

## إقرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

“The Relationship between Information Overload and Managers’ Decision Making Process at International NGOs in Gaza Strip”

"علاقة الحمل الزائد للمعلومات بعملية اتخاذ القرار للمدراء في المنظمات الدولية

غير الحكومية في قطاع غزة"

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The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

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**The Relationship between Information Overload and Managers’  
Decision Making Process at International NGOs in Gaza Strip**

علاقة الحمل الزائد للمعلومات بعملية اتخاذ القرار للمدراء في المنظمات الدولية غير الحكومية في  
قطاع غزة

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**DISSERTATION**  
**SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR**  
**THE DEGREE IN MBA**

1435 هـ – 2014م



## نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة شئون البحث العلمي والدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحث/ صلاح أنور صلاح سكيك لنيل درجة الماجستير في كلية التجارة/ قسم إدارة الأعمال وموضوعها:

علاقة الحمل الزائد للمعلومات بعملية اتخاذ القرار للمدراء في المنظمات الدولية غير الحكومية في قطاع غزة

### The Relationship between information overload and managers' decision making process at international NGOs in Gaza Strip

وبعد المناقشة العلنية التي تمت اليوم الاثنين 18 شعبان 1435هـ، الموافق 2014/06/16 الساعة الواحدة والنصف ظهراً بمبنى طيبة، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

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د. وفيق حلمي الأغا	مناقشاً خارجياً	.....

وبعد المداولة أوصت اللجنة بمنح الباحث درجة الماجستير في كلية التجارة/ قسم إدارة الأعمال واللجنة إذ تمنحه هذه الدرجة فإنها توصيه بتقوى الله ولزوم طاعته وأن يسخر علمه في خدمة دينه ووطنه.

والله ولي التوفيق ،،،

مساعد نائب الرئيس للبحث العلمي والدراسات العليا

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

" يَرْفَعِ اللَّهُ الَّذِينَ آمَنُوا مِنْكُمْ وَالَّذِينَ أُوتُوا الْعِلْمَ دَرَجَاتٍ وَاللَّهُ بِمَا  
تَعْمَلُونَ خَبِيرٌ "

المجادلة (آية 11)

## **DEDICATION**

**To my respective parents who have been my constant source of inspiration. They have given me the drive and discipline to tackle any task with enthusiasm and determination. Without their love and support this project would not be a reality**

**To my lovely wife, the one who stood beside me during my journey toward success. To the one who saved no efforts in encouraging and supporting me.**

**To my lovely three daughters....**

**Lamar: the touch of wisdom**

**Rital: the inspiration of innovation**

**Rajaa: the happiness of her parents**

**To my beloved brothers and sisters.....**

**To my mother-in-law, for her support and her kindness.....**

**To my religion, The Islam, the surviving way to reach Allah.....**

**To my country... Palestine and my city... Gaza.....**

***Researcher  
Salah Anwar Skaik***

## ACKNOWLEDGEMENTS

*First and foremost I would like to thank Allah for what I am and for everything I have.*

*Next I wish to express my deep appreciation to **Prof. Dr. Yousif Ashour** under whose supervision and advice this thesis was developed. Without his considerable efforts, this thesis could not have been carried through completion. Thank you for being my mentor and for the friendship that you offered me.*

*Thanks to my committee members who assisted and guided me to complete this work. The guidance, inspiration and encouragement of **Dr. Wasim Al-Habil** and **Dr. Wafeeq Al-Agha** are greatly appreciated.*

*Thanks and appreciations are due to organizations and individuals who significantly contributed to the successful completion of this study*

*I would like to extend my gratitude to my friends **Zuhair Skaik**, **Yousif Alshayah** and **Hassan Alashqar**. As well as my colleagues from the Department of Business Administration and to the Islamic university librarians for their patience and assistance.*

*It is always impossible to personally thank everyone who has facilitated successful completion of a project. To those of you who I did not specifically name, I also give my thanks for moving me towards my goal.*

## **ABSTRACT**

This study aimed to show the influence of information overload on the decision making process, using the descriptive analytical method to study the influence of information overload represented through three dimensions (email overload, information characteristics and information & communication technology). The study was applied on INGOs that work in Gaza Strip.

The questionnaire was used as a data collection tool. The study population was (106) who are all managers (Top and Middle levels Management) in INGOs. A census has been used for the target population. Because of the policy of some organizations regarding confidentiality and privacy of work environment, only (86) questionnaires were collected and all were retrieved and analyzed. Results of the analysis of the questionnaire data demonstrate significant relationship of information overload with the managers' decision making process.

The study recommended that the effects of information overload should not be neglected and to keep pace with the latest developments in the world of information technology and communications to facilitate overcome of information overload. In addition, the organizations were advised to hire specialists in information management, and hiring staff on how to deal with information overload. Also it was recommended to understand the phenomenon of information overload that should be a part of managers' training and education programs especially for those who are identified as being at risk of experiencing overload.

## ملخص الدراسة

هدفت هذه الدراسة الى توضيح أثر الحمل الزائد للمعلومات على عملية اتخاذ القرار، حيث تم استخدام المنهج الوصفي التحليلي لدراسة أثر الحمل الزائد للمعلومات ممثل بثلاث أبعاد (الحمل الزائد للبريد الالكتروني، خصائص المعلومات، تكنولوجيا المعلومات والاتصالات). وقد تم تطبيق الدراسة على المنظمات الدولية غير الحكومية والتي تعمل في قطاع غزة.

تم استخدام الاستبانة كأداة لجمع البيانات، حيث يتكون مجتمع الدراسة من (106) مدير (من الادارة العليا والوسطى) يعملون في المنظمات الدولية غير الحكومية. حيث تم عمل الدراسة وتوزيع الاستبانة على مجتمع الدراسة ككل، وقد تم استرداد (86) استبانة فقط وذلك بسبب سياسات بعض المؤسسات ذات العلاقة بسرية وخصوصية معلومات العمل في هذه المنظمات، حيث تم استردادها جميعا ومن ثم تحليلها وقد كانت جميعها صالحة للتحليل. وقد أظهرت نتائج تحليل بيانات الاستبانة وجود علاقة للحمل الزائد للمعلومات بعملية اتخاذ القرار للمدراء.

وقد أوصت الدراسة بأنه لا ينبغي إهمال آثار الحمل الزائد للمعلومات، كما أنه يجب مواكبة أحدث التطورات في عالم تكنولوجيا المعلومات والاتصالات لتسهيل التغلب على مشكلة الحمل الزائد للمعلومات. وقد أوصت الدراسة المنظمات بضرورة توظيف واختيار مختصين في مجال ادارة المعلومات واختيار موظفين بناء على امكانياتهم في التعامل مع مشكلة الحمل الزائد للمعلومات. أيضا أوصت الدراسة بأن يكون فهم ظاهرة الحمل الزائد للمعلومات جزءا من برامج تعليم وتدريب المدراء وخصوصا أولئك الذين هم أكثر عرضة لمواجهة مشكلة الحمل الزائد للمعلومات.

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## LIST OF ABBREVIATIONS

<b>Abbreviation</b>	<b>Description</b>
EOM	End Of Message
GPS	Global Positioning System
GSS	Group Supporting System
IAs	Information architects
ICTs	Information and Communication Technologies
IFS	Information Fatigue Syndrome
INGOs	International Non-Governmental Organizations
IO	Information Overload
IPC	Information Processing Capacity
IPR	Information Processing Requirement
PIM	Personal Information Management
RSS	Rich Site Summary
SCF	Save The Children Foundation
SPSS	Statistical Package for Social Science

## CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION

1.2 RESEARCH PROBLEM

1.3 RESEARCH VARIABLES

1.4 RESEARCH HYPOTHESIS

1.5 RESEARCH OBJECTIVE

1.6 RESEARCH SIGNIFICANCE

1.7 RESEARCH METHODOLOGY

1.8 THESIS OUTLINE

## 1.1 Introduction:

Although technology assists us to do our job well and fast, sometimes it has some pitfalls, which play a main role in causing information overload. Information overload, the state of having too much information at our hands at any time, has become a style of life for many people. If we are at work or at home, we are exploded with emails, voice mails, SMSs and cell phone calls, all of which are confusing our attention to the task or work we are doing. On the other hand, to have so much information available, of course it has benefits, but it can be counterproductive if it prevents us from accomplishing things we really need to do, and therefore prevents us from making good decisions

Information overload is considered one of the negative consequences of the information age, that occurs when information received becomes an obstacle rather than a help, or it occurs when the transmission of new information exceeds the receiver's ability to process (Bettis-Outland, 2012).

And as well people find it more difficult to cope with all the new information they receive, changes in the organizations and technologies they use, and increasingly complex and unpredictable side-effects of their actions. This for sure leads to growing delay in decision making or even wrong decisions (Davis, 2011).

There are five elements which considered as the main causes for the problem of information overload:

1. The information itself (its quantity, frequency or intensity, and quality or general characteristics).
2. The person receiving, processing or communicating information.
3. The tasks or processes which need to be completed by a person.
4. Team or organization, the organizational design (i.e., the formal and informal work structures).
5. The information technology that is used (and how it is used) in a company (Zhuang, Qiu, & Peng, 2011).

Nowadays the most research on information overload is focused on work-related activities and especially decision making in information intensive organizations, where many believe that an overload of information occurs mostly (Berner, 2007).

But researches find that this state is occurring nearly everywhere, and one of the places it really occurs, the International Non-Governmental Organizations and mostly for managers, where there are 32 International NGOs working in Gaza strip and each has more than 4 managers. Since these managers are subjected to many factors that actually forms the problem of information overload, and at the same time they must make decisions according to the information available and according to time limit. Or they may use information technology to enhance the information quality and therefore the decision accuracy. For example, Emails, Social Medias, cell phones and many others considered as some of the factors that affect the managers' ability in International NGOs to make their decisions.

After some interviews with some managers who work in top and middle management in some INGOs in Gaza Strip, it is founded that managers in International NGOs in Gaza strip are really facing the problem of information overload in all of their work fields, and this is the main goal of this research, but at the same time the causes, symptoms, and solutions for information overload will be explored throughout the research.

## **1.2 Research Problem:**

Recent developments in the information and communication technology have made it possible to provide managers with large amounts of information. Although information technology has been instrumental in improving the access and flow of information, it has also been instrumental in creating an overload of this same information for businesses and organizations (Djamasbi, 2004).

The INGOs are such an important sector that have been affected by the information overload phenomena, since managers in the INGOs are really facing the huge amounts of information that they should receive, deal with and make decisions about. And this

process might go through internet, emails or other information and communication technologies.

Consequently, the problem of information overload and ways to manage it have been the focus of a great number of studies, because it negatively affects the managers' productivity, performance, and their ability for making decisions.

In the light of these studies and the interviews that had been conducted earlier with INGOs working managers, it is reasonable to believe that a relationship of information overload with the decision making process of the managers in the INGOs in Gaza strip may exist.

So this research attempts to answer the following question:

*"To what extent does a relationship of information overload with the managers' decision-making process at the INGOs in Gaza strip exist?"*

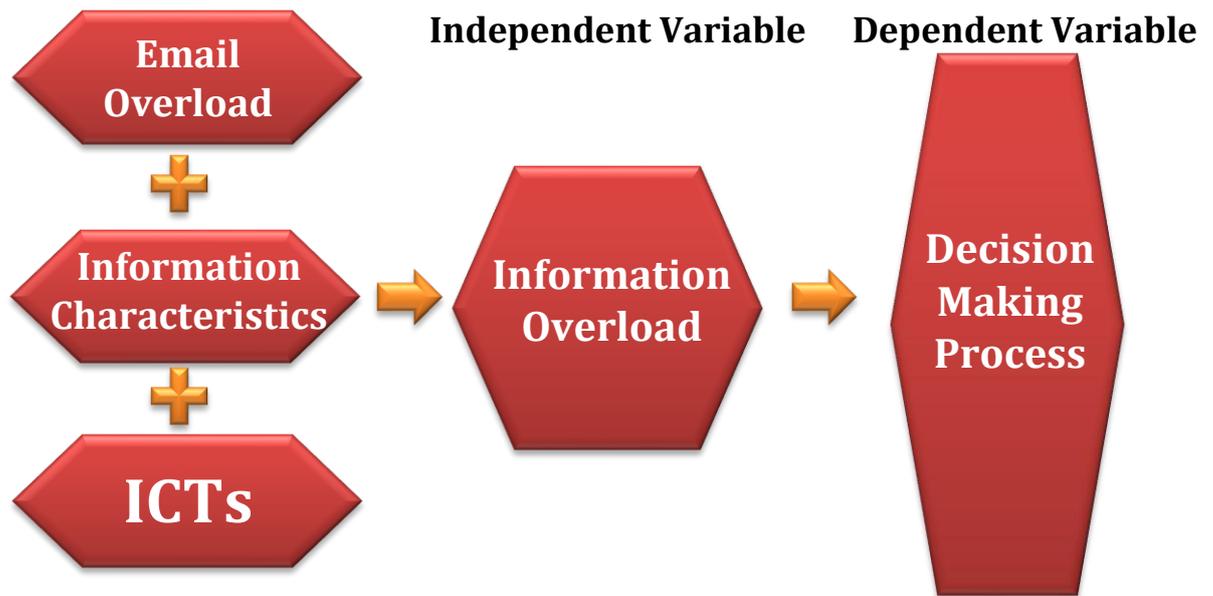
### **1.3 Research Variables:**

**Independent Variable:** Information Overload:

- I. Email Overload.
- II. Information Characteristics.
- III. Information & Communication Technologies.

**Dependent Variable:**

Dependent variable is "Decision Making Process". (See figure 1.1).



**Figure (1.1): A diagram shows the relationship between the dependent and Independent variables (Source: Adapted by researcher)**

## **1.4 Research Hypothesis:**

To investigate the relationship of information overload on decision making process, the following hypotheses are stated as follows:

### **First main hypothesis:**

There is a significant relationship of information overload with managers' decision-making process at the INGOs in Gaza strip.

This hypothesis includes three sub-hypotheses as follows:

- I. There is a significant relationship of Email overload with decision-making Process.
- II. There is a significant relationship of information characteristics with decision-making Process.
- III. There is a significant relationship of information & communication technology with decision-making process.

**Second main hypothesis:**

There is no significant difference among respondents regarding the influence of information overload on decision making attributed to the demographic variables (Age, Gender, Educational Attainment, Years of experience).

**1.5 Research Objective:**

The main objective is to investigate the relationship of information overload with decision making process. This includes the following sub-objectives:

- I. To investigate the extent of information overload in the INGOs in Gaza Strip.
- II. To explore the relationship of information overload with decision-making process in the INGOs in Gaza strip.
- III. To search for and propose some solutions for overcoming the problem of information overload.

**1.6 Research Significance:**

People get masses of email, interrupted by instant messages, they have to remember to check social networking sites, news sources, and company web sites daily or even many times each day. In addition, a web search will produce more hits than anyone can sift through. Also newspapers, TV networks, and press agencies from all over the world publish hundreds of thousands of partially overlapping articles every day. Therefore, the management and control of information overload represents a big challenge for managers to make decisions through this smog of information. So this research has formulized a vision for managers of how to deal with information overload. Also, this research has opened new doors of understanding and ensures that everyone feels good about their own decisions.

In addition, the conclusions of the research might help managers and has been an asset to the International NGOs to adopt new strategies and solutions to overcome the problem of information overload.

So, this research is significant, because the research is studying the relationship of Information Overload with decision-making process.

## **1.7 Research Methodology:**

### **Research Method:**

This research followed the analytical descriptive method. Primary and secondary data had been used to perform this research.

### **Research Population:**

The research population included all managers (Top and Middle Management) at the International NGOs in Gaza Strip. The research population consisted of (106) managers from the (32) International NGOs in the Gaza Strip.

Since the number of managers is relatively small, a census has been used for the target population.

## **1.8 Thesis Outline:**

The study consists of seven chapters:

Chapter 1 (Introduction), includes a brief description of the information overload problem. It also includes a research problem, research hypothesis, objectives, significance of the research and outline of the thesis.

Chapter 2 (Information and Information Overload), includes a brief discussion of history of information and information overload, the concept of information overload. It also includes causes, symptoms, and solutions for information overload.

Chapter 3 (Decision-Making Process), discusses relevant areas of decision making, including steps of decision making process, classifications and types of decisions. It also includes types of decision makers and decision making biases and errors.

Chapter 4 (Previous Studies), presents relevant studies and research papers in the fields of information overload and decision making process, and a brief summary about the previous studies.

Chapter 5 (Research Methodology), includes research design, Study population and sample, the instrument “questionnaire”, piloting, data collection, data entry and analysis.

Chapter 6 (Data Analysis), includes percentages, significance and correlation tables relating to questionnaire's data and study hypotheses.

Chapter 7 (Conclusions and Recommendations), includes conclusions and the recommendations of the study.

References.

Appendices.

## **CHAPTER 2: INFORMATION AND INFORMATION OVERLOAD**

2.1 INTRODUCTION

2.2 ALL ABOUT INFORMATION

2.3 CONCEPT OF INFORMATION OVERLOAD

2.4 DEFINITION OF INFORMATION OVERLOAD

2.5 CHARACTERISTICS OF INFORMATION OVERLOAD

2.6 SYMPTOMS OF INFORMATION OVERLOAD

2.7 CAUSES OF INFORMATION OVERLOAD

2.8 SOLUTIONS

2.9 INFORMATION OVERLOAD AND INGOS

## 2.1 Introduction

Information exists in our daily lives. Many of us deal with it, while it is not easy to answer the question “What is information?” many of us have unclear idea of what information constitutes (Pijpers, 2010).

Information is more than simple data. Data can be viewed as a series of symbols, facts, or rough observations. Lonely, these mean nothing to anyone. Only when data is passed in the correct context where we can process and analyze. When data changes one’s level of knowledge, then it is named information. Data is neutral. The same data could be considered important to one person and totally unimportant to another, the main reason behind this is that the context and the information receiver are different (Davis, 2011).

Information, on the other side, is what people communicate to one another. To understand information, we have to know how communication happened and how information is transmitted with the up to date technologies, among groups and individuals. The information flow has a meaning in the business world, and these flows considered as the basis for decisions made by managers. Organizations are hold together by Information (Pijpers, 2010).

Knowledge is more than just information. To change information into knowledge, we have to add some elements such as experience, importance, value, understanding, opinion, and reasoning. In our heads the knowledge is located. That is why it takes such a long time to become an expert or to grow up. Therefore, no one can buy experience. The one must acquire it in the course of life. To get more wisdom, then the more knowledge, including experience should be collected (Klingberg, 2009).

We are all standing up to information overload. In the same way that the printing press has revolutionized the industry of publishing, the Internet is revolutionizing the amount of information available today. The ease with which electronic information can be stored, distributed and manipulated is threatening to increase rather than to reduce the information overload (Hanka & Fuka, 2000).

Nowadays the most research on information overload is focused on work-related activities and especially decision making in information intensive organizations, where many believe that an overload of information occurs mostly (Berner, 2007).

## **2.2 All About Information**

### **2.2.2 2.2.1 HISTORY OF INFORMATION**

A true revolution had been created according to the invention of the printing press in 1455. Nearly around that time, a team of 20 skilled workers printed 25,000 books per year, and nearly around year 1500, there were as many as 10 million books by 40,000 different authors (Davis, 2011).

Assuming new importance, the classifying and indexing of large amounts of information in an era of the latter eighteenth through early twentieth centuries (Sax, 2006).

Once there is so much information available, people became more skillful in dealing with information. It has been seen exactly the same thing happen at the advent of the Internet. Since there are more information accessible and available to the general public, the more people are informed on events in their immediate environment, and the more they develop a growing desire to influence it (Pijpers, 2010).

Today, it is found that information reaches us in increasingly different ways. Over the last 50 years, the printed book as a “medium” has been competed from many new media, such as radio, television, CDs, DVDs, and e - books. And a major influence on the distribution of information has been made by the new technologies such as cell phones and the Internet, which in many cases has even become available for free. In other words, knowledge is offered in more ways and at no cost (Pijpers, 2010).

### **2.2.3 MEANING OF INFORMATION**

A question that may rise in minds is how did the word information come into existence? The word is derived from the Middle English word *enforme*, which was derived from the Middle French *enformer*, which in turn evolved from the Latin

*informare*. In Latin it meant to give form to, to shape, to form an idea of, or to describe. An idea formation always occurs in the mind of a person, of a subject. *Information* was used in English from as early as at least the 14th century but did not get its current spelling until the 16th century (Pijpers, 2010).

The term “information” is used in a variety of ways, both in the literature and in general speech, thus it is necessary to distinguish between the three levels of analysis by defining it unequivocally as: information consists of strings of symbols generated using a limited range of characters according to certain rules (syntax), which have a concrete, abstract or objective meaning (semantics), and the content of which is interpreted by the sender and recipient of the information in a certain way (pragmatics) (Klausegger, Sinkovics, & Zou, 2007).

#### **2.2.4 ATTRIBUTES OF INFORMATION**

Defining the attribute as a characteristic or recognizable quality of an object, for example, size, color, material, shape, or age, and this attribute is used to describe, analyze, or characterize that object. Attributes can be imagined as questions that are asked about the feature (Pijpers, 2010).

The attributes of information have not yet been identified uniquely. Therefore, here is the most notable attributes described in alphabetical order (Pijpers, 2010).

**TABLE (2.1) ATTRIBUTES OF INFORMATION**

<b>#</b>	<b><i>Attribute</i></b>	<b><i>Description</i></b>
1	Ambiguity	Information is always potentially ambiguous. It is interpreted within a context to identify a specific meaning. It is precisely for these reasons that the importance of the human mind of the receiver of the message is emphasized in the definition of information.

2	Amount	In contrast to most other resources, more information doesn't necessarily mean better information. It is even hard to assess the quantity of information that is needed for making a decision. Which has more information, a telephone directory or a large newspaper? How much information do you need when asking a question? Do you give directions to the respondent in terms of the amount of information that you expect as an answer?
3	Consumption	Information is not lost when it is given to others. It also does not diminish when it is used. Sharing information can even lead to an increased value for both sender and receiver.
4	Dynamics	Information has an intrinsic dynamic and unarguably influences its immediate environment. It is almost impossible to study information as something separate. In organizations, particularly, information should always be viewed in relation to its deployment and its use.
5	Format	The format in which information is presented determines whether the recipients can do anything with it. The recipient should be experienced with the medium and the resources necessary to use that medium.
6	Inappropriability	Information is inappropriable because an individual who has information can never lose it by transmitting it. Information can be owned, but that ownership is rarely exclusive. In other words, if I have information and I give it to you, then both you and I have use of the information. Information can, therefore, not enter into traditional economic exchange, because it becomes the possession of both buyer and seller. Information is thus said to be "leaky", because when it is transferred, it may go not only from seller to buyer but also to third parties. They may be in the vicinity and acquire the information solely through, for example, overhearing it or viewing it from afar.

7	Indeterminacy	A person who sends information has no absolute guarantee of first: who exactly is going to receive it and second: how they are going to interpret it. This indeterminacy arises from the fact that information usually takes the form of a coded representation of entities in the real world, which must be interpreted.
8	Individuality	Information comes in many different forms, and is expressed in many different ways. The same information can be represented in different media, addressing different senses of the recipient.
9	Knowledge	Information changes our level of knowledge. That is not a once - only occurrence, but a continuous process. Keep in mind that only human beings are able to turn information into knowledge; knowledge is information that has been received as well as understood.
10	Multiplicative Quality	Information can be used to create more information or to make better decisions, which cause actions that generate more information, and so on. This is called the self - multiplicative quality of information.
11	Redundancy	The communication of information always has an element of redundancy (i.e., nonessential information), primarily to resolve problems of ambiguity and indeterminacy. However, this apparent redundancy may prove to have value in some situations.
12	Supply	Information is plentiful. That is why it is often not the information that defines the value, but the time and the attention it receives from the recipient.

Source: (Pijpers, 2010, Pp 13-14)

### **2.2.5 DEFINITION OF INFORMATION**

No one can deny that Information has become the single most important word of the 21st century, especially in the last five decades. Most people agree that information has no meaning except when it has an impact on a human being.

Therefore, “A preferable definition of information is: Any difference that makes a difference to a conscious, human mind”.

This definition emphasizes the following:

- a) Data can come from anywhere and anything, even the internal mind of the receiver.
- b) The scope of coverage is broad.
- c) It not necessary that the intention of the sender apply meaning to data for the receiver
- d) A perceived difference emphasizes the personal experience of the receiving human being. (Pijpers, 2010).

#### **2.2.6 VALUE OF INFORMATION**

There are different causes why the value of information is increasing as a production factor. Nearly all business decision-making processes are associated with the collection, processing and forwarding of information. This is an indicator that information is a resource which affects the entire individual decision-making or problem-solving process, from the stage of problem recognition to the stage of reviewing. Furthermore, there is a cost associated with the collection, transformation, storage and transfer of information. (Klausegger, Sinkovics, & Zou, 2007)

For a long time, information has been recognized as one of the four important corporate resources alongside physical, human and finance. And accordingly the businesses that are rich in physical, human and financial resources can channel them into making a more secure future. So could we say that the quantity of information have a similar effect on corporate survival and growth?

There is no straightforward answer to this question. In today’s information age, corporate performance depends on sound business decisions made in a timely fashion, which in turn depends on accurate and relevant information from a variety of sources such as suppliers, customers, markets and competitors, etc. This means that insufficient information will result in poor decision making, and the same consequence occurs when

too much information apply. Therefore when there is too much information, additional resources, especially, time, will need to be deployed to process it (Zhuang, Qiu, & Peng, 2011).

Gradually, information is replacing costly investments in tangible assets such as inventories or even factories. As raw materials can be adapted to production capacity planning, sales and production plans can be adjusted by using incoming orders. Moreover, targeted and accelerated information can be used to enhance competitiveness (Klausegger, Sinkovics, & Zou, 2007).

Indicating opportunities and dangers at an early stage is a crucial task of information, and therefore reducing the uncertainty of management decisions in risky situations (Bridle, 2010).

## **2.3 Concept of Information Overload**

When the one tries to read a complicated article on the Internet and on the same time trying to ignore the advertisements playing out at the edge of a visual field, then a distraction task is confronted; as a consequence, this places a heavy load on one's working memory. Another example, when using the help function in Word, it is probably to read each instruction several times to absorb and assimilate all the information with which the one's working memory is being overburdened (Klingberg, 2009).

Many changes in the information society that are somewhat loosely termed "greater complexity" or "higher information flow" can be traced back to an increase in working memory load (Klingberg, 2009).

The underlying history of "information overload" arrives with the introduction of the printing press and the resultant need, and first efforts during the Renaissance, to organize knowledge and collections (Bernier, 2007).

In recent years, an accelerating rate of change has been witnessed, and certainly there is no sign to slow down. Mobile technology is increasing the number of situations in

which it gives the ability to try to “*dual-task*”, and cell phone conversations are probably just the beginning (Klingberg, 2009).

The interplay of the technology related to information supply and information demand derived from the information and decision behavior of marketing managers, has played the big and main role in originating the problem of information overload (Meyer, 1998).

Massiveness of new simultaneous situations will be created as a result of using Wireless communication and laptop computers. With portable computers and Wi-Fi, the rate of surfing the internet on the streets and in cafés will be seen just as much as cell phone-use (Klingberg, 2009).

At an exponential rate, blogs and data are increasing on the internet. Hundreds of thousands of books will be written worldwide. As well as, the launch of new media outlets is witnessed each week. Information is everywhere, available to everyone at the click of a button but what is relevant to whom when it comes to learning; what will help and what will hinder? Certainly, Google provides results but it does not have the ability to qualify these results and filter them (Bridle, 2010).

Automobile GPS devices are becoming increasingly popular, and some futuristic ideas, such as screens built into glasses, are already becoming a reality (Klingberg, 2009).

As Computer mediated communication systems solve problems for an organization, as it often creates as many problems. The volume and pace of information can become massive and overwhelming, especially since messages are not necessarily sequential and multiple topic threads are common, resulting in amongst other factors, information overload (Marulanda-Carter & Jackson, 2012).

This rush attack of digital and “*pulp verbiage*” affects anyone who has a connection to the World Wide Web, electronic mail, voice mail, or a fax machine. Technology was supposed to make the human organism more efficient, with all good intention. On the same time, it has also managed to waste the people’s time each week. In serious cases people can suffer from sleep disturbances, loss of appetite, sexual drive, and experience serious mental fatigue (Berner, 2007).

How does information overload affect the performance of the organization? Information overload broadly falls into three categories:

- a) Personal information overload.
- b) Organizational information overload.
- c) Customer information overload.

In an organizational context, the performance, defined as the quality of decisions made by an individual correlates positively with the amount of information received up to a threshold point, beyond which it will decline if more information is received resulting in the extra information not being integrated into decision making. Instead, it causes confusion and affects the ability of individuals to set priorities or recall prior information. How the organization is designed and structured is an important factor that depending where the threshold point lies, which, to some extent, defines how information flows. The organizations must identify their core competences and deploy their resources effectively to achieve competitive advantage. When information overload occurs, it is a sign that the resource of information of the organization fails to be utilized effectively to efficiently filter the incoming information and retain the useful part. And as a consequence, this might lead to the danger of core competence being turned into core rigidity which ultimately results in declining the organization performance (Zhuang, Qiu, & Peng, 2011).

## **2.4 Definition of Information Overload**

Most of the definitions around information overload make a focus on the quantity of information available, and the ability of processing of the human brain to handle these huge amounts of information (Hall & Walton, 2004) .

Information overload is often used to convey the simple concept of receiving too much information (Klausegger, Sinkovics, & Zou, 2007). Information overload is defined as an excess of information that results in the lack of ability to prioritize tasks effectively, process information, and make decisions (Woolfson, 2012).

Information overload is defined as the state of an individual or system in which there is no ability to process and utilize all the communication inputs, which as a result leading to breakdown (Jones, Ravid, & Rafaeli, 2004). Information overload is defined as a quantity of information exceeding human-information processing capacities. This refers to cognitive capacity. In contrast, information overload may not be a result of the failure in transmission, but only in the condition that that not all the information offered can be observed or used by the recipient (Klausegger, Sinkovics, & Zou, 2007).

Another perspective is that the problem of information overload is not considered as so much as an actual overload but as a sign of the failure to create high-quality or value-added information from the massiveness of information available (Hall & Walton, 2004).

Apart from these perspectives, it is also significant to note that the term “information overload” has two dimensions, subjective and objective:

- a) Subjective information overload: is the state as perceived by an individual
- b) Objective information overload: or actual information overload can be verified independent of the individual involved (Klausegger, Sinkovics, & Zou, 2007).

## **2.5 Characteristics of information overload**

There are some characteristics of information overload, which are extracted and derived from the initial definitions for the concept of information overload: (Zhuang, Qiu, & Peng, 2011)

- a) The volume and speed of incoming information is beyond processing capacity.
- b) Decline in user performance.
- c) Failure to achieve a balance between task requirements and processing capacity.
- d) Decrease in task performance with increased information.
- e) Time needed to process information exceeds available time.
- f) Receipt of more information than is needed or wanted to function effectively.
- g) Information processing requirements exceeds available information processing techniques.

## 2.6 Symptoms of Information Overload

At this part of the research, a question is raised here: How does one indeed know whether someone has too much information or has to comprehend and understand a lot of information? (Pijpers, 2010)

The following symptoms were demonstrated in people who were no longer able to properly process the information on offer, and therefore the symptoms of information overload are: (Pijpers, 2010)

1. The people who suffer from information overload are more easily to be confused and are not able to concentrate properly.
2. Those people are less likely to make an effort for other people, resulting in less helpful behavior and even in disloyal behavior toward colleagues.
3. A large amount of information can lead to violent behavior and other types of negligence.
4. Information overload has an influential role to get people becoming frustrated and to develop all sorts of illnesses, such as hypertension and increased pressure on vital organs. Furthermore, some research have proofed that prolonged staring at monitors causes a general damage of eyesight (Pijpers, 2010).
5. Other symptoms of information overload, which include the inability to use information effectively (Zhuang, Qiu, & Peng, 2011).
6. A greater tolerance of error (Zhuang, Qiu, & Peng, 2011).
7. A general lack of perspective and cognitive strain and stress (Zhuang, Qiu, & Peng, 2011).
8. Lower job satisfaction and even physical illness (Zhuang, Qiu, & Peng, 2011).

People are often “*overwhelmed*” by the amount of information they have to process. Moreover, the standard is that the more the one reads, the more one has to process. Many people also know that a lot of information is in fact non - information. When employees are unable to process the received information completely or not in time, and accordingly, this affect negatively the way they perform their job. And on the other side it causes more mistakes, inconsistencies, or useless information (Pijpers, 2010).

Most of the people can send and pick up e-mails and voice mails, texts and faxes anywhere and anytime. Even to carry laptops around anywhere and even it appears that many people are on message all the time!! This is a proof that “*If you snooze you lose*” seems to be the belief which is running many people’s lives (Landale, 2007).

Many people, when they are not better informed they feel guilty. Some people lose control over information, and some view the Internet as an unlimited library and are unable to take control on this. People such as librarians, accountants, lawyers, and managers, who work with information a lot, often suffer from this guilt which is the disability to get a grip on it.

Having more information positively affects someone’s self-confidence, although the correctness of the information does not increase. This may lead to an unjust “*sense of security*”. Information is necessary when making decisions, but over a certain limit, extra information practically adds nothing. Moreover, a selection problem results from having a lot of information: What to choose and what to leave out when making decision? (Pijpers, 2010)

Some other perspectives of the information overload symptoms are Identified as stress and tension within the work environment, longer working hours, lowering in social life, exhaustion and illness, and a negative impact on personal relationships. So it is worth mentioning that managers can feel as if they are drowning in a sea of information (Hall & Walton, 2004).

## **2.7 Causes of Information Overload**

There is an indication from the literature that there is a problem with email communication in the workplace. However employees are expected to manage their daily tasks, a new way of dealing with information is developed as a result of email interruptions (Marulanda-Carter & Jackson, 2012).

Whatever the value of the content is another aspect of the problems that involves the constant interruptions experienced. When responding to an e-mail alert that pops up on

our screen or to the vibration of our mobile phone when receiving an SMS from a friend, then it is not just to spend time reading the message. It is also how to recover from the interruption and refocus our attention (Hemp, 2009).

The rapid pace of today's technology, computers become so powerful that they can produce, manipulate and disseminate information much faster than people can process. Furthermore, the massive volume of information that threatens their attention on a daily basis frequently causes many to lose control of the situation (Edmunds & Morris, 2000). On the other hand, with computer processing speed doubling every two years over the past 30 years (Melgoza, Mennel, & Gyeszly, 2002), too much information coming from too many sources via electronic means has resulted in its usefulness diminishing fast as a large proportion of it could not be comprehended and processed in time.

Accordingly five causes of information overload have been identified, namely: (Eppler & Mengis, 2004)

- a) Organizational design;
- b) The nature of information (e.g. the level of ambiguity, novelty and complexity);
- c) The person involved in handling the information (e.g. attitude, qualification and experience);
- d) Tasks or processes to be completed (e.g. frequency of reoccurrence);
- e) The use or misuse of information technology like the internet and e-mail.

Taking into consideration the factors that contribute to the perception of information overload, there are several factors, summarized into four groups: (Hall & Walton, 2004)

- a) More diverse and increasing amounts of available Information.
- b) Effect of new information and communication technologies.
- c) Changing nature of work with the new emphasis on interdisciplinary and collaborative work which both require greater communication.
- d) End users now search for information rather than an intermediary.

The quality of information itself has also been identified as a contributing factor to information overload. Four categories for information quality have been identified, namely, intrinsic information quality, accessibility information quality, contextual

information quality and representational information quality (Wang, Pipino, Y.W., & Strong, D., 1998).

## **2.8 Solutions**

Technology has contributed so much to organizational effectiveness, and the management of the daily life for millions of people. In addition, logically it seems that technology would offer some of the best answers to the problem of information overload. The problem of too much information must have some answers that lies in more advanced search engines, more sophisticated filters, or more creative tools on the Web to draw attention to the best informational resources (Berner, 2007).

For the ones who are interested in what they are learning, they can develop an attitude that allow them to maintain their attention, engage with the material they are trying to comprehend, as well as allow them to remember it and, importantly, to have the ability to recall this material (information) (Landale, 2007).

### **2.8.1 SOLUTIONS TO INFORMATION OVERLOAD**

Technical solutions focus on the creation of software and hardware solutions to the storage and dissemination of information and knowledge, such as developing and using of decision support services system, which depends on research and evidence-based information. Furthermore, developing an electronic knowledge management system which attempts to provide knowledge and information on a “*just in time*” basis. Additionally, constructing of expert systems can help physician to receive relevant information in time of need. Notably, the information literacy skills for Individual are considered as a critical factor to good information use. On the other hand, it is worthy to mention that the medium of delivery is irrelevant to information overload, which means that the medium used can affect the rate of development of overload but not necessarily to be one of the main factors (Hall & Walton, 2004).

Although the advancement of technology will continue to propose creative solutions to information overload, it might be the most novel approach is to anticipate and expect how much information is needed in deed (Berner, 2007).

The following is a list of recommendations for managing information overload:  
(Berner, 2007)

- I. Evaluate E-Mailing Practices:
  - a) Check e-mail headers before opening email.
  - b) Dispose of email immediately.
  - c) Treasure your e-mail address and don't hand it left, right and center.
  - d) Use just one mailbox and use one bundled email software.
  - e) Write brief responses to encourage adoption of style by respondents.
  - f) Stop repeated spam.
  - g) Prevent needless responses.
- II. Revise Research Activities:
  - a) Use your brain rather than depending on search engines and "intelligent" agents: Nothing can compete with the power of the human brain, and the ability of a human expert to scan, browse, and absorb data in any particular field of interest.
  - b) Analyze the information, and then point you to the original source if you wish to obtain more information.
  - c) These experts include newsletter editors, columnists, librarians, and information specialists who will continue to play a valuable role in providing the public with highly processed meta-sources.
- III. Revise Your Information Management Practices:
  - a) Depend on human intervention over electronic filtering: One of the most ignored solutions to reducing information overload is human intervention, either as an organization or as individuals.
  - b) In struggling to use technology to control technologically-spawned infoglut, many lose sight of the fact that the truly intelligent agent is a person. Many organizations are responding by creating policies that reintroduce human agents. For example, some companies are resurrecting what used to be called secretaries. Now they call them "mission control" and they limit them to top executives. Mission control sifts through an executive's messages deleting extraneous or out of-date messages, compiling messages pertaining to single topics and converting material from one medium to another.

IV. Deal With Information Quickly:

- a) When information comes in, whether via e-mail, the Internet or fax, generally you need to read and take action on it, or discard it quickly. Don't fall into the habit of creating a huge "maybe" pile of articles, faxes, and computer messages. "If it's not worth dealing with now, it probably won't be later," say experts.
- b) Be sure to keep a "traveling" file of materials you do want to read, and carry them with you to read and digest when you're on the subway, or waiting for doctors, planes, clients, etc.
- c) Even the best filing system can't hold everything. Whenever possible, have your staff screen and winnow and summarize materials for you or colleagues.

V. Deal with Voice Mail:

- a) Check voice mail often.
- b) Skip the outgoing message.
- c) Avoid Phone Tags.
- d) Return calls late at night.
- e) Change your outgoing message to suit current situation and let callers skip your outgoing message.

### **2.8.2 SOLUTIONS TO EMAIL OVERLOAD**

People who think that they are email addictive of victims, they will find an optional link on (Google) Gmail page that, when the one click it, turns the screen into gray and displays the message *“Break time! Take a walk, get some real work done, or have a snack. We’ll be back in 15 minutes”*—and then counts down the time until having the ability to resume checking messages.

People may not capable of overcoming an addiction without help, whether this help could be by support group or technology. But at the end it is something related and depending on the people themselves to take control of their information problem. And that means modifying their thinking and behavior.

Nowadays, e-mails are considered one of the most important tools developed for communications in business environment, and accordingly an overwhelming volume of advice is available on how to manage e-mail more effectively. Here are some advices divided into two categories: (Hemp, 2009)

- I. How to manage e-mail as a recipient.
  - a) Avoid continuous interruptions; this can be reached by turning off the automatic notifications of incoming e-mails. Then by setting particular times during the day to check and take action on messages.
  - b) Replace the habit of sorting messages into folders by using the inbox search engines. And create an “*urgent action*” folder as an exception and remember to check it.
  - c) Avoid highlighting messages you intend to deal with later by marking them as unread.
  - d) Make an automatic receipt Acknowledgement in case there is no ability to respond to an e-mail for several days, and it is preferred to tell the sender when it is likely to get to it.
  
- II. How to manage e-mail as a sender.
  - a) Make messages easy to digest by:
    - i. Writing a clear subject line.
    - ii. Starting the body with the key point.
    - iii. Use boldface headings, bullet points, or numbering to highlight action items with everyone’s responsibility
  - b) In case of very short messages, put the entire contents in the subject line, followed by “eom” (end of message), this to avoid the need for recipients to open it.
  - c) Whenever possible, paste the contents of an attachment into the body of the message.
  - d) Make suggestions to minimize e-mail “*ping pong*”, such as (“Shall we meet at 11?”) rather than asking open-ended questions (“When shall we meet?”).

- e) Before choosing “reply to all,” stop and consider the e-mail burden that your choice places on each recipient, and try to justify that burden. Then remove the recipient from the send list if no need.
- f) Set a goal to reach, which is sending less e-mails, since on average, each outgoing message generates nearly two responses.

### **2.8.3 SOLUTIONS TO INTERRUPTION OVERLOAD**

Interruption is another perspective of the information overload, and the researcher sees that it is highly connected to the main subject which is the solutions to information overload. So from the literature, some tips are picked out to highly assist in overcoming the interruption overload and thus the information overload as well.

There are three major interrupters, which are: emails, people and phone calls. And for dealing with these interrupters there are six tips: (O'Connell, 2008)

- a) Prevent interruptions. To be able to prevent the interruption, it is recommended not checking emails so regularly.
- b) Limit interruptions to specific times. This might be done by checking emails two to four times per day, and this is considered optimal to prevent interruptions and allow ones to focus.
- c) Be tough about how to deal with interruptions. This might be done by making a quick decision about whether to deal with it immediately or park it and return to the original task.
- d) Have a strategy for fast re-engagement with the original task. This might be done by for example, *“leaving a document open or writing a quick post-it of where you were up to before responding to the interruption can help you quickly pick up the task again”*.
- e) Don't get distracted. Sometimes an interruption happens, so try not to allow this to distract you into two or three other tasks. And in case that the original task was important, then get straight back to it and complete it.
- f) Have a plan. Adjusting a clear plan or prioritized action list that is displayed prominently at the workspace.

## **2.9 Information Overload and INGOs:**

International non-government organizations (INGOs) are increasingly regarded as important in their capacity to influence global policy on development issues such as poverty alleviation, sustainable development, and human rights. This has been possible through their simultaneous attachment to local places and cultures on the one hand, and their critical engagement with global institutions on the other. With recent advances in information and communication technologies, an increasingly connected INGO community is finding considerable scope for networking and information sharing at multiple levels (Madon, 2000).

Information overload is not always a problem. It is easy to blame technology as the main cause, but a question raised here: is everyone physically and mentally prepared to be dealing with large or even specific amounts of relevant information? Simply, it can be a matter of installing the right resources for filtering, developing new skills, or training managers not to demand so much information (Pijpers, 2010).

INGOs have begun to make much more systematic use of information systems – both ICT-based and non-ICT-based – in order to improve the flow of ideas, experiences and information across national frontiers between INGO headquarters, national offices and the grassroots level. In a small number of INGOs such as Save the Children Fund (SCF), an increasing amount of energy and resources are going into information activities at the country and regional-office levels with many offices having full-time information officers with a brief to collect, analyze and disseminate information internally and externally (Madon, 2000).

Current research suggests that the high volume of available information and its interruption of people's work, can strongly affect not only personal behavior, but also productivity, innovation and decision making (Hemp, 2009).

Recent advances in ICTs mean not only cheaper information sharing, but also that networking is made simpler as cohorts are connected by fax and email. For example, in a recent study of INGOs and their use of ICTs, they found that the vast majority of these organizations make frequent use of phone-, fax- and modem-based communication. However, in most INGOs, systems for accessing, storing, transferring and disseminating information are underdeveloped. With the increased use of ICT based communication in INGOs, there is an added acute problem of information overload. Staff complains bitterly of huge amounts of information being sent electronically every day, but too little structure to sift out what is relevant for learning to take place in the organization (Madon, 2000).

The increased use of different types of communications technologies [such as social media and mobile phones, together with continuing use of e-mail, etc..] has created an information overload that needs to be filtered for the most relevant information (Koenig, 2011).

For people who are still not convinced, consider these few facts: during the next decade there will be as much new information available as has been discovered in the whole course of human history, since there are 50,000 new book titles published every year, and that currently there are 550 billion web-connected documents (Landale, 2007). Furthermore, there are 7 million pages of information added to the World Wide Web every day (Hall & Walton, 2004).

Physically, we are what we are. Our brains have remained structurally consistent for more than 50,000 years, but exposure to information in this new century has increased by a factor of thousands. People will continue to be exposed to extraneous, irrelevant information in the future (Pijpers, 2010).

A study by Microsoft researchers tracking the e-mail habits of coworkers found that once their work had been interrupted by an e-mail notification, people took, on average, 24 minutes to return to the suspended task. That's bad news for both individuals and their organizations (Hemp, 2009). And this makes the Internet and the issues it confronts are so enormous that this is probably inevitable (Nicholas, Williams, Cole, & Martin, 2000).

It is worth mentioning that more focus should be made on the execution of information processes rather than on the acquisition of information. And as a first step, think about and interact with information. There is no easy way to sift through the information mountain, but adopting some measures can help us become more literate and productive with information (Pijpers, 2010).

Eventually, it is important to define what the manager is to reach the research objectives. “A *manager is defined as a paid employee who is charged with the responsibility of leading an organization or one of its subunits*”; the manager may or may not have budget to manage or staff to supervise. A manager may or may not be a member of senior executive, or chief executive officer, or a vice-president who manages a group of services, a director who oversees services of two or more departments, or a department manager (MacDonald, Bath, & Booth, 2011).

## **CHAPTER 3: DECISION MAKING**

- 3.1 INTRODUCTION
- 3.2 DECISION MAKING
- 3.3 THE DECISION MAKING PROCESS
- 3.4 INFORMATION AND DECISION MAKING
- 3.5 RATIONAL DECISION MAKING
- 3.6 CLASSIFICATION OF DECISIONS
- 3.7 TYPES OF DECISION MAKERS
- 3.8 RISK AND UNCERTAINTY
- 3.9 DECISION MAKING AND INFORMATION OVERLOAD

## **3.1 Introduction**

In recent years rapid changes have been observed in information technology, these rapid changes have created a situation where it's a must for the managers to make timely decisions. And as a result the decision making is become inevitable. In other words, a try to refrain from making a decision is a decision itself. The managers who are already nervous because of the unpredictable environment are forced to take more decisions by making too fast and too many decisions regarding the problems that are unfamiliar and at an increased pace. For many reasons, making the suitable decision is the most difficult part in the management of an organization today (Iqbal, Shahi, & Khan, 2012).

Therefore, and as a conclusion, the primary duty of managers is decision-making. These decisions may be related to planning, organizing, staffing, leading or controlling can be straight forward or complex, can be short-range or long-range, flexible or inflexible and even crisis decisions. Accordingly, managers must make decisions even if they are not willing to do so (Al-Tarawneh, 2012).

Decision-making is inevitable, because to explicitly avoid making a decision is in itself to make a decision. However, making decisions is the most important job of any manager or executive. Thus to be effective in the highly competitive environment of today, managers in any organization need to dedicate a significant amount of skill, knowledge and attention to managerial decision-making (Al-Tarawneh, 2012).

## **3.2 Decision Making**

Decision making is the point at which plans, policies and objectives are translated into particular actions. Planning leads to sound decision-making and that implies the selection from alternatives course of actions. Decision making is the core of planning, for instance, choosing of objectives, policies, procedures, programs, rules, strategies and tactics etc., require the entire process of decision-making. Therefore, the quality of marketing management decision is linked with the quality, quantity, adequacy and speedy availability of data. The purpose of decision making as well as a planning is to

direct human behavior and effort towards future objectives. In the entire process of management activities, making decisions is always essential. Managerial function is exercised through decision-making. Decision-making spreads through all elements of management cycle such as production, marketing, finance, personnel, administration. Whatever managers do, they do it through a decision making after considering thoroughly the available alternative course of action (Ismail, 2011).

Decision-making is a conscious human process. A particular course of action from among a set of possible alternatives. To decide means to come to a conclusion or resolution, decision-making defined as the “conscious and human process, involving both individual and social phenomenon based upon factual and value premises, which concludes with a choice of one behavioral activity from among one or more alternatives with the intention of moving toward some desired state of affairs” (Ismail, 2011).

It represents a course of behavior or action about what must or must not be done. Decision making is the selecting of action from among alternatives to achieve a specific objective or solve specific problem. The art of decision-making provide us a variety of approaches, methods and techniques helpful and useful for making high quality of decision. A decision maker, as an individual, or as a member of formal organization with his own philosophy and perception of the organization, selects for optimizing values within the constraints imposed by the organization (Ismail, 2011).

### **3.3 The Decision-Making Process**

*“Decisions are means of achieving predetermined goal or goals (ends). Every decision is an outcome of a dynamic process”*. And also decision-making is a dynamic function rather than a static action. It is a sequential process. However, managers in making a decision may apply different processes. Several varieties of these processes have been recognized and suggested by many researchers (Al-Tarawneh, 2012).

## **2.2.7 STEPS IN THE DECISION MAKING PROCESS**

### **3.3.1.1 IDENTIFYING THE PROBLEM**

At least this process must identify causes, limiting assumptions, boundaries and interfaces of system and organization as well, and any stakeholder issues. The goal of this step is to express the issue in a one-sentence-clear problem statement that describes both the initial conditions and the desired conditions. The problem statement should be a concise and unambiguous written material agreed by all decision makers and stakeholders. This step is considered as a crucial and necessary point before proceeding to the next step (Al-Tarawneh, 2012).

### **3.3.1.2 DETERMINE REQUIREMENTS**

Requirements are defined as conditions that must meet any acceptable solution to the problem.

Requirements clarify what the solution must do to the problem. In mathematical form, these requirements are the constraints describing the set of the feasible (admissible) solutions of the decision problem. It is very important that even if subjective or judgmental evaluations may occur in the following steps, the requirements must be stated in exact quantitative form. In other words, for any possible solution it has to be decided unambiguously whether it meets the requirements or not (Al-Tarawneh, 2012).

### **3.3.1.3 ESTABLISH GOALS**

Goals are broad statements of intent and desirable values. In mathematical form, the goals are objectives contrary to the requirements that are constraints. The goals may be conflicting but this is a natural concomitant of practical decision situations (Al-Tarawneh, 2012).

#### 3.3.1.4 IDENTIFY ALTERNATIVES

Alternatives are seen as different approaches for turning the initial condition into the desired condition. Any alternative must meet the requirements. The possible alternatives can be checked one by one if their number is finite and they meet requirements. The infeasible ones must be deleted (screened out) from the further consideration, and we obtain the explicit list of the alternatives. On the other hand, if the number of the possible alternatives is infinite, the set of alternatives is considered as the set of the solutions fulfilling the constraints in the mathematical form of the requirements (Al-Tarawneh, 2012).

#### 3.3.1.5 DEFINE CRITERIA

Decision criteria must be based on the goals, and will discriminate among alternatives. Since the goals will be represented in the form of criteria, every goal must generate at least one criterion but complex goals may be represented only by several criteria. (Al-Tarawneh, 2012).

It can be helpful to group together criteria into a series of sets that relate to separate and distinguishable components of the overall objective for the decision. This is particularly helpful if the emerging decision structure contains a relatively large number of criteria. Grouping criteria can help the process of checking whether the set of criteria selected is appropriate to the problem. Criteria should be able to support the comparison of the performance of the alternatives and are complete to include all goals (Al-Tarawneh, 2012).

#### 3.3.1.6 SELECTING A DECISION MAKING TOOL

There are several tools for solving a decision problem. The selection of an appropriate tool is not an easy task and depends on the concrete decision problem, as well as on the objectives of the decision makers. Sometimes, it is better to select simpler

method, but complex decision problems may require complex methods (Al-Tarawneh, 2012).

### **3.3.1.7 EVALUATING ALTERNATIVES AGAINST CRITERIA**

The evaluation of the alternatives against the criteria is a need for every correct method for decision making. Depending on the criterion, the assessment may be objective “factual”, with respect to some commonly shared and understood scale of measurement such as money, or can be subjective “judgmental”, reflecting the subjective assessment of the evaluator. The selected decision making tool can be applied after the evaluation to rank the alternatives or to choose a subset of the most promising alternatives (Al-Tarawneh, 2012).

### **3.3.1.8 VALIDATING SOLUTIONS AGAINST PROBLEM STATEMENT**

The alternatives selected by the applied decision making tools have always to be validated against the requirements and goals of the decision problem. It may happen that the decision making tool was misapplied. In complex problems the selected alternatives may also call the attention of the decision makers and stakeholders that further goals or requirements should be added to the decision model (Al-Tarawneh, 2012).

## **2.2.8 THE IMPORTANCE OF DECISION CRITERIA IN THE DECISION MAKING PROCESS**

Decision making is considered as a multistage and multicriteria process. The decision maker evaluates between the possibilities of success and risks involved. The process of evaluation is based on the information available like the knowledge about the decision, the probability of each option and the results of the options. Another critical factor is that decision making is a non-linear, recursive process which means that decision makers move forward and backward between the criteria that make up the decision and the options that are available based on the criteria. During the decision making process a certain criterion may come up that the decision maker did not take

into account yet and really wants to take this criterion in the set of criteria thus influencing the possible outcome of the options. That means that the available options influence the criteria and the criteria influence the options that are considered. In more and more complex situations with an overload of information to select the proper criteria and possible options entrepreneurs cannot cope anymore with this increasing complexity and create a kind of shortcuts in their way of thinking. To be able to cope with this complex environment two simplifications are possible. The first one is taking decisions based on routine and the second is taking decisions based on intuition (Mulders, 2012).

### **3.4 Information and Decision Making**

In the decision making process, Information plays a crucial role. This means that information is considered as a great commodity in any organizations. Those who are in charge of managing an organization are more concerned with the concept of information than others. The permanent need for conformability with the new changes has entailed more and more the availability of the accurate and timely information to the managers in the organizations. Following this, the reasonable monitoring of the conditions and the allocation improving will result in an efficient management. The more access a manager or director has to precise information, the more efficiently the managers can improve strategies and make logical decisions, leading to more competencies in their organizations. The way a manager makes decisions can be a good benchmark for the efficiency of an organization. In order to reach high quality decisions, it is necessary to gather precise and timely information and report and put them at the decision makers' disposal.

Timely access to useful and effective information can decrease the risk of making wrong and inaccurate decisions and can reduce a manager's uncertainty about the contingent events. Decrease in extra costs, optimal usage of resources and high productivity are all among the outcome of correct decisions. Problems, like wrong decisions, depend on the trial and error method, uncertainly and indecisiveness of managers. Problems will be minimal if effective and necessary information is available.

With effective and correct information, managers can determine how much and in which course their organization must proceed in order to reach its objectives (Behzadpur, Tabibi, Najafi, Poornajaf, Ghiasi, & Hamidi, 2011).

## **3.5 Rational Decision Making**

Administrative decision making is assumed to be rational. This means that organizations administrators make decisions under certainty, since they know their alternatives, they know their outcomes, they know their decision criteria, and they have the ability to make the optimum choice and then to implement it (Lunenbourg, 2010).

### **3.5.1 THE CONCEPT OF BOUNDED RATIONALITY**

Sometimes decision makers are limited by time constraints, cost, and the ability to process information. So they generate a partial list of alternative solutions to the problem based on their experience, intuition, advice from others, and perhaps even some creative thought. Therefore rationality is limited. Accordingly the term bounded rationality describes the decision maker who would like to make the best decisions but normally settles for less than the optimal.

“In contrast to complete rationality in decision making, bounded rationality implies the following (Lunenbourg, 2010):

Decisions will always be based on an incomplete and, to some degree, inadequate comprehension of the true nature of the problem being faced.

Decision makers will never succeed in generating all possible alternative solutions for consideration.

Alternatives are always evaluated incompletely because it is impossible to predict accurately all consequences associated with each alternative.

The ultimate decision regarding which alternative to choose must be based on some criterion other than maximization or optimization because it is impossible to ever determine which alternative is optimal” (Lunenbourg, 2010).

### **3.5.2 THE CONCEPT OF SATISFICING**

The principle of satisficing is considered as one version of bounded rationality. This approach to decision making involves choosing the first alternative that satisfies minimal standards of acceptability without exploring all possibilities. This is the usual approach taken by decision makers. Most human decision making, whether individual or organizational, is concerned with the discovery and selection of satisfactory alternatives; only in exceptional cases is it concerned with the discovery and selection of optimal alternatives (Lunenburg, 2010).

## **3.6 Classification of Decisions**

### **3.6.1 PROGRAMMED DECISIONS**

Programmed decisions can be defined as decisions that can be “pre-specified” by a set of rules or decision procedures (Ismail, 2011).

A decision rule tells decision makers which alternative to choose once they have predetermined information about the decision situation. The appropriate decision rule is used whenever the same decision is encountered. Programmed decisions are usually highly structured, which means that the goals are clear and well known, the decision making procedure is already established and the sources and channels of information are clearly defined (Muindi, 2011).

Programmed decisions can probably be handled by a computer program since the rules for arriving at a decision are completely defined and only the values of variables must wait for the specific problem. The programmed decision methods imply a closed decision model because all outcomes and consequences must be known (Ismail, 2011).

In other words, programmed decisions are routine and repetitive decisions, and the organization typically develops specific ways to handle them. For this kind of routine

repetitive decisions, standard arrangement decisions are typically made according to established management guidelines (Asemi, 2011).

### **3.6.2 NONPROGRAMMED DECISIONS**

Non-programmed decisions are used for unique, unstructured, “ill-defined” situations of a non-recurring state. They are considered as a non-repetitive decision often with high levels of risk where many factors from inside and outside the organization have to be considered. They are handling by general problem solving processes. They involve judgment, intuition and creativity. They are made by trained and higher level manager (Ismail, 2011). Also non-programmed decisions are defined as one-shot decisions that are usually less structured than programmed decisions (Asemi, 2011).

When a problem or a situation has not been pre-encountered or is unique, then the decision made is known as a non-programmed decision and it requires problem solving. Problem solving is a special form of decision making in which the issue is unique, and it requires developing and evaluating alternatives without the aid of decision rules. Non-programmed decisions are poorly structured because information is unambiguous and there is no clear procedure for decision making and the goals are often cloudy (Muindi, 2011).

### **3.6.3 STRATEGIC DECISION**

A strategic decision has three characteristics: (Ismail, 2011)

- a) It is made during a current time, and in some future time its primary effect will be felt.
- b) Strategic decisions affect organizational structure and objectives.
- c) Strategic decision cannot be delegated lower than a particular level (Ismail, 2011).

### **3.6.4 ORGANIZATIONAL DECISIONS**

The company's policies and programs are reflected by the organizational decision, this means that when a manager acts formally in his\her expected role in an organization, and therefore he\she makes an organizational decision, which becomes the organization's official decision. Organizational decisions can be delegated to others (Ismail, 2011).

### **3.6.5 TACTICAL DECISION**

Tactical decisions are called routine decisions and are tactical in nature. They are important, repetitive, and need little thoughts with few alternatives. The decision are taken up by middle and first line managers and do not involve any higher risk or uncertainty. Tactical decisions support and compliment organizational strategy. The tactical decision can be delegated to lower levels in the organization. In addition, what might be strategies decision for one organization may be tactical decision for another (Ismail, 2011).

## **3.7 Types of Decision Makers**

Generally people differ in their approach to making decisions, we can term this their decision making style. "One perspective of decision making styles proposes that people differ along two dimensions in the way they approach decision making. The first is an individual's way of thinking. Some people tend to be rational and logical in the way they think or process information. A rational type looks at information in order and makes sure it's logical and consistent before making a decision. Others tend to be creative and intuitive. Intuitive types do not have to process information in a certain order but are comfortable looking at it as a whole. (Robbins, Bergman, Stagg, & Coulter, 2006)

The other dimension describes an individual's tolerance for ambiguity. Again, some people have a low tolerance for ambiguity. These types must have consistency and order in the way they structure information so that ambiguity is minimized. On the other hand,

some people can tolerate high levels of ambiguity and are able to process many thoughts at the same time. When we diagram these two dimensions, four decision-making styles are evident: directive, analytic, conceptual and behavioral (Robbins, Bergman, Stagg, & Coulter, 2006).

Decision making style proposes people differ along two dimensions in the way they approach decision making. The first is an individual's way of thinking. Some people tend to be rational and logical and others tend to be creative and intuitive. The other dimension describes an individual's tolerance for ambiguity. Some people have a low tolerance for ambiguity and others have high level of ambiguity. Based on way of thinking and tolerance for ambiguity decision making styles can be of four types (ebusinessmgmt Website, 2010).

### **3.7.1 DIRECTIVE**

A person has this style if they have a low tolerance for ambiguity and are efficient, rational, and logical in their way of thinking. They focus on the short term and are quick to make decisions, usually resulting in a decision that has been made with minimal information and not carefully analyzing other alternatives. (Robbins, Bergman, Stagg, & Coulter, 2006)

Managers using directive style have low tolerance for ambiguity and are rational in their way of thinking. They are efficient and logical. They make fast decisions with minimal information and assessing few alternatives (ebusinessmgmt Website, 2010).

### **3.7.2 ANALYTIC**

As opposed to the directive style, a person with an analytic decision-making style has greater tolerance to ambiguity. They are careful decision makers that like to be well informed and thoroughly assess their options. They usually have the ability to adapt or cope with unique and challenging situations. (Robbins, Bergman, Stagg, & Coulter, 2006)

Managers with an analytic style have high tolerance for ambiguity than do directive type and are rational in their way of thinking. They need more information and consider

more alternatives. They are characterized as careful decision makers with the ability to cope with unique situations (ebusinessmgmt Website, 2010).

### **3.7.3 CONCEPTUAL**

Conceptual decision makers are generally very broad in their approach and consider all available alternatives. They are long-term oriented and are usually capable of formulating creative solutions to problems. (Robbins, Bergman, Stagg, & Coulter, 2006)

Managers with conceptual style have high tolerance for ambiguity and an intuitive way of thinking. They tend to be very broad to their outlook and consider many alternatives. They are at finding creative solutions to problems (ebusinessmgmt Website, 2010).

### **3.7.4 BEHAVIORAL**

People with a behavioral decision-making style work well with others, are open to suggestions, and are concerned about the achievements of their team. They generally try to avoid conflict and place importance on their acceptance by others. (Robbins, Bergman, Stagg, & Coulter, 2006)

Managers with behavioral style have low tolerance for ambiguity and an intuitive way of thinking. They work well with others. They are receptive to suggestions from others. They often use meetings to communicate although they try to avoid conflict. They want to be accepted by others.

Some managers will rely almost exclusively on their dominant style, while others are flexible and can shift their style depending on the situation. Some may take their time carefully weighing alternatives and considering riskier options whereas others may be more concerned about getting suggestions from others before making decisions. This doesn't make one approach better than the other. It is just their decision-making styles, which are different (ebusinessmgmt Website, 2010).

## **3.8 Risk and Uncertainty**

A distinction is often drawn by decision theorists between risk and uncertainty. Risk is applied to a situation where there are several possible outcomes and there is relevant past experience to enable statistical evidence to be produced for predicting the possible outcomes. Uncertainty exists where there are several possible outcomes, but there is little previous statistical evidence to enable the possible outcomes to be predicted. Most business decision can be classified in the uncertainty category, but the distinction between risk and uncertainty is of little importance in our analysis and we shall use the terms interchangeably (Drury, 1996).

## **3.9 Decision Making and Information Overload:**

Information technology may be a primary reason for information overload due to its ability to produce more information more quickly and to disseminate this information to a wider audience than ever before.

Decision makers' day-to-day activities increasingly involve the use of computers and many of the recent developments in information technology have also exacerbated the number of interruptions that occur in the work environment (Speier, Valacich, & Vessey, 1999)

We all need information to survive in the business market and to compete, meanwhile excessive information may make us drown in. If you let yourself inundate in the informational swamp, the organization and yourself will face corruptive consequences. Existence of repetitive and wrong information somehow makes the managers disappointed, and prevents them reaching the useful information. The more useful information exists, the more analysis is required and sometimes the excessive analysis leads in paralysis and hurt the accurate decision making. As expected, individuals who have little or no information for processing make weak decisions. When the information amount is increased, the information processing and the decision making quality is increased too. However, the decision maker could have access to more information by determining a specific point rather than by processed the information. Now, the

informational overload occurs and the decision making ability is declined and subsequently, the extra information cannot be processed and just interferes the decision making ability (Nejadirani & Rajabzadeh, 2011).

Information overload occurs when the amount of input to a system exceeds its processing capacity. Decision makers have fairly limited cognitive processing capacity. Consequently, when information overload occurs, it is likely that a reduction in decision quality will occur. Research from a number of disciplines has found, for example, that information overload decreases decision quality, increases the time required to make a decision, and increases confusion regarding the decision (Speier, Valacich, & Vessey, 1999).

In studies to date, information overload has been conceived primarily as "information load," which has been operationalized in different ways: the amount of information, number of alternative and overall diversity of the information. The number of information cues is the most commonly cited determinant of information overload. An increase in task demands directly influences mental workload and can lead to information overload. More recent research has articulated the importance of time in understanding information overload, suggesting that information overload occurs when the time required to meet a decision maker's processing requirements exceeds the amount of time available for such processing, resulting in degradation of decision quality (Speier, Valacich, & Vessey, 1999).

Figure (3.1): Illustrates the relationship between information overload and decision accuracy as an inverted U curve (Eppler & Mengis, 2004).

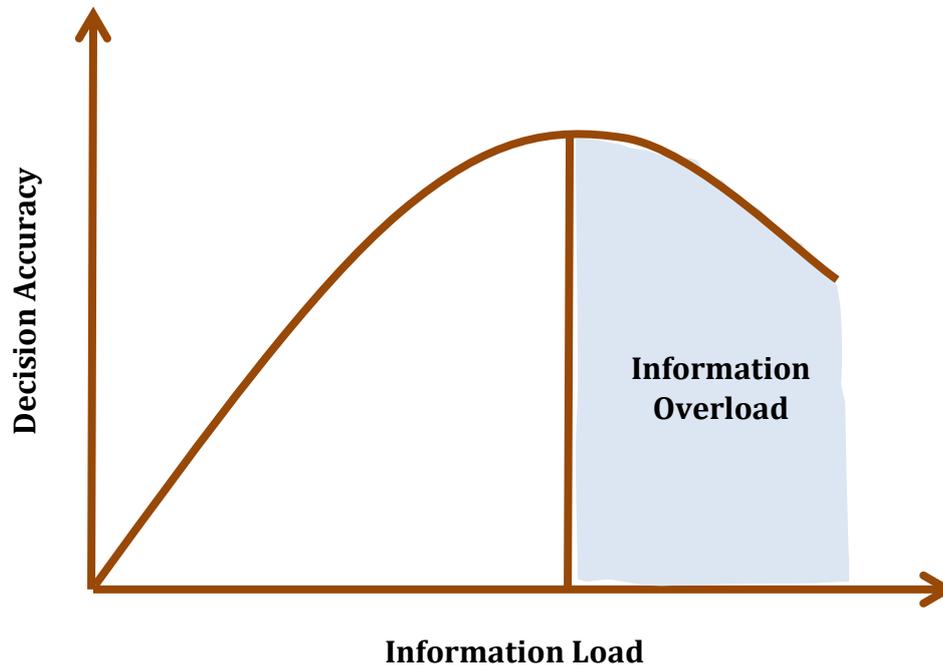


Figure (3.1): Information overload as the inverted U-curve

Source: Eppler and Mengis, 2004

## **CHAPTER 4: PREVIOUS STUDIES**

4.1 INTRODUCTION

4.2 COMMENTS ON PREVIOUS STUDIES

## 4.1 Introduction:

A number of published researches/papers in certified journals are viewed for the purpose of this research. Since there is no Arabic studies concerning the subject of the research, so the research depends on the foreign researches that match research objectives.

### 1) (Abu Rouk, 2013): “**The Impact Of Information Overload On Management In Workplace**”

This study aimed to show the impact of information overload on the management in the workplace on five main dimensions (fulfillment of job responsibilities, planning, occurrence of stress, personal, information management, and individual factors) using the descriptive analytical method to study the impact of Information Overload. The study was applied in Islamic University (IUG), Al-Azhar University and Al-Aqsa University of Gaza as a case study for the Palestinian higher education institutions in Gaza Strip.

The questionnaire used as a data collection tool. The study population was (434) who are all administrative and academic administrative staff of the three mentioned universities' employees, but the researcher has excluded academics, administrative and secretarial due to lack of direct effect on the subject of the study. (207) questionnaires were distributed and all were retrieved and analyzed by the SPSS program for statistical analysis.

Results of the analysis of the questionnaire data demonstrate significant effect of information overload on the fulfillment of job responsibilities, occurrence of stress, and planning, and a significant effect of personal information management and individual factors on information overload.

The research recommended that the effects of information overload should not be neglected and to keep pace with the latest developments in the world of information technology and communications to facilitate overcome of information overload, and advice to human resource managers to screen existing and potential employees if the ability to deal with work related information is an important requirement. Also the

research recommended that understanding the phenomenon of information overload should be a part of employee training and education programs especially for those who are identified as being at risk of experiencing overload.

2) (Jackson & Farzaneh, 2012): **“Theory-Based Model Of Factors Affecting Information Overload”**

This paper develops a new theory-based model of factors affecting information overload and provides a formula for calculating the extent of overload, potentially of use as a diagnostic tool supporting individual or organizational development. Two methods for categorizing factors that contribute to the overload phenomena are introduced. The first method separates those factors based on their direct or indirect effect on information overload, called intrinsic and extraneous factors respectively. The second method divides factors based on whether or not the factor increases or decreases information overload likelihood and tags those factors in terms of ‘For’ or ‘Against’. These new methods for categorization not only assisted in the development of the conceptual model and in creating the formula, but could be used in other aspects of information overload research, such as finding and evaluating countermeasures to information overload. The model and the formula presented in the paper provide a significant contribution to the information overload body of research.

3) (Anderson & de Palma, 2012): **“Competition For Attention In The Information (Overload) Age”**

This research modeled multiple sectors competing for consumer attention in Virginia USA, with competition in price within each sector. The researcher used model-developing methodology. This research concluded that new product classes may displace others by crowding information spans, in addition that, increasing the number of product classes causes an initial acceleration in the volume of messages as crowding raises prices, making more ads profitable. The research presented some of the key results as follows: First, new product classes may displace others by crowding

information spans. Total information volume rises; although sufficiently strong other sectors may see a rise in size because crowding relaxes price competition, leading to stochastically higher prices. This encourages messages when the enhanced profit effect dominates the direct crowding effect.

Second, increasing the number of product classes causes an initial acceleration in the volume of messages as crowding raises prices, making more ads profitable. Eventually this tails off, in a classic S-shaped (logistic) volume relation over time, with an upper bound to message volume.

Third, if consumer attention rises, prices fall stochastically as competition is enhanced. This gives rise to the information hump; information volume initially rises as it becomes easier to get messages across. But the lower prices eventually come to dominate as it becomes less profitable to send messages, as it is likely that other offers register with the consumer. This suggests that both more attention and more product classes raise the volume of information. Eventually, though, the attention span effect reduces information volume and increases competition. Thus, whether prices get lower depends crucially on whether attention rises “faster” than the range of (desirable) goods.

#### **4) (Bettis-Outland, 2012): “Decision-Making's Impact On Organizational Learning And Information Overload”**

This research examines incremental and comprehensive decision making to understand the effects of different decision making types on organizational learning and information overload in Florida USA. Through using literature review methodology, the research concludes that, in most cases, comprehensive decision making is more successful in turbulent, competitive business environments. This research also concludes that in business settings, decision making enhances organizational learning; that is, the more decisions that are made, the more the organization learns. Organizational learning occurs in both comprehensive and incremental approaches.

#### **5) (Woolfson, 2012): “Information Overload: When Information Becomes Hazardous To Your Health”**

This paper analyses the concept of information overload in UK, how it has evolved, and its relevance to the information professional in the commercial law firm. The paper concluded that It is unlikely that analysis of the concept of information overload and its detrimental effects on the worker and workplace in general will stop any time soon. Interest in the topic has grown exponentially alongside the rapid influx in sources and methods of imparting information. With regard to the law firm, the role of the IP is fundamental to the battle against overload, in that they must ensure that they do not become a cause of it.

it is also vital that the IP is aware of the ease with which they could become completely overwhelmed by the sheer volume of information available to them; and that they should seek to implement certain strategies such in order to ensure that they remain in control not only of their inbox, but of their sanity as well.

**6) (MacDonald, Bath, & Booth, 2011): “Information Overload And Information Poverty: Challenges For Healthcare Services Managers?”**

The purpose of this research is to gain insight into managers’ decision-making practices in UK when challenged by inappropriate information quality, and to test frameworks developed from research to see whether they apply to these managers.

This exploratory, multiple case study used the critical incident technique in 19 semi-structured interviews. Responses were analyzed using framework analysis, a matrix-based content analysis technique, and then considered with respect to the research literature on information overload, information poverty and satisficing.

The Findings of the study were– The managers in this study tended to satisfice (terminate the search process and make a good enough decision, while recognizing that information gaps remain). Those challenged by too little information appear to fit descriptions of information poverty, while others described aspects of information overload.

The Research limitations/implications– A shortage of information behavior research on managers makes it difficult to conclude whether these results are typical of managers in

general or of healthcare services managers specifically. Further research is needed to confirm initial findings and address questions suggested by this paper.

This paper suggests that existing definitions for the concepts of information poverty and information overload can be used to describe managers' experiences.

This paper contributes to what is known about information behavior in managers in general and healthcare services managers specifically. It may serve as an example of how to consider new research findings within existing frameworks.

#### 7) (Marulanda-Carter & Jackson, 2012): **“Effects Of E-Mail Addiction And Interruptions On Employees”**

The purpose of this paper is to explore the effect of e-mail interruptions on tasks and to explore the concept of e-mail addiction within the workplace in Loughborough UK.

Data were collected from a large car rental company in the UK.

The first collection method involved observing the effects of simulated e-mail interruptions on seven employees by measuring the interrupt handling time, the interrupt recovery time, and the additional time required to complete the task given the number of interruptions. The second part of the study involved a questionnaire sent to 100 employees to capture addictive characteristics in employees' e-mail communication behavior.

The finding of the study is that e-mail interruptions have a negative time impact upon employees and show that both interrupt handling and recovery time exist. A typical task takes one third longer than undertaking a task with no e-mail interruptions. The questionnaire data show clinical characteristics classify 12 per cent of e-mail addicts, and behavioral characteristics classify 15 per cent of e-mail addicts in the workplace. Observation was constrained by the timeframes and availability of the participating organization. Measuring an employee receiving e-mail interruptions over a greater time period might achieve a more comprehensive understanding of the impact.

This study was the first to determine the impact of e-mail interruptions on work tasks by observing employees, and to present a method to determine e-mail addiction. By

understanding these factors, organizations can manage workflow strategies to improve employee efficiency and effectiveness.

**8) (Davis, 2011): “Information Overload, Reloaded”.**

A costly drain on productivity, information overload can stem from not only vast amounts of information but also a failure to filter information as presented. Information architects (IAs) are in a position to address the challenge, starting by distinguishing between macro information overload and micro information overload.

At the macro level, physical storage limits and processing capacities present an obstacle to information access. Information overload at the micro level is a failure to filter information, interfering with a user’s cognitive processing by presenting too many images, concepts, messages and other elements to sort through. If systems architects are skilled at recognizing signs of macro information overload, IAs should be able to identify signals of overload at the micro level, drawing on user experience design methods, and should develop ways to spot when information presented on a web page threatens to exceed a typical user’s threshold for effective cognitive intake. The solution presents fertile ground for research and potential time and cost savings.

**9) (Messner & Wänke, 2011): “Unconscious Information Processing Reduces Information Overload And Increases Product Satisfaction”**

The purpose of the research is that the consumers in Switzerland are less satisfied with a product chosen from an extended assortment than from a limited one. Presumably, information overload causes decreased satisfaction and reducing information overload would increase satisfaction. Building on Unconscious Thought Theory, results suggest that this classic effect reverses when consumers do not deliberate. Consumers reported lower satisfaction with a praline chosen from a large assortment than from a small one, when they either deliberated intensively or chose spontaneously. This effect reversed when consumers were distracted before choosing. Unconscious thinking about a large assortment led to the highest product satisfaction.

**10) (Sumeckia, Chipulua, & Ojiakoa, 2011): “Email Overload: Exploring The Moderating Role Of The Perception Of Email As A ‘Business Critical’ Tool”.**

The purpose of the research is that the management of email remains a major challenge for organizations. In this article, the researchers explore the extent of the perceptions of email as a business critical tool within an organization in England, and how the level of such perceptions may moderate the level of email overload experienced by individuals within the organization.

A survey was conducted using a web-based application on a sample of 7400 employees, only 913 respondents who completed the survey with a response rate of 12%.

The results suggest that without a clearly stated code of email practice within an organization, there are likely to be large variations in what is perceived as ‘business-critical’ email and, as a result, a substantial amount of email generated within the organization may not be ‘business-critical’, potentially increasing the level of ‘email-overload’ experienced by individuals within the organization.

**11) (Zhuang, Qiu, & Peng, 2011): “Is It The More The Merrier?: An Exploratory Study Into The Growing Problem Of Information Overload”**

A research seeks to uncover some empirical evidence on how prevalent the problem of information overload has become, how it has affected the performance of organizations. Set in the context of the information-intensive tourism industry, this exploratory study examined the top two state-owned tour operators in China. Using semi-structured group interviews supplemented by a questionnaire survey, the empirical evidence gathered was examined to identify key themes concerning information overload.

The research find that the problem was felt more by the front line operatives than those who managed them. Increasing tiredness, high stress levels and more mistakes made at work were amongst the symptoms.

Factors specific to the tourism industry included poor clarity in job division and task procedures, low standardization of job contents, inter-team work, and loose team structures. Experience, training and staff motivation were identified as possible ways to address the problem.

Designing the structure of an organization in a way that closely reflects the nature of its business and its internal and external communication needs and effectively minimize or eliminate the circulation of information to those who do not need it could be the most effective way to tackle the growing problem of information overload and thus enhance corporate performance.

To fully appreciate the strategic impact of the problem of information overload on corporate performance, considerable further research needs to be carried out involving organizations in different sizes and forms operating in different industries across different countries.

This paper adds practical value by providing some empirical evidence to complement the growing body of anecdotal evidence demonstrating how information explosion especially through the internet is having an adverse impact on corporate performance.

**12) (Lindkvist, 2011): “Drowning In Information - Five Ways Of Changing Your Information Diet”.**

The purpose of the research is that since the world is moving from a world of knowledge stocks to a world of knowledge flows, and therefore how to navigate this steady stream of noise and weak signals not only to find new business opportunities but also to create a portrait of the future that they can lead others toward. This research outlines five ways that every executive can improve his or her information diet in order to filter out nuggets of insight from the ocean of information. The research has been conducted in Sweden.

**13) (Paul & Nazareth, 2010): “Input Information Complexity, Perceived Time Pressure, And Information Processing In GSS-Based Work Groups: An**

## **Experimental Investigation Using A Decision Schema To Alleviate Information Overload Conditions”**

Collaboration technology enhances the ability of work groups in USA to acquire and share large volumes of information within a short period. The processing of voluminous information is challenging and may lead to conditions of information overload. The issue of complexity of information processing in collaboration technology supported group work, and the mechanisms to overcome the information overload conditions have not received sufficient attention in the past. In this paper, there is an attempt to address this gap by building a theoretical model and validating it through a laboratory experiment. By examining information processing of GSS-supported groups to perform tasks involving cognitive conflict. The study demonstrates that information processing has an inverted U-shaped relationship with input information complexity and a positive relationship with time pressure. The study also demonstrates that the inclusion of a decision schema that incorporates aggregate level of information gleaned from the work of prior groups engaged in a similar decision situation alleviates the information overload, enabling groups to process larger and more complex information.

### **14)(Soucek & Moser, 2010): “Coping With Information Overload In Email Communication: Evaluation Of A Training Intervention”.**

The paper had been conducted in Germany. The paper introduces three facets of information overload in email communication: a large amount of incoming information, inefficient workflow, and deficient communication quality and in order to cope with these facets of information overload, a training intervention was developed and evaluated. The results reveal that the training contributed to an increase in knowledge and media competencies. The study also found evidence for a transfer of training contents to the workplace. Finally, strain diminished on several dimensions. In particular, problems with media usage and work impairment decline significantly, an effect that was stronger for those participants who face a large amount of email at their workplaces.

**15) (Prasitratanaorn, 2010): “Information Overload Among Professionals In Thailand”**

In this study a theoretical model of the effects of personal factors (personality traits and socio-demographic variables) on an individual’s perception of information overload is formulated. The study investigates personal factors as causes for overload and adopts the view that the degree of information overload is an individual perception.

Based on previous studies 16 personality traits and four socio-demographic variables are identified as potential causes for the perception of overload.

Data collected using a self-administered structured questionnaire based on existing measuring instruments from a sample of 594 individuals employed in organizations in Thailand is analyzed and used to test the effects of these 20 personal factors on the perception of overload. The model is tested and a parsimonious model is developed using structural equation modeling (SEM) techniques.

The results are interpreted and theoretical and practical conclusions are drawn. Four personality traits (imagination, reserve, complexity, and emotionality) are found to have significant effects on perceptions of overload and based on their significant correlations with the other personal factors four profiles are developed for individuals at risk of experiencing perceptions of overload in their work environment.

Those with strong reserve or emotionality traits are likely to experience overload mainly because of their lack of skills in dealing with the content of information rather than the amount of information. On the other hand, those who exhibit high levels of complexity are likely to experience overload as a result of their strong desire to use information rather than any lack of ability in dealing with the content of information. Those who are highly imaginative are the least likely to experience overload and if they do then it is likely to be because of the amount of information they seek and use rather than any lack of skills in dealing with the content of the information. These four traits are significantly associated with other personality traits, and socio demographic factors (gender, age, level of income, and level of formal education) and this enabled the development of four profiles of individuals who are more or less likely to experience perceptions of information overload. In addition, perceptions of overload are associated mainly with

numerical and textual information in both soft and hard/verbal copy forms derived from sources that are internal to the organization.

From a practical perspective the advice to human resource managers is to screen existing and potential employees if the ability to deal with work related information is an important requirement. Understanding the phenomenon of information overload should be a part of employee training and education programs especially for those who are identified as being at risk of experiencing overload. Also, the results of this study may be used by therapists and counselors to further develop the profile of an individual who is experiencing overload. In particular, these individuals are likely to display symptoms such as: limited use of information search and retrieval strategies; seemingly arbitrary approaches to information analysis and organization; and suboptimal decision making. Furthermore, information overload often causes other personal problems and in such cases it is important to identify and treat the basic causes and not just the symptoms which often present in the form of stress related problems.

The researcher strongly recommended that the study be repeated in order to establish the external validity of the findings. Possible limitations on the results of (Kyunghye, Mia, & Burke, 2007)the study include: (a) the sample only included individuals who work in the urban region of Bangkok; (b) no attempts were made to control age, level of education, gender, type of organization, or level of employment. Most of the subjects were employed in the private sector and most worked at staff levels in their organizations.

**16) (Chen, Shang, & Kao, 2009): “The Effects Of Information Overload On Consumers’ Subjective State Towards Buying Decision In The Internet Shopping Environment”.**

This study, via re-appraising the conception of decision quality, subjective state towards decision, and threshold of information load, proposes an extended model, considering the roles of information filtering mechanisms, on-line shopping experience, and perceived information overload, to examine the effects of information load on subjective state towards decision. The results indicate that rich information leads to a perception of high information overload; and the latter lead consumers to a worse

subject state towards decision. Information filtering tools and on-line shopping experience may have influences on relieving but are not the panacea to the phenomenon of information overload.

**17) (Bawden & Robinson, 2008): "The Dark Side Of Information: Overload, Anxiety And Other Paradoxes And Pathologies".**

This review article identifies and discusses some of main issues and potential problems – paradoxes and pathologies – around the communication of recorded information, and points to some possible solutions. The article considers the changing contexts of information communication, with some caveats about the identification of „pathologies of information“, and analyses the changes over time in the way in which issues of the quantity and quality of information available have been regarded. Two main classes of problems and issues are discussed. The first comprises issues relating (Bawden & Robinson, 2008) to the quantity and diversity of information available: information overload, information anxiety, etc. The second comprises issues relating to the changing information environment with the advent of Web 2.0: loss of identity and authority, emphasis on micro-chunking and shallow novelty, and the impermanence of information. A final section proposes some means of solution of problems and of improvements to the situation.

The results showed that no set of solutions to the problems identified in this article can be regarded as finally satisfactory, if only because new “pathologies of information” will emerge as the information environment changes, primarily under the influence of new technologies. New solutions will always be needed, although it will be vital to be selective in determining which new patterns and modes of information communication and use are truly problems in need of solutions.

Solutions to information overload, for example, generally revolve around the principle of taking Control of one’s information environment. This not only avoids the effect that one is con-trolled by the information, but avoids the feelings of powerlessness which noted as being aspects of the “anxiety” pathologies.

The solutions which emerge are not likely to be purely “informational”, still less associated solely with formal information services and information management. Rather, information aspects will comprise part of solutions involving much wider issues of education, the nature of work, and individual responses to an increasingly complex, and largely digital, information environment.

Information managers will, no doubt, continue to devise and promote pragmatic solutions to these continuing and emerging issues. But satisfactory progress will depend on a better understanding of the fundamentals of human information behavior, and the ways in which it changes over time, perhaps, the most basic challenge for information science over the next decades.

**18) (Kyunghye, Mia, & Burke, 2007): “Predictors Of Cancer Information Overload: Findings From A National Survey”**

The study explored predictors of information overload among cancer information seekers who reported having suffered from information overload. These persons were characterized by socio-demographic characteristics, health status, health information and communication environment and behavioral, cognitive, and affective cancer information seeking.

A secondary analysis was performed of the 2003 Health Information National Trends Survey conducted by the U.S. National Cancer Institute with 6,369 randomly selected participants. A subset of this dataset, which includes the responses of 3,011 cancer information seekers, was analyzed. A bivariate analysis was used to identify factors significantly associated with information overload. These factors were then entered in a logistic regression model to identify predictors of overload.

Results showed that lower socio-economic status, poor health, low media attentiveness and high affective components of information seeking were associated with overload. The strongest predictors were education level and cognitive aspects of information seeking, which indicates that overload is strongly predicted by health information literacy skills.

Use of the Internet and high media attentiveness, two factors usually thought to cause overload, were found not to be associated with overload.

The findings emphasize the importance of health information literacy in coping with information overload and implies the need to design better health information campaigns and delivery systems.

**19) (Klausegger, Sinkovics, & Zou, 2007): “Information Overload: A Cross-National Investigation Of Influence Factors And Effects”.**

The purpose of this paper is to examine the nature and negative effects of the “information overload” phenomenon, exacerbated in recent years by organizational design issues and rapid advances in information and communication technology, through a multidisciplinary lens.

Data from a five-country East-West published study of information overload in the Reuters organization are used to examine the influences on information overload and to compare the effects on respondents in each country.

Results of the re-manipulation of the survey data demonstrate significant negative relationships between information overload and the fulfillment of job responsibilities in all five countries surveyed. Information overload was perceived to be most stressful in the USA and UK.

Marketing managers face the dilemma of receiving too much information, but too little that is “right” for their planning responsibilities. The challenge is thus to convert “information” into “intelligence” that can effectively support strategic marketing planning.

Suggestions are offered for reducing the duplication of information and adopting appropriate information-management strategies.

Information overload has serious practical consequences for management and planning in marketing no less than in any other discipline. A clear and comprehensive view of the phenomenon and its effects on everyday job responsibilities is therefore useful in tackling the problem. The cross-national analysis permits adjustments to local management style and behavior in the major economies of the East and West.

**20) (Edmunds & Morris, 2000): “The Problem Of Information Overload In Business Organizations”.**

This paper reviews the literature on the problem of information overload, with particular reference to business organizations. The literature reveals that although the problem of information overload has existed for many years, in recent years the problem has become more widely recognized and experienced. Both perceptions and the actual effects of information overload have been exacerbated by the rapid advances made in information and communication technology, although it is not clear cut as to whether the Internet has worsened or improved the situation. A theme stressed in the literature is the paradoxical situation that, although there is an abundance of information available, it is often difficult to obtain useful, relevant information when it is needed. Some solutions put forward to reduce information overload are: a reduction in the duplication of information found in the professional literature; the adoption of personal information management strategies, together with the integration of software solutions such as push technology and intelligent agents; and the provision of value-added information (filtered by software or information specialists). An emphasis is placed on technology as a tool and not the driver, while increased information literacy may provide the key to reducing information overload.

## **4.2 Comments on Previous Studies:**

It is obviously seen that some of the previous studies tried to explore and determine the factors that cause the information overload to occur and grow, on the other hand, some other previous studies tried to propose some strategies and develop framework that could help in minimizing the effect of the information overload problem.

Some previous studies see that the major factor in the information overload problem is the email overload or email interruption, and these studies tried to focus on how this problem has a negative time impact upon employees generally and upon managers especially, through the handling and recovery time needed.

One of the most important previous studies, (Woolfson, 2012), which concluded that it is unlikely that analysis of the concept of information overload and its detrimental effects on the worker and workplace in general will stop any time soon. As well as, (Marulanda-Carter & Jackson, 2012) found that e-mail interruptions have a negative

time impact upon employees and show that both interrupt handling and recovery time exist, and these results walk in parallel with the research literature review, analysis and results.

But – upon what available of resources and electronic databases - there is no research that studied the relationship of information overload with decision making process neither locally nor in foreign studies, and this is what makes this research unique and distinguished from previous studies.

**This research benefited from previous studies in:**

- Exploring the previous experiences in other countries regarding the research independent variable “Information Overload” and its relationship with decision making process.
- Collecting the theoretical framework and building the research tool.
- Testing the research methodology, and appropriate statistical methods.
- Interpreting the results and make recommendations.

**This research characterized from previous studies in:**

- It talked about the problem of information overload and its relationship with decision making process through the research variables, where the variables which this research focuses on are not mentioned as a set in a specific one of the previous studies.
- The research population was also focused only on International Non-Governmental organizations in the Gaza-Strip in Palestine, and studied the relationship of information overload with the top and middle levels management, who are the decision makers.
- However, the phenomenon of information overload has not been fully investigated in Palestine and the Arabic World.

- In conclusion, it is obviously seen that the majority of the previous literature mentioned in this research ensure the increasing importance of presenting more efforts in studying the problem of information overload and its relationship with information technology and knowledge management.

## **CHAPTER 5: RESEARCH METHODOLOGY**

- 5.1 INTRODUCTION
- 5.2 RESEARCH METHODOLOGY
- 5.3 RESEARCH POPULATION
- 5.4 QUESTIONNAIRE DESIGN AND CONTENT
- 5.5 PROCEDURES FOR THE APPLICATION OF THE STUDY
- 5.6 EVALUATION OF THE RESEARCH

## **5.1 Introduction**

This chapter addresses the research methodology and deals with the data collection process. Also it defines the population and the sample. The questionnaire design and content used in this study was shown. Each step in the questionnaire distribution, response rate, the validity and reliability of questionnaire, data gathering procedures, and the procedure of statistical analysis are discussed in this chapter.

## **5.2 Research Methodology**

The descriptive analytical approach was used in conducting the research. This section presents the procedures conducted in this study and answers the research questions. In order to achieve the objectives of the study, two sources of data were relied on:

### **5.2.1 DATA COLLECTION**

#### **5.2.1.1 PRIMARY DATA**

Primary data are to analyze the qualitative and quantitative characteristics of the phenomenon of information overload.

The primary data were collected through a questionnaire designed to collect data and information. The questionnaire is the main tool for the research and was distributed to the study sample.

The data which collected from the questionnaire survey analyzed using descriptive statistical capabilities of SPSS (Statistical Package for Social Science) a program to calculate ratios and use appropriate statistical test in order to process data and to transfer them to useful information that can be interpreted to reach valuable indicators that support the subject of the study.

### 5.2.1.2 SECONDARY DATA

Secondary data were collected from articles from various fields of study, such as psychology, computer science, information system management, marketing, organizational studies and accounting, as well as library and information science.

In this study, different types of secondary data resources were used. These resources are to introduce the theoretical literature of the research topic.

The aim of the use of the secondary data sources in the study is to identify the correct principles and scientific methods in writing scientific researches, as well as taking a general perception about the latest developments that have occurred in the field of the study. These resources are as the following:

1. Books and references in English about Information overload and related topics.
2. Scientific journals and academic magazines.
3. Electronic databases such as Emerald, ScienceDirect and others.
4. Periodicals, articles, published papers and previous studies in different countries which have been conducted on the same subject.
5. Published sites and available electronic versions.

## 5.3 Research Population

The research population includes all managers at the International NGOs in Gaza Strip. The research population consists of (105) managers from the (32) International NGOs in the Gaza Strip.

Since the number of managers is relatively small, a census had been used for the target population.

## 5.4 Questionnaire Design and Content

After reviewing the literature, the questionnaire was found to be the most appropriate tool. The questionnaire was designed in English (see Appendix A).

The questionnaire survey was chosen as one method of primary data collection. The main reasons for selecting the questionnaire as a research instrument: firstly, questionnaires are relatively inexpensive. Secondly, the analysis of the data is relatively uncomplicated. Thirdly, it is confidential. Fourthly, it is possible to survey a large population in a short period of time. Finally, it is an easy mean to contact respondents. A questionnaire provides reliable information as respondents are more likely to answer questions truthfully when their identity is undisclosed.

The questionnaire was provided with a cover letter which explained the purpose of this study, the way of responding, the aim of the research and the privacy of the information in order to encourage high response. The questionnaire is composed of parts sections as following:

### **Part I: Demographic Information**

This consists of the general characteristics of the research population and consists of (7) paragraphs, which are:

- a. Gender.
- b. Age.
- c. Educational Level.
- d. Seniority (Experience).
- e. Job Title.
- f. Sources of ICTs used at work.
- g. Time percentage dedicated for using ICTs at work.

**Part II: This part consists of (33) paragraphs to collect information distributed on four main fields as follows:**

1. The relationship between Email overload and decision making process, consists of (8) statements.

2. The relationship between information characteristics and decision making process, consists of (8) statements.
3. The relationship between information and communication technology and decision making process, consists of (7) statements.
4. The relationship between information overload and decision making process, consists of (10) statements.

## **5.5 Procedures for the Application of the study**

After reviewing the literature and previous studies of the problem in-depth, a questionnaire was built according to the following steps:

- a. Prepare a preliminary questionnaire for use in the collection of data and information.
- b. Submit the questionnaire to the supervisor in order to test its suitability for the collection of data and modify it if the need arises.
- c. Evaluate the questionnaire by a number of experts in the field from different universities (Islamic University and Al-Azhar University), who in turn advise and counsel, modify and delete what it takes.
- d. Make adjustments recommended by the arbitrators where some of the paragraphs were deleted, and modified, where the number of paragraphs of the questionnaire after the final formulation was (31) paragraphs. And Appendix A shows the questionnaire in its final form.
- e. Conducting an exploratory preliminary study for the questionnaire of (27) members of the research population in order to examine the validity and reliability of the questionnaire.
- f. Distribute the questionnaire to all members of the research population to collect the necessary data for the study.

## 5.6 Evaluation of the Research

Selection of instrument affects the validity and reliability of the research, in the following sections the research will be evaluated based on the validity and reliability of the questionnaire that used as a research instrument.

### 5.6.1 DATA MEASUREMENT

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, ordinal scales were used. Ordinal scale is a ranking or a rating data that normally uses integers in ascending or descending order. The numbers assigned to the important (1,2,3,4,5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on Likert scale we have the following:

<b>Item</b>	<b><i>Strongly agree</i></b>	<b><i>Agree</i></b>	<b><i>Do not Know</i></b>	<b><i>Disagree</i></b>	<b><i>Strongly Disagree</i></b>
<b>Scale</b>	5	4	3	2	1

### 5.6.2 TEST OF NORMALITY FOR EACH DIMENSION

Table (5.1) shows the results for Kolmogorov-Smirnov test of normality.

TABLE (5.1): KOLMOGOROV-SMIRNOV TEST

Field	Kolmogorov-Smirnov	
	Statistic	P-value
Email Overload	1.140	0.149
Information Characteristics	0.511	0.956
Information & Communication Technology	0.834	0.490
Decision Making Process	0.901	0.391
<b>All paragraphs of the questionnaire</b>	0.693	0.722

From Table (5.1), the p-value for each field is greater than 0.05 level of significance, therefore the distribution for each field is normally distributed. Consequently, parametric tests will be used to perform the statistical data analysis.

### 5.6.3 STATISTICAL ANALYSIS TOOLS

The researcher would use data analysis both qualitative and quantitative data analysis methods. The Data analysis will be made utilizing (SPSS 20). The researcher would utilize the following statistical tools:

- 1) Kolmogorov-Smirnov test of Normality.
  - 2) Pearson correlation coefficient for Validity.
  - 3) Cronbach's Alpha for Reliability Statistics.
  - 4) Frequency and Descriptive analysis.
  - 5) Parametric Tests (One-sample T test, Independent Samples T-test, Analysis of Variance).
- **T-test** is used to determine if the mean of a paragraph is significantly different from a hypothesized value 3 (Middle value of Likert scale). If the P-value (Sig.) is smaller than or equal to the level of significance,  $\alpha = 0.05$ , then the mean of a

paragraph is significantly different from a hypothesized value 3. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 3. On the other hand, if the P-value (Sig.) is greater than the level of significance  $\alpha = 0.05$ , then the mean a paragraph is insignificantly different from a hypothesized value 3.

- ***The Independent Samples T-test*** is used to examine if there is a statistical significant difference between two means among the respondents toward The Influence of Information Overload on Managers' Decision-Making Process at the International NGOs in Gaza Strip due to (Gender).
- ***The One- Way Analysis of Variance (ANOVA)*** is used to examine if there is a statistical significant difference between several means among the respondents toward The Influence of Information Overload on Managers' Decision-Making Process at the International NGOs in Gaza Strip due to (Age, Education Level, Job Title and Seniority" Experience").

#### **5.6.4 VALIDITY OF QUESTIONNAIRE**

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include internal validity and structure validity.

#### 5.6.4.1 STATISTICAL VALIDITY OF THE QUESTIONNAIRE

Validity refers to the degree to which an instrument measures what it is supposed to be measuring (Pilot and Hungler,1985). Validity has a number of different aspects and assessment approaches.

To insure the validity of the questionnaire, two statistical tests should be applied. The first test is Criterion-related validity test (Pearson test) which measure the correlation coefficient between each paragraph in one field and the whole field. The second test is structure validity test (Pearson test) that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of similar scale.

#### 5.6.4.2 CRITERION RELATED VALIDITY

Internal consistency of the questionnaire is measured by a scouting sample, which consisted of 30 questionnaires through measuring the correlation coefficients between each paragraph in one field and the whole field.

#### 5.6.4.3 INTERNAL VALIDITY

Internal validity of the questionnaire is the first statistical test that used to test the validity of the questionnaire. It is measuring the correlation coefficients between each paragraph in one field and the whole field.

TABLE (5.2): CORRELATION COEFFICIENT OF EACH PARAGRAPH OF "EMAIL OVERLOAD" AND THE TOTAL OF THIS FIELD

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	I feel I spend too much time keeping up with my mail.	.822	0.000*
2.	Email cuts into the time I wanted to spend on other tasks.	.546	0.002*
3.	I have trouble keeping up with email on days I am away from my desk.	.659	0.000*
4.	I get too much email.	.712	0.000*
5.	I am satisfied with the strategy I use to keep up with my mail.	.466	0.007*
6.	Sometimes my emails may get lost or missed.	.624	0.000*

\* Correlation is significant at the 0.05 level

Table (5.2) clarifies the correlation coefficient for each paragraph of the "Email Overload" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at  $\alpha = 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

TABLE (5.3): CORRELATION COEFFICIENT OF EACH PARAGRAPH OF " INFORMATION CHARACTERISTICS" AND THE TOTAL OF THIS FIELD

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The volume and speed of incoming information is beyond your processing capacity.	.728	0.000*
2.	The increasing information causes decreasing in task performance.	.713	0.000*

3.	Time needed to process information exceeds available time.	.478	0.006*
4.	Receiving more information than is needed or wanted affects negatively the decision making process.	.520	0.003*
5.	It is hard to assess the quantity of information that is needed for making a decision.	.583	0.001*
6.	Information can be used to create more information or to make better decisions.	.440	0.011*
7.	It is not easy to find an information source that provides a higher level of usability (or ease of use) among the huge number of information sources.	.669	0.000*
8.	It is not easy to find an information source that customizes the information for your specific needs.	.442	0.010*

\* Correlation is significant at the 0.05 level

Table (5.3) clarifies the correlation coefficient for each paragraph of the " Information Characteristics " and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at  $\alpha = 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

**TABLE (5.4): CORRELATION COEFFICIENT OF EACH PARAGRAPH OF " INFORMATION & COMMUNICATION TECHNOLOGY " AND THE TOTAL OF THIS FIELD**

<b>No.</b>	<b>Paragraph</b>	<b>Pearson Correlation Coefficient</b>	<b>P-Value (Sig.)</b>
1.	Information processing requirements exceeds available information processing mechanisms.	.596	0.001
2.	The Organization offers enough help for you to deal with information relevant to work.	.731	0.000*
3.	I use an information source that provides voting capabilities to make users evaluate the information.	.752	0.000*
4.	My organization is applying an automated facilitator	.846	0.000*

	support tool (known as a group support system – GSS) to assist in a working-group task such as “idea generation”.		
5.	My organization is applying an automated decision support system (DSS) to reduce a large quantity of information to a more manageable size when preparing to make a decision.	.656	0.000*
6.	Communication technologies are frequently updated at my organization to adapt with the rapid acceleration in technologies.	.573	0.001*
7.	Intranet and internet networks are efficiently and effectively used since these networks include attainable essential information.	.414	0.016*

\* Correlation is significant at the 0.05 level

Table (5.4) clarifies the correlation coefficient for each paragraph of the " Information & Communication Technology " and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at  $\alpha = 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

**TABLE (5.5): CORRELATION COEFFICIENT OF EACH PARAGRAPH OF " DECISION MAKING PROCESS " AND THE TOTAL OF THIS FIELD**

<b>No.</b>	<b>Paragraph</b>	<b>Pearson Correlation Coefficient</b>	<b>P-Value (Sig.)</b>
1.	I have to make decision without defining or analyzing the problem.	.773	0.000*
2.	I face hardships to determine the possible alternatives to solve the problem.	.764	0.000*
3.	There are many decisions I made that either modified or cancelled.	.656	0.000*
4.	I make important decisions without consulting other	.676	0.000*

	people		
5.	It is not of my interest to assist my supervisors to make the suitable decisions.	.727	0.000*
6.	I face hardships to determine the right way to carry out the decision.	.621	0.000*
7.	Information Overload causes Failure to achieve a balance between task requirements and processing capacity.	.663	0.000*
8.	I'm fully capable of dealing with all the information related to work and making decisions within eight-hour mandatory working time per day.	.367	0.030*

\* Correlation is significant at the 0.05 level

Table (5.5) clarifies the correlation coefficient for each paragraph of the " Decision Making Process " and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at  $\alpha = 0.05$ , so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

#### 5.6.4.4 STRUCTURE VALIDITY OF THE QUESTIONNAIRE

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one field and all the fields of the questionnaire that have the same level of liker scale.

**TABLE (5.6): CORRELATION COEFFICIENT OF EACH FIELD AND THE WHOLE OF QUESTIONNAIRE**

<b>No.</b>	<b>Field</b>	<b>Pearson Correlation Coefficient</b>	<b>P-Value (Sig.)</b>
1.	Email Overload	.746	0.000*
2.	Information Characteristics	.763	0.000*
3.	Information & Communication Technology	.814	0.000*
4.	Decision Making Process	.686	0.000*

\* Correlation is significant at the 0.05 level

Table (5.6) clarifies the correlation coefficient for each field and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at  $\alpha = 0.05$ , so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

### **5.6.5 RELIABILITY OF THE RESEARCH**

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring (Poilt & Hungler, 1985). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient (Poilt & Hungler, 1985).

#### **5.6.5.1 CRONBACH'S COEFFICIENT ALPHA**

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher

degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

**TABLE (5.7): CRONBACH'S ALPHA FOR EACH FIELD OF THE QUESTIONNAIRE**

<b>No.</b>	<b>Field</b>	<b>Cronbach's Alpha</b>
1.	Email Overload	0.748
2.	Information Characteristics	0.616
3.	Information & Communication Technology	0.783
4.	Decision Making Process	0.833
	<b>All paragraphs of the questionnaire</b>	0.857

Table (5.7) shows the values of Cronbach's Alpha for each field of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.616 and 0.833. This range is considered high; the result ensures the reliability of each field of the questionnaire. Cronbach's Alpha equals 0.857 for the entire questionnaire which indicates a good reliability of the entire questionnaire.

Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample.

## **CHAPTER 6: DATA ANALYSIS AND DISCUSSION**

6.1 INTRODUCTION

6.2 DEMOGRAPHIC DATA

6.3 STATISTICAL ANALYSIS FOR EACH DIMENSION OF THE  
QUESTIONNAIRE

6.4 ANALYZING HYPOTHESIS

## 6.1 Introduction

This research was designed to respond to the study objectives and to test the hypotheses stated in chapter one. This chapter presents the demographic data, the discussion and interpretation of the data collected by the questionnaire and the hypotheses testing. The findings that respond to these objectives were discussed and compared to the findings in the previous studies.

## 6.2 Demographic Data

### 6.2.1 GENDER

Table (6.1) shows the gender distribution among the respondents.

TABLE (6.1): GENDER

<b>Gender</b>	<b>Frequency</b>	<b>Percent</b>
Male	61	70.9
Female	25	29.1
Total	86	100.0

Table (6.1) shows that the majority of the respondents are males and this represents 70.9% of the study sample and 29.1% are Females.

The results show that the majority of the decision making positions in the INGOs are headed by males, and this is due to:

- Work chances are for males.
- The women work dimensions are limited.
- The society culture is an essential reason in decreasing the women contribution in work.
- Women obligations and responsibilities toward their homes and families.

### 6.2.2 AGE

Table (6.2) shows the gender distribution among the respondents.

TABLE (6.2): AGE

Age	Frequency	Percent
less than 30 year	13	15.1
30 year to 40 year	47	54.7
41 year to 50 year	18	20.9
above 50 year	8	9.3
Total	86	100.0

Table (6.2) shows that the majority of the respondents have ages between 30 year to 40 years, and this represents 54.7%. 15.1% of the respondents have ages "Less than 30 years", 20.9% of the respondents have ages between "41 year to 50 year" and 9.3% of respondents have ages "above 50 year".

### 6.2.3 EDUCATION LEVEL

Table (6.3) shows the gender distribution among the respondents.

TABLE (6.3): EDUCATION LEVEL

Qualification	Frequency	Percent
Diploma	4	4.7
Bachelor	63	73.3
Master	19	22.1
PH.D	-	-
Total	86	100.0

Table (6.3) shows that 4.7% of the respondents hold "Diploma", 73.3% "Bachelor's degree" and 22.1% of the sample hold "Master degree".

This analysis indicates that the majority of the managers who work in the INGOs in Gaza Strip have Bachelor degree and nearly the remaining have Master degree, which means it is rarely to find a manager who has just Diploma because of the job qualifications and requirements, and also when a manager obtain PHD degree, then the trend will be directed to the academic field.

#### 6.2.4 YEARS OF WORK EXPERIENCE

Table (6.4) shows years of work experience distribution among the respondents.

TABLE (6.4): YEARS OF WORK EXPERIENCE

Seniority " Experience"	Frequency	Percent
Less than 5 years	26	30.2
5 – Less than 10 years	48	55.8
11- less than 15 years	12	14.0
20 years and more	-	-
Total	86	100.0

Table No.(6.4) shows that 30.2% of the respondents have experience " Less than 5 years ", 55.8% have experience " 5 – Less than 10 years " and 14.0% of the respondents have experience " 11- less than 15 years " .

The analysis indicates that nearly half of the managers worked at least from 5 to 10 years which means the work stability for managers in INGO mostly does not last more than 10 years, and this could be regarded to the nature of the INGOs as they are composed of limited projects and programs with limited budgets.

#### 6.2.5 SOURCES OF ICTS USED AT WORK

Table (6.5) shows the sources of ICTs used at work distribution among the respondents.

TABLE (6.5): SOURCES OF ICTS USED AT WORK

Item	Frequency	Percent
Internet	86	100.0
Intranet	42	48.8
Video Conference	43	50.0
Email	85	98.8
SMS	38	44.2
Personal interviewees	24	27.9

Meetings	67	77.9
presentations	26	30.2
Telephone calls	80	93.0
Periodic Reports	64	74.4
Others	1	1.2

### 6.2.6 TIME PERCENTAGE DEDICATED FOR USING ICTS AT WORK

Table (6.6) shows the sources of ICTs used at work distribution among the respondents.

TABLE (6.6): TIME DEDICATED FOR USING ICTS AT WORK

Time Dedicated	Frequency	Percent
70% and less	24	27.9
71% to 80%	33	38.4
81% and more	29	33.7
Total	86	100.0

## 6.3 Statistical Analysis for Each Dimension of the Questionnaire

One Sample T-test was used to analyze the questionnaire paragraphs. If the P-value (Sig.) is greater than the level of significance  $\alpha=0.05$ , then the null hypothesis cannot be rejected, then the mean of a paragraph is insignificantly different from a hypothesized value 3. If the P-value (Sig.) is smaller than or equal to the level of significance,  $\alpha=0.05$ , and the null hypothesis is rejected and the mean of a paragraph is significantly different from a hypothesized value 3, and the sign of the Test value indicates whether the mean is significantly greater or smaller than the hypothesized value 3.

### 6.3.1 ANALYZING THE FIRST FIELD: EMAIL OVERLOAD

The first field discusses the “Email Overload”, and consists of (6) paragraphs. The table (6.7) shows the results of using T-test to see whether the mean value had reached to the hypothesized value (3) or not.

TABLE (6.7): MEANS AND TEST VALUES FOR “EMAIL OVERLOAD”

	Item	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	I feel I spend too much time keeping up with my mail.	3.85	76.98	7.78	0.000*	5
2.	Email cuts into the time I wanted to spend on other tasks.	3.97	79.30	8.47	0.000*	4
3.	I have trouble keeping up with email on days I am away from my desk.	3.72	74.42	5.69	0.000*	6
4.	I get too much email.	4.12	82.38	10.66	0.000*	1
5.	I am satisfied with the strategy I use to keep up with my mail.	4.12	82.35	11.22	0.000*	2
6.	Sometimes my emails may get lost or missed.	4.08	81.63	10.86	0.000*	3
	<b>All paragraphs of the field</b>	<b>3.97</b>	<b>79.47</b>	<b>11.99</b>	<b>0.000*</b>	

\* The mean is significantly different from 3

**Table (6.7) shows the following results:**

The mean of paragraph #4 “I get too much email” equals 4.12 (82.38%), Test-value = 10.66, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to this paragraph.

The mean of paragraph #3 “I have trouble keeping up with email on days I am away from my desk” equals 3.72 (74.42%), Test-value = 5.69, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to this paragraph.

The mean of the field “Email Overload” equals 3.97 (79.47%), Test-value = 11.99, and P-value=0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to field of “Email Overload”.

This finding is consistent with the study of (Sumeckia, Chipulua, & Ojiakoa, 2011), which indicates that the email overload has a negative influence on decision making and decision quality, also it is consistent with the result of E-mail interruptions have a negative time impact upon employees and show that both interrupt handling and recovery time exist. A typical task takes one third longer than undertaking a task with no e-mail interruptions.

### **6.3.2 ANALYZING THE SECOND FIELD: INFORMATION CHARACTERISTICS**

The second field discusses the “Information Characteristics”, and consists of (8) paragraphs. The table (6.8) shows the results of using T-test to see whether the mean value had reached to the hypothesized value (3) or not.

TABLE (6.8): MEANS AND TEST VALUES FOR “INFORMATION CHARACTERISTICS”

	<b>Item</b>	<b>Mean</b>	<b>Proportional mean (%)</b>	<b>Test value</b>	<b>P-value (Sig.)</b>	<b>Rank</b>
1.	The volume and speed of incoming information is beyond your processing capacity.	3.60	72.09	5.10	0.000*	8
2.	The increasing information causes decreasing in task performance.	3.97	79.30	8.85	0.000*	6
3.	Time needed to process information exceeds available time.	3.99	79.77	10.17	0.000*	5
4.	Receiving more information than is needed or wanted affects negatively the decision making process.	4.01	80.23	9.49	0.000*	4
5.	It is hard to assess the quantity of information that is needed for making a decision.	3.92	78.33	9.39	0.000*	7
6.	Information can be used to create more information or to make better decisions.	4.29	85.81	17.08	0.000*	1
7.	It is not easy to find an information source that provides a higher level of usability (or ease of use) among the huge number of information sources.	4.08	81.63	10.72	0.000*	2
8.	It is not easy to find an information source that customizes the information for your specific needs.	4.02	80.47	9.91	0.000*	3
	<b>All paragraphs of the field</b>	<b>3.98</b>	<b>79.68</b>	<b>13.61</b>	<b>0.000*</b>	

\* The mean is significantly different from 3

**Table (6.8) shows the following results:**

The mean of paragraph #6 “Information can be used to create more information or to make better decisions” equals 4.29 (85.81%), Test-value = 17.08 and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to this paragraph.

The mean of paragraph #1 “The volume and speed of incoming information is beyond your processing capacity” equals 3.60 (72.09%), Test-value = 5.10, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to this paragraph.

The mean of the field “Information Characteristics” equals 3.98 (79.68%), Test-value = 13.61, and P-value=0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to field of “Information Characteristics ”.

This finding is consistent with the study of (Paul & Nazareth, 2010), which indicates that the information characteristics have a direct impact on the managers ability to take decisions and therefore on the making decision process, and this of course because it is not easy to find an information source that customizes the information for your specific needs (80.47%). In addition, receiving more information than is needed or wanted affects negatively the decision making process (80.23%).

### 6.3.3 ANALYZING THE THIRD FIELD: INFORMATION AND COMMUNICATION TECHNOLOGY

The third field discusses the “Information and Communication Technology”, and consists of (7) paragraphs. The table (6.9) shows the results of using T-test to see whether the mean value had reached to the hypothesized value (3) or not.

TABLE (6.9): MEANS AND TEST VALUES FOR “INFORMATION & COMMUNICATION TECHNOLOGY”

	<b>Item</b>	<b>Mean</b>	<b>Proportional mean (%)</b>	<b>Test value</b>	<b>P-value (Sig.)</b>	<b>Rank</b>
1.	Information processing requirements exceeds available information processing mechanisms.	3.70	73.95	7.33	0.000*	1
2.	The Organization offers enough help for you to deal with information relevant to work.	3.02	60.47	0.20	0.421	2
3.	I use an information source that provides voting capabilities to make users evaluate the information.	2.29	45.81	-6.55	0.000*	5
4.	My organization is applying an automated facilitator support tool (known as a group support system – GSS) to assist in a working-group task such as “idea generation”.	2.06	41.16	-9.44	0.000*	6
5.	My organization is applying an automated decision support system (DSS) to reduce a large quantity of information to a more manageable size when preparing to make a decision.	1.88	37.67	-11.03	0.000*	7

	<b>Item</b>	<b>Mean</b>	<b>Proportional mean (%)</b>	<b>Test value</b>	<b>P-value (Sig.)</b>	<b>Rank</b>
6.	Communication technologies are frequently updated at my organization to adapt with the rapid acceleration in technologies.	2.30	46.05	-5.85	0.000*	4
7.	Intranet and internet networks are efficiently and effectively used since these networks include attainable essential information.	2.62	52.33	-2.53	0.007*	3
	<b>All paragraphs of the field</b>	2.55	51.06	-6.40	0.000*	

\* The mean is significantly different from 3

**Table (6.9) shows the following results:**

The mean of paragraph #1 “Information processing requirements exceeds available information processing mechanisms” equals 3.70 (73.95%), Test-value = 7.33, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to this paragraph.

The mean of paragraph #5 “My organization is applying an automated decision support system (DSS) to reduce a large quantity of information to a more manageable size when preparing to make a decision” equals 1.88 (37.67%), Test-value = -11.03, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3. We conclude that the respondents disagree to this paragraph.

The mean of the field “Information & Communication Technology” equals 2.55 (51.06%), Test-value = -6.40, and P-value=0.000 which is smaller than the level of

significance  $\alpha = 0.05$ . The sign of the test is negative, so the mean of this field is significantly smaller than the hypothesized value 3. We conclude that the respondents disagree to field of “Information & Communication Technology”.

This finding is consistent with the study of (Soucek & Moser, 2010), which indicates that the vulnerable of the information and communication technologies are considered one of the obstacles to improve the quality of the decision and therefore the whole decision making process. And this appear clearly through that managers do not have enough information and communication technologies that might enhance their making decision capabilities and appear through their negative test value and their disagreement on most of the paragraphs of the field.

#### **6.3.4 ANALYZING THE FOURTH FIELD: DECISION MAKING PROCESS**

The Fourth field discusses the “Decision Making Process”, and consists of (8) paragraphs. The table (6.10) shows the results of using T-test to see whether the mean value had reached to the hypothesized value (3) or not.

**TABLE (6.10): MEANS AND TEST VALUES FOR “DECISION MAKING PROCESS”**

	<b>Item</b>	<b>Mean</b>	<b>Proportional mean (%)</b>	<b>Test value</b>	<b>P-value (Sig.)</b>	<b>Rank</b>
1.	I have to make decision without defining or analyzing the problem.	2.27	45.35	-6.97	0.000*	5
2.	I face hardships to determine the possible alternatives to solve the problem.	2.71	54.19	-2.54	0.006*	3
3.	There are many decisions I made that either modified or cancelled.	2.00	40.00	-10.37	0.000*	7

4.	I make important decisions without consulting other people	2.01	40.23	-8.67	0.000*	6
5.	It is not of my interest to assist my supervisors to make the suitable decisions.	1.80	36.05	-12.45	0.000*	8
6.	I face hardships to determine the right way to carry out the decision.	3.17	63.49	1.43	0.078	2
7.	Information Overload causes Failure to achieve a balance between task requirements and processing capacity.	4.00	80.00	10.37	0.000*	1
8.	I'm fully capable of dealing with all the information related to work and making decisions within eight-hour mandatory working time per day.	2.69	53.72	-2.58	0.006*	4
	<b>All paragraphs of the field</b>	<b>2.58</b>	<b>51.63</b>	<b>-6.91</b>	<b>0.000*</b>	

\* The mean is significantly different from 3

**Table (6.10) shows the following results:**

The mean of paragraph #7 “Information Overload causes Failure to achieve a balance between task requirements and processing capacity” equals 4.00 (80.00%), Test-value = 10.37, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is positive, so the mean of this paragraph is significantly greater than the hypothesized value 3. We conclude that the respondents agreed to this paragraph, this of course because this paragraph gives a good indicator if really those managers face information overload and if this phenomena affects their capability on making decisions.

The mean of paragraph #5 “It is not of my interest to assist my supervisors to make the suitable decisions” equals 1.80 (36.05%), Test-value = -12.45, and P-value = 0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is negative, so the mean of this paragraph is significantly smaller than the hypothesized value 3. We conclude that the respondents disagree to this paragraph.

The mean of the field “Decision Making Process” equals 2.58 (51.63%), Test-value = -6.91, and P-value=0.000 which is smaller than the level of significance  $\alpha = 0.05$ . The sign of the test is negative, so the mean of this field is significantly smaller than the hypothesized value 3. We conclude that the respondents disagree to field of “Decision Making Process ”.

This finding is consistent with the study of (Iqbal, Shahi, & Khan, 2012), which indicates that those who are overloaded with information often fail to think strategically about the future, simply because they have no thought processes available beyond the immediate concerns. With so much information flooding into their consciousness, it can be hard to think ahead and plan according to the very much information available, and this is the main reason that affect negatively the decision making process.

## **6.4 Analyzing Hypothesis**

This study dealt with several hypotheses to examine the influence of information overload on decision making process on managers in INGOs.

To test the hypothesis of the study, laboratory tests used (Independent Samples T-test, the One-Way Analysis of Variance (ANOVA)). These tests are considered appropriate where the distribution of the data follow a normal distribution.

In the following paragraphs, a statistical analysis conducted to test the research hypothesis and linked to the result of previous studies.

### **6.4.1 FIRST MAIN HYPOTHESES**

The first main hypotheses consist of three sub-hypotheses as follows:

*There is a significant relationship of Email Overload with decision making process.*

The result of testing this hypotheses shows that there is an agreement among the respondents about the existence of a statistical significant effect at ( $\alpha = 0.05$ ) of Email Overload on decision making process.

*There is a significant relationship of information characteristics with decision making process.*

The result of testing this hypotheses shows that there is an agreement among the respondents about the existence of a statistical significant effect at ( $\alpha = 0.05$ ) of Information Characteristics on decision making process.

*There is a significant relationship of Information & Communication Technology with decision making process.*

The result of testing this hypotheses shows that there is an agreement among the respondents about the existence of a statistical significant effect at ( $\alpha = 0.05$ ) of Information & Communication Technology on decision making process.

And accordingly, there is a significant relationship of information overload with decision making process.

#### **6.4.2 SECOND MAIN HYPOTHESES**

*There is no significant difference among respondents regarding the influence of information overload on decision making attributed to the following demographic variables (Age, Gender, Educational Attainment, Years of experience).*

TABLE (6.11): ANALYSIS OF VARIANCE AND INDEPENDENT SAMPLES T-TEST FOR

DEMOGRAPHIC VARIABLES

No	Demographic variables	Test Name	Test Value	P-value(Sig.)
1.	Gender	Independent Samples T-test	1.125	0.264
2.	Age	Analysis of Variance	1.748	0.164
3.	Education Level	Analysis of Variance	1.574	0.213
4.	Seniority " Experience"	Analysis of Variance	0.455	0.636

Table (6.11) shows that the p-value (Sig.) is greater than the level of significance  $\alpha = 0.05$  for each demographic variables, then there is insignificant difference among respondents regarding the influence of information overload on decision making. We conclude that the demographic variables have no effect on the influence of information overload on decision making process.

## **CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS**

7.1 INTRODUCTION

7.2 CONCLUSION

7.3 RECOMMENDATIONS

7.4 PROPOSED FUTURE STUDIES

## 7.1 Introduction

This research concentrates efforts to investigate the relationship between information overload and decision making process especially in INGOs. This chapter will consolidate the main results of the previous chapters in the light of research problem and objectives and focuses on the conclusion and recommendation of this research. The conclusion will explain how this research achieves its goals according to the objectives and problem statement. Finally brief recommendations will be directed towards getting rid of the negative impact of information overload and to enhance the quality of decision making process in the light of good habits and procedures.

## 7.2 Conclusions

The objectives of this study are to highlight the relationship between information overload and managers' decision making process in INGOs in Gaza Strip through:

1. To explore the relationship between Email overload and decision-making Process.

The results show that there is a statistically significant relationship at ( $\alpha \leq 0.05$ ) between Email overload and decision making process.

2. To explore the relationship between information characteristics and decision-making Process.

The results show that there is a statistically significant relationship at ( $\alpha \leq 0.05$ ) between information characteristics and decision making process.

3. There is a significant relationship between information & communication technology and decision-making process.

The results show that there is a statistically significant relationship at ( $\alpha \leq 0.05$ ) between information & communication technology and decision making process.

4. To completely reduce information overload is not possible neither desirable. Information is always needed because what is often deemed irrelevant now, can

be relevant the next day. This research shows that it is better to find ways to cope with high information load than to decrease the information load.

5. All proposed solutions suggest some ways to help managers cope with high information load. Some literature also suggest that combining these solutions will lead to better ways of coping with the situation, even though such solutions are not implemented yet.
6. People used to think that IT will solve everything. But the opposite is true. Evidence, as shown by the influences and effects of factors, e.g. emails and the internet, can have a negative impact on information overload. This is also true for the proposed technical solutions and further emphasizes the importance for managers to also develop and use other mechanism for coping with high information load and accordingly to develop their decision making processes.

The findings from the data analysis according to Descriptive Statistics table clearly indicate that the phenomena of information overload exists in INGOs, as well as the relationship that has been found between the information overload and decision making process according to the data analysis shown in previous chapters. In addition the research proposed some solutions and procedures for overcoming the problem of information overload.

### **7.3 Recommendations**

Based on the results that have been reached, the researcher offers the following set of recommendations, wishing adoption of them, and these recommendations are:

- The problem of information overload should be studied objectively through continuous and periodic surveys to measure the influence of information overload on not only managers but also on all staff that might be subjected to this problem.
- Hiring specialists in information management and hiring staff on how to deal with information overload.
- The need to develop the information technology infrastructure and keep pace with the latest developments in the world of information technology and communications to facilitate overcome information overload.

- The advice to human resource managers is to screen existing and potential managers if the ability to deal with work related information is an important requirement. The screening should use established measuring instruments for personality traits in order to identify individuals who are at risk of experiencing overload and this screening procedure may be used to place a manager in a work environment where their exposure to information overload can be controlled, monitored and minimized in order to improve the decision quality and accordingly the whole decision making process.
- Understanding the phenomenon of information overload should be part of the managers' training and education programs.
- Promote conferences, scientific and academic seminars on the subject of the information overload so that it is promoting intellectual debate and scientific interaction that broadens the base of managerial literature in this field.
- Organizations need to provide tools for managers to deal with information overload.

## **7.4 Proposed Future Studies**

All literature that were reviewed agree that information overload has a negative effect on the performance of an individual, and it is a phenomenon that worth to be discussed and to be investigated in order to highlight on other aspects that may be affected by information overload.

In light of the above conclusions and recommendations, the following studies were proposed:

- Future researches may investigate the influence of information overload on productivity.
- Future researches may extend the impact of information overload in public or private sectors.
- Future researches may investigate the influence of information overload in more details and from different angles and include other variables that are not being used in this study.

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## **APPENDICES**

**APPENDIX A**

**QUESTIONNAIRE**

**Islamic University of Gaza  
High Studies Deanery  
Faculty of Commerce  
Business Administration Department**



Questionnaire No.

Date:

Dear Sir \ Madam

The attached questionnaire is a tool of collecting data reference in order to conduct a thesis that assess *The Influence of Information Overload on Managers' Decision-Making Process at the International NGOs in Gaza Strip*, and to be submitted in partial fulfillment of the requirement for Master Degree in Business Administration.

The phrase information overload is often used to convey the simple notion of receiving too much information. This can result in difficulties with locating and using information needed to support decision making. Information overload can occur when managers try to process all relevant information in the available time.

Therefore, achieving the objective of this research requires your participation in answering all questions thoroughly, honestly and subjectively. You are kindly reminded that all submitted information will be treated as confidential and will be of major concern to us.

***Note: NO names of Organizations will be mentioned in the research document.***

For further information, please do not hesitate to contact me on 0599 - 464 119

Thank you for your time and support ... Thank you for your trust



**Please indicate your agreement/disagreement with the following statements by putting the sign X in the appropriate location on a scale of 1-5 (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree).**

**Section 2: Email Overload**

<b>Item</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1</b>	I feel I spend too much time keeping up with my mail.					
<b>2</b>	Email cuts into the time I wanted to spend on other tasks.					
<b>3</b>	I have trouble keeping up with email on days I am away from my desk.					
<b>4</b>	I get too much email.					
<b>5</b>	I spend too much time getting rid of unimportant messages.					
<b>6</b>	I am satisfied with the strategy I use to keep up with my mail.					
<b>7</b>	When I return from vacation / time off, I feel overwhelmed when triaging my mail.					
<b>8</b>	Sometimes my emails may get lost or missed.					

**Section 3: Information Characteristics**

<b>Item</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>9</b>	The volume and speed of incoming information is beyond processing capacity.					
<b>10</b>	The increasing information causes decreasing in task performance.					
<b>11</b>	Time needed to process information exceeds available time.					
<b>12</b>	Receiving more information than is needed or wanted affects negatively the decision making process.					
<b>13</b>	It is hard to assess the quantity of information that is needed for making a decision.					
<b>14</b>	Information can be used to create more information or to make better decisions.					
<b>15</b>	It is not easy to find an information source that provides a higher level of usability (or ease of use) among the huge number of information					

	sources.					
<b>16</b>	It is not easy to find an information source that customizes the information for your specific needs.					

#### Section 4: Information & Communication Technology

Item		1	2	3	4	5
<b>17</b>	Information processing requirements exceeds available information processing mechanisms.					
<b>18</b>	The Organization offers enough help for you to deal with information relevant to work.					
<b>19</b>	I use an information source that provides voting capabilities to make users evaluate the information.					
<b>20</b>	My organization is applying an automated facilitator support tool (known as a group support system – GSS) to assist in a working-group task such as “idea generation”.					
<b>21</b>	My organization is applying an automated decision support system (DSS) to reduce a large quantity of information to a more manageable size when preparing to make a decision.					
<b>22</b>	Communication technologies are frequently updated at my organization to adapt with the rapid acceleration in technologies.					
<b>23</b>	Intranet and internet networks are efficiently and effectively used since these networks include attainable essential information.					

#### Section 5: Decision Making Process

Item		1	2	3	4	5
<b>24</b>	I have to make decision without defining or analyzing the problem.					
<b>25</b>	I face hardships to determine the possible alternatives to solve the problem.					
<b>26</b>	There are many decisions I made that either modified or cancelled.					

27	I make important decisions without consulting other people					
28	It is not of my interest to assist my supervisors to make the suitable decisions.					
<b>Item</b>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
29	I work on achieving the organization's goals with high efficiency.					
30	I face hardships to determine the right way to carry out the decision.					
31	Information Overload causes Failure to achieve a balance between task requirements and processing capacity.					
32	I'm fully capable of dealing with all the information related to work and making decisions within eight-hour mandatory working time per day.					
33	My workload mainly comes from the information load I have to deal with at work.					

THE END OF THE QUESTIONNAIRE

THANK YOU VERY MUCH

## APPENDIX B

### LIST OF INTERNATIONAL NGOS WORKING IN GAZA STRIP

#	Name of Organization
1	Secours Islamique France (SIF)
2	Médecins du Monde France (MDM)
3	Mercy Corps (MC)
4	Handicap International (HI)
5	Global Communities (CHF)
6	Norwegian People's Aid (NPA)
7	Catholic Relief Services (CRS)
8	Dan Church Aid
9	International Medical Corps (IMC)
10	Save the Children (SC)
11	International Relief & Development (IRD)
12	War Child Holland (WCH)
13	Qatar Red Crescent (QRC)
14	World Vision
15	Children's Villages Palestine (SOS)
16	Oxfam GB
17	German International Cooperation (GIZ)
18	Medcins Sans Frontiers (MSF)
19	Islamic Relief (IR)

20	The American Friends Service Committee (AFSC)
21	The Palestine Youth Civic Engagement Program (YCEP)
22	The Norwegian Refugee Council (NRC)
23	Action Against Hunger (ACF)
24	Caritas Jerusalem (CJ)
25	Qatar Red Crescent Society (QRCS)
26	Terre des hommes Foundation
27	CARE
28	The International Committee of the Red Cross (ICRC)
29	American Near East Refugee Aid (ANERA)
30	International Orthodox Christian Charities (IOCC)
31	Cooperazione Internazionale (COOPI)
32	HelpAge International

## REFEREES

#	Name	University
1	Prof. Yousif Ashour	Islamic University
2	Dr. Issam Al-Buhaisy	Islamic University
3	Dr. Sami Abu Al Ross	Islamic University
4	Dr. Akram Samour	Islamic University
5	Dr. Sami Abu Nasser	Al-Azhar University
6	Dr. Hazem Skaik	Al-Azhar University
7	Dr. Mahmoud Okasha	Al-Azhar University