Faculty of Humanities and Social Sciences

Bachelor's Degree in Global Communication

Final dissertation

Preference of Decision-Making Styles in a Teamwork Environment:

findings amongst university students

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Abstract

This dissertation overviews the work of experts such as Lunenbur; George & Jones and Lee & Stinson as a baseline to study the decision-making proces, which leads specifically to the study of the decision-making process amongst university students when working in teams. This investigation leads to the ellaboration of a survey conducted within the dissertation with the aim to discover the extent to which university students follow the classical decision-making model suggested by (Lunenbur, 2010), the perception they have of the type of decisions they are required to make when working in teams, and the approach they prefer to take regarding taking programmed or non-programmed decision approaches.

Keywords

Decision-making, survey, team decision-making, university students

Resumen

Este trabajo de fin de grado se repasan los trabajos de expertos como Lunenbur; George y Jones; y Lee y Stinson de manera introductoria para el estudio del proceso de toma de decisiones, lo que nos lleva específicamente al estudio del proceso de toma de decisiones entre los estudiantes universitarios cuando trabajan en equipo. Esta investigación conduce a la elaboración de una encuesta en el presente trabajo de fin de grado con el propósito de descubrir hasta qué punto los estudiantes universitarios siguen el modelo clásico de toma de decisiones sugerido por (Lunenbur, 2010); la percepción que tienen del tipo de decisiones que requiere el trabajo en equipo, y si el enfoque que prefieren adoptar con respecto a la toma de decisiones es de decisiones programadas o no programadas.

Palabras clave

Toma de decisiones, encuesta, toma de decisiones en equipo, estudiantes universitarios

1. Introduction

University students are more often than not required to elaborate assignments. These are sometimes individual, but frequently demand teamwork, investigation, organization, submitting before deadlines and performing presentations among other tasks. A university student will often need to work in a team over the course of his or her career, which will usually serve as a preparation for the rest of his or her life, in which knowing how to collaborate and work in a team will probably be required. A study called *Teamwork: can it equip university science students with more than rigid subject knowledge?* (Blignaut & Venter, 1998). Used both qualitative and quantitative methods to prove that most students that participated in the study felt that they had learned more in teams than they would have individually.

Within student teamwork, much of the productivity and success of the team depends on the organization and ability to make decisions and carry them out as a team. Problems and doubts may arise, and often organizing teamwork takes more time than needed because of the lack of knowledge. Understanding the types of complications that might arise, different decision-making styles and reflecting on the ones that have been more effective (personally and perhaps historically for other people) can make these assignments shorter, easier and, most important, more enjoyable.

This final dissertation will look into studies, surveys and ideas of experts regarding decision-making, teamwork, and elaborate a survey to gain insight on the specific case of teamwork decision-making amongst university students. As many experts in psychology, communication, marketing and other areas have discussed before, decisions may be programmed or non-programmed (George & Jones, 2010, Lee & Stinson, 2014; Gorgulho, Tavares, Páscoa, & José Tribolet, 2015). And the approach taken to react to different situations will vary depending on if it is recurrent and based on an already established routine (programmed), or a new situation to which a solution still needs to be found (non-programmed).

The aim of this dissertation and the survey conducted within is to discover the extent to which university students follow the classical decision-making model suggested by

(Lunenbur, 2010), the perception they have of the teamwork decisions they are so often required to make, and the approach they prefer to take regarding taking programmed or non-programmed decision approaches.

The structure of this dissertation is as follows: in the first place, within the introduction, it will go over the motivation and reasons for research. Secondly, the state of the art, that will set a base of the findings, studies, and thoughts of experts regarding decision-making and will lead to the theoretical framework, that will help to define the objectives of this dissertation. This leads to methodology, in which data collection, data analysis and data visualization of the survey are developed and represented with visual graphics leading to conclusions on the previously defined research question and hypothesis.

1. 1. Motivation and reasons for research

The election of this topic is mainly based on personal interest. Leadership and decision-making are of great interest since leadership can be an extremely influential factor for many aspects of our everyday lives. Decision-making can also be deeply related to leadership. Since we live in society, most times we need to collaborate with other people in order to achieve our goals, duties, or most of our purposes. In other words, most times, either to a greater or lesser extent we need to rely on teamwork.

Teamwork demands a compilation of skills that improve or even enable efficiency while working on a common purpose. It is often required for jobs regardless of the field, personal life, and thus vastly present in universities too. Teamwork teaches and improves crucial communication and social skills that will be beneficial for students even after their graduation, and if we look into decision-making within teamwork (either in student or work environments). It can improve innovation, as supported by a study on Minority Dissent and Team Innovation carried out by Carsten K.W. De Dreu and Michael A. West (2001), and therefore the quality, efficiency or interest of the work carried out, which demonstrates the importance of teamwork in decision-making.

This final dissertation will address preference of decision-making styles in a teamwork environment, specifically amongst university students.

3

First of all, the **viability** of the project relies on the population being narrowed down to university students. This facilitates the investigation due to the investigator having access to the group of interest as well as to materials and sources available, all by reason of being a part of the group of interest for this study. Being part of this group has also been the source of the development and acquisition of the tools, skills and knowledge needed to enable the conduct of this final dissertation: the investigation and compilation of information available, the opinions and findings of experts on this field, and the application of it in a survey to reach a conclusion through data analysis. Another factor taken into account is the dissertation being conceived to be manageable within the time frame of the academic year.

The **relevance** of this work is justified by the large number of team works carried out by university students, which also provides them with enough insight to be able to answer questions while reflecting on the results they have achieved through different approaches. The amount of teamwork needed for many university degrees also arises the interest to understand more deeply how to use decision-making styles more effectively, which should consequently spring on better results. The frequent discontent while working in teams due to unequal distribution of time and lack of knowledge regarding organization within the team also makes this study relevant, since reflecting on what the most effective options are may provide a valuable insight.

This dissertation offers an overview of decision-making styles within teamwork environment, and will determine, through a survey distributed amongst university students, and later analyzed, the preferred decision-making styles of university students.

2. State of the Art and Theoretical Framework

This section examines what other studies or articles related to decision-making and surveys have found through a bibliographic review, with which it is possible to gain a deeper insight of the state of art. This theoretical framework helps lead the project, establish a baseline, and formulate research objectives.

2.1. State of the Art

This chapter presents some of the research by other authors that is the most relevant for this dissertation, they are ordered by priority in terms of discourse logic.

As an introduction, to highlight the importance of teamwork within decision-making, in *The Power of Collective Wisdom and the Trap of Collective Folly* Briskin, Erickson, & Ott, discuss the groups power to make wise and creative decisions. Wisdom does not rely on a few wise people, but in the ability to make choices that are wise. "Wisdom is about connection, connection to one another and to a larger whole. It is an inherently relational concept […]" (2009). This work refers to society as a whole but can also be applied to more concrete situations such as decision-making within students.

Starting from a situation where teamwork is important for decision-making, the research carried out in *Minority Dissent and Team Innovation: The importance of Participation in Decision Making* shows empirical support for the "need to ensure high degrees of participation in decision making" (De Dreu & West, 2001), this study discusses the creativity minority dissent can provide since it can translate into more innovative products, practices and services. It once more highlights the importance of participation in decision-making.

In order to study how decision-making works in a team, we should first gain an insight on what can influence decision-making. *Decision Making: Factors that Influence Decision Making, Heuristics Used, and Decision Outcomes* (Dietrich, 2010) is an article in which some of these factors are discussed. Dietrich studies factors that influence the choices people make such as: past experience, following Julliusson, Karlsson, & Gärling (2005); cognitive biases, following Stanovich & West (2008); age and individual differences, following Bruin, Parker, & Fischoff (2007); and belief in personal relevance, following Acevedo, M., & Krueger (2004). Outcomes may be impacted by these factors, which is why understanding them and their influence in decision-making bares importance. (Dietrich, 2010)

The type of decision also affects how the team takes that decision. Basic types of organizational decisions can either be programmed or non-programmed (Lee & Stinson, 2014). This classification can also apply to team decisions university students make.

- Programmed decisions are recurring opportunities or problems, which could be, for example access (or not) to internet for an assignment; or based on performance program, for example, having to discuss a certain topic within the assignment.

- Non-programmed decisions can be novel opportunities or problems, like casually finding a very useful source of information for the assignment; requiring extra information; or uncertainty (Lee & Stinson, 2014).

"Teamwork is an inevitable part of organizational life." (Guchait, Lei, & Tews, 2015) this study called Making Teamwork Work: Team Knowledge for Team Effectiveness examines the impact of team-work knowledge on team satisfaction and performance concluding that it should be developed and worked on for maximum effectiveness. This refers not only to organizational life but can also be useful in a university environment. It sets an important idea that can better results and relationships between students while working in teams and also inspired a few questions for the survey.

There are multiple leadership styles. For group decisions, the responsibility could either be given to a single person, to a subgroup, or to the whole group. When more than one person is making the decision, consensus (all members must consent) and majority vote are one of the first decision-making styles that come to mind. Voting can be faster, but consensus can result in better relationships among members of the team, better quality in the decisions made and a more effective implementation, since members are more likely to participate if they feel included and taken into account (Bressen, n.d.).

The Unstructured model is a continuous cycle that consists of constant evaluation, analysis of the situation and options, choices, making decisions on how to act and later evaluate to recommence the cycle (Stevens, 2019). It can be useful for university students since it is versatile and can be adapted and readapted to many circumstances. It will be interesting to discover through the survey if this model (even if many may not be aware

that it is a model) is popular amongst students, since it can potentially improve results by analyzing results and reconsidering options all along the project they are working on.

The Rational Model is "a model that uses facts and information, analysis, and a step-by-step procedure to come to a decision". It was designed for problem solving and has several steps to follow:

1. *Identifying the problem that requires solutions*

2. *Identifying the solution scenario*

3. *Carrying out a gap analysis*

4. *Gathering facts, options, and alternatives*

5. *Analyzing option outcomes*

6. *Selecting best possible options*

7. *Implementing decision for solution and evaluate final outcome* (Uzonwanne, 2016)

Organizational decision-making models: Comparing and Contrasting to the Stinson Wellness Model (Lee & Stinson, 2014) analyses a few models that refer to organizational decision-making but can also be applied to teamwork in many other situations such as university teamwork. "The Stinson Wellness Model is built around two integrated processes: wise decision making and alignment. The four pillars of wellness (purpose, balance, congruence, and sustainability) assist in making decisions with intention and principles" (Lee & Stinson, 2014).

The following table develops some techniques that can be beneficial for group decision-making and the benefits each provides.

Table 1.- Summary of Techniques That May Improve Group Decision-Making.

Techniques that may improve group decision-making quality	
Techniques	**Benefits**
• Have diverse group members. • Assign a devil's advocate. • Encourage everyone to speak up and contribute. • Help members find a common ground.	• Generates more options and therefore reduces bias. • Reduces groupthink. • Generates more options and prevents suppression of dissent. • Reduces personality conflict

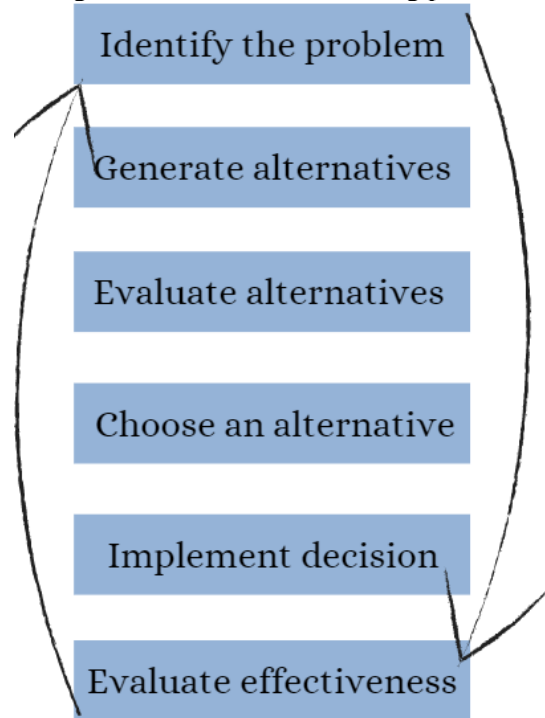Source: own re-elaboration in base of (Bright & Cortes, 2019).

The Relations Between Decision Making in Social Relationships and Decision-Making Styles (Sart, 2008) is an interesting paper related to this dissertation. It is of similar thematic, but the relevant part for this dissertation is the structure and methodology. The content is similar, and objectives are similar, which is why it is interesting to consult the instruments (the questionary used), participants, and methodology of this work.

2.2. Theoretical Framework

This chapter sets the base of the study carried out in this dissertation. It looks into a few aspects that serve to develop and study more deeply the decision-making styles amongst university students while working I groups in the following chapters.

The classical decision-making process consists of a cycle that starts with identifying the problem, opportunity or situation that needs to be addressed, goes over possible solutions or reactions, evaluates them in order to choose the most beneficial option and implements the decision that will later be evaluated through the results achieved. This will serve to decide whether to repeat the same cycle if it has shown to be efficient or change it to make it as effective as possible. It is not completely realistic because it is based on the assumption that all information is available to decision-makers, when in practice, only part is, but the classical decision-making model only describes how decisions should be made. (George & Jones, 2010) This model could serve as a base to determine the differences between programmed and non-programmed decisions.

Figure 1.- The decision-making process.

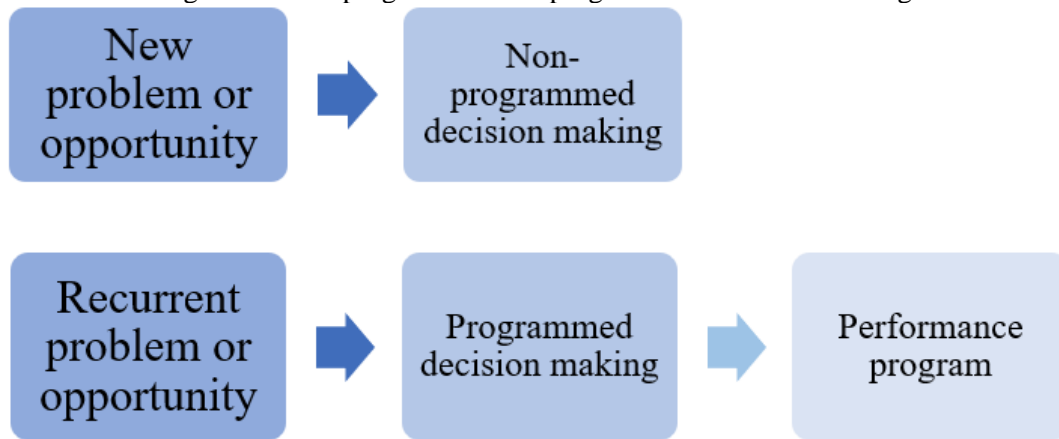Source: own re-elaboration in base of: (Lunenbur, 2010)

Programmed and non-programmed decisions appear in many decision-making related papers as we have seen above following Lee & Stinson, decisions can be programmed and non-programmed. The difference between both relies on whether they are repetitive and a routine (programed), or part or consequence of something new, unexpected, or unusual (Gorgulho, Tavares, Páscoa, & José Tribolet, 2015). These concepts had also been discussed before in *Understanding and Managing Organizational Behavior* (George & Jones, 2010). The differences between the two can be seen below in table 2 and figure2.

Table 2.- Programmed and non-programmed decisions

Basic types of decisions	
Programmed	**Non-programmed**
• Recurring opportunities and/or problems • Based on a program or routine	• New opportunities and/or problems • Unexpected or unusual • Need to develop a response

Source: own re-elaboration in base of: (George & Jones, 2010)

Figure 2.- Non-programmed and programmed Decision-Making.

Source: own re-elaboration in base of (George & Jones, 2010)

"Non-programmed decision making involves searching for the extra information to make the right choice" and "Programmed decision-making responds to issues or problems that are *routine or recurring*" (George & Jones, 2010). Teamwork in universities is fairly common (sometimes even routine), but themes and subjects even if for the same degree vary more. Questions in the survey are aimed to discover the approach students take. Do they consider teamwork a recurrent situation and establish general programs or plans to follow that can help get the work done regardless of the subject or theme, or do they consider each teamwork a new situation and therefore think of new ways to get it done every time?

2.3. Objectives

General objective: To identify preferred decision-making styles in a teamwork environment amongst university students.

Specific objectives:

- To determine
    - extent to which the classical decision-making model (Lunenbur, 2010) is followed.
    - the approach students take (programmed or non-programmed decision-making), since teamwork in universities is fairly common (sometimes

even routine), but themes and subjects, even if for the same degree vary more.

- To identify most effective decision-making style based on students' perceptions of past experiences.

2.4. Research Question

Do university students overall follow the decision-making model and, do they prefer taking a programmed or non-programmed decision-making approach while working in a team?

2.5. Departure Hypothesis

Students do mostly follow Lunenbur's decision-making model and prefer taking a non-programmed approach since it allows more creativity but like to combine it with some programmed aspects.

3. Methodology

This final dissertation aims to reach its objectives, answer the research question, and confirm or disregard the hypothesis through an online survey developed on Google Forms and tips and directions from [Laerd Statistics](#). The methodology of the research to achieve this will be divided in three sections: data collection, analysis technique, and data visualization.

Results obtained through the survey are first analyzed considering different aspects and dividing them in different groups to analyze specific characteristics of each group to comment on variations between whether they follow or not Lunenbur's decision-making model, whether they consider decision-making for teamwork programmed (repetitive and based on routines) or non-programmed (new, unexpected and in need of new ideas solutions) and whether they prefer making those decisions approaching them as programmed decisions (looking at how they have made similar decisions before) or as non-programmed decisions (thinking of new ways to make those decisions). After this analysis,

the survey answers are reviewed again without separating the survey-takers in different groups with the purpose of reaching a general conclusion too.

3.1. Data Collection Techniques

Data is collected through snowball sampling by means of an online survey. This means that the survey has been distributed to participants within the group of interest and they have been asked to share it with other potential participants (also known as chain sampling or referral sampling) (Glen, 2014). The survey is conducted through Google forms and distributed through chain sampling thanks to apps like WhatsApp and other social media, that allows it to get to other university students. During the time the survey was spread, 53 university students submitted their answers to take part in the survey.

The choice of Google forms to carry out the survey is mostly due to the author being familiar with the platform. It is also an efficient way to collect information online with surveys that can be easily developed and designed on the same platform, with different format choices to later analyze the data obtained. This platform stores the received data and allows to analyze it. It also allows to see how the survey looks like before sending it, which allows for improvements, and can be easily shared via email or sharing the link via any social network or other means. It is also adaptable to the formats different electronic devices require, which ensures that it will be easy to read and answer regardless of if the survey-taker is answering through their computer or mobile phone.

3.1.1. Survey Questions

The heading of the survey is a brief introduction in which basic information is displayed. Inn this brief introductory paragraph, survey-takers are informed that the survey is part of a research project to study the team decision-making process of university students, and that the survey is completely anonymous and carried out on a non-profit basis.

The purpose of the first questions, related to demographics, is to first determine the demographics of the answering group, since the target population is reduced to only university students (regardless of their age or the career they are studying). These demographic questions lead to questions regarding teamwork and decision-making. They

have been framed in different ways through the survey and some include an image to illustrate respondents. Even if the variables are qualitative (preferred decision-making approach, perceptions, results, …) the way of data collection will be quantitative, since most answers will be collected through Likert scale, selecting numbers on a scale from 1 to 5 to indicate the level of preference, perceived results, or habitual practices. This results in a mixed approach.

The first questions, related to demographics, are aimed to studying who is taking the survey, taking in the following factors: age, autonomous community where they reside, gender, level of education (to discard people that are not part of the target population, type of university (public or private), area of their university studies, determine whether they are in their first or last years of university studies (to analyze if there is a change in their preferred decision-making over time), academic results and two personality questions to determine if survey- maker consider themselves more introvert or extrovert and more or less creative on a scale from 1 to 5 to later relate their answers to their preferred decision-making style.

The next question includes an image (Figure 1) that illustrates the decision-making process according to (Lunenbur, 2010). Survey-takers are then asked the extent to which they follow that model for decision-making while working in teams. The following questions ask about the importance the survey-taking student gives to step of this model. The last questions ask about the preferred decision-making approach while working in a team to determine if university students prefer making decisions with a programmed or non-programmed approach.

Most questions asked are multiple choice. After questions regarding demographics, all questions require the survey-takers to choose in a linear scale from 1 to 5 the degree to which they consider a determined factor important, the degree to which they personally follow a model or the degree to which they prefer acting one way or another (for example, following a similar plan for every teamwork or developing a specific and unique plan for each work).

3.2. Data Analysis and Visualization Techniques

Questions were defined and structured beforehand and not changed after the survey was first shared. Analysis has been observational since there is no experimental purpose. It is a descriptive analysis, since conditions will not be different from normal for the survey-takers, and they have been asked to reflect on their habitual ways of working in teams.

Collecting data through the Google forms survey, allows the possibility to later see the summary of the results as a whole as well as the responses collected for each question and the responses for the whole survey of each survey-taker. Google forms also offers the option to transfer data to an excel page, which also comes very handy for following data collection and analysis.

The findings resulting from data collected through the survey are analyzed using descriptive statistics, which is a way to describe data that can help present it in a more meaningful way, allowing us to reach conclusions through a simpler interpretation (Laerd Statistics, 2018). Factors like mode, median, mean serve to analyze data, and relate the factors discussed above to the rest of the questions related to the following of the decision-making model and preferred style (programmed or non-programmed).

Data analysis is caried out through the collection of answers received in an excel page, in which a filter is applied to examine the relation between the first questions (demographics and personality factors) and the decision-making-related questions. Regarding data visualization, data obtained from the described process is later exhibited through graphs, and an explanatory analysis to support findings.

The range of survey-takers include male and female university students whose age range varies from 18 to 34 and reside in the Autonomous Communities of Andalusia, Asturias, Castile and Leon, Galicia, Madrid, or Valencia. Most of the survey-takers are university degree students, but there are also a few (7,5 %) master's degrees students. Survey-takers study both in private and public universities and study either humanities and social sciences (94,3 %) or health sciences (5,7 %). Most of the surveyed students are in

their third year or above, whereas a 15,1 % are still in the first or second year. Their academic results range from 5 to 7 (15,1 %) and from 7 to 10 (84,9 %). Regarding personality traits, a 37,7 % consider themselves more extrovert, a 33,9 % consider themselves more introvert and a 28,3 % find themselves in between; a 43,3 % consider themselves creative, a 30,2 % not creative and a 26,4 % somewhere in between.

In order to visually represent the data collected, it is represented through different types of graphs elaborated either in word or in excel for the analysis and discussion. **Pie charts** are an efficient and simple way to compare parts of a whole in a very visual way. They have been used in this dissertation to represent the different parts of the demographic studied in the survey such as age, gender, and level of education. **Bar charts** also come handy for visualizing and graphically describing data. In this dissertation, they have been used once to show the autonomous communities and how many more participants from Madrid took the survey since it offered a very visual way to show how big the difference between the number of answers from students in Madrid and in other communities. However, it has mostly been used to compare answers from different subgroups within the same category such as for example, the extent to which students follow Lunenbur's model (always/most times, sometimes, rarely/never) on basis of academic results dividing them between students with grades that go from 5 to 7 and students with grades from 7 to 10.

The following chapters overview if students prefer following Lunenbur's decision-making model; whether they consider decisions for university teamwork programmed or non-programmed decisions and whether they prefer approaching teamwork for university as programmed or non-programmed decisions depending on the above-mentioned demographic characteristics (age, autonomous community, and gender), academic characteristics (studying a master's or a university degree, in a public or private university, their area of study, the academic year they are in, and their academic results) and personality traits (extroversion and creativity levels).

4. Analysis and discussion

4.1. Preferences under demographic characteristics

In terms of **age**, the survey offered options for all age ranges, but all participants were between 18 and 24 except for a small minority between 25 and 34 (Figure 3). Regarding following Lunenbur's decision-making model (Figure 1), 40 % of students between 18 and 24 follow this model always or most times; 46 % follow it sometimes, and 14 % never or rarely follow it. This age group mostly (42 %) consider decisions for group work for university programmed decisions, which means they consider them recuring and part of the routine; 30 % consider it depends, and 28 % consider them non-programmed decisions and feel the need to develop new responses for each of them. However, 36 % prefer taking a non-programmed decision approach, which means that they prefer thinking of new different solutions; for 34 % it depends, and 30 % prefer using strategies they already know work (they take a programmed decision approach)

For the older students, the sample is smaller, since fewer answered the survey. Among these students, 33,3 % follow Lunenbur's model most times while 66,6 % rarely or never follow this model. This group mostly (66,6 %) considers decisions for group work for university programmed decisions, and 33,3 % consider them non-programmed decisions, but regarding preference, 66,6 % try to take a non-programmed approach for work in teams and 33,3 % say it depends.

Figure 3.- Age of the students that took part in the survey.

AGE

5,7%

94,3%

■ 18-24 ■ 25-34
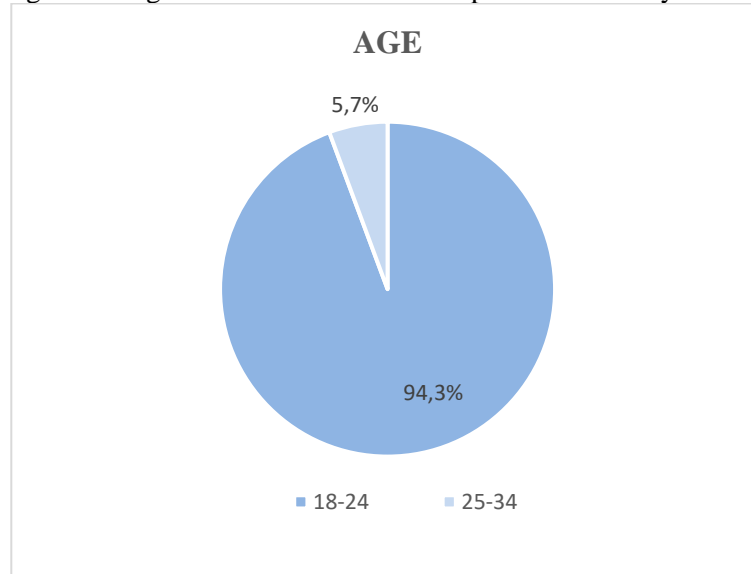
Source: own elaboration in base of surveyed data

Regarding the **autonomous community** where students reside (Figure 4), most survey-takers (77,3 %) respond from Madrid, 3,7 % respond both from Andalusia, Castile and Leon and Galicia and 5,6 % from bot Asturias and Valencia. Since a lot more students responded from Madrid than the rest of the communities, the variable autonomous community is disregarded because there are no significant data from other communities in comparison.

Figure 4.- Autonomous communities where survey-takers reside.

AUTONOMOUS COMMUNITY

| | | | | 41 | |
| 2 | 3 | 2 | 2 | | 3 |
| ANDALUSIA | ASTURIAS | CASTILE AND LEON | GALICIA | MADRID | VALENCIA |
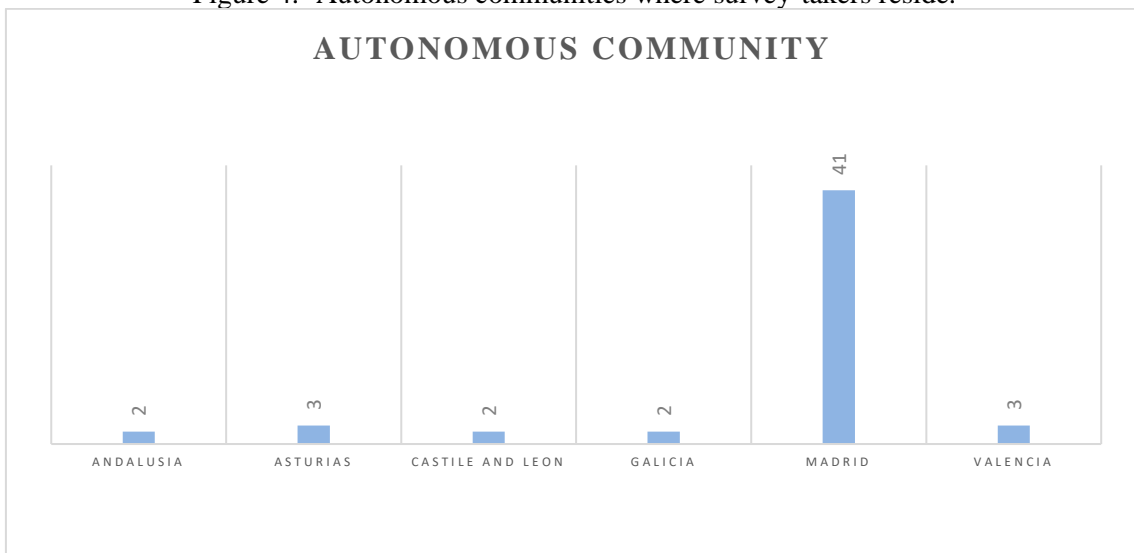
Source: own elaboration in base of surveyed data

Regarding **gender** (Figure 5), 79,2 % of the survey-takers were female, from which 35,7 % said to always or most times follow Lunenbur's decision-making model, 54,7 % follow it sometimes and a 9,5 % rarely follow it. Most (45,2 %) both consider decisions for university teamwork non-programmed decisions and prefer taking a non-programmed decision approach; 30,9 % consider them programmed decisions and 23,8 % say it depends, however, only 23,8 % would definitely rather to take a programmed decision approach whereas 30,9 % would consider both.

Male survey-takers, that make 20,8 % of students that answered the survey, mostly (54,5 %) follow Lunenbur's decision-making model and the rest (45,4 %) rarely or never do. The majority think that whether decisions for teamwork in university are programmed or non-programmed depends (45,4 %), 27,2 % consider them programmed decisions and the remaining 27,2 % consider them non-programmed, but interestingly, even when most consider them non-programmed situations, 45,4 % would rather take programmed decision approaches, another 45,4 % said it would depend, and only a 9,1 % would rather take a non-programmed decision approach.

Figure 5.- Gender of the students who took part in the survey.
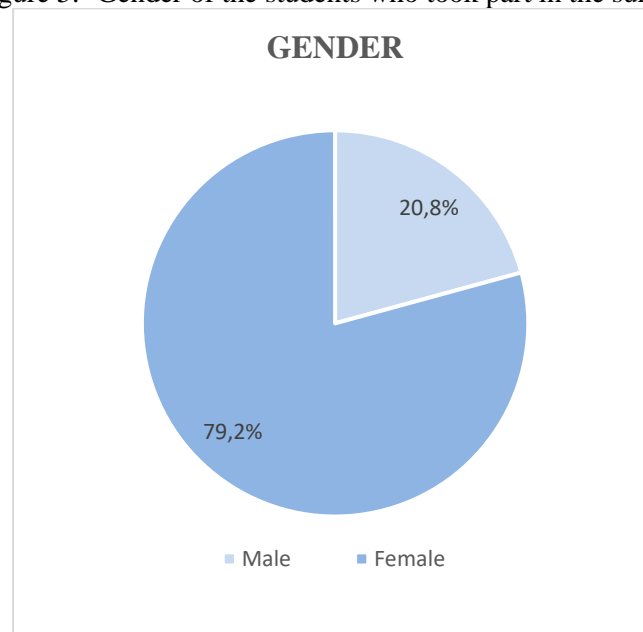
Source: own elaboration in base of surveyed data

4.2. Preferences under academic characteristics

Regarding the **level of education** of the survey makers, the majority (92,5 %) are degree students, and just a 7,5 % study a master's degree (Figure 6). Among degree students, a 38,7 % will usually follow Lunenbur's decision-making model, a 14,2 % will rarely or never do and for the majority (46,9 %) it would depend. The majority of degree students 40,8 % consider decision-making for university teamwork non-programmed decisions, a 30,6 % consider them programmed decisions and for a 28,5 % it depends. However, 34,6 % prefers considering both approaches, a 38,7 % prefers approaching these decisions as non-programmed and the remaining 26,5 % prefers approaching them as programmed decisions.

Regarding master's students, even if they represent just a 7,5 % of the survey-takers, it will be interesting to compare their view to the degree students'. Regarding Lunenbur's decision-making model, 50 % always or usually follow it and the remaining 50 % rarely or never follows it. Master's degree students mostly consider decisions for teamwork non-programmed decisions, a 25 % said it depends, and the remaining 25 % considers them programmed decisions, but curiously none prefer taking a programmed decision approach and would rather be more creative and take a non-programmed approach (50 %) or would consider both options (the remaining 50 %).

Figure 6.- Level of education of the survey-taker students.

STUDENT IN A

7,5%

92,5%

■ Degree   ■ Master's degree
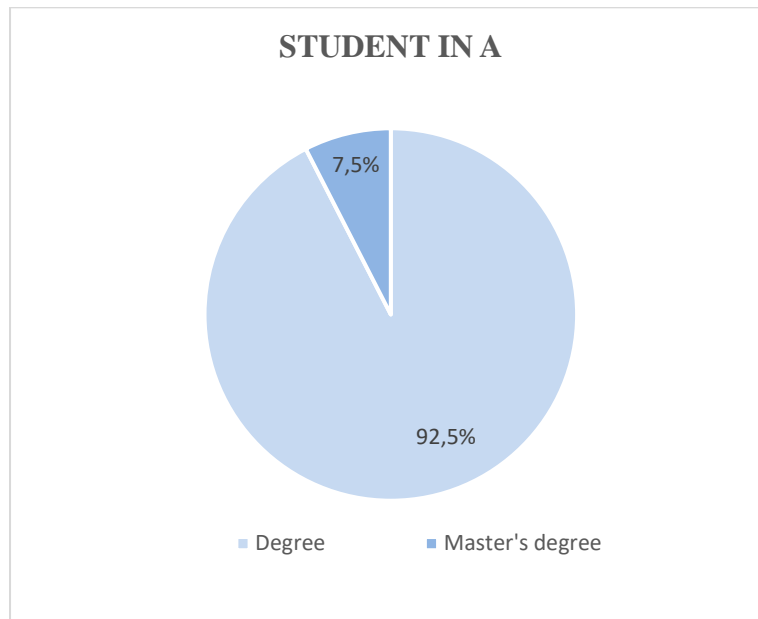
Source: own elaboration in base of surveyed data

Regarding the **kind of university** in which survey-takers study, a 58,5 % study in a private university while 41,5 % study in public universities (Figure 7). 25,8 % of private university students always or normally follow Lunenbur's decision-making model and 12,9 % rarely or never do. The remaining 61,3 % follow it sometimes or to some extent. Most (58 %) consider decisions for university teamwork non-programmed decisions, a 29 % consider them programmed decisions and the remaining 12,9 % say it depends. 41,9 % like considering both approaches, 35,4 % prefer taking non-programmed decision approaches and the remaining 22,5 % prefer taking a programmed decision approach for teamwork.

Among public university students, 59 % always or normally follow Lunenbur's decision-making model, 18,1 % sometimes follow it and a 22,7 % rarely or never follow this model. 31,8 % of this group consider decisions for university teamwork programmed decisions, but a 40,9 % rather take a non-programmed decision approach for teamwork decisions. 18,1 % of the public university students that took part in this survey consider that decisions for teamwork are non-programmed and the remaining 50 % consider that it depends. A 36,3 % of this group rather take programmed approaches and a 22,7 % say it depends.

Figure 7.- Type of university in which survey-taker study.

TYPE OF UNIVERSITY


41,5%

58,5%

■ Public   ■ Private
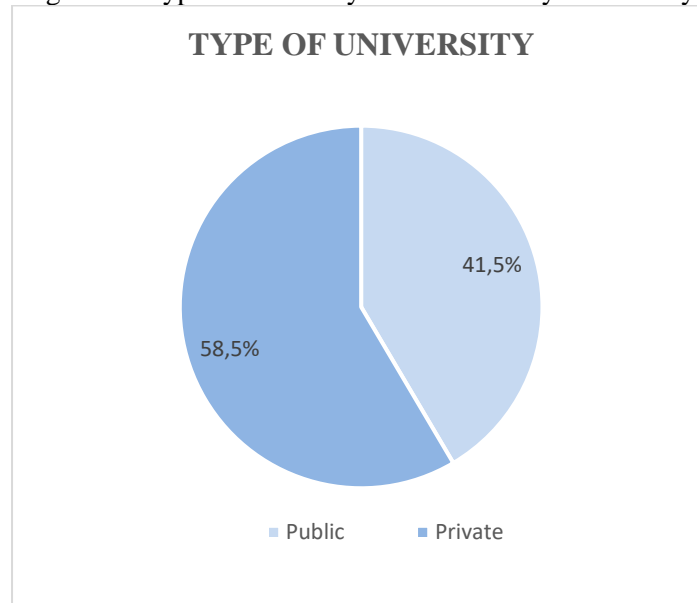
Source: own elaboration in base of surveyed data

Regarding the **area of studies** of the survey-takers, most (94,3 %) study careers in humanities and social sciences and 5,7 % study health sciences (Figure 8). Among students of humanities and social sciences, 42 % always or normally follow Lunenbur's decision-making model, a 44 % says it depends, and a 14 % rarely or never do. 30 % consider decisions they take for teamwork programmed decisions, a 26 % says it depends, and a 44 % consider them non-programmed decisions. Regarding their preferred approach towards these decisions, 30 %, as would be expected considering their perception of these decisions, prefer taking a programmed decision approach. The 36 % prefer taking a non-programmed decision approach and for a 34 % it depends.

Regarding health sciences students, which make up just a 5,7 % of the students that took the survey, none will normally follow Lunenbur's decision-making model. A 33,3 % will sometimes follow it and a 66,6 % will rarely or never do. Within this group, 33,3 % consider the decisions that have to be made for university teamwork programmed decisions whereas 66,6 % consider that it depends. None consider them completely non-programmed decisions, but regarding their preferred approach, a 33,3 % would rather take a non-programmed decision approach and the remaining 66,6 % says that their preferred approach depends, but none definitely prefer approaching them as programmed decisions.

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Figure 8.- Area of studies of the survey-taker students.
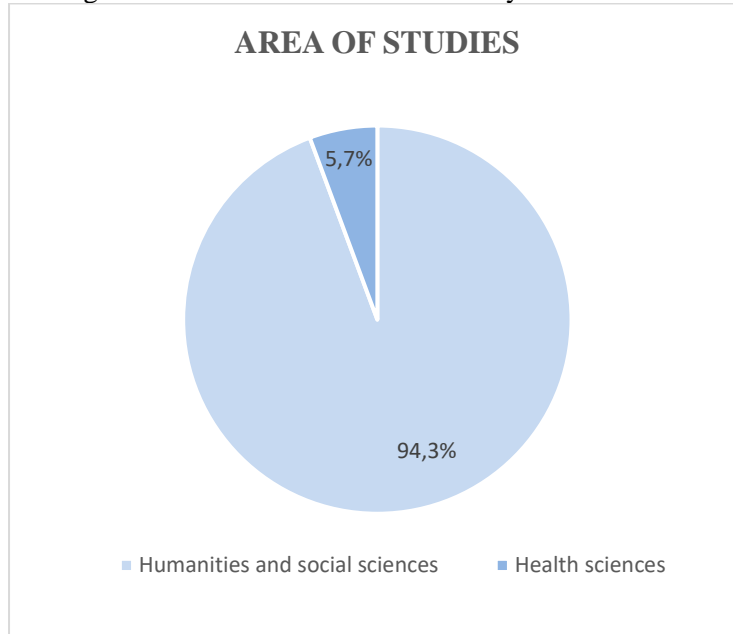
Source: own elaboration in base of surveyed data

Regarding the **academic year** in which they find themselves, 84,9 % of the students that took part in this survey are in their last academic years (3rd grade and above) and the remaining 15,1 % are either in their 1st or 2nd academic year (Figure 9). While a 44,5 %, follows the Lunenbur's decision-making model only sometimes, 40 % do follow it most times and a 15,5 % said they never or rarely do. Most of them consider decisions they make for teamwork non-programmed decisions (44,4 %) and 42,2 % prefer approaching these decisions as non- programmed. The 28,8 % consider them programmed decisions, and for a 26,6 % it depends. Regarding the preferred approach of the remaining, 31,1 % say their approach depends, and a 26,6 % would rather take a programmed decision approach.

Students on 1st or 2nd grade (15,1 % of the students that answered the survey) said to be equally inclined (both 37,5 %) to follow Lunenbur's decision-making model either habitually or sometimes and the remaining 25 %. Regarding perception of the decision-making process, the 25 % of the survey-takers consider decisions taken for teamwork programmed decisions, another 25 % consider them non-programmed decisions and the remaining 50 % consider that it depends, regarding preferences, a 50 % of this group said their approach would depend, a 37,5 % would rather take a programmed decision approach and only the remaining 12,5 % prefer taking a non-programmed decision approach.

Figure 9.- Academic year in which survey-taker students are.
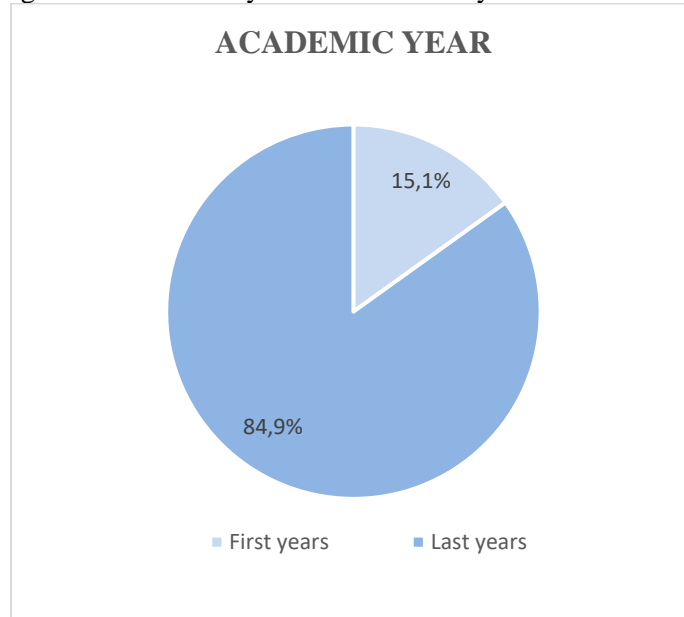
Source: own elaboration in base of surveyed data

Regarding **academic results**, even if more options were given, all respondents had grades that ranged either from 5 to 7 (15,1 %) or from 7 to 10 (84,9 %) (Figure 10). Within the first group (with grades ranging from 5 to 7), 50 % never or rarely would follow Lunenbur's decision-making model, 25 % will often follow it and 25 % say they sometimes do. A 12,5 % perceive decisions for teamwork programmed decisions another 12,5 %consider them non-programmed decisions and the remaining 75 % say it depends, but regarding their preferred approach, 50 % would rather take a non-programmed decision approach, the other 50 % said it depends, and none would definitely take a programmed decision approach.

The latter group with grades ranging from 7 to 10, 42,2 % normally or often follow Lunenbur's decision-making model, 46,6 % sometimes do and 11.1 % never or rarely do. A 46,6 % consider decisions made for university teamwork non-programmed decisions, 31,1 % consider them programmed decisions and the remaining 22,2 % consider that it depends. Regarding their preferred approach, 35,5 % prefer approaching these decisions as non-programmed, 33,3 % as programmed decisions and the remaining 31,1 % say it depends.

Figure 10.- Academic results of the survey-taker students.

ACADEMIC RESULTS
(1 to 10)

15,1%

84,9%

■ 5 to 7   ■ 7 to 10
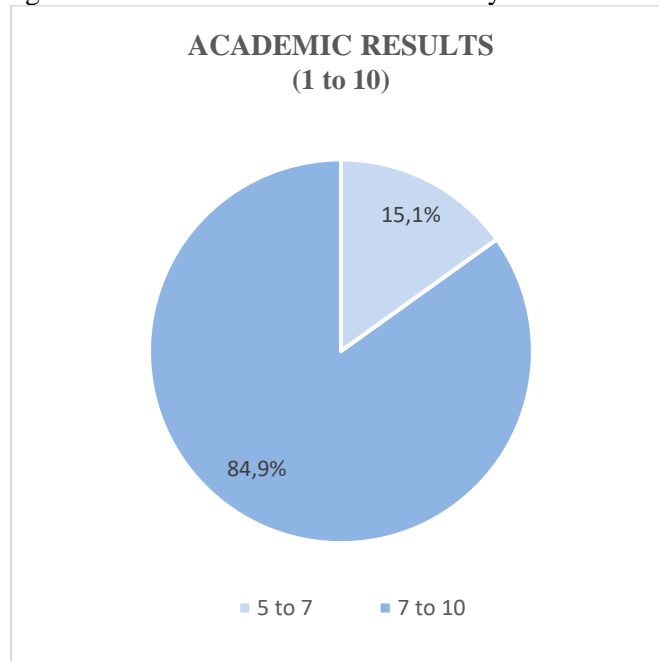
Source: own elaboration in base of surveyed data

4.3. Preferences under personality traits

Regarding **introversion and extroversion**, a 37,7 % of the survey-takers consider themselves extroverts, a 34 % consider themselves introverts and a 28,3 % consider themselves to be somewhere in between (Figure 11).

For extroverts, 20 % said to usually follow Lunenbur's decision-making model while the remaining 80 % only sometimes does. Most of the students in this group (65 %) consider decisions for teamwork non-programmed decisions, 30 % of consider them programmed decisions and the remaining 5 % days it depends, and regarding their preferred approach, 40 % prefer approaching teamwork decisions as non-programmed decisions, 30 % as programmed, and the remaining 30 % says it varies.

For students in between introversion and extroversion, a 46,6 % will normally follow Lunenbur's decision-making model, a 33,3 % will sometimes do and a 20 % never or rarely follows it. Regarding perception of the decision-making process, 20 % of the survey-takers consider decisions taken for teamwork programmed decisions, another

46,6 % consider them non-programmed decisions and the remaining 33,3 % consider that it depends. Regarding preferences, a 46,6 % of this group said their approach would depend, a 40 % would rather take a non-programmed decision approach and only the remaining 13,3 % prefer taking a programmed decision approach.

For introvert students, a 55,5 % say to normally follow Lunenbur's decision-making model, 11,1 % sometimes follow it and a 33,3 % rarely do. They perceive decisions for university teamwork as programmed on a 33,3 %, an 11,1 % believe they are non-programmed decisions and a 55,5 % says it depends. Their preferred approach towards these decisions is taking them as non-programmed decisions for a 33,3 % of the student, take a programmed decision approach for the 38,8 % and for the remaining 27,7 % it depends.

Figure 11.- Introversion and extroversion of the survey-taker students.
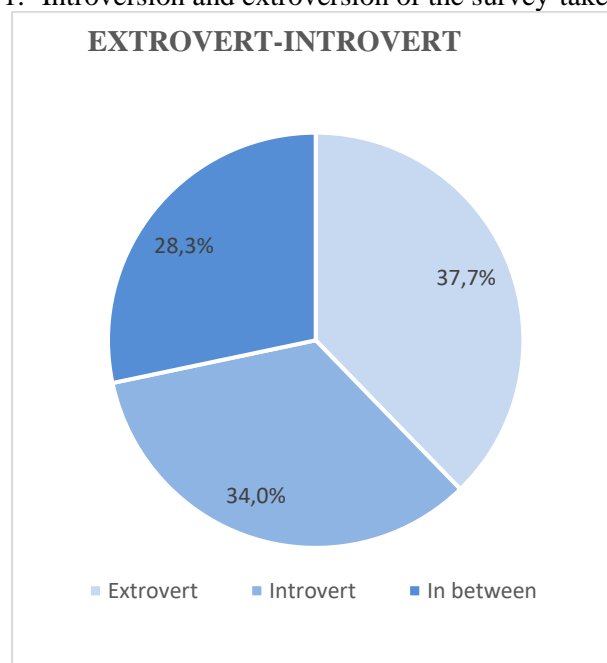
Source: own elaboration in base of surveyed data

Regarding **creativity**, 43,4 % of the surveyed students consider themselves creative, a 30,2 % consider themselves not to be creative and the remaining 26,4 % consider themselves somewhere in between (Figure 12).

From these creative students, 34,7 % normally follow Lunenbur's decision-making model, 60,8 % sometimes do, and the remaining 4,3 % rarely follow it. A 52,1 % consider

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decisions for teamwork non-programmed decisions, a 26,1 % consider them programmed decisions and the remaining 21,7 % say it depends. Regarding their preferred approach 34,7 % said they preferred to approach these decisions as non-programmed and another 34,7 % said it would depend. The remaining 30,4 % prefers making these decisions with a programmed approach.

42,8 %, of students that consider themselves to be in between being creative and not, normally follow Lunenbur's decision-making model. 35,7 % sometimes follow it, and the remaining 21,4 % rarely or never follow it. A 35,7 % of them consider decisions for university teamwork programmed decisions and a 64,2 % say it depends, but none considered them completely non-programmed decisions. However, 51,1 % prefer taking a non-programmed decision-making approach, 28,5 % say it depends, and just a 14,2 % prefer taking a programmed decision approach.

Students that consider themselves not to be creative mostly follow Lunenbur's decision-making model (62,5 %), 25 % sometimes follow it and the remaining 12,5 % rarely or never do. A 25 % perceive decisions for teamwork programmed decisions another 12,5 % say it depends, and the remaining 62,5 % consider them non-programmed decisions. Regarding their preferred approach, 31,2 % would rather take a non-programmed decision approach, 31,2 % would take a programmed decision approach, and 37,5 % said it depends.

Figure 12.- Creativity of the survey-taker students.

CREATIVITY

43,4%

30,2%

26,4%

■ Creative   ■ Not creative   ■ In between
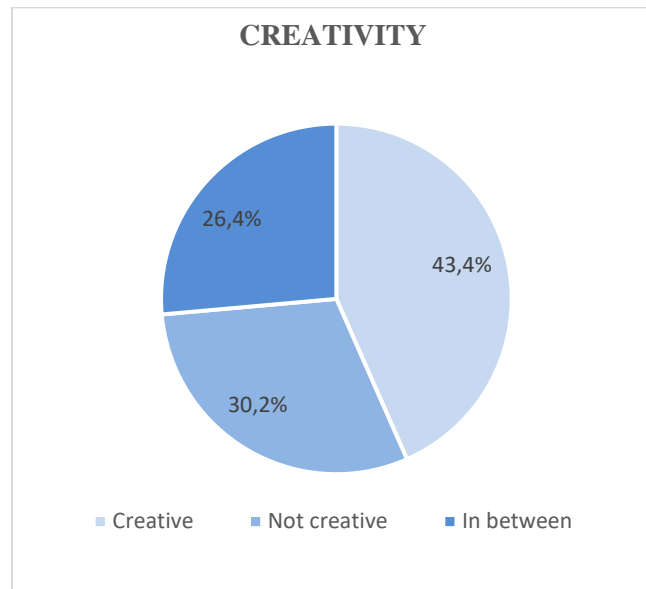
Source: own elaboration in base of surveyed data

4.4. Programmed or non-programmed decisions

Regarding the perceived decision type and the preferred approach, the author decided to compare these two variables on the basis that, regardless of whether or not a decision is indeed repeated and rutinary (programmed) or not, students, if they are eager to be creative and look for new options, can prefer taking a non-programmed decision approach for a programmed "problem" or situation. Results, as shown in the last graphic that illustrates the comparison between these two variables (perceived situation and preferred approach) are similar but rarely match exactly.

A few of the most remarkable dissimilarities between both can be found in the analysis elaborated for specific groups such as master's degree students and degree students. The first example originates from the master's students' group. In this group, even if 25 % of master's students consider decisions made for teamwork in university programmed decisions, curiously none absolutely prefer taking a programmed decision approach and 50 % would rather be more creative and take a non-programmed approach or would consider both options (the remaining 50 %).

Another example comes from the health science students. Within this group, 33,3 % consider the decisions that have to be made for university teamwork programmed decisions whereas 66,6 % consider that it depends. None consider them completely non-programmed decisions, but regarding their preferred approach, a 33,3 % would rather take a non-programmed decision approach and the remaining 66,6 % says that their preferred approach depends, but none absolutely prefer approaching them as programmed decisions.

In order to identify most effective decision-making style based on students' perceptions of past experiences survey data regarding academic results can be used, which was another objective, data obtained during the analysis of the decision-making styles through the scope of academic results provide a relevant insight.

Looking at the results from data collected in the light of academic results, as mentioned above, more options were given, but all respondents had grades that ranged either from 5 to 7 (15,1 %) or from 7 to 10 (84,9 %). Within the first group (with grades ranging from 5 to 7), 50 % never or rarely would follow Lunenbur's decision-making model, 25 % will often follow it and 25 % say they sometimes do. The latter group with grades ranging from 7 to 10, 42,2 % normally or often follow Lunenbur's decision-making model, 46,6 % sometimes do and 11.1 % never or rarely do (Figure 14).

Figure 13.- Extent to which students follow Lunenbur's model on basis of academic results.
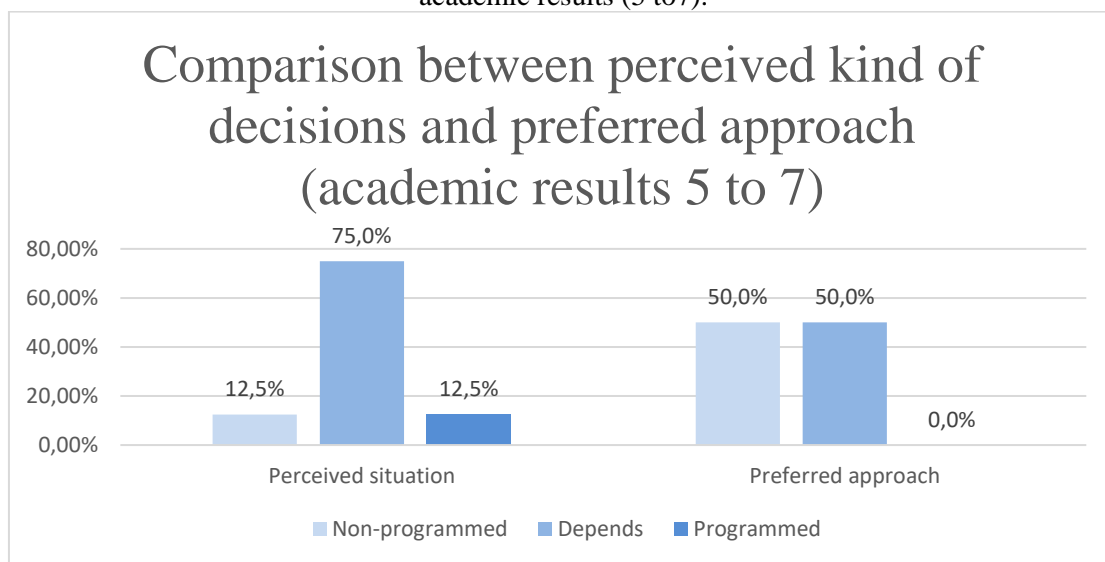

Source: own elaboration in base of surveyed data

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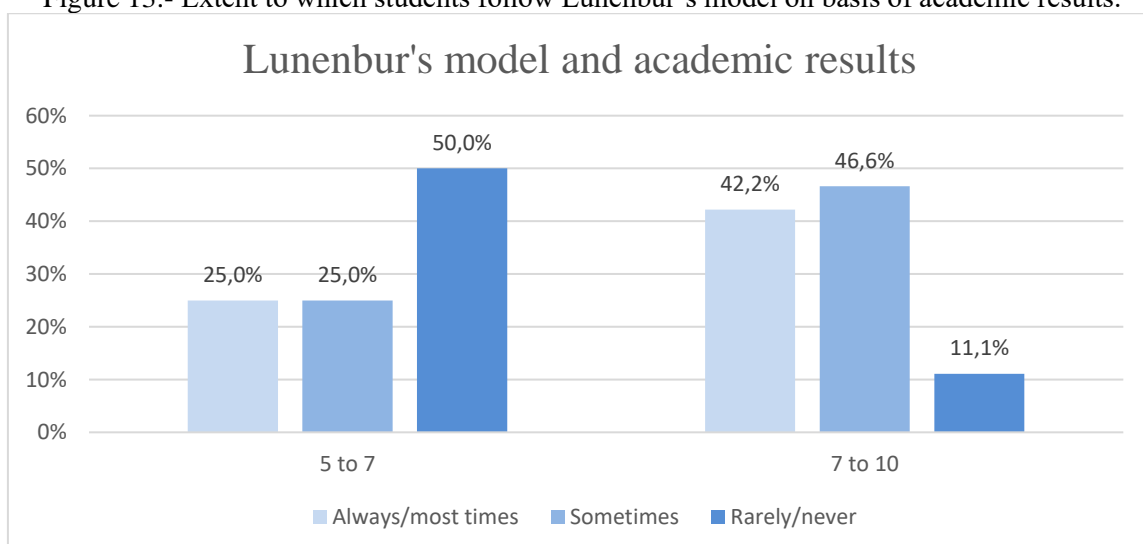
In light of this graphic (Figure 14), there is a notable difference between the percentage of students with higher grades that follow Lunenbur's model. It can be observed that the group with higher grades notably follow Lunenbur's model a lot more than the group with lower academic results.

For further comparison regarding this aspect, also regarding academic results and in particular within the group with lower results (5 to 7) 12,5 % perceive decisions for teamwork programmed decisions another 12,5 % consider them non-programmed decisions and the remaining 75 % say it depends, but regarding their preferred approach, 50 % would rather take a non-programmed decision approach, the other 50 % said it depends, and none would definitely take a programmed decision approach. Amongst the group with grades from 7 to 10, 46,6 % consider decisions made for university teamwork non-programmed decisions, 31,1 % consider them programmed decisions and the remaining 22,2 % consider that it depends. Regarding their preferred approach, 35,5 % prefer approaching these decisions as non-programmed, 33,3 % as programmed decisions and the remaining 31,1 % say it depends. Figures 15 and 16 offer a more visual comparison between these two groups.

Figure 14.- Comparison between perceived kind of decisions and preferred approach on basis of academic results (5 to7).

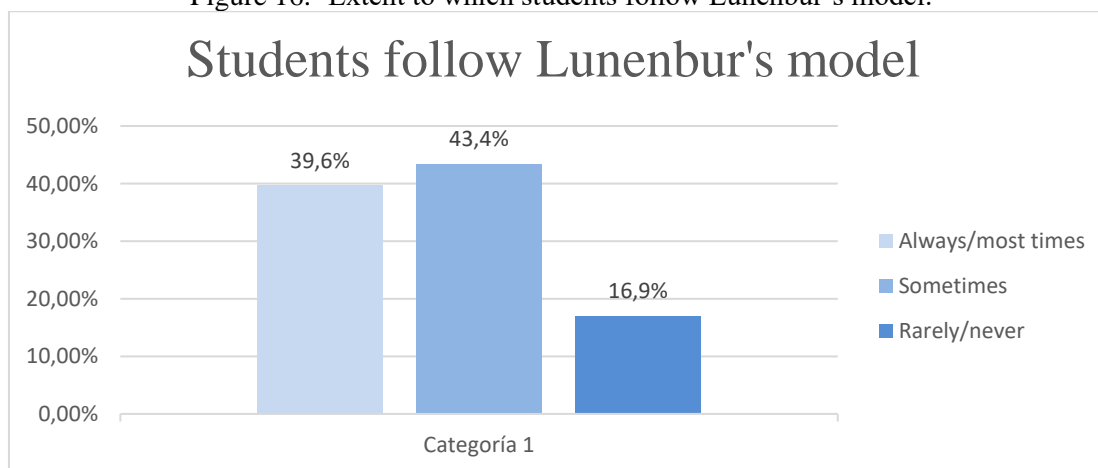Source: own elaboration in base of surveyed data
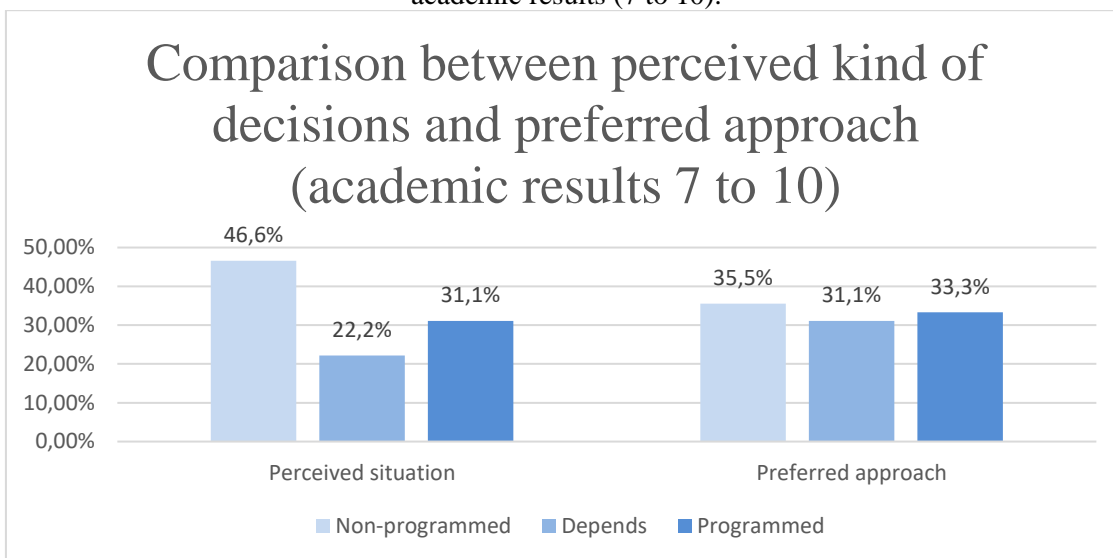
Source: own elaboration in base of surveyed data

4.5. General analysis of the survey

This chapter analyzes the results as in chapters above but does not base the results on differentiated groups with different characteristics and instead has the focus on the global picture, what university students in general have answered.

39,6 % of the students that took part in the survey normally follow Lunenbur's decision-making model, only 16,9 said to never or rarely follow it and a 43,4 % said to apply it sometimes or to some extent (Figure 17).

Figure 16.- Extent to which students follow Lunenbur's model.

Source: own elaboration in base of surveyed data

When asked whether they considered decisions for teamwork programmed or non-programmed decisions, 41,5 % said to consider them non-programmed decisions, 28,3 % consider them programmed decisions. The remaining 30,2 % said that it depends. Regarding their preferred approach, a 37,7 % would rather make decisions taking a non-programmed approach, 28,3 % rather approach them as programmed decisions and the remaining 33,9 % said it depends (Figure 18).

Figure 17.- Comparison between perceived kind of decisions and preferred approach.
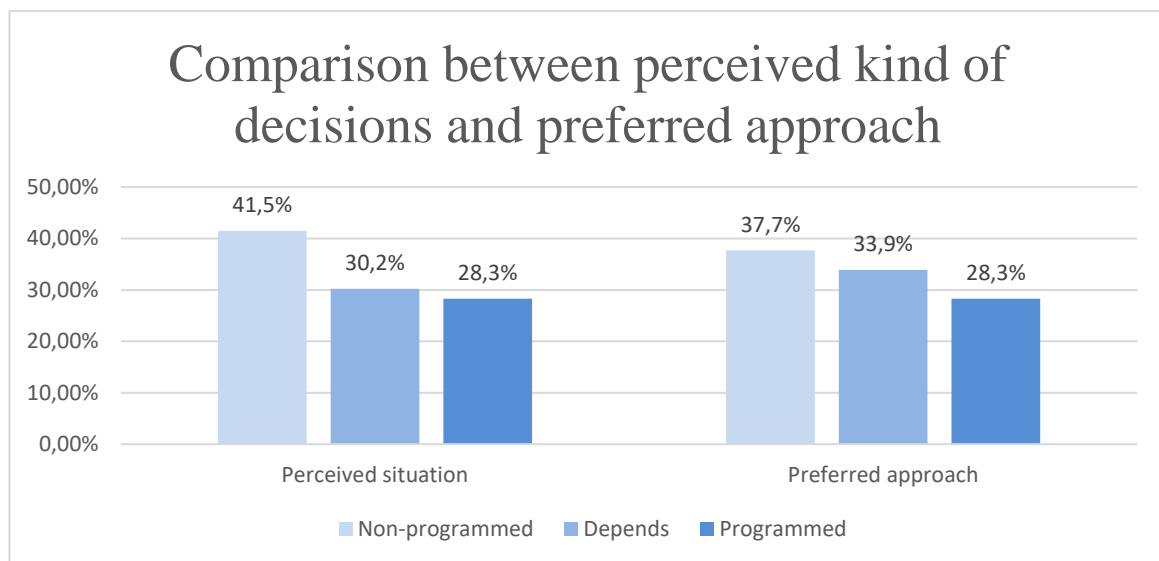
Source: own elaboration in base of surveyed data

Conclusions

The departure hypothesis was that students do mostly follow Lunenbur's decision-making model and prefer taking a non-programmed approach since it allows more creativity but like to combine it with some programmed aspects.

Looking back at the objectives established in previous chapters, the general objective, that goes hand in hand with the hypothesis above, was to identify preferred decision-making styles in a teamwork environment amongst university students.

With data obtained through the survey, the conclusion can be reached that, within the students surveyed, even if students most times will not know that they are indeed

following Lunenbur's decision-making model, most either always or often follow it, or at least do follow it sometimes. It is generally the minority (according to the results collected through this survey) who does not follow this model or does, but very rarely.

Regarding limitations found throughout the elaboration of this dissertation, even if the study carried out in this dissertation may not be big enough to determine a global truth, it is an interesting examination that brings us an insight into the decision-making styles of the groups examined.

Since the survey has been distributed through snowball sampling, there will definitely be a sampling error, since it has therefore been distributed only to a very small sample of the target population.

The survey was aimed at university students in general, expecting that it would reach a broader variety of areas of study, but most survey-takers were humanities and social sciences students being the only exception a few health science students. It was also hoped to reach more master's degree students, to make a more significant comparison between master's degree students and degree students. Even if the percentage of some groups such as health sciences student and students of master's degrees, master's degree students or students from autonomous communities other than Madrid were very low compared to the majority of the students the survey reached, the comparison was interesting and allowed a tiny insight into the preferences and perceptions of those groups, being the biggest limitation, the number of students surveyed. Even if the number of surveyed students was very low, they have been enough to develop an interesting investigation in accordance with the means (time, programs available…) at disposal for the elaboration of this dissertation.

Regarding possible future research avenues and practices suggestions, this survey's limited sample does not allow to reach definitive conclusions. However, it provides an interesting area for future research. It would be interesting to reach a greater number of survey-takers to obtain more accurate data through a more extensive research. It could also be interesting to launch surveys about group decision-making for students in university and try to discover which strategies or combination of characteristic and preferences lead to the best results. Students could later be provided with this information and work knowing what has brought others better results.

Another interesting suggestion could be developing an optional subject in universities aimed to provide students with accurate and useful information regarding groupwork for university could be very helpful and make their groupwork more efficient as well as interesting. This would in turn allow them to work in a more structured way assuming that it would provide them with more guidance and tips on how to achieve better results while working in groups.

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Anexos

Encuesta Liderazgo (respuestas).xlsx

Survey Google Forms:

https://docs.google.com/forms/d/e/1FAIpQLSdyc8TzYeJZkvw9Jlsov0-zDp4kJNR9zN0qVn81a-GUXINCsg/viewform?usp=sf_link