004). Managing Strategic Innovation and Change, A collection of readings, Oxford University Press.

United Nations: Economic and Social Council: Committee of Experts on Public Administration, Innovations in Governance and Public Administration To achieve its long-term goals, p: 1112.http://unpan1.un.org/intradoc/groups...NPAN022322.pdf

Van de Ven, A. (1986): Central problems in the management of innovation. *Management Science,* 32(5) p: 590-607.

Van de Ven, A.H and Poole, M.S. (1995). Explaining development and change in organizations. *Academy of Management Review*, p.512.

Venkataraman, S, MacMillan, I. and McGrath, R. (1992). Progress in research on corporate venturing. P.487. in D. Sexton (Ed.), *State of the art in entrepreneurship*. New York: Kent.

Wilson, D. (2001): *Change Strategy "Concepts and Debates in Managing Change". Translation*: Greetings Emara. Dar El Fagr for Publishing & Distribution, Cairo.

Woodman, R.W., Sawyer, J.E. and Griffin, R.W.(1993).Toward a theory of organizational creativity. *Academy of Management Review*, 18 (2): pp. 293–321.

Zakri, A.M; Bashir, N.A; Ajman, M.A. and Ajibi, A.H.(2006): Change Management, *Journal of School Administration, Ministry of Education*, No. 3, .P. 54-55.

Zeitoun, A. (1987): *Development of creativity and creative thinking in the teaching of science*.T2. Oman: Association of workers of cooperative printing presses. Jordan University.

Zmzmi, A.A. (2007): *Teaching Thinking and Development of Capabilities*, T1 and a study published in a book, part one, Al-Rashed Library for Publishing Riyadh.

APPENDIXES
Appendix1: Questionnaire Form

T.C
BINGOL UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCE
BUSINESS ADMIMISTRATION DEPARTMENT

Dear Sir / Madam Respondent

This questionnaire form is a part of the study entitled "**THE ROLE OF INNOVATION MANAGEMENT IN CHANGE MANAGEMENT:** An Empirical Study in the public universities in the Erbil city" and I tis part of Requirements for the degree of Masters in the jurisdiction of the Administrative Sciences.

I request you kindly to take the time to answer the below questionnaires, after reading all its content thoroughly. Please give it your time and attention, as your responses will be used to reach the results of this study, and surely the result will not use for any educational purpose and your names will not mention on the questionnaire form. Knowing that your answers will be confidential and I will work for the purposes of scientific research exclusively.

Thanks for your valuable time and response.

Supervisor

Assoc. Prof. Dr. Abdulvahap BAYDAŞ

Researcher

Narmen Wali ALI
Master Student

First Section: General Information

Please select the option that represents the alternative you think proper for the phrases below:

1. Gender: ( ) Male   ( ) Female

2.Age: ( ) 31-40 years   ( ) 41–50 years   ( ) 51–60 years   ( ) 61 and above

3.Academic Degree: ( ) PhD   ( ) Master

4. Scientific Title: ( ) Professor   ( ) Assist. Professor

5.Overall Academic Career experience: ( ) Less Than 5 Years   ( ) 5-10 Years

( ) 11-15 Years   ( ) 16-20 Years   ( ) 21 and above

6. The number of scientific conferences that participate within the country:

( ) Did not participate.   ( ) Participate in one
( ) Participate in two conferences ( ) Participate in three and more scientific conferences

7. The number of scientific conferences that participate outside the country:

( ) Did not participate.   ( ) Participate in one
( ) Participate in two conference ( ) Participate in three and more scientific conferences

SECOND SECTION: THE SCALE OF INNOVATION MANAGEMENT

Innovation management is a set of processes and behaviors that exercised by the individual within the University, which leads to changes in organizational structures, policies, and patterns of management through the application of new ways and methods to solve problems and take decisions in a more original and familiar manner.

Q	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
First, Fluency means the ability to generate a large number of alternatives, synonyms, ideas, problems or uses when responding to particular incentives, and the speed and ease of generating them. Also, it's essentially a process of recall and optional recall of previously learned information, experiences or concepts.						
1	The university management has the ability to propose quick solutions to address work problems.					
2	The university management employs as much of its faculty as possible to adopt ideas for faculty members.					
3	The university management offers several innovative ideas for developing the scientific process within a short period of time.					
4	The university management sets several proposals to solve the problem.					
5	The university management can study issues related to the development of faculty members.					

Q	Second, Flexibility: It is the ability of the individual to change the view of the problem that he or she addresses from different viewpoints, or looking at things with a new perspective other than what people are accustomed to, and flexibility has a big role in the inventions that we see and touch.					
6	The university management has the ability to adopt new innovative ideas to develop work spontaneously and easily.					
7	The university management accepts criticism and offers ideas and suggestions even if it is contrary to the work.					
8	The university management provides an opportunity to others in order to express their opinion and to benefit from them.					
9	The university management adapts itself to different situations at work.					
10	The university management has the ability to see things from different viewpoints.					
	Third, Originality is the ability to introduce new ideas that are rare, useful, and not related to the previous ideas. They are non-familiar and far-reaching productions. Originality is the most important factor in the ability to think creatively. And thus realize relations, and design, think and solutions, new and authentic.					
11	The university management is constantly looking for new ideas and innovations.					
12	The university management is developing new ways of solving administrative problems.					
13	The university management encouraging scientific skills in conducting discussion and dialogue among faculty members.					
14	University management avoids routine methods as much as possible.					
15	The university management has the ability to convince others while dealing with innovative ideas.					

Q	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	Fourth, sensitivity to problems: means awareness of problems, needs, or elements of weakness in the environment or situation, this means that some individuals faster than others in the observation of the problem, and investigation of its presence in the situation.					
16	The university management has the ability to anticipate problems before they occur.					
17	The university management has precise sensitivity for detecting problems experienced by others.					
18	The university management is keen on knowing the shortcomings or weaknesses of his work.					
19	University management looks forward to everything new in the educational administration to increase its ability to face future problems.					
20	The University administration monitors opportunities and threats affecting university effort.					
	Fifth, risk and challenge: means willingness to take risks resulting from the actions of an individual when adopting new ideas or methods and taking responsibility for the consequences.					
21	The university management takes the responsibility for its effort.					
22	The university management accepts failure as the experience which precedes success.					
23	The university management has the ability to defend its ideas with argument and proof.					
24	The university management implements new ideas and methods and seeks solutions to problems.					
25	The university management encourages innovative individual and collective initiatives.					

	Sixth, maintaining the direction: it means the ability of the individual to focus his or her attention on the problem without dispersants effect on his or her thinking, and interaction with the problem be stronger than external influences, which strengthens the chances of success in reaching the correct solution, and it is flexible.					
26	The university management focuses on completing work more accurately and with dedication by faculty members.					
27	The university management has a strong motivation for success and continuity in university effort.					
28	University management defends innovative ideas rather than to seek the approval of faculty members.					
29	The university management insists on defending its objectives and achieving them effectively.					
30	The university management adopts innovative ideas that suit the overall interest.					

References of questionnaire (Innovation management):

Al-Shammari, Saad bin Debian, (2006). The degree of innovative leadership practice of educational leaders in Saudi Arabia. Mutah University.

Abdel Wahab, Buba, (2012). The role of innovation in supporting the competitive advantage of the economic institution: Case Study of the Algeria Mobile Telecommunications-in Mobilis. University of Mentori.

THIRD SECTION: THE SCALE OF CHANGE MANAGEMENT

Change management is intended to encourage universities to develop common vision for the University, and the ability to make decisions at all management levels through broad powers, and provide them with the information they need to complete their work without direct supervision, and raising its capabilities, along with confidence in their abilities to accomplish tasks and performance optimization problems.

Q	Statements	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	First, developing a common vision for the university: this dimension includes administrative behavior aimed at searching for a vision and future prospects for the university, and that the director works to disseminate this vision and disseminate it among his or academic staff.					
31	The university management is involved in building a common vision for the university.					
32	The university management invests opportunities to clarify the common vision of the university and its objectives.					
33	The university management takes into account the university's previous plans when developing future programs.					
34	The university's management enhances the abilities of the participants in the vision setting that they aspire to achieve.					
35	The management of the university will create the common vision in a way that will involve all members of the teaching staff.					
	Second, building a collective agreement on the university's goals and priorities: It is up to the director of change to encourage collaboration among university faculty members and make them work together to formulate common goals that are clear and achievable, a real challenge for them to achieve and a collective agreement on priority achieving these goals.					
36	The university management is seeking to reach a collective agreement regarding the university's goals.					
37	University management engages in the faculty at all stages of change implementation planning and university calendar.					
38	University management adopts methods which develop scientific march in an institution.					

39	University management takes the clear goals and achievable.					
40	The university management involves faculty members in training courses on how to connect the university with the local environment.					

Third, building a common culture within the university: institutional culture includes a set of behavioral norms, values, and beliefs, and postulates that all University members.

41	The university management maintains a set of core values shared within the university.					
42	The university management explains the elements of the joint culture of the university to work on making the desired change in the university.					
43	The university management consistently emphasizes the provision of a climate for change and the conviction of others.					
44	The university management believes in the importance and commitment of change and development by acting in a manner consistent with a new common culture on all occasions.					
45	The university management encourages relationships and refrains that express the values of the new culture on all occasions.					

Fourth, intellectual stimulation: this dimension refers to what degree offers faculty members at the University guidance emphasizes the development of scientific thinking and problem-solving methodology they have, and motivate them to think about new ways of learning and teaching.

46	The university management is encouraged to participate in educational conferences and meetings and to visit leading universities.					
47	The university management encourages practical ideas that further enrich the curriculum and contribute to increased innovation.					
48	The university management offers new initiatives and proposals for mental stimulation.					
49	The university management provides incentives to faculty members and students to achieve innovation in education.					
50	The university management provides the university climate conducive to innovation and modernization.					

Fifth, structure change: this dimension includes the appropriate infrastructure, to support innovative initiatives and development, and improving the working environment to provide opportunities for university management to contribute to planning and decision making.

51	The university management periodically and systematically reviews the structure of change.					
52	The university management is making substantive changes to the structure to improve performance.					
53	The university management has the structure of change to help manage change.					
54	The university management is developing new units to keep inevitable with environmental changes.					
55	The university management has a flexible structural change					

References of questionnaire (Innovation management):

Al-Qurashi, Adila Bint Abdullah bin Ali, (2008). Innovation management and its relationship to change management to the managers and assistance managers of primary schools in the city of Mecca, Umm al-Qari University, Saudi Arabia.

Al-Subaie, Ubaid bin Abdullah bin Baiter, (2008). The leadership roles of education managers in the light of change management requirements. Umm Al-Qura University, Saudi Arabia.

Al-Chakoura, Munir Hassan Ahmed, (2012). Change management and its relation with innovation management for principals of secondary schools in Gaza governorates from the Teachers points of view. Al-Azhar University - Gaza.

Appendix 2:List of questionnaire arbitrators

S	Name	Scientific Tile	Experts	Workplace
1	Dr. Kawa Hama Faraj Qaradaxi	Professor	Business Management - Marketing Management	Sulaimani University College of Administration and Economic
2	Dr. Khalid Hama-Amin Mirkan	Professor	Strategic Management	Salahaddin University The College of Administration and Economic
3	Dr. Khalid Haidar Abdullah	Assistant Professor	Administration and Economic	Sulaimani University College of
4	Dr. Naseem Yousif Hanna	Senior Lecturer	Financial accounting	Salahaddin University The College of Administration and Economics
5	Dr. Rizgar Mghdid Ahmed	Lecturer	Statistics	Salahaddin University The College of Administration and Economics
6	Dr. Omid Saber Abdullah	Lecturer	Statistics	Salahaddin University The College of Administration and Economics

Appendixes 3: Curriculum Vitae

Personal Information			
Name & Surname **Date of Birth**	Narmen Wali ALI 20/07/1985		
Nationality	Iraqi, Kurdish		
Contact			
Place & Address **E-mail**	Erbil, Iraqi Kurdistan. narmen985@gmail.com		
Telefon	+964750 406 4326		
Education Level			
Degree	**Field**	**University**	**year**
Undergraduate	Business Administration	Salahaddin University- Erbil	2008
Postgraduate			
Work Experience:			
Work place	**Position**	**Year**	
Ministry of Higher Education and Scientific Research	Administrator	2006 On going	