

**Open University of Cyprus**

**Faculty of Economics and Management**

***MASTER IN BUSINESS ADMINISTRATION***

**Master Thesis**



**“DECISION MAKING:**

**A Literature Review on Decision Making  
and a Pilot Survey on  
Comparing Decision Making  
Between Public and Private Sector in Cyprus”**

**Markellos Markides**

**Supervisor Professor  
Dr. Emmanuel Mamatzakis**

**May 2021**

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The present Master Thesis was submitted in part to meet the requirements for  
obtaining a Master Degree  
in Business Administration  
from the Faculty of Economics and Management  
of Open University of Cyprus.

**May 2021**

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## **Abstract**

The purpose of this thesis “Decision Making: A Literature Review on Decision Making and a Pilot Survey on Comparing Decision Making between Public and Private Sector in Cyprus” is firstly to cite the bibliographic review that refers to the theme of decision making (in general) and then via a pilot survey to record, analyze and capture the similarities and differences in decision making between the private and public sector.

The work is composed of four chapters, as follows:

In Chapter 1, the literature is reviewed, on the general theme of Decision-Making, capturing the differences (resulting from the literature) between the Public and the Private Sector that could affect decision-making. In the final part of this chapter, the author’s definition of decision-making is briefly recorded.

In Chapter 2, the methodology of the survey is described (Questionnaire).

In Chapter 3, the data collected from the survey are presented on tables/graphs and data analysis is performed with the help of IBM SPSS Statistics v.26. A brief discussion is made on the findings.

The main aim of the work has been reached and in the final Chapter 4 the results from the survey are summarized and conclusions are drawn. The findings of the literature are listed along with the findings of the survey. Suggestions are made of what should or could be changed/ introduced/ applied, based on the findings and conclusions of this Pilot Survey.

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## Introduction

“Decision making is the most common task of managers and executives. Successful (organizations) ‘outdecide’ their competitors in at least three ways: they make better decisions; they make decisions faster; and they implement decisions more” (McLaughlin 1995:443).

Decision Making has never been more challenging before. Because of the complexity of the times the uncertainty grows. Uncertainty causes greater risks but great opportunities along with it.

People make a huge number of decisions every day. Most of them are taken subconsciously. Some others are taken after a little thought. For some decisions, it is necessary to devote a lot of time, to make calculations, correlate data, and take into account parameters and factors. Some decisions are simple and even insignificant and some are particularly important and even crucial for the survival of human lives.

In the business world, from small businesses to giant companies with multinational spread, everyone, from the lowest ranking employee to the General Manager, is required to make decisions daily, which can have a small to a huge impact on the business.

For a more systematic study of decisions and their decision-making process, it was necessary to classify them. In 1960 Simon proposed a model for the decision-making process, which consists of phases.

It is known that for anyone to be able to make the best possible decision, it is essential that all the right information and procedures are available for use. For this purpose, tools of various sciences are used to help in the faster and more correct decision-making. The advancement of computer science provides the ability to store and process large volumes of data in a very short time. The internet has eliminated distances, having achieved the fastest data exchange, which offers real-time information.

# Chapter 1

## Literature Review

### 1.1. Decision Making

"Decision-making is an intellectual process which involves the selection of one course of action out of many alternatives. Decision-making will be followed by a second function of management called planning. The other elements which follow planning are many such as organizing, directing, coordinating, controlling and motivating". ~ R. C. Davis <sup>1</sup>.

Johnson, J. G., & Busemeyer, J. R. (2010), state that "some researchers are interested in how to make the 'best' decision under specific conditions, while others are interested in the explanation for a specific course of action; some prefer to know what decision should be made, while others strive to understand why."

#### 1.1.1. Types of decisions

For a more systematic study of decisions and their decision-making process, it was necessary to classify them. At different stages in the development of research on the decision-making process, various criteria were proposed for their categorization.

According to Simon (1960), decisions are divided into the following categories:

##### 1.1.1.1. Programmed Decisions

For everyday decisions (clothes, food, etc.) people spend much less time. These types of easy take decisions are called scheduled decisions and are taken so often and because of

---

<sup>1</sup> (December 24, 1894 – c. 1960) Professor of Business Organization at Ohio State University.

this we develop automated responses, since there is much experience and less risk and it is easier to predict the consequences and results of the decision.

### **1.1.1.2. Non-programmed Decisions**

On the other hand, other decisions are more important, unfamiliar, and unique and this is why they require more conscious thinking, information gathering, and careful consideration of alternatives. These are called non-programmed decisions. The process of obtaining them is more based on intuition, judgment, creativity, negotiation, and empirical rules.

## **Programmed and non-programmed**

- Programmed decisions (Simon, 1960)
  - Familiar, structured problems and information known
  - Resolve by procedures, rules, policies and quantitative analysis.
- Non-programmed decisions
  - Unfamiliar, unique problem, information unclear and open to interpretation
  - Resolution depends on judgement, intuition, negotiation and creativity – for example, Inamo.

Boddy, Management: An Introduction PowerPoint on the Web, 6<sup>th</sup> edition © Pearson Education Limited 2014

**Picture 1 – Programmed and non-programmed decisions (Simon, 1960)**

<https://slidetodoc.com/slide-7-1-chapter-7-decision-making-boddy/>

Keen and Scott-Morton (1978) and Keen (1980) categorized decisions based on the nature of the problem:

### **1.1.1.3. Structured Decisions**

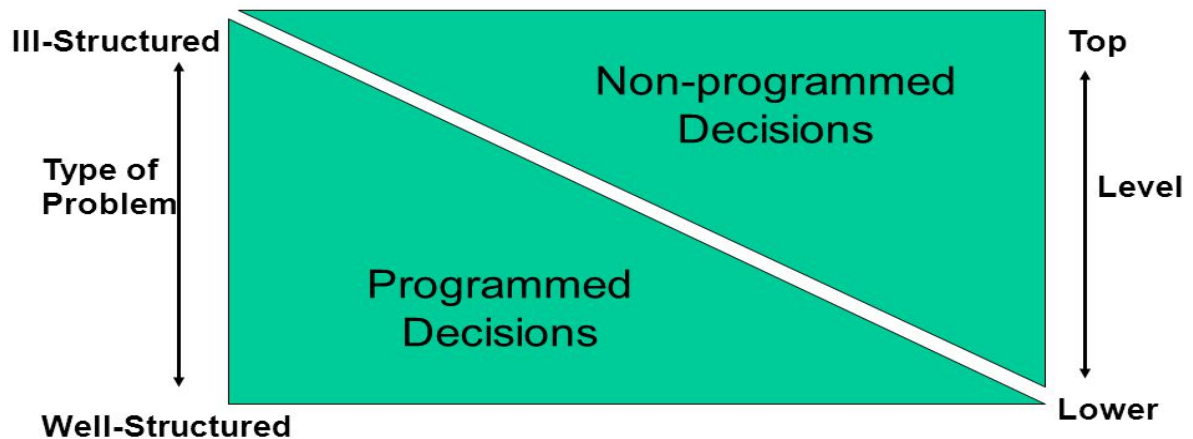
These are common decisions that are made very often. There is relevant experience in making these decisions and they involve low risk. The results of the decision are safe enough to be obtained almost mechanically. Solving this type of decision is very easy with the use of computers and through automated processes.

#### 1.1.1.4. Unstructured Decisions

These decisions are the most difficult. This is because there is not much experience in them and they involve high risk. Also, it is not clear what the correct decision-making process is. The decision cannot be automated. We can, however, through various tools, support decision-making and increase the chances of making the best choice.

#### 1.1.1.5. Semi-structured Decisions

These decisions are in between the two previous types. Some of its parts are clearly defined and some others are completely vague. There is some experience that can be used but it is not enough.



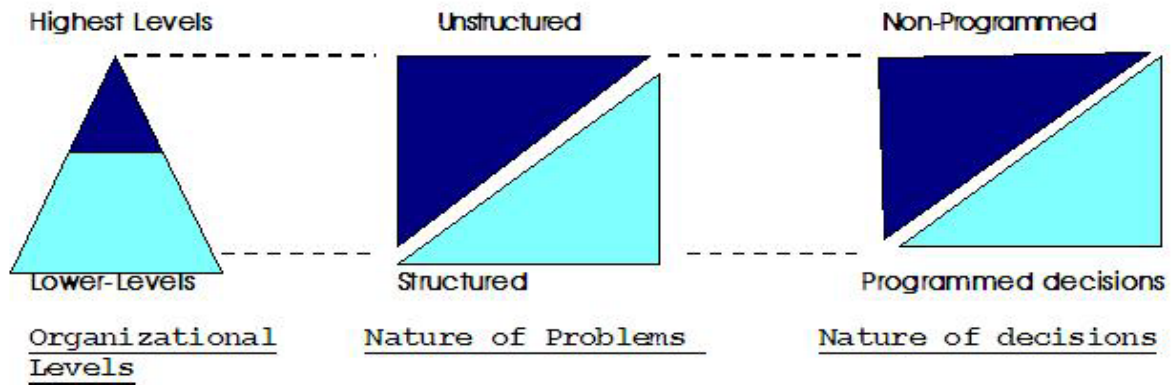
© 2005 Prentice Hall Inc. All rights reserved.

5-20

**Picture 2 - Programmed and non-programmed decisions related to the hierarchical level**

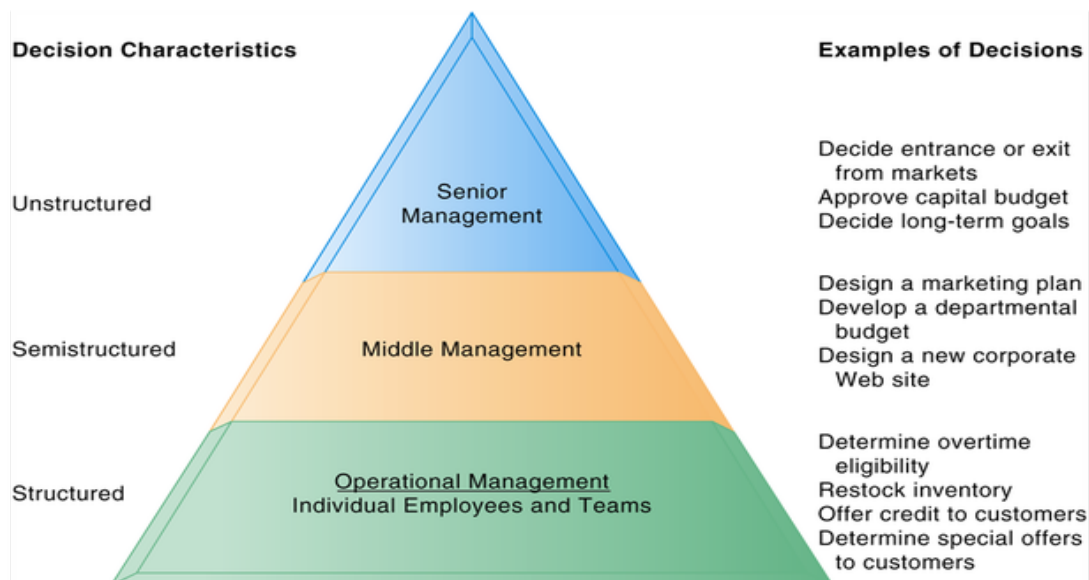
<https://laurencoom.wordpress.com/2016/10/11/decisionmaking/>

According to Anthony (1965), the classification of decisions is related to the hierarchical level at which the decision is made, that is, the position of responsibility held by the decision-maker. The classification is as follows:



**Picture 3 - Classification of decisions related to the hierarchical level**

<https://www.indiastudychannel.com/resources/116916-Programmed-and-Non-Programmed-Decisions-in-Management.aspx>



**Picture 4 - Classification of decisions related to the hierarchical level - Examples of decisions related to hierarchical level**

<https://teachmba.blogspot.com/2018/12/decision-making-process.html>

### 1.1.1.6. Operational Decisions

These are the day-to-day decisions that are made by ordinary employees, such as selling a product, preparing an offer to a customer, sourcing raw materials, etc. They are low-risk decisions and are often supported by automated processes, with little employee initiative.



### 1.1.1.7. Tactical Decisions

They are decisions that are taken by senior executives such as managers and relate to issues that have a greater impact on the course of the business than Operational Decisions, such as the purchase of machinery, the decision to open or close stores, etc.

### 1.1.1.8. Strategic Decisions

They can affect the future of the business. They are the most important decisions that can be made and it is the responsibility of the top executives. i.e. the expansion of the company, opening of new factories and stores, etc.



Picture 5 – Type of decisions related to hierarchical level

<https://www.pinterest.com/pin/750904937843796005/>

## **1.1.2. Decision Making Phases**

The decision-making process is a complex process, which, in order to be completed and to bring the desired result, goes through certain stages.

In 1960 Simon proposed a model for the decision-making process, which consists of three phases:

### **1.1.2.1. Intelligence Phase**

In this phase, the problem is analyzed. The state of the problem is recorded, as well as the parts of which it is composed and any other related problems. Its importance is determined so that the appropriate priority is given by the company. It is categorized and broken down as much as possible into sub-problems. The data and requests of the problem are fully recorded as well as all other data related to it.

### **1.1.2.2. Design Phase**

At this stage, attempts are being made to find all the alternatives that can be taken. These actions are then analyzed and calculations are performed to determine whether they can be implemented. The modeling of the problem is of great importance at this stage. This model attempts to represent the problem with all its parameters, the factors that affect it, and the prevailing conditions. Based on this model, an attempt is made to conclude the results of each action.

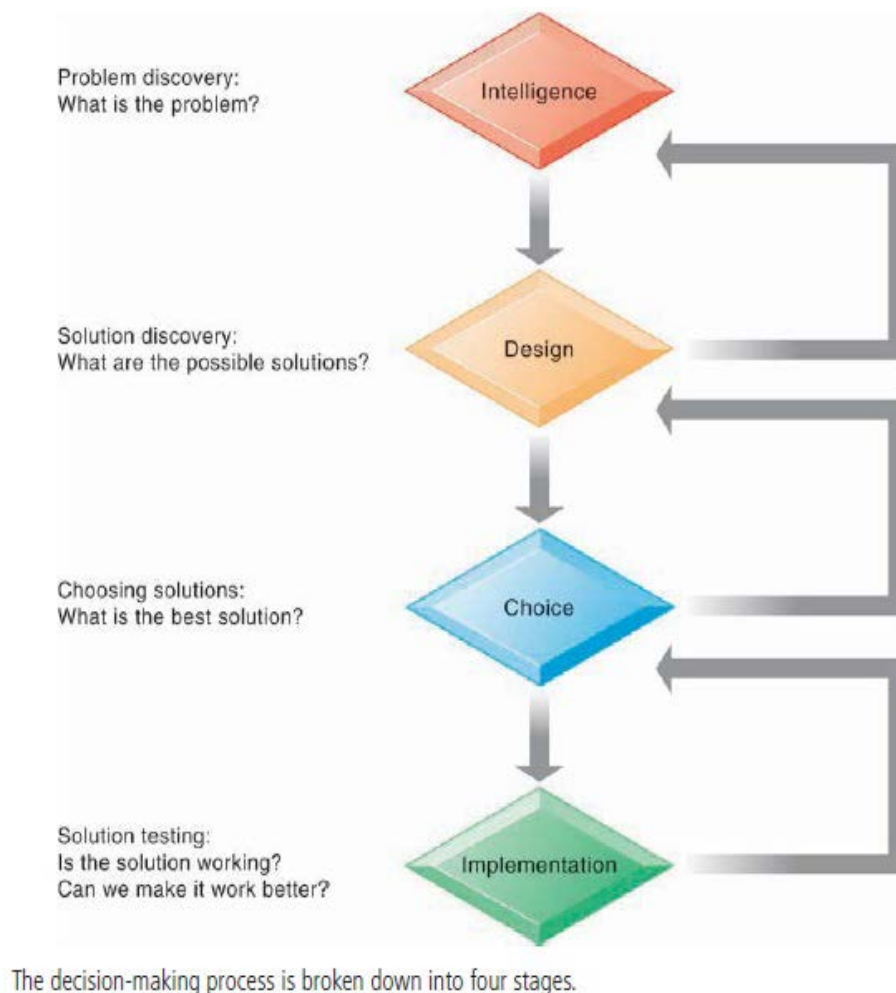
### **1.1.2.3. Choice Phase**

In the selection phase, the appropriate solution to the problem is sought through the evaluation of the solutions that were proposed in the previous phase.

There are two ways to look for a solution:

- The search for the solution is data-driven, based on available data.
- The search for the solution is goal-oriented, i.e. the starting point of the search is the goals.

Many researchers identify another phase, the **Implementation Phase**, which Simon considered part of the Choice Phase. In this Phase, the decision that has been taken is applied and its result is examined. Conclusions are drawn about the success or failure of the decision. If the result is not satisfactory, the previous stages of the decision are reviewed and an attempt is made to improve them.



**Picture 6 - Decision Making Phases**

<https://teachmba.blogspot.com/2018/12/decision-making-process.html>

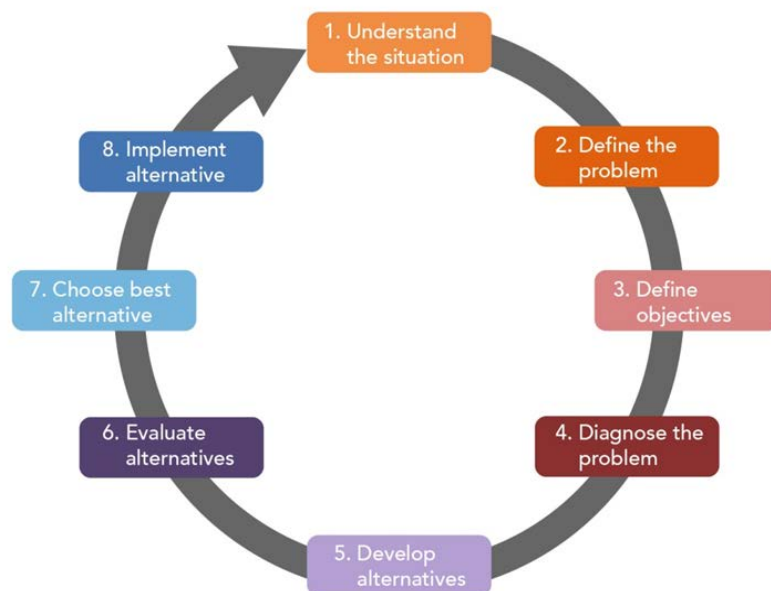
### 1.1.3. Factors that affect Decision Making

According to Business Dictionary, “Decision Making is the thought process of selecting a logical choice from the available options. When trying to make a good decision, a person must weigh the positives and negatives of each option, and consider all the alternatives”.

#### 1.1.3.1. Process in Decision Making – The Rational Model

Everyone makes decisions all the time but they all go about the process in their way. Many people, if not the most, will support that decision-making should be rational because the rational decision-making process involves careful, methodical steps. And the process becomes more rational when these steps are more carefully and strictly followed.

The rational decision-making model is given much emphasis in the strategic management field (Ansoff, 1991). According to Hashem (2018), “rational decision making, as a systematic process, includes information and data collection and analysis”.



**Picture 7 - Rational decision-making model**

<https://www.pinterest.com/pin/726979564845635098/>

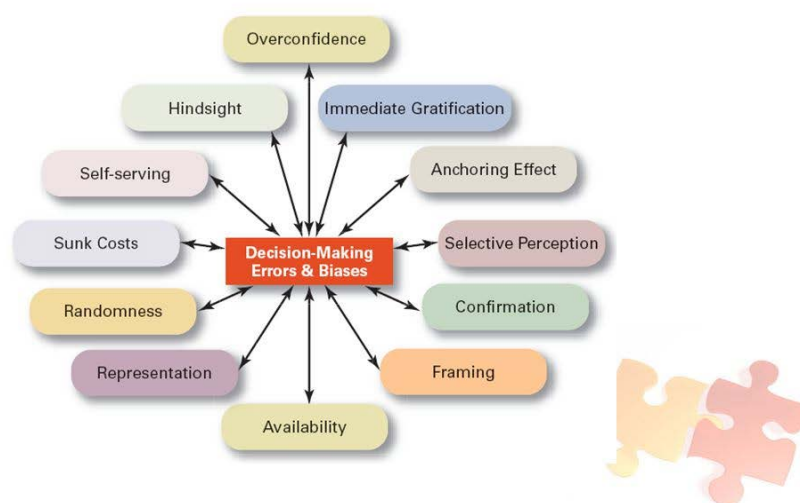
Goll and Rakesh (1998), suggest that stakeholders believe that managers should manage organizations rationally and efficiently towards particular ends. Managers should adopt the management’s techniques that stakeholders expect they will or else their support will be withdrawn from the organization (Abrahamson, 1996; Meyer and Rowan, 1977). Fredrickson (1983, 1984) suggests that “the link between rational decision making and performance may be moderated by the environment”.

Uzonwanne F.C. (2016), argues that “the rational model of decision making is the opposite of intuitive decision making”. In a rational decision-making process, someone uses facts and information, analysis, and a step-by-step procedure to come to a decision. Having that in mind he supports that “the rational model of decision making is a more advanced type of decision-making model”.

### 1.1.3.2. Biases that create problems in Decision Making

Lovallo, D., Sibony, O. (2018, October 11) state that “unlike in fields such as finance and marketing, where executives can use psychology to make the most of the biases residing in others, in strategic decision-making leaders need to recognize their own biases”. They also state that “Improving strategic decision making ... requires not only trying to limit our own (and others’) biases but also orchestrating a decision-making process that will confront different biases and limit their impact”.

## Decision Making and Biases/Errors



**Picture 8 – Decision making and biases/errors**

<https://dhkald.blogspot.com/2018/05/common-biases-and-errors-in-decision.html>

Although there are many decision-making biases most commonly can be:

### Overconfidence bias

The decision makers tend to hold a wrong, false and misleading assessment of their skills, intellect, or talent. It is an egotistical belief and happens when people believe they are better than they are. It can be a dangerous bias.



Picture 9 - Overconfidence bias

<https://www.youtube.com/watch?v=lQHDZM2Wizw>

### Immediate gratification bias

Immediate gratification bias is the one in which decision-makers make the decision based on the choice that will give them immediate and quick rewards. In this way, they ignore the future outcomes and simply give importance to those decision choices that have the quicker outcomes.

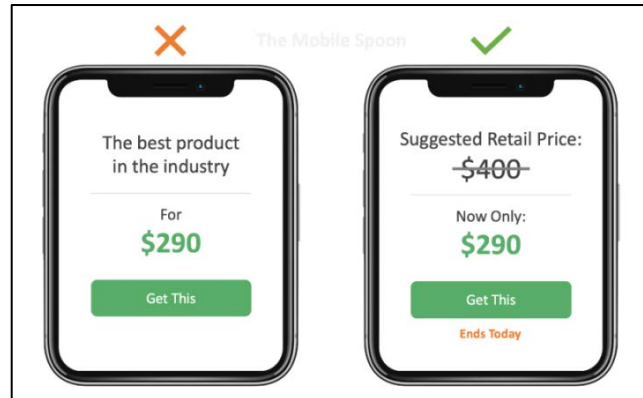


Picture 10 - Immediate gratification bias

<https://www.hebergementwebs.com/news/how-hyperbolic-discounting-leads-to-terrible-life-choices>

## Anchoring Effect

It is the tendency to rely too much and 'anchor' on only one piece of information to make decisions. Usually rely heavily on the initial information. That information carries a lot of weight as a decision-making factor and further information has not so much importance.



Picture 11 - Anchoring Effect

<https://www.pinterest.com/pin/654992339549870317/>

## Selective perception bias

Selective perception is the bias in which the decision-maker selectively understands the facts based on his selective perception or according to his awareness without making any further try to understand the remaining facts and data.



Picture 12 - Selective perception bias

<http://www.findglocal.com/KE/Westlands/396046783795936/Image-Horizon-Management-Consultants>

## Confirmation bias

People are biased towards confirming their existing beliefs. Confirmation bias is that the manager favors the information that confirms his fixed ideas without keeping them in mind.

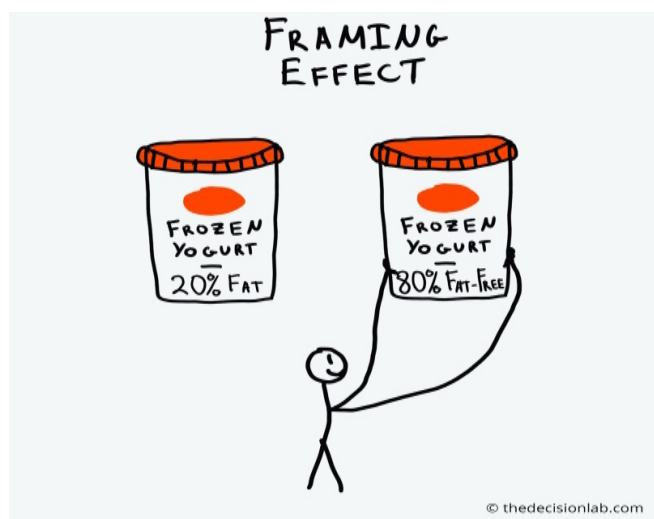


Picture 13 - Confirmation bias

<https://boycewire.com/confirmation-bias-definition-and-examples/>

## Framing effect

The framing effect is the bias when the decision-maker excludes certain aspects of a situation and includes some of them for making decisions.



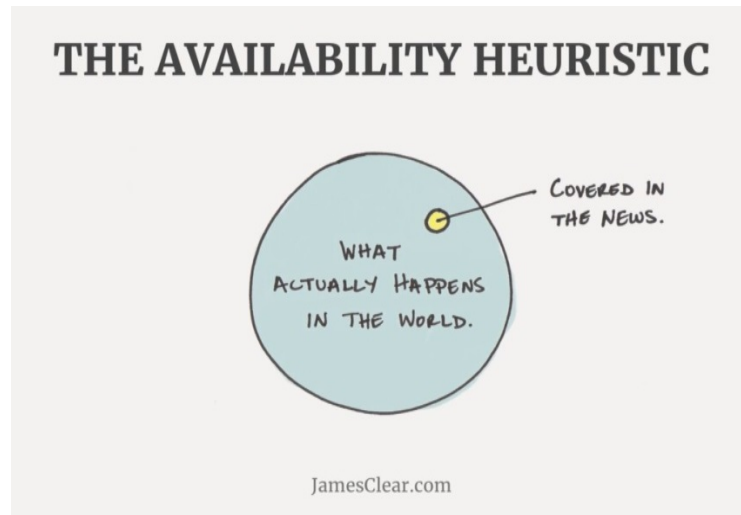
Picture 14 - Framing effect

<https://line.17qq.com/articles/qhatrqsax.html>



## Availability bias

The decision-makers tend to remember the events that are most recent and available to them.



Picture 15 - Availability bias

<https://www.pinterest.com/pin/385198574357221702/>

## Representation bias

Compare similar situations as they are identical. Some managers would think that when we were in a specific situation we reacted in this specific way and they forget that this is not this identical situation.



Picture 16 - Representation bias

<https://www.youtube.com/watch?v=aSB4hcy6DnM>

## Randomness bias

This is when the decision-makers try to create meaning out of random events, even though random events happen to everyone and there's nothing that can be done to predict them. Therefore, it is closely connected to probabilities.



Picture 17 - Randomness bias

<https://www.coindesk.com/how-a-decentralized-randomness-beacon-could-boost-cryptographic-security>

## Sunk cost error

The sunk costs are costs that you won't get back, regardless of future outcomes. The mind trap occurs when considering those sunk costs when making decisions about the future. Despite being fully aware of this a manager still has a difficult time avoiding it himself many times.

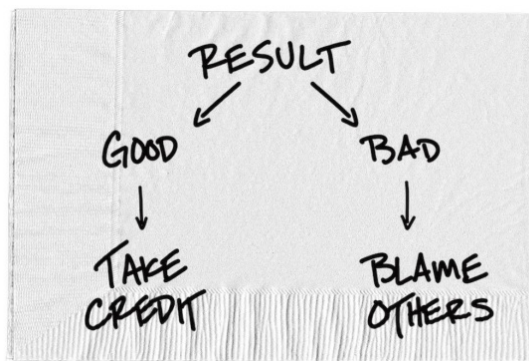


Picture 18 - Sunk cost error

<https://medium.com/firebase-developers/why-are-firebase-apis-asynchronous-callbacks-promises-tasks-e037a6654a93>

## Self-serving bias

A self-serving bias occurs when people point their successes to internal or personal factors but attribute their failures to situational factors away from their control. The self-serving bias can be seen in the common human propensity to take credit for success but to deny responsibility for failure. Examples of self-serving bias can be found in the workplace. Victims of serious occupational accidents tend to relate their accidents to external factors, whereas their coworkers and management tend to relate the accidents to the victims' actions.

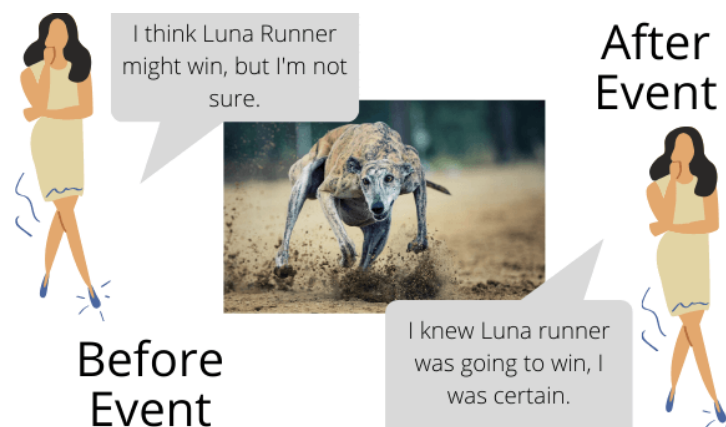


Picture 19 - Self-serving bias

<https://stackedhomes.com/editorial/10-cognitive-biases/#gs.xggwqz>

## Hindsight bias

Hindsight bias is the bias in which people amplify the predictability of an event after it has already happened. It may affect future decision-making if the decision-maker gets overconfidence.



Picture 20 - Hindsight bias

<https://boycewire.com/hindsight-bias-definition-and-examples/>

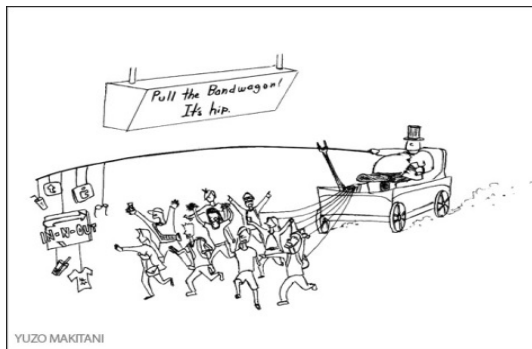
## Bandwagon effect

It is the tendency to blindly do or believe things because many other people do or believe. People often do and believe things just because many other people do and believe these things.



Picture 21 - Bandwagon effect

<https://www.conversion-uplift.co.uk/glossary-of-conversion-marketing/bandwagon-effect/>



Picture 22 - Bandwagon effect

<https://aragonoutlook.org/2011/11/trendy-foods-the-bandwagon-effect/>

## Bias blind spot

The tendency to see oneself as less biased and affected than other people.



Picture 23 - Bias blind spot

<https://www.interaction-design.org/literature/article/the-bias-blind-spot-and-unconscious-bias-in-design>

## Negativity bias

It is the tendency to pay more attention and give more weight to negative than positive experiences and other kinds of information, especially recently after taking a bad decision. This bias affects negatively future decision-making.

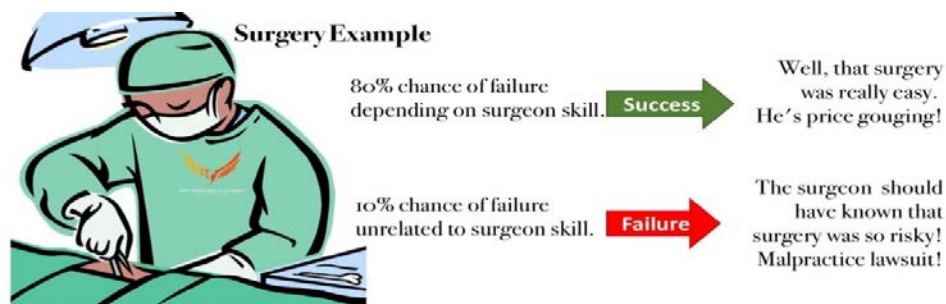


Picture 24 - Negativity bias

<https://www.youtube.com/watch?v=cdDrD3uk2E0>

## Outcome bias

It is the tendency to judge a decision by its eventual outcome instead of based on the factors and circumstances that exist for the decision at the time it was made. This bias may affect future decision-making negatively. I.e. patients may die after surgery even though the percentage they die without the surgery is still very high.



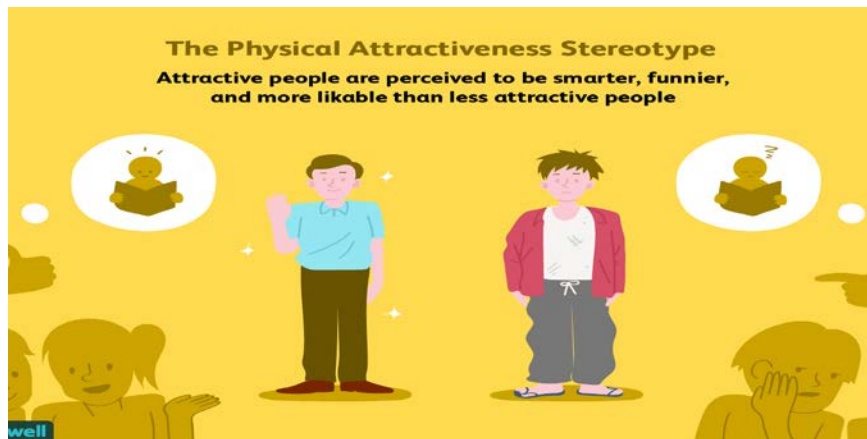
Picture 25 - Outcome bias

<https://andamaninspirations.com/2018/09/27/overconfidence-the-downfall-of-decision-making/>

## Halo effect

One of the most common and important biases is the Halo effect. The effect was first identified by US psychologist Edward Thorndike in 1920. It is the tendency to make specific inferences based on a general impression. It is when the perception of one trait

(i.e. a characteristic of a person or object) is influenced by the perception of another trait (or several other traits) of that person or object. A most specific example would be that a company's performance, good or bad, would create an overall impression —a halo— about every other element about that company. That impression shapes the way we think about all other elements (i.e. strategy, managers, employees, etc.). Another very common example is judging people upon their appearance (i.e. we may think that well-dressed people wearing nice and more expensive clothes are better people).



**Picture 26 - Halo effect**

<https://www.verywellmind.com/what-is-the-halo-effect-2795906>

### 1.1.3.3. Uncertainty and Risk in Decision making

“The biggest risk is not taking any risk... In a world that changing really quickly, the only strategy that is guaranteed to fail is not taking risks.” - Mark Zuckerberg, Co-founder Chairman, Chief Executive Officer, and controlling shareholder at Facebook, Inc.

Everyone understands risk differently and this has to do with the environment they are in. Decision-making is taken under either a) certainty (when the outcome can be known), (b) risk (when there are some possible outcomes), or (c) Uncertainty, (when there are many and completely unknown outcomes).

Ari Riabacke (2006) conducted a survey in which 12 managers in the Swedish forest industry were interviewed concerning/including the following subjects/questions “a) How they define risk?, b)How they handle risk?, c) How they make risky decisions?, d)How the organizational context affects the decision-making process?”.

The results showed that many risky and probability estimation decisions are taken mostly because a) inadequate or lack of information and precise objective data, b) no computer-based decision tools are used and no formal analysis is carried out in the decision making processes, and c) most decisions are based on intuition and gut feeling.

The managers when asked what they did when faced with a problem that involves risk they stated that they tried a) to avoid taking risks, b) collect more information, c) checked different aspects of the problem, d) actively work on the problem to reduce the risk, e) delayed the decision or f) delegated the decision.

When managers attempt to manage the risk they said that they either buy insurance (thus reducing the consequences of a risk), or carrying out a pilot study before making decisions, or using check-lists of points to take into consideration when making decisions, or “sign-away” at least a part of the risk.

### **1.1.3.4. Motivation, Intuition, and Innovation in Decision Making**

#### **Motivation**

“Private sector motivations generally differ from those of the public sector; which is not surprising given that they have different environments or contexts. The private sector is typically associated with market forces, while the public sector is more noticeably shaped by political considerations; one is about business and the other government; one tends to be decentralized and the other centralized” (Perry & Rainey 1988).

Khojasteh M. (1993) in his study explores the differences in the motivations of private versus public sector managers. The results of the study showed that pay has a significantly higher incentive for the private than public sector managers. Also, the study showed that their public-sector managers' recognition rewards had a higher motivation for the public than private-sector managers. He also mentions that “lack of a motivated workforce is one of the major problems that face both the public and private sectors and might be a more critical issue for the public than for the private sector”. On the other hand, Rapp (1978) suggested that many civil servants whose pay does not depend on performance have no incentive to perform better. Moreover, the results showed that both private and public sector managers are motivated by the factors of achievement and advancement.

Some other studies too e.g. Rawls et al. (1975) showed that private sector managers value more financial rewards than public sector managers, while public sector managers are more job security-oriented.

#### **Intuition**

“All of my best decisions in business and life have been made with heart, intuition, guts ... not analysis. If you can make a decision with analysis, you should do so. But it turns out in life that your most important decisions are always made with instinct and intuition, taste, heart.” - Jeff Bezos, founder, CEO, and president of Amazon.



Yet, the latest research doesn't agree with this statement since they have proved that intuition itself cannot always be trusted to lead to the optimal decision.

Riabacke, A. (2006) argues that people often neglect the rules when making important and especially risky decisions and make those decisions based mainly on intuition.

According to Sutton, J. (2020), intuition is actually the use of knowledge that is not clear.

Pattern recognition is vital to intuition. Intuition is the automation of a decision-making process. The knowledge one is learning recently cannot be acquired automatically but every move or action must be consciously considered. As a result of repeating the practice of this knowledge, this knowledge becomes automated. Such tasks are performed without conscious intervention, saving considerable processing power and leaving the mind free to focus on more difficult and intensive energies arising from newly acquired knowledge.

Seymour Epstein (2010) offers an additional, complementary picture: "Intuition includes the sense of knowing without knowing how one knows" based on the unconscious processing of information.

## **Innovation**

"Everyone thought the acquisition strategy was extremely risky because no one had ever done it successfully. In other words, it was innovative". - Larry Ellison, Co-founder, Executive Chairman of Oracle Corporation.

Markides, C. (2003) argues that organizations must create an environment (i.e. culture/structure/incentives/people) that promotes and supports innovative behavior. Strategic innovation has the potential to elevate an organization to the leader. Many organizations find it hard to become strategic innovators because there is a general lack of incentives to abandon a certain present for an uncertain future.

According to Sanger et al. (2020) "innovative public managers are entrepreneurial; they take risks with this old stuff with an opportunistic bias toward action and conscious underestimating of the bureaucratic and political obstacles their innovations face".

Bysted, Rune & Hansen, Jesper. (2013) quote that the innovation and bureaucracy are counter to each other and that the bureaucratic structure has a negative influence on public innovativeness. They also claim that public sector employees lack the need for innovation, but also that the public sector suffers from weaker leadership and administrative authority, something that is hindering public sector employee innovativeness.

### **1.1.4. Tools and techniques in decision making**

As we already mentioned, managers and leaders make a huge number of decisions every day, many of them could affect the future of their organization. Many tools and techniques were developed and used from time to time - and even more were proposed - to help managers to identify, analyze and deal with strategic decisions.

Everyone acknowledges the importance of these decision-making tools and techniques and many scholars and researchers focused on which tools are more often and effectively used and on how these tools and techniques are used (Clark, 1997, Elbanna 2007, Hashem 2017). According to Hashem (2018) “strategic decision-making tools and techniques can support decision-makers to achieve high rational decisions, as it motivates the decision-maker to get the right information and to use it in the right way for decision making”.

Some of these tools and techniques are the following:

- Decision Support Systems
- SWOT analysis
- PESTLE analysis
- Cost-benefit analysis
- Benchmarking
- Financial analysis
- Porter’s 5 Power analysis
- Value chain analysis
- Outsourcing
- Pareto analysis
- Portfolio analysis
- Stakeholder analysis
- Human Resources analysis
- Organizational Culture analysis
- Scenario analysis
- What if analysis
- Market research analysis

In the following chapters, we will briefly refer to the most popular tools (Decision Support Systems, SWOT analysis, PESTLE analysis, and Cost-Benefit analysis).



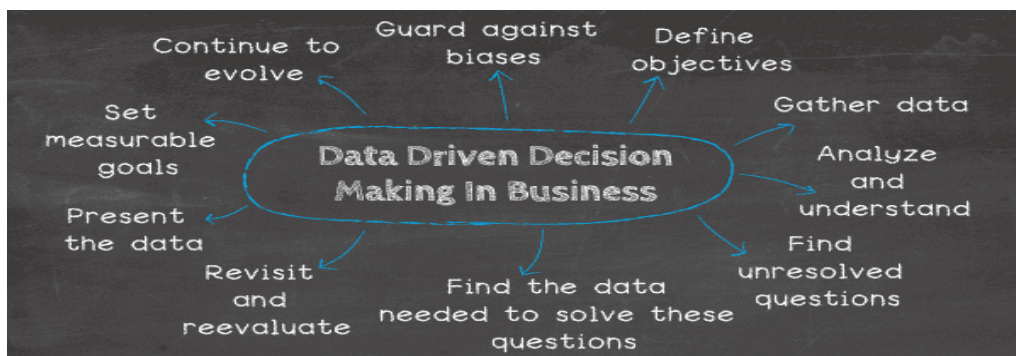
Picture 27 – Decision-making tools

<https://medium.com/@mahzeb/your-guide-to-making-better-business-decisions-a6de0d694af8>

### 1.1.4.1. Data Quality Management (DQM) and Decision Making

Deeb, G.<sup>2</sup> (2019, 2020) argues that “a business cannot be effectively managed without quality data” and he goes on to state that “using accurate data is critical” ... “non-accurate data may cause wrong business decisions that may result in hurting the business”.

Durcevic, S. (2019) argues that occasionally is okay to take decisions based on instinct but the majority of the decisions should be taken based upon “metrics, facts, or figures related to aims, goals, or initiatives” related to the business operations.



Picture 28 – Data-driven decision making

<https://instrumentalst.com/>

Fan, W., & Geerts, F. (2012, July) argues that “real-life data are often dirty: inconsistent, duplicated, inaccurate, incomplete, or stale”. It is obvious that these dirty data generate misleading and wrong results and bad decision-making and as a result, it leads to loss of revenues, credibility, and customers and this creates the need for data quality management.

According to Lebled, M. (2018) “data quality management (DQM) is a set of practices that aim at maintaining a high quality of information”. DQM starts with finding data, implementing various data processes, and then efficiently distributing the data. The system also requires oversight of information management. Effective DQM is considered crucial and of great importance and substance for the proper analysis of data.

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<sup>2</sup> Managing Partner, at Chicago based Red Rocket Ventures. Author of 101 Startup Lessons—An Entrepreneur’s Handbook, a member of the Chicago Tech 50, mentor at Techstars and an active venture investor via the FireStarter Fund. A past Ernst & Young “Entrepreneur of the Year” for his efforts as Founder & CEO of iExplore.

#### **1.1.4.2. Decision support systems**

Decision Support Systems (DSS) were first introduced in the 1970s and were widely used by businesses to aid the decision-making process. Mintzberg (1975) studied the characteristics and the way executives make decisions. These characteristics have proven useful tips for the designing of Decision Support Systems.

In the previous decades, decision-making was considered more as an art, as a set of personal skills, developed through experience over time. At present days, this approach has proven not enough. The volume of information provided is so large that keeping it without the use of specialized tools is beyond human capabilities.

The same goes for the need to process all this data. Modern managers, in addition to their special personal skills, must be systematic in their work and take advantage of the new tools offered to them. Information technology has changed the landscape and the field of decision-making. Nowadays, several information systems are installed in all organizations and operate providing data storage and processing capabilities as well as communication. All executives, nowadays, in the exercise of their duties utilize the capabilities of information systems.

In terms of the role of executives, according to Mintzberg, executives use electronic communication systems to connect the organization with the external environment, Management Information Systems to search for information about the organization and its dissemination to it, and Decision Support Systems for distribution and allocation of resources of the organization.

In terms of the Simon decision-making model, executives use Management Information Systems at the Information Stage to gather information about the problem and Decision Support Systems at the Design and Selection stage, to experiment with different solutions and to choose one of them.

Turban, Aronson, and Liang (2005) summarize the capabilities that Decision Support Systems offer in the decision-making process as follows:

- Quick and complex calculations can be performed at high speed and low cost
- Improved communication
- Increased productivity
- Technical support via storage, processing, and transmission of data at high speed and lower cost.
- Quick and easy access to huge data warehouses.
- Quality support is achieved by accessing more data, testing more alternatives, using simulation and artificial intelligence, etc.
- Competitive advantage. By improving decisions, quality, schedules, customer support, etc.
- Exceeding human perceptual limits.

Keen and Scott-Morton (1978), state that Decision Support Systems combine the mental resources of individuals with the capabilities of computers to improve the quality of decisions, and define them as computer-based systems, that support executives, who make decisions about semi-structured problems.

### 1.1.4.3. SWOT, PESTLE, and COST-BENEFIT analysis

#### SWOT ANALYSIS

<b>S</b> STRENGTHS	<b>W</b> WEAKNESSES	<b>O</b> OPPORTUNITIES	<b>T</b> THREATS
<ul style="list-style-type: none"><li>• Things the company does really well</li><li>• Qualities and characteristics which give you an advantage over the competition</li><li>• Internal resources such as dedicated and knowledgeable staff</li><li>• Assets such as capital, intellectual property, etc.</li></ul>	<ul style="list-style-type: none"><li>• Things the company lacks</li><li>• Things the competition does better</li><li>• Limited resources</li></ul>	<ul style="list-style-type: none"><li>• Untapped or underserved markets</li><li>• Few competitors</li><li>• Growing demand for your products or services</li><li>• Positive press/media coverage</li><li>• Goodwill amongst target audience</li></ul>	<ul style="list-style-type: none"><li>• New competition</li><li>• New industry and/or regulatory standards</li><li>• Negative press/media coverage</li><li>• Lack of goodwill</li></ul>

Picture 29 - SWOT analysis

<https://www.wordstream.com/blog/ws/2017/12/20/swot-analysis>

It is a strategic planning method used for strategic decision-making and business planning. It is used to analyze the Strengths, Weaknesses, Opportunities, and Threats involved in an organization/business/project.

**SWOT** is an acronym derives from the words

- **S**= Strengths
- **W**= Weaknesses
- **O**= Opportunities
- **T**= Threats

Williams (1996) claims that effective business leaders are people who live 'in a world of SWOT', as they will be individuals who will have access to the right information so that they can act on maximizing opportunities and attempt to avoid threats.



SWOT analysis is recommended by some as a prime tool of analysis (Hatton et al., 1992).

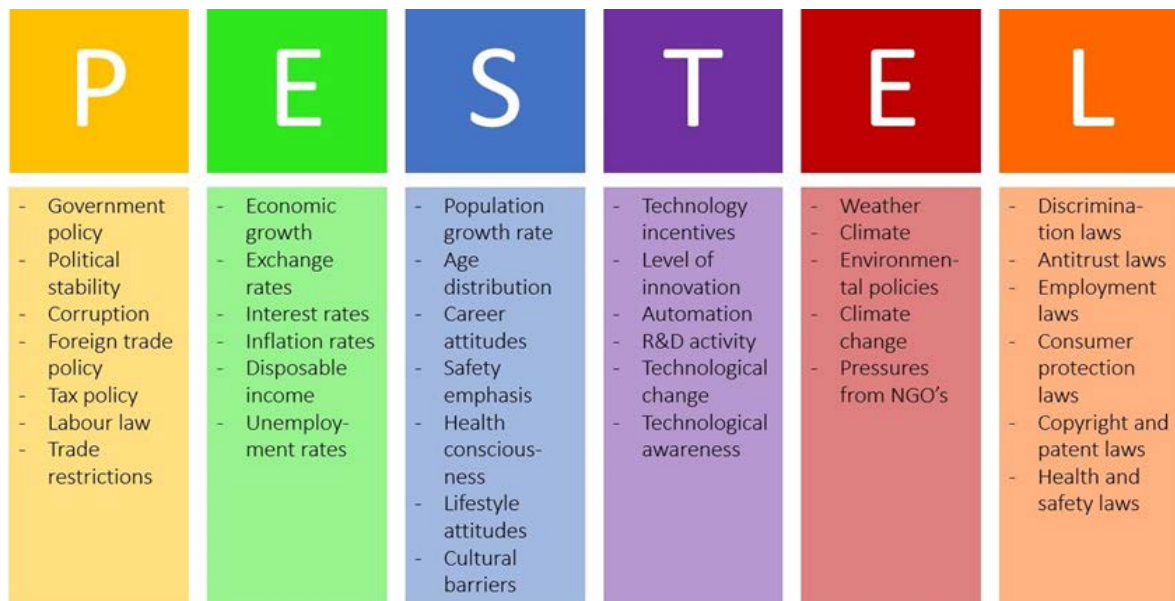
Glaister and Falshaw (1999) agree that SWOT analysis is one of the most respected and prevalent tools of strategic planning.

Dickson (2002) agrees that SWOT analysis can be re-conceptualized in terms of the direction and momentum where the market can still be changed.

Panagiotou (2003) stated that SWOT analysis is used more than any other strategic planning tool.

Helms, M.M. and Nixon, J. (2010), in their study they examined the use of the strategic management tool.

## PESTLE ANALYSIS



Picture 30 – PESTLE analysis

<https://www.business-to-you.com/scanning-the-environment-pestel-analysis/>

It is an analytical tool that is used for strategic decision-making and business planning. It can help for analyzing and a better understanding of external influences (on a business or a project) (i.e. Opportunities and Threats in SWOT ANALYSIS).

As Cadle et al. (2010) stated a business interacts with the external environment in its operations and the external factors cannot be controlled by the business.

**PESTLE** is an acronym derived from the words:

- **P= POLITICAL**
- **E= ECONOMIC**
- **S= SOCIAL**
- **T=TECHNOLOGICAL**
- **L= LEGAL**
- **E=ENVIRONMENTAL**

**Political:** includes political stability, laws, political status, etc. These and other factors in this environment can allow or even prohibit the (normal) operation of a business (tax policies, Fiscal policy, trade tariffs, etc.)

**Economic:** includes the factors that affect the economic environment are the inflation rate, interest rates, foreign exchange rates, economic growth patterns, etc. The inflation rate affects the price of the products and services. It also affects the purchasing power of a consumer and changes demand/supply models for that economy.

**Social:** includes the structure of a society, the perceptions of the inhabitants of a particular community, the demographic, psychographic, and other criteria that influence how the economy and companies behave.

**Technological:** includes the innovations in technology that affect the operations of the economy, the industry, and the market (internet, social networks, automation, research, and development, etc). Barriers to the entrance into a certain market are included.

**Legal:** includes the Laws and other policies that affect the business environment in a certain country (i.e. consumer laws, safety standards, labor laws, etc.).

**Environmental:** it is especially referred (but is not limited) to climate, weather, geographical location, ground conditions, water sources, ecology, international, national, or local environmental conditions and issues, environmental regulations, etc.

## **COST-BENEFIT ANALYSIS**

A cost-benefit analysis (CBA) is a process that businesses use to analyze data and take decisions. The business (or the analyst) sums the benefits of a situation or action and then subtracts the costs associated with taking that action (Kenton, W., 2020).

Thus, the analysis measures the final gain or loss of a decision (benefits of a decision - costs of that decision). The results of the comparison (benefit - costs) determine if the decision should proceed in action. Note that within the cost-benefit analysis, many data are only predictions and therefore could be inaccurate.

Prest A.R. and Turvey R. (1965, p.686) define CBA as “the maximization of the present value of all benefits less that of all costs”, subject to specific constraints. Moreover, according to Prest A.R. and Turvey R. (1966), “the cost-benefit analysis is a practical way of assessing the desirability of projects, where it is important to take a long view (in the sense of looking at repercussions in the further, as well as the nearer, future) and a wide view (in the sense of allowing for side-effects of many kinds on many persons, industries, regions, etc.)”.

They go on breaking down the process in the following questions:

1. Which benefits and costs should be taken under consideration?
2. In what way these benefits and costs should be analyzed?
3. What interest rate should be taken to calculate the present value (of future benefits and costs)?
4. Which are the constraints to be taken under consideration?

P.G. Sassone and W.A. Schaffer (1978) define CBA as the process which identifies and evaluates net benefits associated with alternatives for achieving defined public goals.

The procedure involves measurable financial metrics, but intangible benefits and costs (or effects) from the decision (especially in the public sector), can be taken under

consideration. A monetary measurement to all of the items on the cost-benefit list should be applied taking special care not to underestimate costs or overestimate benefits.

Benefits may include the following:

- Revenue and sales increase from increased production or new product.
- Intangible benefits, such as improved employee safety and morale, as well as customer satisfaction due to enhanced product offerings or faster delivery.
- Competitive advantage or market share gained as a result of the decision.

The costs involved could be the following:

- Direct costs (salaries, inventory, materials, manufacturing expenses, fuel, etc.),
- Indirect costs (utility bills, management overheads, rents, etc.),
- Intangible costs (impact on customers or employees, etc.),
- Opportunity costs (benefits from decisions finally not taken i.e. alternative decisions).
- Other risks cost (competition, environmental impacts, legislation, crises, etc.).



**Picture 31 - COST-BENEFIT analysis**

<https://www.pinterest.com/pin/104005072643864416/>

## 1.2. Strategic Decision Making

According to Mintzberg (1994c):

“Strategic Planning has always been about analysis – about breaking down a goal or set of intentions into steps, formalizing those steps so that they can be implemented almost automatically, and articulating the anticipated consequences or results of each step.

Strategic thinking, in contrast, is about synthesis. It involves intuition and creativity. The outcome of strategic thinking is an integrated perspective of the enterprise”.

According to Eisenhardt & Zbaracki (1992):

“Central among **strategic process** issues is **strategic decision-making**. It is crucial because it involves those fundamental decisions which shape the course of a firm.”

Graetz, F. (2002) in the case study of Communications Co. illustrates that scenario planning is one tool that many organizations are using with some success. Moreover, the findings support that strategic thinking skills can be cultivated and disseminated through an organization. Yet, it will need more than that. Leaders must have a high degree of emotional intelligence.

### **1.2.1. Decision Making in a Crisis**

The recent crises showed that everyone (especially leaders and managers) faces complex situations that require decisions for which they have no relevant experience and are completely unknown to them.

Bakonyi, Z. (2018), states that “in the time of crisis, companies centralize because they would like to gain efficiency.”

According to Bristol, A. (2020), the success or the failure is not because of one decision but a series of decisions... also, sometimes it is those who go against training and procedures that survive and the ones who do what they are told and stick to procedures suffer”. It is proved that it is extremely difficult for someone to maintain a complete open-minded thought procedure, especially when being under time pressure and has to make difficult decisions (Tversky and Kahneman, 1973; Kahneman, 2003; Dunning et al., 2003; Tsoukas, 2003; Klein, 2003, p.21; Waroquier et al., 2010).

Some recent studies identified that some of the assumptions that support and use the (rational choice) theory have flaws. “Rationality” and “Optimality” were proved to be non-realistic in real-life crisis environments Okoli, J. and Watt, J. (2018).

It is almost certain that those who will make the decisions will most likely modify the decision criteria, most likely unconsciously, to suit the situations and their understanding of the issue. It is also a fact that in recent years, the crises have become faster and more dynamic than ever before, which means that it is very difficult and almost unlikely that decision-makers will have time to perform the complex calculations they have evaluated for different situations (Tissington and Flin, 2005; Salas et al., 2012; Sadler-smith, 2016).

## 1.2.2. Decision Making in Chess

Chess is a mental simulation game that strengthens the ability to act and decide on whether something is an asset or a liability. In other words, chess is a game that uses strategies of decision-making to decide whether something is serving you or not. This is an essential skillset to have in life and chess.

Yet, Von Neumann<sup>3</sup> argued:

“Chess is not a game. Chess is a well-defined form of computation. You may not be able to work out the answers, but in theory, there must be a solution, the right procedure in any position. Real-life is not like that. Real-life consists of bluffing, of little tactics of deception, of asking yourself what is the other man going to think I mean to do. And that is what games are about in my theory” (Freedman, L. (2013). *Strategy: A History*).

According to Duke, A.<sup>4</sup> (2018):

“Chess, for all its strategic complexity, isn’t a great model for decision-making in life, where most of our decisions involve hidden information and a much greater influence of luck. This creates a challenge that doesn’t exist in chess: identifying the relative contributions of the decisions we make versus luck in how things turn out.”

In many different areas, experts make the right decisions (which are difficult and complex), often under conditions of great uncertainty and time pressure. It can be considered that these experts can do this either because they have superior analytical skills in creating and evaluating alternatives, or because they have a greater ability to recognize the characteristics of the situation and therefore the most promising choices based on the stored knowledge they have (pattern recognition, Klein & Peio, 1989). Although both of these elements are unquestionably necessary, current theories

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<sup>3</sup> [https://en.wikipedia.org/wiki/John\\_von\\_Neumann](https://en.wikipedia.org/wiki/John_von_Neumann);

<sup>4</sup> For two decades, Duke Annie was one of the top poker players in the world

emphasize the role of pattern recognition in decision making by experts (Feltovich, Prietula, & Ericsson, 2006).

One of the most important studies is Groot's (1946) study of chess players, which concludes that pattern recognition, rather than search, was the key determinant of expertise (see Bilalić, McLeod, & Gobet, 2008; Charness, 1992; Gobet & Charness, 2006). Vicente and Brewer (1993) reported that de Groot's work is in the most frequently cited works.

Kahneman D. (2011), explains how the brain has two different ways to think (System 1 and System 2).

“System 1 is fast, automatic, frequent, emotional, stereotypic, and subconscious. It handles all the things that we already know how to do. In chess, this is called intuition. Intuition is something that is based largely on pattern recognition, visual and abstract”.

“System 2 is slow, effortful, infrequent, logical, calculating, and conscious. When we try to solve unusual and complex problems, we use the brain in this way. The brain is very reluctant to turn to this way of thinking, as it requires us to stop everything else we are currently working on. In chess, this is basically everything else”.

As Aagaard, J. (2018), points out about the above statements is that “the two main ways to divide up what is done (in chess) would be strategy and calculation”.



## 1.3. Publicness - Entrepreneurship

According to Collins dictionary, “Publicness” is the quality or state of being public or being owned by the public.

Antonsen, M. and Jørgensen, T.B. (1997), define “publicness” as an organizational attachment to public sector values.

Boyne, G. A. (2002) argues that many organizations that are in the private sector may be more public than others that are part of the public sector. He also states that if a private firm complies with governmental policies (e.g. on health and safety regulations) it can be viewed as more public than a government organization that ignores these policies.

### **Variables for publicness: ownership, funding, and control**

According to Bozeman (1987) “all organizations are public”. Bozeman (1987) put together the three variables of **ownership, funding, and control** into the model of publicness. He argues that no organization is completely public or private.

### **Theoretical impacts of publicness: organizational environments, goals, structures and managerial values**

Boyne, G. A. (2002, p.99) states that four main theoretical impacts of publicness have been identified in the literature on the differences between public and private management. These refer to the relationship between:

- i. publicness and organizational environments,
  - a. Complexity
  - b. Permeability
  - c. Instability
  - d. Absence of competitive pressures
  
- ii. publicness and organizational goals,

- iii. publicness and organizational structures,
  - a. More bureaucracy
  - b. More red tape. It is the unnecessary and non-productive persistence with rules rather than results, and with processes instead of outcomes (Boyne, G. A., 2002, p.101),
  - c. Lower managerial autonomy.
  
- iv. Publicness and managerial values.

### **Entrepreneurship in organizations – key dimensions**

Ramamurti (1986, p. 143) defined a public entrepreneur as:

“An individual who undertakes purposeful activity to initiate, maintain or aggrandize one or more public sector organizations.....Even though there is a great demand for the public sector to become more innovative and dynamic, it seems to be even more difficult to be a successful entrepreneur in the public sector than in the private sector”.

Claudine Kearney, Robert D. Hisrich, Frank Roche (2009) point out that innovation, risk-taking, and proactivity have been referred to in the literature as entrepreneurial orientation. Also, that the term “entrepreneurship” is usually connected with private sector business activity and even more specifically with small to medium private sector companies. Miller (1983, p. 770), stated that an entrepreneurial firm is one that “engages in product market innovation, undertakes somewhat risky ventures and is first to come up with ‘proactive’ innovations, beating competitors to the punch”. However, in recent years it has appeared in the public administration literature also. Sanger and Levin (1992, p. 88) argued that “innovative public managers are entrepreneurial”.

## 1.4. Differences between the public and private sector (emerging from the literature) that could affect decision making

It is broadly believed that public and private organizations differ in many and important matters. These differences most of the time act as barriers to the transfer of decision-making techniques from the private to the public sector (Boyne, G. A., 2002).

The similarities and the differences between the public and private sectors have frequently been debated in the literature.

- a. The main distinction between public and private organizations is their **ownership** (Rainey et al., 1976).
- b. The public sector is mainly **funded** by taxation rather than the money paid directly by customers (Niskanen, 1971; Walmsley and Zald, 1973)
- c. Public sector organizations are **controlled** predominantly by political forces, not market forces. In other words, the primary constraints are imposed by the political system rather than the economic system (Dahl and Lindblom, 1953).

According to Fottler (1981, p. 4), these variables create “differences in how the basic functions of management are carried out” in the public and private sectors.”

Abdel-Maksoud, A., Elbanna, S., Mahama, H. and Pollanen, R. (2015), reinforces this idea by positing the following fundamental differences:

- a. the public sector is more **bureaucratic**. Because of that, it is more formal but less flexible compared to the private sector (Boyne, 2002; Bozeman and Kingsley, 1998)
- b. the public sector is focused on following **rules and procedures**, whereas the private sector is focused on profit-maximizing (McAdam et al., 2005)
- c. the public sector has **ambiguous and often conflicting goals** dictated by political pressures (Boyne, 2002)

### **1.4.1. Ownership**

Public ownership leads to lower efficiency in the public sector (Clarkson, 1972). In the private sector, owners and shareholders have direct monetary benefits if they monitor and control their organizations and their managers also have monetary benefits from better organizational performance (either because they own shares or because their payment is linked to the better financial results of the company). On the other side, in the public sector ownership is public and voters (who is the actual owner) direct gain from monitoring and controlling is very small. Moreover, public managers do not obtain direct financial benefits from the better performance of the organization.

Various studies show that “public managers try more to serve the public interest” (Gabris and Simo, 1995; Nalbandian and Edwards, 1983; Posner and Schmidt, 1996; Rainey, 1982; Rawls et al., 1975; Wittmer, 1991).

Nutt, P. C. (2005) studied public and private sector decision-making trying to find the differences in the practices of mid-level managers working in the two sectors. Managers with at least five years’ experience who were currently working in the public or the private sector participated in the study. The findings show that the public sector cannot easily adopt practices of the private sector.

### **1.4.2. Funding and Profit**

Public Sector is not constrained by narrow profit and is easier to obtain funding for risky projects - instead, they are guided by political and social objectives (Ramamurti, 1986; Morris and Jones, 1999), while Private Sector can be constrained by narrow profit. To obtain funding and raise capital, especially for risky projects is much more difficult (Ramamurti, 1986).

### **1.4.3. Objectives and goals**

In the public sector, there is greater diversity and multiplicity of objectives and greater conflict among objectives (Banfield, 1975; Rainey et al., 1976; Cornwall and Perlman,

1990), while in the private sector the goals and objectives are more clearly defined and there is a greater consistency (Sadler, 2000).

Baldwin, J. N. (1987) noted that, as also the literature suggests, the public sector's goals are not clear as they are in the private sector, because of the many different interests that inform the goal-setting process (Capauiola and Dowling, 1983; Fottler, 1981; Gawthrop, 1969; Hinrichs and Taylor, 1972; Levine, Backoff, Gaboon and Siffin, 1975; Rainey et al, 1976; Rogers, 1981).

Gapauiolo and Dowling, (1983) also suggest that private sector goals are clear because they are counted in terms of profit and loss.

Moreover, Baldwin, J. N. (1987) argues that public officials often try to follow their political stakeholders' interests and may agree on goals that are vague and conflicting. On the other hand, managers in the private sector generally make decisions that help the profitability of their organizations.

#### **1.4.4. Authority**

Public Sector is more authoritarian and more centralized (Downs, 1967; Pugh et al., 1969) while Private Sector is more democratic and more decentralized, (Miller, 1983; Cornwall and Perlman, 1990; Slevin and Covin, 1990; Miles and Arnold, 1991; Jennings, 1994; Russell, 1999).

#### **1.4.5. Rewards - Motivation**

Public Sector has lower financial incentives and does not share enterprise's profit (Ramamurti, 1986; Morris and Jones, 1999) and this is why there is lower commitment and job satisfaction (Rhinehart et al., 1969; Buchanon, 1974a, b; Rainey, 1983; Boyne, 2002).

Boyne, G. A. (2002), states (a statement with which I completely agree), that it is difficult for public employees to link contributions and the success of their organization.

In the Private Sector, a manager can be a calculated risk-taker. Many times he invests personal capital in the business. He can have higher financial incentives since profitability can generate more income (Ramamurti, 1986; Hornsby et al., 2002) and for these reasons, there is a greater level of commitment and job satisfaction (Rhinehart et al., 1969; Buchanon, 1974b; Rainey, 1983; Hornsby et al., 2002). Various studies showed that organizational commitment stronger in the private sector and weaker in the public sector (Buchanan, 1974, 1975; Zeffane, 1994).

Concerning the issue of satisfaction, many studies (Buchanan, 1974; Buchanan, 1975; Rainey, 1979a, 1979b; Rhinehart, Barrell, DeWolfe, Griffin & Spaner, 1969; Paine, Carrol, & Leete, 1969 and Solomon, 1986) concluded that public sector managers experience significantly lower levels of satisfaction than private-sector managers.

#### **1.4.6. Bureaucracy**

Various studies have tested the hypothesis that the public sector is more bureaucratic. Most of them strongly support it (Emmert and Crow, 1988; Holdaway et al., 1975; Lan and Rainey, 1992; Rainey, 1983; Scott and Falcone, 1998; Zeffane, 1994). Yet, Knott (1993, p. 95) pointed out that, also, most huge private companies use much bureaucracy too (even more than this of the public sector) to deliver successfully their services.

#### **1.4.7. Innovation**

Public managers take risks with an opportunistic bias toward action. They consciously overcome bureaucratic and political obstacles their innovation face (Sanger and Levin, 1992). The private sector creates value through innovation and (seizing that opportunity) produces resources or endows existing resources with enhanced potential for creating more profit (Churchill, 1992).

#### **1.4.8. Risk-taking**

In the Public Sector, a manager takes relatively big organizational risks without taking big personal risks (Morris and Jones, 1999), while in the Private Sector risk-taking is a huge factor. A manager knows that many times there is a significant - for him personally

and for the company financial - risk but attempts to minimize them (McClelland, 1961; Palmer, 1971; Timmons, 1978; Welsh and White, 1981).

Dilulio et al. (1993, p. 76) argue that the governments should promote “prudent risk-taking” and “experimenting” by providing room for failure. This way they pull public officials out of routines and encourage proactive actions to solve problems.

#### **1.4.9. Proactivity**

Public Sector managers will try to exploit every opportunity to distinguish (their leadership style) from what is the standard in the public sector – they will support the opportunity for business growth and development (Ramamurti, 1986). In the Private Sector, managers pursue an opportunity, regardless of the resources they control as they are relatively unconstrained by situational forces (Timmons, 1994; Bateman and Crant, 1993).

#### **1.4.10. My experience as a professional for about a decade in the Private Sector and another decade in the Public Sector**

For the last two decades, I have been working in both Sectors (Private and Public), mainly as a Project Manager (8 years in the Private Sector and 11 years in the Public Sector).

From my experience I can record the following:

##### **Private Sector**

The private sector is more profit-oriented. However, the proper professional knows that quality is something that will keep the business going. The triptych of success is that **the business must deliver the product at Low Cost, Good Quality, and In Time**. Of course, these three factors should be in balance.

In the Private Sector, there is more pressure for more efficiency, more results, and faster production. This can lead to earlier work fatigue, both physical and mental (especially if there are no obvious prospects for development for the employee in the business).

A very important fact is that in the Private Sector the motivations differ a lot from the Public Sector and consequently this affects decision making. Of course one of the strongest motivations in the Private Sector is not to be dismissed (especially if the employee has heavy burdens and many family responsibilities and perhaps his/her qualifications do not provide easy access to another job). The second important factor and significant motivation is professional development with the simultaneous increase of income (salary).

The goals, size, and procedures of a company are important factors that influence employees and therefore decision making. The larger a company is, the more impersonal and cumbersome it becomes, with more procedures and bureaucracy. Yet, the company gains more experience, skills, and reliability.

### **Public Sector**

In the public sector, things are quite different. Goals, needs, and policies are determined by the needs of the people of the country and not by money. Decisions are made mainly by the respective Governments and the Political world in the country (who as representatives of the voters always try, of course, to satisfy them). This is not a bad thing, since a democratic society is based on these principles and procedures. It should be enough if there were no personal interests behind these decisions (something that is almost unlikely to be eliminated by any society).

The ultimate guide in decision-making in Public Departments/Services is (very correctly in my opinion) the State Budget, which is voted by the Parliament at the beginning of every year.

Moreover, Public Departments are mostly guided by laws and regulations (concerning them), and specific procedures which generally apply to the entire Public Sector. The



civil servant is not flexible in decision making, as the procedures, as mentioned above, are non-negotiable and relatively strict.

However, in my opinion, the two most important factors, that affect decision making in the Public Sector are (a) the lack of motivation for the employees and (b) the permanence in their jobs, in the sense that for the civil servants there is minimum (if not at all) risk of dismissal. The dismissal procedures of a civil servant are very complicated and time-consuming because unshakable evidence is required (connected to serious criminal offenses and not for bad performance at work) for a dismissal to occur. As for the lack of motivation, it is much to the fact that in the Public Sector the promotion of the employees depends mainly on their seniority in the Department and to a much lesser extent (or even not at all) to the performance of the employee at work.

## **1.5. My definition of Decision Making**

For me (as a Project Manager and a chess player too) decision making is the choice of a specific action (move in chess), chosen among at least another one, that will improve the overall position of the decision-maker, or at least not make it worse - in the case, there is no way for the position to become better.

The procedure to choose that decision (move) should take into account all the data of the specific situation (position), at the specific moment. Both static and dynamic elements must be taken into account. The decision-maker should make in his mind short-term and long-term plans. It is well known to chess players that having a bad plan in mind is better than not having a plan at all.

The better decision-maker (chess player) can constantly improve his position. He constantly tries to have his team (pieces) in the position (squares of the chessboard) which maximize their possibilities and target the weakest point of the opponent.

Time has a very important role. Time in both chess and life is not just about clock time but also the speed of progress. The better decision-maker (chess player) can improve his position in the environment he/she is (i.e. on the board) faster than a less good decision-maker. The situation is like a speed race.

In short, I would like to point out the following: the better decision-maker (chess player) implements his goals (plans) faster and more precisely, by taking more accurate decisions, both in time and target. While the amateur/less experience decision-maker (chess player) often makes decisions that are not related to the specific purpose required by the position at the moment, the master makes precise moves that improve his position. This improvement can occur either because the move improves the position of its team (army) or because it worsens the position of the opposing teams (army). When the experienced decision-maker cannot take a decision (move) that improves his position then he tries to take a decision (finds a move) that at least maintains the existing balance.

One can compare a good decision-maker (chess player) to a good predator, who patiently prepares his attack and executes it at the right time. One of the characteristics that distinguish an experienced decision-maker from an amateur one is the ability of the experienced to recognize the right moment for each decision (best timing).

Every small detail can make a difference. The strategy requires the drawing up of many small plans, in different areas of the board, which must be manipulated by the decision-maker so that in the end they coexist in harmony and bring success.

Many factors must coexist to become a good decision-maker. The most important of these is prior knowledge. As in anything else in life, so it is in decision making (and chess), that success is 90% due to study and experience and 5% to talent. I believe that 5% is also due to the luck factors (country of residence - in different countries there are different development opportunities).

# **Chapter 2**

## **Methodology**

## **2.1. Place / Area of study**

The study was conducted in Nicosia / Cyprus from September to December 2020 on a sample of people working in both the private and public and semi-public sectors.

## **2.2. Objectives - Research questions**

This research aims to study the differences between professionals, in the way of thinking as well as in the way of making decisions in their workplace.

At the same time, to study various external factors that influence, more or less, decision-making, as well as the degree to which these factors influence decisions is investigated.

Also, it is being investigated whether any tools and techniques are used to make these decisions, in both sectors.

Problems and obstacles were sought, mainly of the character of professionals which make it difficult to make or even complete in practice the decisions are taken.

The evaluation of all the above questions was done with the Questionnaire attached at the end of the paper.

For the construction of the questionnaire, data from the bibliographic review of Chapter 2 were used, as well as some questions from the Flinders Decision Making Questionnaire (Q.16-20).

## **2.3. Research Tools - Questionnaire**

The questionnaire used is a very short questionnaire prepared by me. It consists of 4 Parts and a total of 20 questions.

Part 1 includes demographic data and consists of 5 questions (gender, age, educational level, whether the employee works in the public and semi-public sector or the private sector and the department that works in his organization).

Part 2 includes questions about the extent to which various external factors (such as permanence, bureaucracy, political parties influence, organization structure, and procedures in the organization) influence decision-making. Also, there is a question that puts the above external factors in order of importance-influence.

Part 3 consists of questions about business innovation's influence in decision-making as well as decision-making tools.

The 4th and last Part consists of questions concerning the personal character of each employee concerning the taking and the action of his decisions.

## **2.4. Data collection process**

For the needs of the data collection process of the research, a questionnaire was created from 20 clear and easy questions (which take about 3 minutes to be answered).

Initially, another questionnaire was created and used as a pilot questionnaire, which consisted of 60+ questions. This pilot questionnaire was forwarded to 25 people in my closest environment. It turned out to be large with relatively difficult questions and therefore it was not easy for the participants to answer it (it took about 20 minutes to answer it). This questionnaire was completed by all 25 people, but at least 20 of them pointed out its large size and the relatively complex questions to answer. Therefore, I proceeded to create the final questionnaire, which, in essence, is a summary of the most important questions of the pilot one.

The final questionnaire was created first created in MS Word and then transferred to Google's free online software called Google Forms for easier distribution and use (the link is given below).

<https://forms.gle/ihTLKJcoEvzYRRsQ8>

The questionnaires were collected as follows:

1. From the Ministry I work (the Ministry of Energy, Commerce and Industry) I have collected 51 questionnaires, after following a massive e-mail request to more than 200 employees of the Ministry,
2. From the Department my wife works, also from the Public Sector, I have received 15 questionnaires from about 30 employees,
3. From close friends, who work in both the public and private sector, I have received the rest of the questionnaires (about 30).

## **2.5. Limitations**

1. Although great efforts were made to ensure the randomness of the sample, it is was not completely random,
2. The sample size, especially for some questions was not enough to perform sound statistical analysis,
3. Lack of previous research studies on the topic in Cyprus.

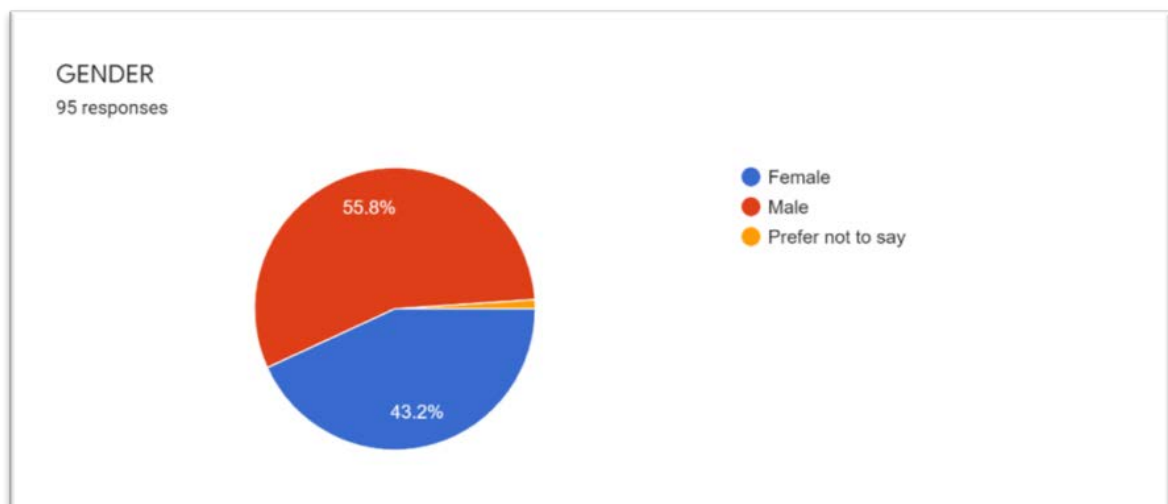
# **Chapter 3**

## **Data and Tables, Analysis, Discussion**

The data, the questions, the answers and the analysis of the research are presented in tables and graphs and the discussion and analysis of the results are below. The analysis is preceded using IBM SPSS Statistics v.26.

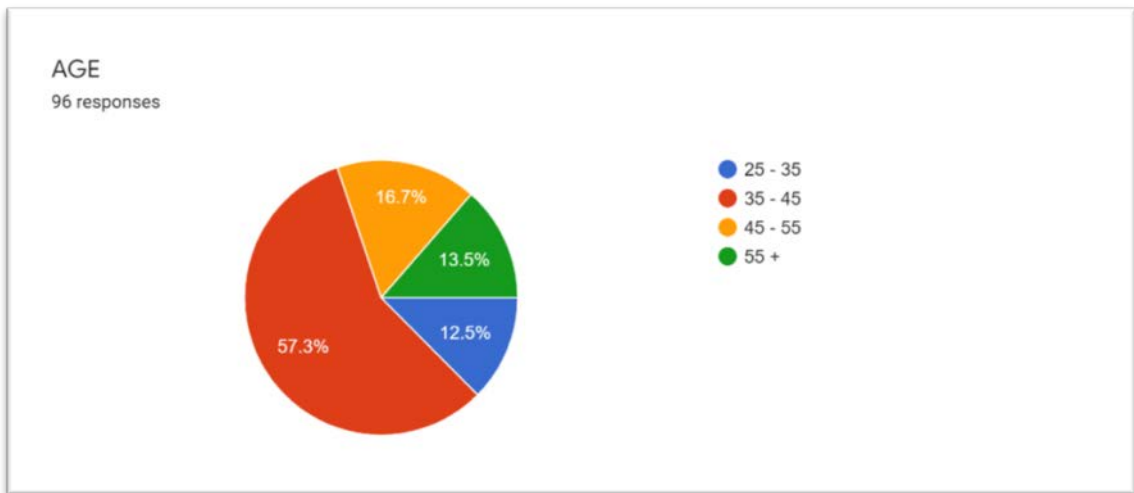
		Count	Column N %
Gender	Female	41	43,2%
	Male	53	55,8%
	Prefer not to say	1	1,1%
Age	25 - 35	12	12,5%
	35 - 45	55	57,3%
	45 - 55	16	16,7%
	55 +	13	13,5%
Education	High school	4	4,2%
	Higher Technical Institute	3	3,1%
	College Degree	2	2,1%
	Bachelor's degree	16	16,7%
	Master's degree	60	62,5%
	Ph.D. or higher	11	11,5%
Which Sector do you work at?	Public sector	76	80,0%
	Private sector	19	20,0%

**Table 1 - Demographic**

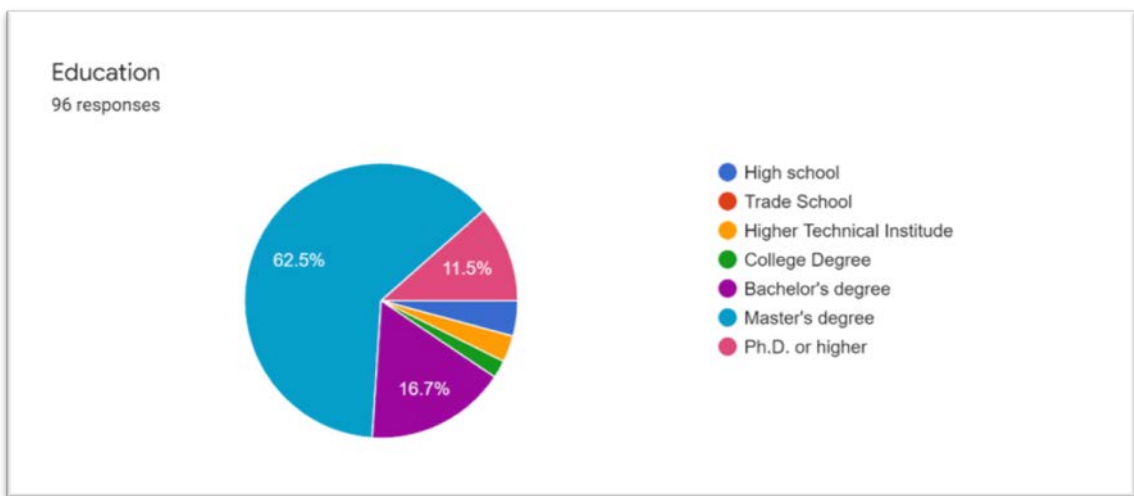


**Graph 1-Demographics - Gender**

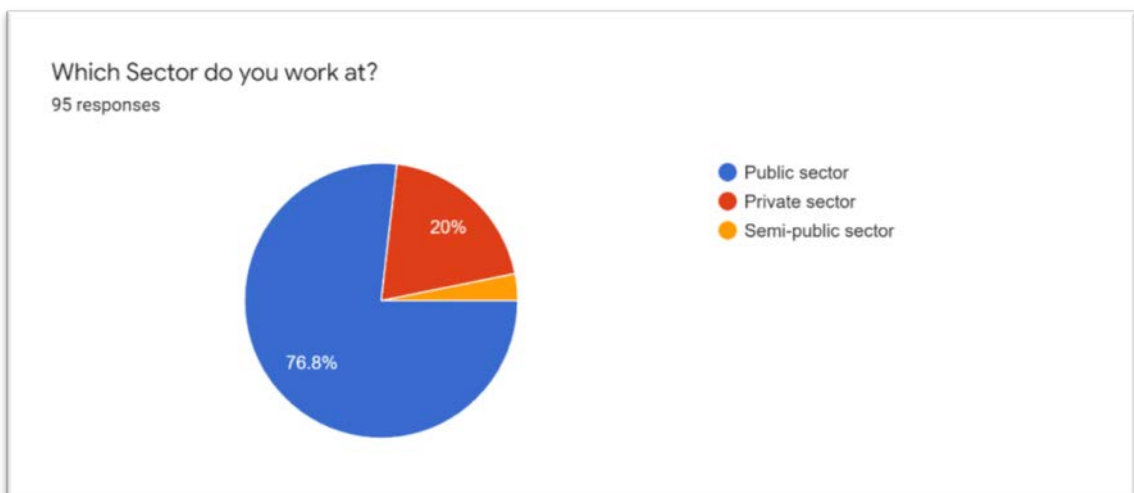




**Graph 2–Demographics - Age**



**Graph 3–Demographics - Education**



**Graph 4–Demographics – Sector the participant works at**

The majority of the sample (almost 70 %) is between 35-55 years old, over 70 % has a Master or Ph.D. degree, and 80% work in Public Sector.

		Count	Column N %
Department in your organization you work in.	Accounting and finance	8	10,0%
	Administration	28	35,0%
	Administration, Accounting, HR management, purchasing, and supplies	1	1,3%
	Competition	1	1,3%
	Consulting	7	8,8%
	Department for Social Inclusion of Persons with Disabilities	1	1,3%
	Education	1	1,3%
	Export Help Desk	1	1,3%
	Human Resource Management	2	2,5%
	Inspection - Customer Protection Services	1	1,3%
	Market surveillance, drafting legislation	1	1,3%
	Marketing	2	2,5%
	Officer	1	1,3%
	Policy making	1	1,3%
	Production	5	6,3%
	Project-management	7	8,8%
	Purchasing and Supplies	1	1,3%
	Quality Assurance	1	1,3%
	Research and development	4	5,0%
	Risk Management	1	1,3%
Social Work	1	1,3%	
Systems	1	1,3%	
Teaching	1	1,3%	
Technical Audit	1	1,3%	
Trade Policy	1	1,3%	

**Table 2- Demographics**



**Graph 5-Department**

Most people that answered the questionnaire work as Administration employees (over 35 %), following by Accounting and Finance employees with 10,0%, Consultants 8,8%, Project-managers 8,8%, people work in production 6,3% and research and development employees with 5,0%. All other are of less than 2%.

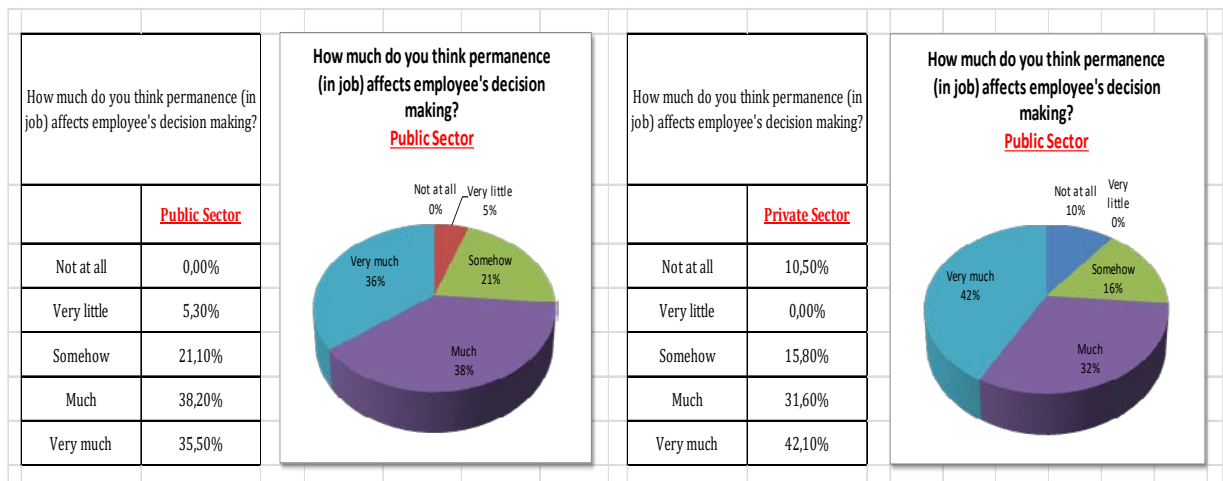
		Which Sector do you work at?		Total
		Public sector	Private sector	
How much do you think permanence (in the job) affects employee's decision-making?	Not at all	0	2	2
		0,0%	10,5%	2,1%
	Very little	4	0	4
		5,3%	0,0%	4,2%
	Somehow	16	3	19
		21,1%	15,8%	20,0%
	Much	29	6	35
38,2%		31,6%	36,8%	
Very much	27	8	35	
	35,5%	42,1%	36,8%	
Total		76	19	95
		100,0%	100,0 %	100,0 %

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	9.568 <sup>a</sup>	4	0,048	0,059		

**Table 3- “How much permanence (in the job) affects employee's decision making.”**

Statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 9.568$ , p value= 0,048 < 0,05).



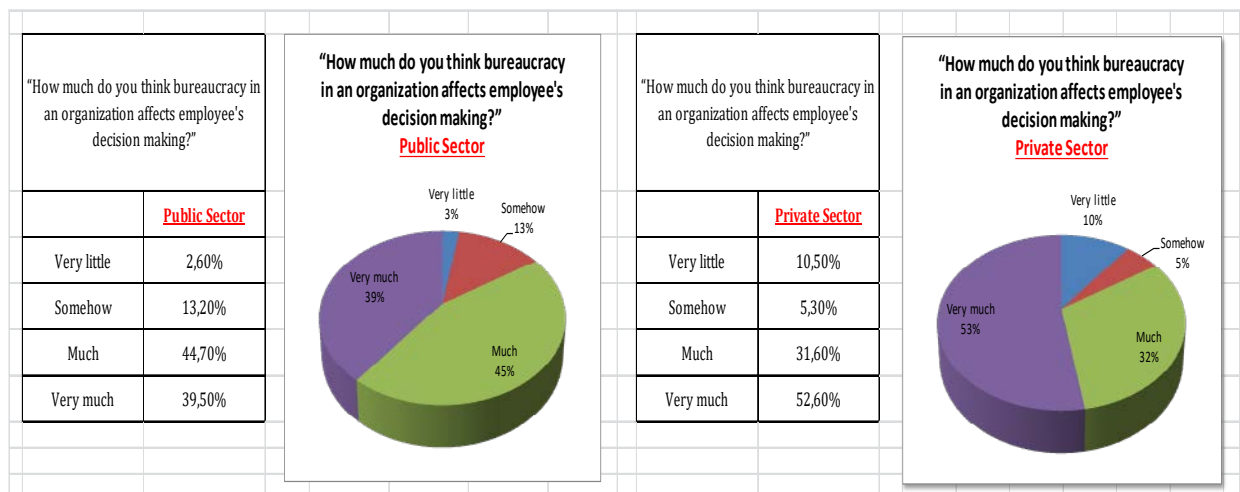
**Graph 6-“How much permanence (in the job) affects employee's decision making.”**

In both sectors (Public and Private Sector) employees answered (73%) that permanence (in the job) affects much and/or very much decision making.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
How much do you think bureaucracy in an organization affects employee's decision-making?	Very little	2	2	4		
		2,6%	10,5%	4,2%		
	Somehow	10	1	11		
		13,2%	5,3%	11,6%		
	Much	34	6	40		
		44,7%	31,6%	42,1%		
	Very much	30	10	40		
		39,5%	52,6%	42,1%		
Total		76	19	95		
		100,0%	100,0%	100,0%		
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	4.318 <sup>a</sup>	3	0,229	0,230		

**Table 4 – “How much do you think bureaucracy in an organization affects employee decision-making?”**

No statistical significance was found between the question of how much they think that bureaucracy in an organization affects employee's decision-making and the sector they work at ( $\chi^2 = 4.318$ , p value= 0,229 > 0,05).



**Graph 7–“How much do you think bureaucracy in an organization affects employee decision-making?”**

In both sectors (Public and Private Sector) employees answered (84%) that bureaucracy affects much and/or very much decision making.

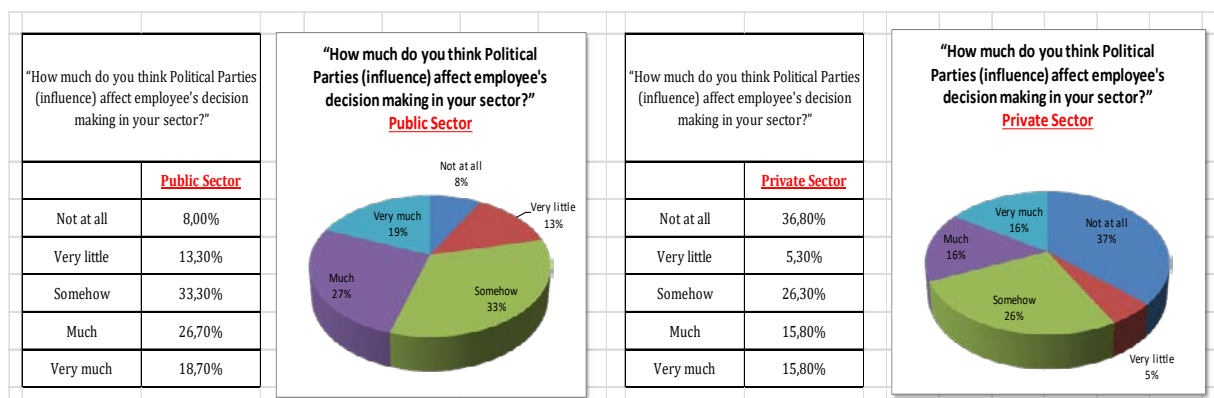
		Which Sector do you work at?		Total
		Public sector	Private sector	
How much do you think Political Parties (influence) affect employee's decision-making in your sector?	Not at all	6	7	13
		8,0%	36,8%	13,8%
	Very little	10	1	11
		13,3%	5,3%	11,7%
	Somehow	25	5	30
		33,3%	26,3%	31,9%
Much	20	3	23	
	26,7%	15,8%	24,5%	
Very much	14	3	17	
	18,7%	15,8%	18,1%	
Total		75	19	94
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	10.999 <sup>a</sup>	4	0,027	0,025		

**Table 5- “How much do you think Political Parties (influence) affect employee's decision making in your sector?”**

Statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 10.999$ , p value= 0,027 < 0,05).



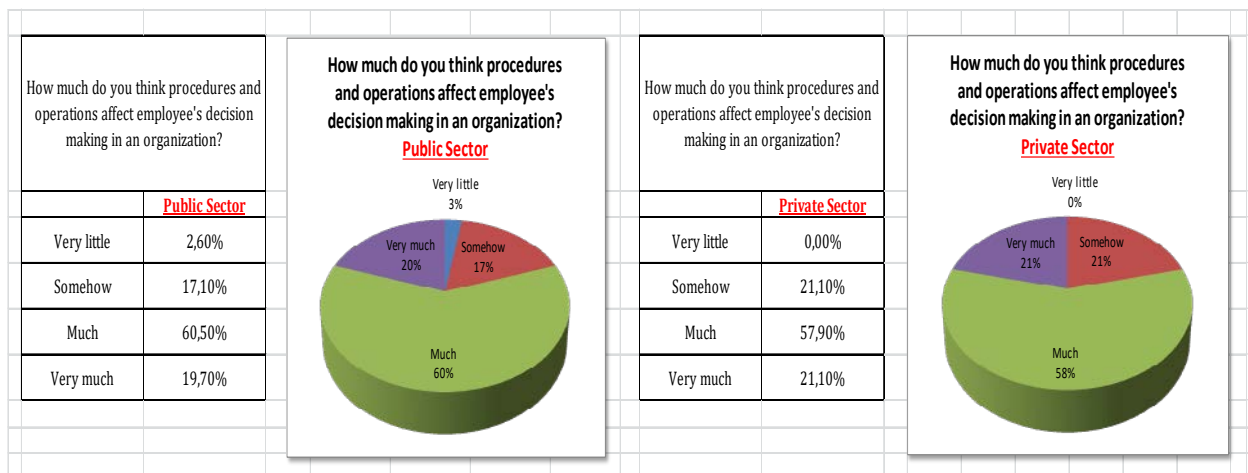
**Graph 8-“How much do you think Political Parties (influence) affect employee's decision making in your sector?”**

In the Public Sector employees answered (60%) that Political Parties (influence) affect much and/or very much decision making. In the Private Sector, the employees’ majority (36,8%) answered that Political Parties (influence) do not affect at all decision making, while 26.3% believe that PP affects somehow decision making.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
How much do you think procedures and operations affect employee's decision-making in an organization?	Very little	2	0	2		
		2,6%	0,0%	2,1%		
	Somehow	13	4	17		
		17,1%	21,1%	17,9%		
	Much	46	11	57		
		60,5%	57,9%	60,0%		
	Very much	15	4	19		
		19,7%	21,1%	20,0%		
Total		76	19	95		
		100,0%	100,0%	100,0%		
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.663 <sup>a</sup>	3	0,882	0,959		

**Table 6- “How much do you think procedures and operations affect employee's decision making in an organization?”**

No statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = .663$ , p value = 0,882 > 0,05).



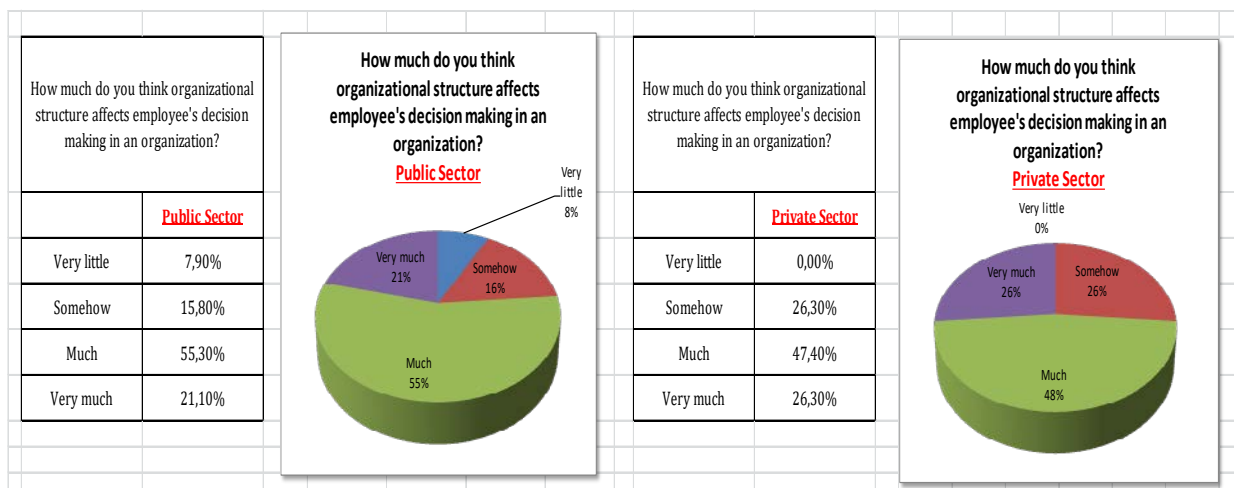
**Graph 9- “How much do you think procedures and operations affect employee's decision making in an organization?”**

In both sectors Public (60,5%) and Private Sector (57,90%), the employees answered that procedures and operations affect the employee's decision-making much in an organization.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
How much do you think organizational structure affects employee's decision-making in an organization?	Very little	6	0	6		
		7,9%	0,0%	6,3%		
	Somehow	12	5	17		
		15,8%	26,3%	17,9%		
	Much	42	9	51		
		55,3%	47,4%	53,7%		
	Very much	16	5	21		
		21,1%	26,3%	22,1%		
Total		76	19	95		
		100,0%	100,0%	100,0%		
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.808 <sup>a</sup>	3	0,422	0,444		

**Table 7- “How much do you think organizational structure affects employee's decision making in an organization?”**

No statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 2.808$ ,  $p$  value =  $0,422 > 0,05$ ).



**Graph 10- “How much do you think organizational structure affects employee's decision making in an organization?”**

In both sectors (Public-55,30% and Private Sector-47,40%) employees answered that organizational structure affects much employee's decision making in an organization.



		Which Sector do you work at?		Total		
		Public sector	Private sector			
Permanence (or not) in the job affects employee's decision-making.	the most	30	8	38		
		39,5%	42,1%	40,0%		
	most	11	4	15		
		14,5%	21,1%	15,8%		
	more	11	3	14		
		14,5%	15,8%	14,7%		
	less	10	1	11		
		13,2%	5,3%	11,6%		
	the least	14	3	17		
		18,4%	15,8%	17,9%		
	Total		76	19	95	
			100,0%	100,0%	100,0%	
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	1.338 <sup>a</sup>	4	0,855	0,860		

**Table 8–Degree that “Permanence (or not) in job affects employee's decision making.”**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 1.338$ , p value= 0,855 > 0,05).

In both sectors (Public and Private Sector) employees answered that Permanence (or not) in job affects employee's decision making the most (1 in scale) of all other reasons.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
Bureaucracy in the organization affects employee's decision-making.	the most	11	4	15		
		14,5%	21,1%	15,8%		
	most	33	8	41		
		43,4%	42,1%	43,2%		
	more	15	4	19		
		19,7%	21,1%	20,0%		
	less	16	3	19		
		21,1%	15,8%	20,0%		
	the least	1	0	1		
		1,3%	0,0%	1,1%		
	Total		76	19	95	
			100,0%	100,0%	100,0%	
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	.896 <sup>a</sup>	4	0,925	0,947		

**Table 9–Degree that “Bureaucracy in the organization affects employee's decision making”**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = .896$ , p value=  $0,925 > 0,05$ ).

In both sectors (Public and Private Sector) employees answered that bureaucracy affects employee's decision making most (2 in scale) of all other reasons.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
Political parties (influence) affect employee's decision-making.	the most	8	2	10		
		10,5%	10,5%	10,5%		
	most	6	1	7		
		7,9%	5,3%	7,4%		
	more	20	3	23		
		26,3%	15,8%	24,2%		
	less	16	3	19		
21,1%		15,8%	20,0%			
the least	26	10	36			
	34,2%	52,6%	37,9%			
Total		76	19	95		
		100,0%	100,0%	100,0%		
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.410 <sup>a</sup>	4	0,661	0,699		

**Table 10 - Degree that the “Political parties (influence) affect employee's decision making”.**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 2.410$ , p value= 0,661 > 0,05).

In both sectors (Public and Private Sector) employees agree that Political parties (influence) affect employee's decision-making the least (5 in scale) of all other reasons.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
<b><u>Procedures and operations in an organization</u></b> affect employee's decision-making.	the most	17	1	18		
		22,4%	5,3%	18,9%		
	most	12	5	17		
		15,8%	26,3%	17,9%		
	more	17	5	22		
		<b>22,4%</b>	<b>26,3%</b>	23,2%		
	less	19	6	25		
		25,0%	31,6%	26,3%		
	the least	11	2	13		
		14,5%	10,5%	13,7%		
	Total		76	19	95	
			100,0%	100,0%	100,0%	
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.814 <sup>a</sup>	4	0,432	0,441		

**Table 11–Degree that the “Procedures and operations in an organization affect employee's decision making”.**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 3.814$ , p value=  $0,432 > 0,05$ ).

In both sectors (Public and Private Sector) employees answered that Procedures and operations in an organization affect employee's decision-making less (4 in scale) than all other reasons.

		Which Sector do you work at?		Total		
		Public sector	Private sector			
The organizational structure affects employee's decision-making.	the most	10	4	14		
		13,2%	21,1%	14,7%		
	most	14	1	15		
		18,4%	5,3%	15,8%		
	more	13	4	17		
		17,1%	21,1%	17,9%		
	less	15	6	21		
19,7%		31,6%	22,1%			
the least	24	4	28			
	31,6%	21,1%	29,5%			
Total		76	19	95		
		100,0%	100,0%	100,0%		
Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.978 <sup>a</sup>	4	0,409	0,418		

**Table 12-Degree that the “The organizational structure affects employee's decision making”.**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 3.978$ , p value= 0,409 > 0,05).

In Public Sector the employees answered that they believe that the organizational structure affects employee's decision making the least (5 in scale) of all other reasons while in the Private Sector the employees answered that they believe that the organizational structure affects employee's decision making less (4 in scale) of all other reasons.

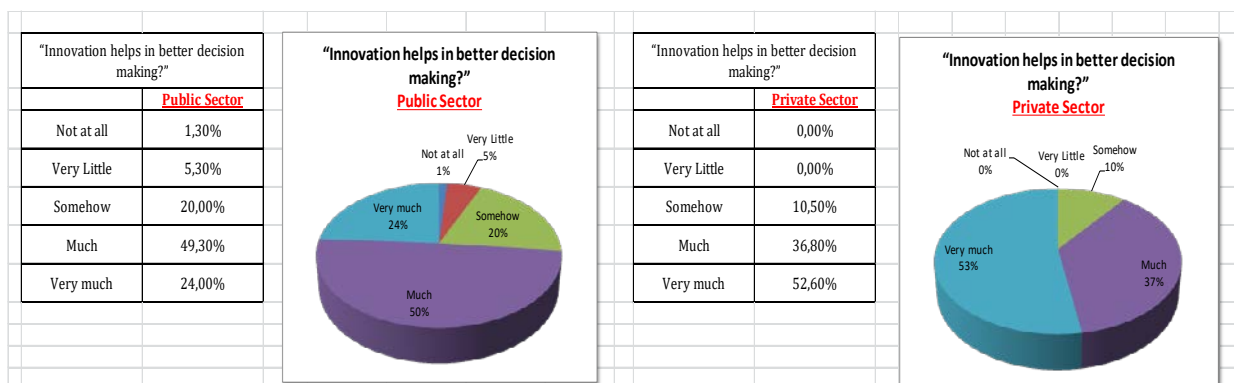
		Which Sector do you work at?		Total
		Public sector	Private sector	
Does innovation help in better decision-making?	Not at all	1	0	1
		1,3%	0,0%	1,1%
	Very little	4	0	4
		5,3%	0,0%	4,3%
	Somehow	15	2	17
		20,0%	10,5%	18,1%
Much	37	7	44	
	49,3%	36,8%	46,8%	
Very much	18	10	28	
	24,0%	52,6%	29,8%	
Total		75	19	94
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	6.696 <sup>a</sup>	4	0,153	0,160		

**Table 13–Degree that the “Innovation helps in better decision making?”**

No statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 6.696$ , p value= 0,153 > 0,05).



**Graph 11–“Innovation helps in better decision making?”**

In both sectors (Public-55,30% and Private Sector-47,40%) employees answered that innovation in the organization would affect much employee's decision-making in an organization.

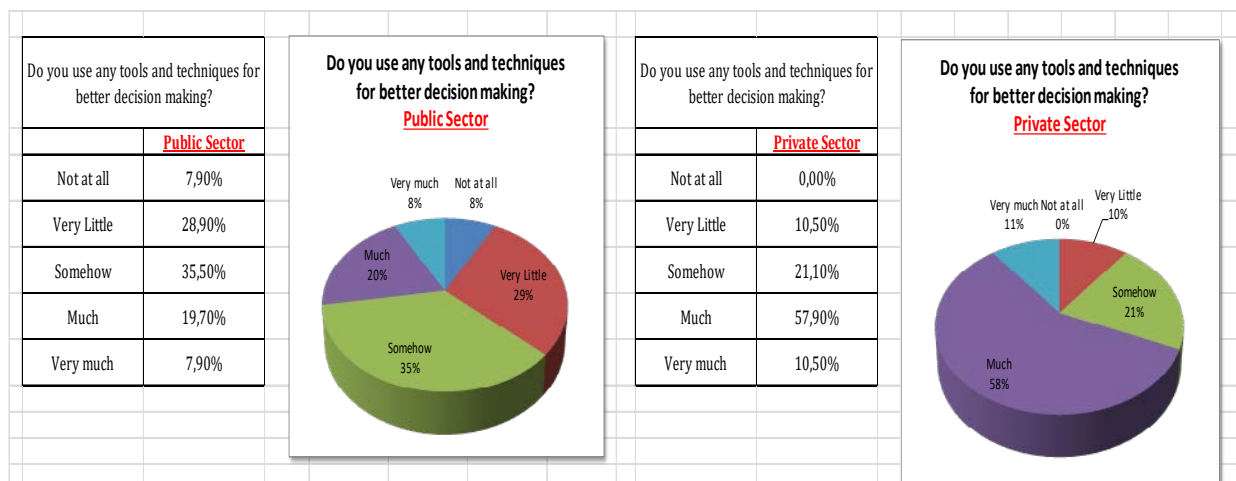
		Which Sector do you work at?		Total
		Public sector	Private sector	
Do you use any tools and techniques for better decision-making?	Not at all	6	0	6
		7,9%	0,0%	6,3%
	Very little	22	2	24
		28,9%	10,5%	25,3%
	Somehow	27	4	31
		35,5%	21,1%	32,6%
	Much	15	11	26
19,7%		57,9%	27,4%	
Very much	6	2	8	
	7,9%	10,5%	8,4%	
Total		76	19	95
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	12.729 <sup>a</sup>	4	0,013	0,012		

**Table 14- Answers on “Do you use any tools and techniques for better decision making?”**

Statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 12.729$ , p value= 0,013 < 0,05).



**Graph 12-“Do you use any tools and techniques for better decision making?”**

In Public Sector the employees answered that they use tools and techniques for better decision-making in less percentage (35,5% somehow use) than in the Private Sector (57,90 % much use).

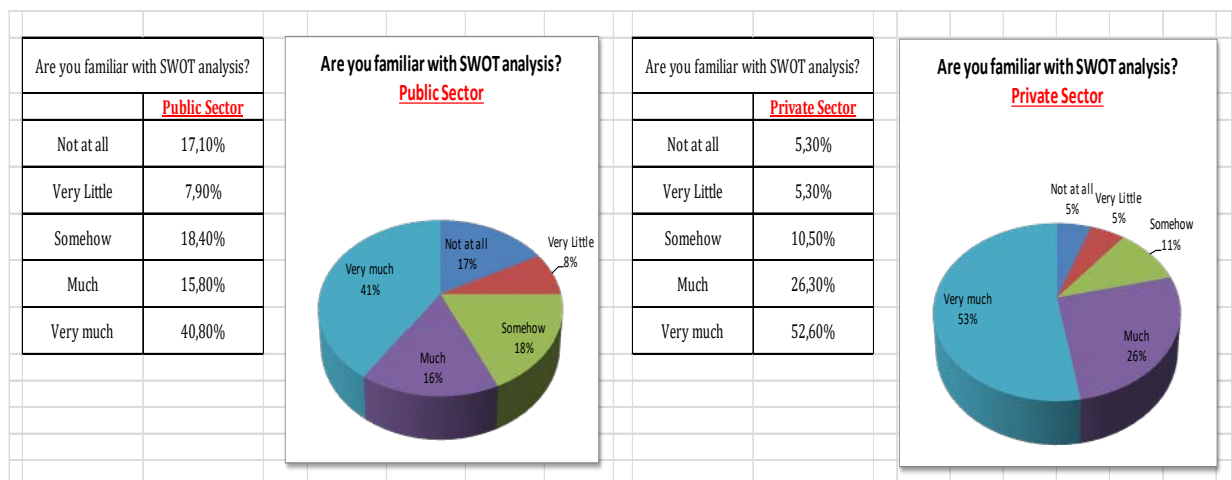
		Which Sector do you work at?		Total
		Public sector	Private sector	
Are you familiar with SWOT analysis?	Not at all	13	1	14
		17,1%	5,3%	14,7%
	Very little	6	1	7
		7,9%	5,3%	7,4%
	Somehow	14	2	16
		18,4%	10,5%	16,8%
Much	12	5	17	
	15,8%	26,3%	17,9%	
Very much	31	10	41	
	40,8%	52,6%	43,2%	
Total		76	19	95
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.587 <sup>a</sup>	4	0,465	0,468		

**Table 15 - Answers on “Are you familiar with SWOT analysis?”**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 3.587$ , p value= 0,465 > 0,05).



**Graph 13–“Are you familiar with SWOT analysis?”**

In both sectors Public (40,8%) and Private (52,6%) employees answered that they are very much familiar with SWOT analysis.



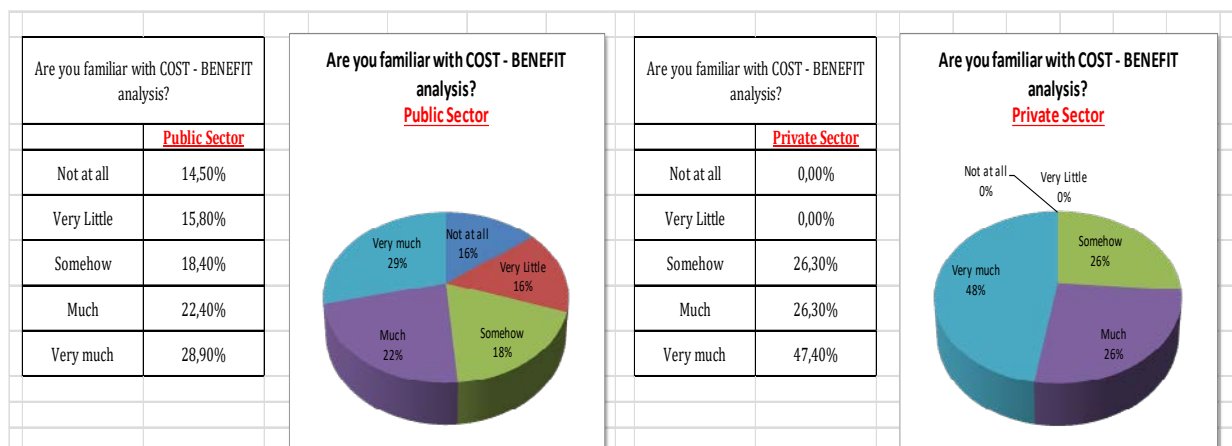
		Which Sector do you work at?		Total
		Public sector	Private sector	
Are you familiar with COST-BENEFIT analysis?	Not at all	11	0	11
		14,5%	0,0%	11,6%
	Very little	12	0	12
		15,8%	0,0%	12,6%
	Somehow	14	5	19
		18,4%	26,3%	20,0%
	Much	17	5	22
22,4%		26,3%	23,2%	
Very much	22	9	31	
	28,9%	47,4%	32,6%	
Total		76	19	95
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	7.907 <sup>a</sup>	4	0,095	0,092		

**Table 16– Answers on “Are you familiar with COST-BENEFIT analysis?”**

No statistical significance was found between the question how much do you think that permanence (in the job) affects employee's decision-making and the sector they work at ( $\chi^2 = 7.907$ , p value= 0,095 > 0,05).



**Graph 14–“Are you familiar with COST-BENEFIT analysis?”**

In both sectors Public (40,8%) and Private (52,6%) employees answered that they are very much familiar with COST-BENEFIT analysis. Yet, the percentage in the private sector is higher.

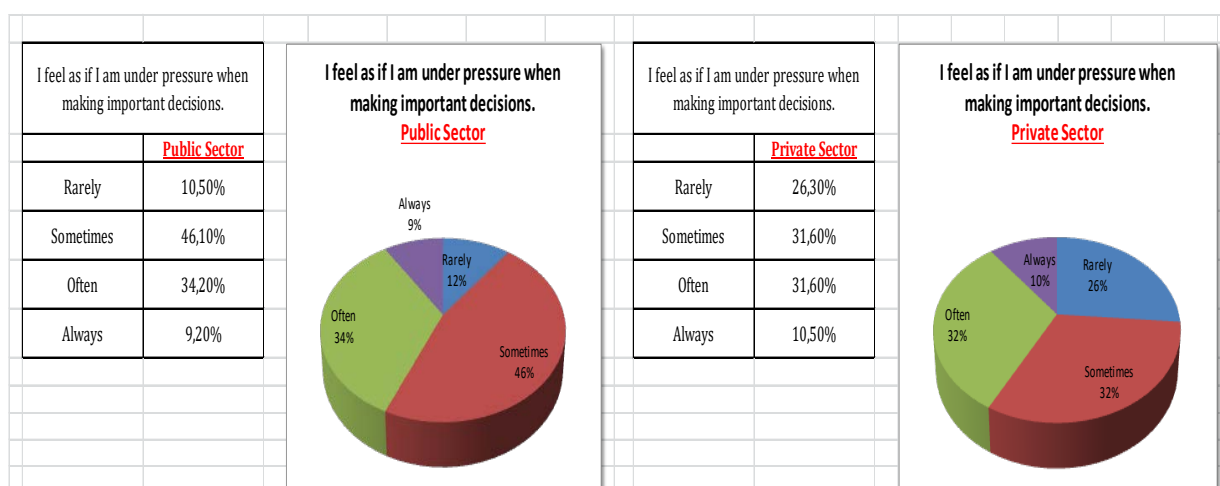
		Which Sector do you work at?		Total
		Public sector	Private sector	
I feel as if I am under pressure when making important decisions.	Rarely	8	5	13
		10,5%	26,3%	13,7%
	Sometimes	35	6	41
		46,1%	31,6%	43,2%
	Often	26	6	32
		34,2%	31,6%	33,7%
	Always	7	2	9
		9,2%	10,5%	9,5%
Total		76	19	95
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.566 <sup>a</sup>	3	0,312	0,337		

**Table 17- Answers on “I feel as if I am under pressure when making important decisions”**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 3.566$ , p value= 0,312 > 0,05).



**Graph 15-“I feel as if I am under pressure when making important decisions”**

In the Public Sector employees answered that they feel as if they are under pressure when making important decisions in more percentage (80,3%) than those who work in the private sector (62,2%).

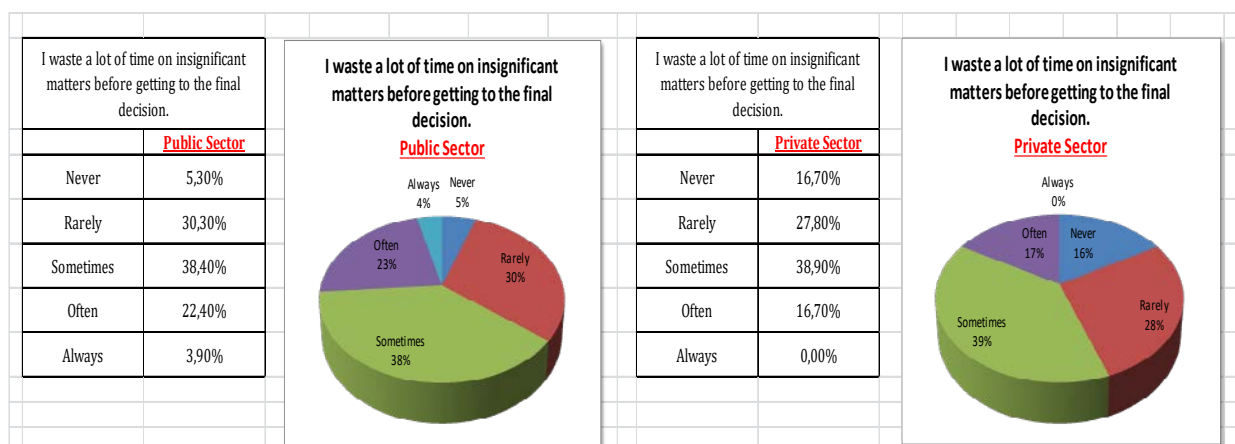
		Which Sector do you work at?		Total
		Public sector	Private sector	
I waste a lot of time on insignificant matters before getting to the final decision.	Never	4	3	7
		5,3%	16,7%	7,4%
	Rarely	23	5	28
		30,3%	27,8%	29,8%
	Sometimes	29	7	36
		38,2%	38,9%	38,3%
	Often	17	3	20
22,4%		16,7%	21,3%	
Always	3	0	3	
	3,9%	0,0%	3,2%	
Total		76	18	94
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.506 <sup>a</sup>	4	0,477	0,485		

**Table 18- Answers on “I waste a lot of time on insignificant matters before getting to the final decision”.**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision making and the sector they work at ( $\chi^2 = 3.506$ ,  $p \text{ value} = 0,477 > 0,05$ ).



**Graph 16-“I waste a lot of time on insignificant matters before getting to the final decision.”**

In both sectors (Public-68,5% and Private-66,7%) employees answered that they rarely or sometimes waste a lot of time on insignificant matters before getting to the final decision.

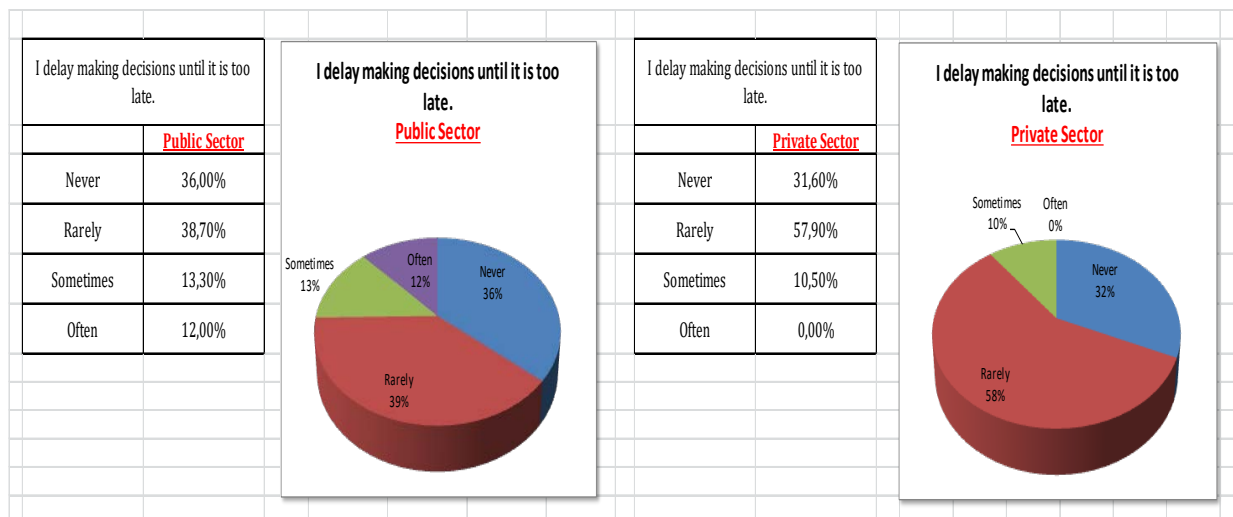
		Which Sector do you work at?		Total
		Public sector	Private sector	
I delay making decisions until it is too late.	Never	27	6	33
		36,0%	31,6%	35,1%
	Rarely	29	11	40
		38,7%	57,9%	42,6%
	Sometimes	10	2	12
		13,3%	10,5%	12,8%
Often	9	0	9	
	12,0%	0,0%	9,6%	
Total		75	19	94
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.775 <sup>a</sup>	3	0,287	0,309		

**Table 19 Answers on “I delay making decisions until it is too late”**

No statistical significance was found between the question of how much do you think that permanence (in the job) affects employee's decision-making and the sector they work at ( $\chi^2 = 3.775$ , p value= 0,287 > 0,05).



**Graph 17–“I delay making decisions until it is too late”**

In both sectors (Public-74,7% and Private-89,5%) employees answered that they never or rarely delay making decisions until it is too late. Yet, it must be noted that the percentage of the private sector s significantly larger.

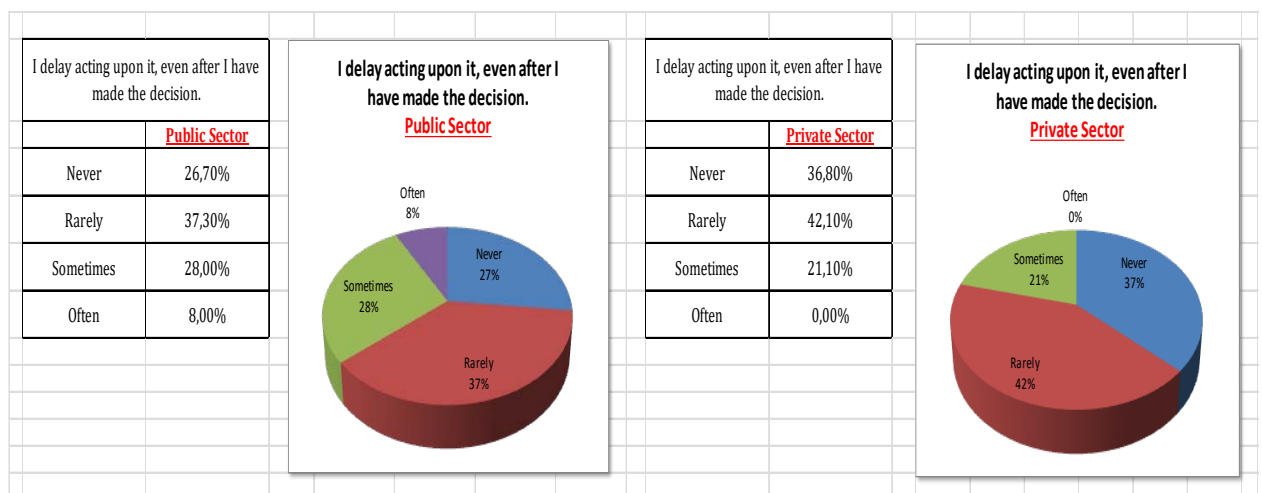
		Which Sector do you work at?		Total
		Public sector	Private sector	
I delay acting upon it, even after I have made the decision.	Never	20	7	27
		26,7%	36,8%	28,7%
	Rarely	28	8	36
		37,3%	42,1%	38,3%
	Sometimes	21	4	25
		28,0%	21,1%	26,6%
Often	6	0	6	
	8,0%	0,0%	6,4%	
Total		75	19	94
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	2.432 <sup>a</sup>	3	0,488	0,491		

**Table 20- Statement “I delay acting upon it, even after I have made the decision”.**

No statistical significance was found between the statement “I delay acting upon it, even after I have made the decision” and the sector they work at ( $\chi^2 = 2.432$ , Pvalue= 0,488 > 0,05).



**Graph 18-“I delay acting upon it, even after I have made the decision.”**

In both sectors (Public-64% and Private-78,9%) employees answered that they never or rarely delay acting upon it, even after I have made the decision. Yet, it must be noted that the percentage of the private sector s significantly larger.

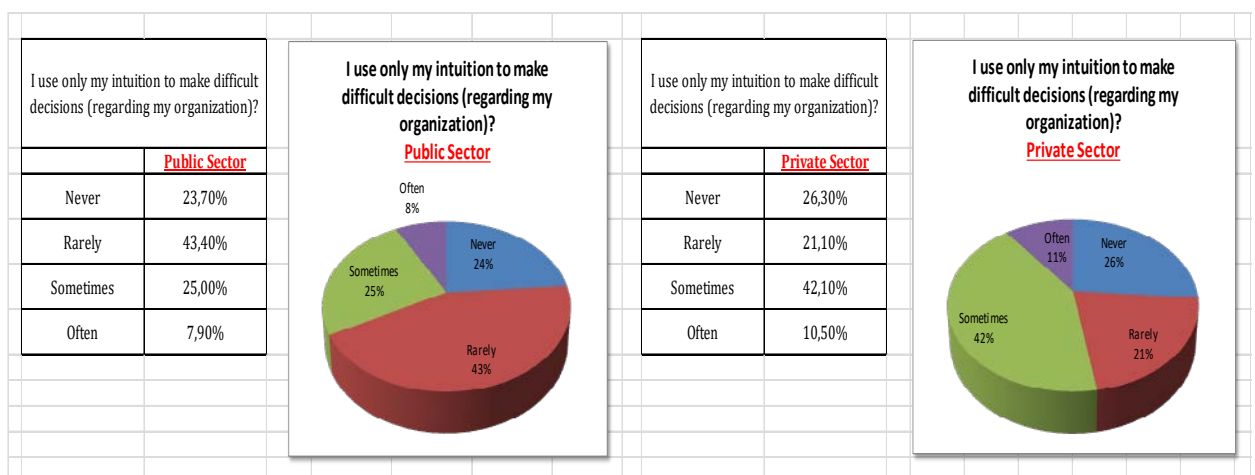
		Which Sector do you work at?		Total
		Public sector	Private sector	
I use only my intuition to make difficult decisions (regarding my organization)?	Never	18	5	23
		23,7%	26,3%	24,2%
	Rarely	33	4	37
		43,4%	21,1%	38,9%
	Sometimes	19	8	27
		25,0%	42,1%	28,4%
	Often	6	2	8
		7,9%	10,5%	8,4%
Total		76	19	95
		100,0%	100,0%	100,0%

Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	3.686 <sup>a</sup>	3	0,297	0,302		

**Table 21- Statement “I use only my intuition to make difficult decisions (regarding my organization)”.**

No statistical significance was found between the statement “I use only my intuition to make difficult decisions (regarding my organization)” and the sector they work at ( $\chi^2 = 3.686$ , p value=  $0,297 > 0,05$ ).



**Graph 19-“I use only my intuition to make difficult decisions (regarding my organization)”**

In the Private Sector, employees answered that they use their intuition to make difficult decisions (regarding their organization) more than those of the public sector.

**Chapter 4**  
**Quotation of**  
**Literature**  
**Findings,**  
**Pilot Survey's**  
**Findings and**  
**Conclusions**

According to the literature the summary of differences in decision making between Public and Private Sector are as follows:

In Public Sector there is less decision-making autonomy and flexibility since it is much more constrained on procedures and operations, subject to public scrutiny. Major decisions have to be transparent (Rainey et al., 1976; Rainey, 1997), while in the Private Sector there is a greater degree of flexibility and autonomy in the decision-making process, and managers are much more participative and independent in their decision making (Pearce and David, 1983; Jennings and Lumpkin, 1989).

Nutt (2006) has compared public and private sector decision making. He made his analysis using the metrics of **analysis** and **bargaining**. He found out that private sector managers are more analysis-based decision-makers while public sector managers are more bargaining-based decision-makers. Private Sector managers are more capable to support budget decisions when they are made after analysis, but they cannot support them when bargaining is applied, while Public Sector managers are less likely to support budget decisions that are made after analysis and more likely to support those that are derived from bargaining.

The findings (though) of the present Pilot Survey are based on some more/or other criteria. After the analysis the findings can be summarized as follows:

Both sectors agreed that permanence (in job) and bureaucracy in the organization affect much and/or very much decision making.

Political Parties (influence) affect much more the decision-making in the public sector than in the private sector. Yet, in both sectors, the employees agree that Political parties (influence) affect employee's decision making the least of all other reasons.

In both sectors, the employees answered that procedures and operations affect employee's decision-making much, as well as organizational structure, affects much employee's decision-making in an organization.



It is obvious that, Permanence (or not) in a job affects employee's decision making the most (1 in scale) of all other reasons, in both sectors, with bureaucracy coming in the second place (2 in scale). Procedures and operations in an organization affect employee's decision-making less (4 in scale) of all other reasons.

In Public Sector the employees answered that they believe that the organizational structure affects employee's decision making the least (5 in scale) of all other reasons while in the Private Sector the employees answered that they believe that the organizational structure affects employee's decision making less (4 in scale) of all other reasons.

Even though in both sectors employees strongly believe that innovation in the organization would affect much employee's decision making, in Public Sector the employees answered that they use tools and techniques for better decision making in less percentage than in the Private Sector. Yet, in both sectors employees answered that they are very much familiar with SWOT analysis, but in the private sector are more familiar with COST-BENEFIT analysis.

A non-expected result is that in the public sector employees answered that they feel as if they are under pressure when making important decisions in more percentage than those they work in the private sector.

In both sectors, employees answered that they rarely or sometimes waste a lot of time on insignificant matters before getting to the final decision, but in both sectors, the employees answered that they never or rarely delay making decisions until it is too late. Yet, it must be noted that the percentage of the private sector is significantly larger. Moreover, in both sectors, the employees answered that they never or rarely delay acting upon it, even after I have made the decision. Yet, it must be noted that also, in this case, the percentage of the private sector is significantly larger.

Finally, a result that was very much expected is that in the Private Sector employees answered that they use their intuition to make difficult decisions (regarding their organization) more often than those of the public sector.

Evaluating all the above findings and conclusions the decision-makers in Cyprus (especially the Government and the Parliament) should consider ways for the improvement of decision making, especially in the Public Sector.

- Permanence should stop be a safety net for a Public Servant,
- Bureaucracy should become more focused to become less barrier,
- Political Parties should influence more efficiently through the Laws they vote,
- Procedures, operations, and organizational structure should be revised n order to become more friendly to the employees,
- Innovation can and must play important role in a better decision-making system,
- Public Servants should become less afraid to make important decisions,
- Employees should be trained to use tools and techniques for better decision making,
- Employees should be trained not to waste time on insignificant matters before getting to the final decision and take action more quickly,
- Intuition according to literature is mostly experience and knowledge and this is proof that the Government should invest even more in training Public Servants.
- Last but not less important (deriving from my experience and not from the present survey) is that the Government and the Political Parties should think and promote laws and regulations that will give real motivation for more effective work and decision making to Public Servants, that will depend less on their seniority in the Department and to a much more extent to the performance of the employee at work.

At the end of all this, we can say that the contribution of this work, the data gathered and the conclusions, are an important supplement to the existing literature. As far as I am aware, it is the first time a survey like this is being executed in Cyprus. This Pilot Survey can be considered the first for others to follow to correct many in Cyprus concerning the way with think in our workplaces, especially in the Public Sector.

# Bibliography

A-Z Quotes | Quotes for All Occasions. (n.d.). A-Z Quotes. Retrieved April 9, 2021, from <https://www.azquotes.com>

Aagaard, J. (2018). *Grandmaster Preparation: Thinking Inside the Box*. Glasgow: Quality Chess. ISBN 978-1-907982-34-7 - Published (paperback) 17 January 2018

Abdel-Maksoud, A., Elbanna, S., Mahama, H. and Pollanen, R. (2015), *The use of performance information in strategic decision making in public organizations*. International Journal of Public Sector Management, Vol. 28, No. 7, pp. 528-549. <https://doi.org/10.1108/IJPSM-06-2015-0114>

Aldabbagh, I., Allawzi, S., (2019). *Rethinking Scenario Planning Potential Role in Strategy Making and Innovation: A Conceptual Framework Based on Examining Trends towards Scenarios and Firms Strategy*. Academy of Strategic Management Journal.

Annie Duke quotes | Inspirational quotes at The Cite Site, (n.d.). <https://thecitesite.com/authors/annie-duke/> (accessed 4.9.21).

Antonsen, M. and Jørgensen, T.B. (1997). *The 'Publicness' of Public Organizations*. Public Administration, 75: 337-357. <https://doi.org/10.1111/1467-9299.00064>

Ari, Riabacke. (2006). *Managerial Decision Making Under Risk and Uncertainty*. IAENG International Journal of Computer Science. 32.

Ayesha. J. (2018). *Cost-Benefit Analysis: Meaning and Uses | Investment Projects | Economics*. Economics Discussion. URL <https://www.economicsdiscussion.net/investment/cost-benefit-analysis-investment/cost-benefit-analysis-meaning-and-uses-investment-projects-economics/30276> (accessed 4.9.21).

Bakonyi, Z. (2018). *Why do firms centralise their strategic decision-making during crisis? A qualitative study*. Journal of Organizational Change Management, Vol. 31 No. 5, pp. 1191-1205. <https://doi.org/10.1108/JOCM-12-2016-0303>

Baldwin, J. N. (1987). *Public versus Private: Not That Different, Not That Consequential*. Public Personnel Management, 16(2), 181-193. <https://doi.org/10.1177/009102608701600209>

Behn, R., (1998). *The new public management paradigm and the search for democratic accountability*. International Public Management Journal - INT PUBLIC MANAG J 1, 131-164. [https://doi.org/10.1016/S1096-7494\(99\)80088-9](https://doi.org/10.1016/S1096-7494(99)80088-9)

Bouhali, R., Mekdad, Y., Lebsir, H., Ferkha, L., (2015). *Leader Roles for Innovation: Strategic Thinking and Planning*. Procedia - Social and Behavioral Sciences,

Proceedings of the 3rd international conference on leadership, technology and innovation management 181, 72–78. <https://doi.org/10.1016/j.sbspro.2015.04.867>

- Boyne, G. A. (2002). *Public and Private Management: What's the Difference?*. *Journal of Management Studies*, 39(1), 97–122. <https://doi.org/10.1111/1467-6486.00284>
- Bristol, A. (2020). *Decision Making During a Crisis - Decision Making Models / Good Practice Guidelines / Bulletin / BC Training*. Retrieved October 08, 2020, from <https://www.b-c-training.com/bulletin/decision-making-during-a-crisis-decision-making-models>
- BusinessDictionary.com - Online Business Dictionary. [Businessdictionary.com](http://www.businessdictionary.com). (n.d.), <http://www.businessdictionary.com/definition/decision-making.html>
- Bysted, Rune & Hansen, Jesper. (2013). *Comparing Public and Private Sector Employees' Innovative Behaviour: Understanding the role of job and organizational characteristics, job types, and subsectors*. *Public Management Review*. 17. 1-20. [10.1080/14719037.2013.841977](https://doi.org/10.1080/14719037.2013.841977).
- Kearney, C., Hisrich, R.D., and Roche, F. (2009). *Public and private sector entrepreneurship: similarities, differences or a combination?*. *Journal of Small Business and Enterprise Development*, Vol. 16 No. 1, pp. 26-46. <https://doi.org/10.1108/14626000910932863>
- Collins English dictionary. Glasgow: HarperCollins Publishers. (2021). Retrieved 8 April 2021, from <https://www.collinsdictionary.com/dictionary/english/publicness>
- Deeb, G. (2019, April 27). *Good Decision Making Requires Good Data*. Retrieved October 10, 2020, from <https://www.entrepreneur.com/article/332659>
- Deeb, G. (2020, July 08). *Decision Making Only As Good As Quality Of Data Studied*. Retrieved October 10, 2020, from <https://www.forbes.com/sites/georgedeeb/2020/07/08/decision-making-only-as-good-as-quality-of-data-studied/>
- Dillon, S., Buchanan, J., Corner, J.L., (2021). *Comparing Public and Private Sector Decision Making: Problem, Structuring and Information*. *Quality Issues*.
- Dionisio, Marcelo. (2017). *Strategic Thinking: The Role in Successful Management*. *Journal of Management Research*. 9. 44. [10.5296/jmr.v9i4.11448](https://doi.org/10.5296/jmr.v9i4.11448).
- Dionne SD, Gooty J, Yammarino FJ, Sayama H. (2018). *Decision making in crisis: A multilevel model of the interplay between cognitions and emotions*. *Organizational Psychology Review*. 2018;8(2-3):95-124. [doi:10.1177/2041386618756063](https://doi.org/10.1177/2041386618756063)
- Duke, A. (2018). *Thinking in Bets: Making Smarter Decisions When You Don't Have All The Facts — Book Notes*. Portfolio/Penguin, an imprint of Penguin Random House LLC, New York

- Durcevic, S. (2019). *Data Driven Decision Making – See 10 Tips For Your Business Success*. (2020, August 17). Retrieved October 10, 2020, from <https://www.datapine.com/blog/data-driven-decision-making-in-businesses/>
- Else, P.K., Howe, M., (1969). *Cost-Benefit Analysis and the Withdrawal of Railway Services*. *Journal of Transport Economics and Policy* 3, 178–194.
- Fairholm, Matthew & Card, Michael. (2009). *Perspectives of strategic thinking: From controlling chaos to embracing it*. *Journal of Management & Organization*. 15. 10.5172/jmo.837.15.1.17.
- Fan, W., & Geerts, F. (2012, July). *Foundations of Data Quality Management*. Retrieved October 10, 2020, from <https://doi.org/10.2200/S00439ED1V01Y201207DTM030>
- Frank W. Spencer IV (2012). *Fusion Strategy: Moving From Decision Making to Multi-Faceted Strategy*, URL <https://www.linkedin.com/pulse/20141108203348-15682330-fusion-strategy-moving-from-decision-making-to-multi-faceted-strategy/> (accessed 4.9.21).
- Gerhard O. Mensch, Vasudevan Ramanujam (1986). *A diagnostic tool for identifying disharmonies within corporate innovation networks*. *Journal of Product Innovation Management*, Volume 3, Issue 1, Pages 19-31, ISSN 0737-6782, [https://doi.org/10.1016/0737-6782\(86\)90040-8](https://doi.org/10.1016/0737-6782(86)90040-8)
- Graetz, F. (2002). *Strategic thinking versus strategic planning: towards understanding the complementarities*. *Management Decision*, Vol. 40 No. 5, pp. 456-462. <https://doi.org/10.1108/00251740210430434>
- Hashem, Abd Elazez. (2018). *The effect of strategic decision making tools on rationality of decision making process*. *International Journal of Business Strategy*. 18. 11-28. 10.18374/IJBS-18-1.2 .
- Hayes, A., (n.d.). *How Cost-Benefit Analysis Process Is Performed*. Investopedia. URL <https://www.investopedia.com/terms/c/cost-benefitanalysis.asp> (accessed 4.9.21).
- Helms, M.M. and Nixon, J. (2010). *Exploring SWOT analysis – where are we now? A review of academic research from the last decade*. *Journal of Strategy and Management*, Vol. 3 No. 3, pp. 215-251. <https://doi.org/10.1108/17554251011064837>
- Heracleous, L. (1998). *Strategic thinking or strategic planning?*. *Long Range Planning*, 31(3), 481–487, <https://doi.org/10.1016/s0024->
- Irene Goll, Rakesh B. Sambharya, (1998). *Rational Model Of Decision Making, Strategy, and Firm Performance*. *Scandinavian Journal of Management*, Volume 14, Issue 4, 1998, Pages 479-492, ISSN 0956-5221, [https://doi.org/10.1016/S0956-5221\(97\)00048-1](https://doi.org/10.1016/S0956-5221(97)00048-1) .

- Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus and Giroux.
- Kenton, W. (2020, September 12). *How Cost-Benefit Analysis Process Is Performed*. Retrieved October 06, 2020, from <https://www.investopedia.com/terms/c/cost-benefitanalysis.asp>
- Khan, Anis & Khandaker, Shahriar. (2016). *Public and Private Organizations: How Different or Similar are They*. Journal of Siberian Federal University - Humanities and Social Sciencs. 12. 2873-2885. 10.17516/1997-1370-2016-9-12-2873-2885.
- Khojasteh, M. (1993). *Motivating the Private vs. Public Sector Managers*. Public Personnel Management, 22(3), 391–401. <https://doi.org/10.1177/009102609302200304>
- Learning, L. (n.d.). *Principles of management*. Retrieved April 09, 2021, from <https://courses.lumenlearning.com/wmopen-principlesofmanagement/chapter/rational-decision-making-vs-other-types-of-decision-making/>
- Lebied, M. (2018). *The Ultimate Guide to Modern Data Quality Management (DQM) For An Effective Data Quality Control Driven by The Right Metrics*. (2020, August 17). Retrieved October 10, 2020, from <https://www.datapine.com/blog/data-quality-management-and-metrics/>
- Lovallo, D.; Sibony, O. (2018, October 11). *The case for behavioral strategy*. Retrieved September 13, 2020, from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-case-for-behavioral-strategy>
- Markides, Constantinos. (2003). *Six Principles of Breakthrough Strategy*. Business Strategy Review. 10. 1 - 10. 10.1111/1467-8616.00096.
- Mintzberg, Henry. (1994). *The rise and fall of strategic planning: reconceiving roles for planning, plans, planners*. New York: Toronto: Free Press; Maxwell Macmillan Canada.
- Nutt, P. C. (2005). *Comparing Public and Private Sector Decision - Making Practices*. Journal of Public Administration Research and Theory, 16(2), 289–318.
- Okoli, J. and Watt, J. (2018), *Crisis decision-making: the overlap between intuitive and analytical strategies*. Management Decision, Vol. 56 No. 5, pp. 1122-1134. <https://doi.org/10.1108/MD-04-2017-0333>
- Ong, S. Q. (2018, August 12). *Thinking in Bets: Making Smarter Decisions When You Don't Have All The Facts — Book Notes*. Medium. <https://medium.com/@skueong/thinking-in-bets-making-smarter-decisions-when-you-dont-have-all-the-facts-book-notes-98f02db61c1a>
- P G Sassone; W A Schaffer (1978). *Cost-benefit Analysis - A Handbook*. NCJRS Virtual Library collection. 74611. Academic Press, Inc.San Diego, CA 92101-

4495. <http://www.ncjrs.gov/App/publications/abstract.aspx?ID=74611>

Prest A.R., Turvey R. (1966). *Cost-Benefit Analysis: A Survey*. In: *Surveys of Economic Theory*. Palgrave Macmillan, London. [https://doi.org/10.1007/978-1-349-00210-8\\_5](https://doi.org/10.1007/978-1-349-00210-8_5)

Prest, A.R., Turvey, R., (1965). *Cost-Benefit Analysis: A Survey*. *The Economic Journal* 75, 683–735. <https://doi.org/10.2307/2229670>

Rosenzweig, P. (2018, February 09). *The halo effect and other managerial delusions*. Retrieved September 13, 2020, from <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-halo-effect-and-other-managerial-delusions>

Sanger, Mary Bryna, and Martin A. Levin (1992). *Using Old Stuff in New Ways: Innovation as a Case of Evolutionary Tinkering*. *Journal of Policy Analysis and Management*, vol. 11, no. 1, 1992, pp. 88–115. JSTOR, [www.jstor.org/stable/3325134](http://www.jstor.org/stable/3325134) . Accessed 23 Nov. 2020.

Shockley, Gordon & Stough, Roger & Haynes, Kingsley & Frank, Peter. (2006). *Toward a Theory of Public Sector Entrepreneurship*. *Int. J. of Entrepreneurship and Innovation Management*. 6. 205 - 223. [10.1504/IJEIM.2006.009875](https://doi.org/10.1504/IJEIM.2006.009875).

Sidheswar P., Rebellow A. M. (2014). *A study on variability in the Decision-making styles of Indian Corporate Executives – Public and Private sectors in Present Era*. *International Journal of Economic Perspectives*, 2017, Volume 11, Issue 3, 920-931, n.d.  
URL [https://www.academia.edu/35694029/A\\_study\\_on\\_variability\\_in\\_the\\_Decision\\_making\\_styles\\_of\\_Indian\\_Corporate\\_Executives\\_Public\\_and\\_Private\\_sectors\\_in\\_Present\\_Era](https://www.academia.edu/35694029/A_study_on_variability_in_the_Decision_making_styles_of_Indian_Corporate_Executives_Public_and_Private_sectors_in_Present_Era) (accessed 4.9.21).

Sutton, J. (2020). *What Is Intuition and Why Is It Important? 5 Examples*. Retrieved 20/11/2020 from: <https://positivepsychology.com/intuition/>

Upadhyay Shatakshi (Nov 20, 2018). *DRDO Final | Qualitative Research | Decision Making*. Scribd. URL <https://www.scribd.com/presentation/393678125/DRDO-Final-Ppt> (accessed 4.9.21).

Uzonwanne F.C. (2016) *Rational Model of Decision Making*. Farazmand A. (eds) *Global Encyclopedia of Public Administration, Public Policy, and Governance*. Springer, Cham. [https://doi.org/10.1007/978-3-319-31816-5\\_2474-1](https://doi.org/10.1007/978-3-319-31816-5_2474-1)

Van de Walle, S., Vogelaar, M., (2010). *Emergence and Public Administration: A Literature Review for the Project 'A New Synthesis in Public Administration'*. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.1580126>

Waroquier, L., Marchiori, D., Klein, O., & Cleeremans, A. (2010). *Is It Better to Think Unconsciously or to Trust Your First Impression?: A Reassessment of Unconscious Thought Theory*. *Social Psychological and Personality Science*, 1(2), 111–

118. <https://doi.org/10.1177/1948550609356597>

Woo, A., (2019). *Why Critical Thinking Is Required For Better Decisions*. Medium.  
URL <https://medium.com/critically-deciding/why-we-needed-critical-thinking-yesterday-6321af72bea9> (accessed 4.9.21)



# **Appendix A**

## **Questionnaire -**

### **A Survey on Decision Making**

# **A SURVEY ON DECISION MAKING**

## **A COMPARISON BETWEEN PRIVATE SECTOR AND PUBLIC SECTOR IN CYPRUS**

*"Decision-making is an intellectual process which involves selection of one course of action out of many alternatives" ~ R. C. Davis*

Decision Making has never been more challenging before. Because of the complexity of the times the uncertainty grows. Uncertainty causes greater risks but great opportunities along with them.

People make a huge number of decisions every day. Most of them are taken subconsciously. Some others are taken after a little thought. For some decisions it is necessary to devote a lot of time, to make calculations, to correlate data and to take into account parameters and factors. Some decisions are simple and even insignificant and some are particularly important.

It is broadly believed that public and private organizations differ in a many and important matters.

**This questionnaire attempts to show these differences and find out what are the barriers to proper decision making in both areas.**

*The present research is carried out in the context of obtaining a Master's degree in Business Administration from the School of Economics and Management of the Open University of Cyprus.*

Thank you for your time.

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# **QUESTIONNAIRE** (of 5+15 questions)

## **A SURVEY ON DECISION MAKING**

## **A COMPARISON BETWEEN PRIVATE SECTOR AND PUBLIC SECTOR IN CYPRUS**

### **PART A**

1. Gender
  - a) Male
  - b) Female
  - c) Prefer not to answer
  
2. Age
  - a) 25 - 35 years old
  - b) 35 - 45 years old
  - c) 45 - 55 years old
  - d) 55 + years old
  - e) Prefer not to answer
  
3. What is the highest degree or level of education you have completed?
  - a) High School
  - b) Technical - Trade School
  - c) Higher (Technical Institute)
  - d) College Degree
  - e) Bachelor's Degree
  - f) Master's Degree
  - g) Ph.D. or higher
  
4. At which sector do you work?
  - a) Public
  - b) Private
  - c) Semi-public
  
5. Department in your organization you work in.
  - a) Administration
  - b) Accounting and finance
  - c) Human Resource Management
  - d) Marketing
  - e) Production
  - f) Purchasing and supplies
  - g) Research and development
  - h) Project-management
  - i) Consulting
  - j) Other



## **PART D**

### **Appendix: Part of Flinders Decision Making Questionnaire (Q.16-20)<sup>1</sup>**

**Instructions:** Please indicate how you make decisions by choosing for each question the response which best fits your usual style.

No.		<b>When I make decisions</b>				
16.	I feel as if I 'm under pressure when making important decisions.	Never <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>
17.	I waste a lot of time on insignificant matters before getting to the final decision.	Never <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>
18.	I delay making decisions until it is too late.	Never <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>
19.	I delay acting upon it, even after I have made the decision.	Never <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>
20.	I use only my intuition to make difficult decisions (regarding my organization)?	Never <input type="checkbox"/>	Rarely <input type="checkbox"/>	Sometimes <input type="checkbox"/>	Often <input type="checkbox"/>	Always <input type="checkbox"/>

Please write below any comments / information you think may be useful to refer to/ incorporate into the research and therefore take into account in the results of the analysis.  
**(OPTIONAL)**

.....  
.....

### **CONTACT INFO (OPTIONAL)**

Name & Surname: .....

Tel.: .....

Email: .....

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<sup>1</sup> Mann, L. (1982). Flinders Decision Making Questionnaire II. Unpublished Questionnaire. The Flinders University of South Australia.

Note: Mann et al.'s (1997) Melbourne Decision Making Questionnaire has been recommended as a replacement for the DMQ. See also the Flinders Adolescent Decision-Making Questionnaire.