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**The use of learning management
systems (LMS)
within Startup companies.
An exploratory study.**

Atmatzidou Vasiliki
SID: 3305200003

SCHOOL OF SCIENCE AND TECHNOLOGY

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Student Name: Vasiliki Atmatzidou
SID: 3305200003
Supervisors: Prof. Ioannis Magnisalis,
PhD Candidate Ioannis Konstantinidis

“I hereby declare that the work submitted is mine and that where I have made use of another’s work, I have attributed the source/sources according to the Regulations set out in the Student’s Handbook.”

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Thessaloniki – Greece

Abstract

The main cause of this dissertation Thesis is to make research about learning management systems (LMS) used within startup companies. This is an exploratory study.

On this research, we are exploring what are the LMSs and how they developed within those years and whether these companies are using them for the development of their stuff, and which are those.

As it is known so far, there are plenty of learning management systems used around the world, some of them already well known, such as Moodle platform or Blackboard which are also widely used in universities, and there are some other custom-made, that they have been built within those companies in order to support that learning and development system of them and those use to have special features.

There are also some other LMSs that they're being offered as a software, and they can be customized and can be built upon client's needs. Those, have specific features that can support different kind of companies and organizations and are parameterize in some of their points.

All these will be discovered on this Thesis throughout the literature and with the support of previous research. Mainly, LMSs are widely used nowadays and definitely support companies, organizations, universities, and many other entities.

Keywords: Learning Management Systems (LMS), Startup, Startup companies, organizations, software systems, CMS, New companies, learning systems, development systems, learning, systems, programs, new technologies, e-learning, collaboration learning, distance learning and development.

Vasiliki Atmatzidou

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1.Introduction

This thesis' aim is to review the overall impact and usefulness of LMS platforms in today's startup companies. Although LMS adaptation in the modern working industry is a phenomenon of the last years (primarily caused by the Covid-19 pandemic), learning management systems have been around since the early 2000s and have been greatly evolved over the years along with the comprehensive technological growth, in which we live in.

Some of the most widely known and used LMS platforms are Moodle, Edmodo, Blackboard and Skillsoft among others and nowadays many start-up companies trust some of them for various internal processes and procedures to keep up with a demanding, competitive, and constantly developing market.

At that time, we can point some differences.

LMS types are distinguished by two main criteria, licensing type and deployment type. There are two licensing types, proprietary and Open Source:

- Proprietary LMSs are licensed to the owner under exclusive legal rights, and they cannot be modified, further distributed, or configured in any means.
- Open source LMSs on the contrary, ensure freedom for modification, distribution, and configuration so that they serve the company's exact needs.

From the deployment method perspective, there are also two types of LMSs, On-Premises and Cloud

- On-premises LMSs are hosted on the company's infrastructure. They tend to be more expensive (with significantly higher maintenance and upgrade costs), but they offer much more options for customization in addition to the possibility of integration with other locally hosted services and products
- Cloud LMSs are hosted on the internet, and you can access them from everywhere. They are more popular than on-premises LMSs because of their little maintenance cost, however they lack configuration options.

There is also the alternative of a custom-built LMS entirely developed by the company itself for a tailor-made solution, but it requires quite an amount of time, cost, and human resources, not to omit the necessity of in-house future maintenance and further development.

We are going straight, to explore all the aforementioned within the literature and through a literature review, a questionnaire study and its analysis.

1.1 Problem Statement

To make a start in our research study, it is vital that we state the problem we want to explore and hereafter to deliver the results of our dissertation study. A lot of information must be taken into consideration, such as the past passing technology development, the huge changes in our lives because of the covid-19 situation, the rise of new startup technology companies and many more factors and facts which affect our lives.

It is widely known that there are numerous companies starting activities every day. A lot of them are beginning like startups, that means they usually start from a small team of people, a new idea or technology and with some investors who fund these new businesses.

On this thesis, we want to explore whether startup companies use LMSs for the learning and development of their people, which software or other systems they use, if they develop custom made ones, what characteristics they have and how much these are helping the company to grow and develop. Some other points we want to explore are whether there are factors can affect the LMS effectiveness and if the LMSs succeed to support people and their learning and development process during the Covid era. In any case, we need to make a deep literature review and to point some questions in order to come up with some research results.

1.2 Research Questions

On this study, we followed Pearson's method (Pearson 2019), and we created some sort of questions to be answered by some people in order to give the results for our main question and to the rest ones that can lead us to some results upon this study. So, the main question stated is, whether startup companies are using LMSs for their learning and development procedure and if yes, which are they and what characteristics they have. More specifically, our target is to state as many precise questions as possible, for this specific study and by talking the answers and analyze them and together with the literature review of the topic to come up with some conclusions.

On the beginning of our questionnaire, of course we stated some demographic questions about the people who answered it, to see in which parts of population they belong and what kind of educational level they have.

In the next part, we pointed some questions to explore, if our target knows what LMSs are, which one from an indicative list do they recognize, and if they can understand the differences between LMSs and CMS's. In the next questions we are asking them which parts of an organization they believe an LMS support and if by their opinion LMSs support the remote working model.

On our last section, questions such as how effective they believe an LMS run into a startup company is, the usefulness impact in level of workers' satisfaction or what impact do they think an LMS has within a startup organization.

1.3 Facts and advantages of LMSs for new, startups and small companies

As prementioned, an LMS is a portal to online education and training those aids in preparing your workforce for cutting-edge challenges. Eada Hudes says, that owners of small enterprises are aware of how crucial it is for employees to continuously learn new skills and stay competitive. Today, the majority of small business owners use LMSs, to identify employee skill gaps and provide them with additional training.

A tailored, effective, and cost-effective e-learning system enables small enterprises to teach employees for much less money. But an LMS also has a lot of other advantages. Let's peek at it:

Value

A startup company cannot afford to purchase an LMS. This is the most typical source of frustration for every small firm with restricted resources. However, with the introduction of the SaaS model, new enterprises may now host complex structures in the cloud without investing a fortune. In truth, there are several sites that provide free use. Using an LMS eliminates expenses such as tutor fees, publishing charges, accommodation, and travel expenses, and so forth. As a result, the time spent on training is reduced.

Centralized Data

LMSs are well-known for centralizing all types of company data, even on distant servers. If you maintain your vital information on many computers, the chances of losing it are almost none. However, if it is consolidated in one area, personnel from many departments may have admittance to the learning resources and study whenever and wherever they choose. Small businesses may utilize a cloud based LMS to keep their development programs and company data together in one place. As a result, its multi-layer security decreases the potential of data loss.

Direct experience

There is no purpose in training personnel who cannot give quality results in the actual world. However, an LMS that contains real-life scenarios and scenarios makes it simple for your employees to comprehend and enhance their abilities. It is created in such a way that personnel can be instructed in a real-world setting, such as fulfilling a PoS activity, dealing with a virtual consumer, and so on.

Personalization

Each company is unique and demands a unique set of systems. Consequently, when you subscribe for an LMS software, you should choose one that can be adjusted to your company's specific needs, since this reduces the need to redo training programs.

Monitoring of progress

When conducting training, a corporation must guarantee that its staff understand the material thoroughly. It may help them face future issues Eada Hudes says. Therefore,

latest technological LMSs enable you to track each employee's performance along with skill development via reporting and its conclusions. Businesses that use an LMS may effectively monitor individual performance and growth, as well as see grades by specialized programs. It aids in identifying an individual's weak points and may offer more extensive training to help them perform better. Learners will get more opportunities to research new areas and apply what they've learned during the trial.

Improve client service

With the correct tools and knowledge, a company is able to promote its identity and improve customer service. An LMS is utilized to correctly teach people about the goods, trademark, operations, and customer service. Customer service abilities are finally polished by the training sessions. Furthermore, with an LMS, you may teach staff on a number of duties or enable them to acquire new abilities.

Assumptions

As Eada Hudes says, an LMS is an important tool for small businesses. Given these fantastic benefits, investing in an LMS is the ideal option for your company's training needs, whether small, medium, or big.

1.4 Structure of Thesis

Four chapters constitute this thesis. The first chapter, which is the introduction, gives an overview of the body of literature that served as the study's framework, provides a description of the issue being examined and the motivation behind conducting this study, systematizes the research objective, and sketches out the study's main limitation.

On the next chapter, the second, we explore LMSs within a historical anadromy and we roughly give a definition of them. We explain synchronous and asynchronous Learning Management structure, and we point the differences between CMSs and LMSs. Then it's time to say a few about the LMSs design. And in the end of the chapter we make an overview of some widely known LMSs to see their characteristics and points of difference.

Continuously in the next part of the second chapter, we read about the need for digitalization and collaboration management within startup companies and we give the reasons of the need for LMSs while teleworking. On the next pages, we present the primary LMS attributes that are efficient for using LMSs in businesses and we give the reasons why companies should invest in them.

On the third chapter is our research. We are presenting our research design and methodology, we give the results of our analysis with charts, histograms and tables and we discuss our finding.

On the fourth chapter we provide the Bibliography and final we have an appendix with our questionnaire.

2.Literature Review

2.1 History and definition of Learning Management Systems (LMS)

To start investigating and make research about our main topic, it is vital to sort out and make clear what a Learning Management System is.

It is found throughout the literature, that an LMS is kind of a software or other web-based application that have been made and designed to implement and support educational processes of distance learning. An LMS, we can say is the infrastructure that provides and manages educational content, identifies, and evaluates individual and organizational learning or training targets that have been set, and monitors progress towards achieving the goals. As well as collects and presents data to monitor an organization and the learning process as a total. Such learning management systems are commonly used among universities. Some well-known ones are Blackboard and Moodle platform.

The Watson and Watson in 2012, made a list of terms to give us a rough description of the computer adoption within the years. So, they described them as computer-based instruction or else CBI, computers assisted instruction or CAI and computer-assisted learning or else CAL. The aforementioned terms help to monitor, approve and distribute information.

A learning management system do have different online uses and behaves a guidebook to many layers of progressive learning and development as many researchers said (Jung & Huh, 2019, Kuosa et al., 2016, Oakes, 2002, Watson & Watson, 2012) and reacts as a platform to disseminate learning material (Watson and Watson, 2012). By enabling learners to sign onto classes, monitor their grades, and look at updates and course announcements, an LMS platform creates an environment that fosters engagement and learner achievement (Al-Fraihat et al., 2020, Oakes, 2002, Watson and Watson, 2012).

If we want to summarize somehow, an LMS give users a beneficial learning environment where they can absorb many elements of systematic applications (Jung & Huh, 2019, Watson & Watson, 2012).

2.1.1 Asynchronous and Synchronous Learning Management Systems structure

As prementioned in our introduction, there have been both asynchronous and Synchronous Learning Management Systems structures.

To foster beneficial connections, an LMS offers a framework for asynchronous delivery techniques including emails, discussion groups, audio discussion sessions, and newspapers (Alzahrani, 2019). Students can speak with one another using asynchronous delivery methods without being distracted by their physical location or by the passage of

time (Alzahrani, 2019). Learning and development can be done in conjunction with other obligations and responsibilities thanks to asynchronous platforms.

A structure for synchronous delivery techniques using video and online conferences is also provided by an LMS (Alzahrani, 2019). In addition to presentations and word documents, students get access to live chat, online discussions, and video of their professors (Alzahrani, 2019). By utilizing synchronous frameworks for videoconference communication, teachers and students may interact more easily (Alzahrani, 2019).

Both structures as we understand, provide users of these technologies with many different tools to make them easily facilitate their learning procedure. According to Hrastinski and Keller's (2007) comparison of synchronous and asynchronous learning, synchronous learning is essential for fostering a participant's capacity for critical reflection in a distant learning setting. Asynchronous learning systems do not provide learners with immediate feedback (Hrastinski & Keller, 2007). Additionally, asynchronous learning environments might cause them to feel disconnected from their social environment and all alone (Al-Fraihat et al, Hrastinski & Keller, 2007). Alkhasawneh and Alqahtani (2019), on the other hand, they underline the need to increase the usage of asynchronous tools in an LMS. According to Alkhasawneh and Alqahtani (2019), asynchronous learning offers flexibility because learners can reflect and complete easier their assignments.

Learners do better in blended synchronous and asynchronous environments according to Alzahrani (2019). Compared to traditional learning methods, learners who use both initiatives achieve better results in their learning and development (Alzahrani, 2019).

2.1.2 LMSs VS CMSs

According to the Evolving Technologies Committee (ETC, 2003) Jung and Huh (2019), and Watson and Watson (2012), a CMS offers users a collection of operational tools that organize online interactions. It offers a procedure for managing information in a central position (Jung & Huh, 2019, Watson & Watson 2012). Online and blended-learning courses are provided via CMSs, allowing users to access folders containing the necessary course content as well as tools and other resources. Examples include monitoring progress, keeping tabs on grades, and using communication tools for chats, group discussions, and information posting (Watson and Watson, 2012). While Course Management Systems and Learning Management Systems share some functions, an LMS offers a comprehensive training platform that holds online classes to monitor course completion and test score (Jung & Huh, 2019, Watson and Watson, 2012). A CMS, on the other hand, focuses in organizing and developing learning content.

An LMS is a strong choice for businesses wishing to train staff members online because it frequently comes with a ton of interactive features. Because staff members can view, listen to, and interact with content, these elements contribute to making courses enjoyable. Therefore, training that is provided through an LMS typically results in higher rates of learning participation and course completion. Using LMSs is also ideal for

businesses with large number of staff who work by distance, travel or work from various countries or locations.

Finally, compared to a CMS, an LMS typically provides more thorough reporting. You can easily keep track of who has finished and which tasks when, as well as how it took to complete them. Quizzes that provide automated feedback allow you to assess their learning without the need for manual grading.

2.1.3 Exploring the LMSs design

If we want to take into consideration which facts are taken on using an LMS we need to explore how the system is designed. There are different characteristics that most of researchers have been point out that can affect the choice to use an e-learning system, an LMS, and are in general terms the following four ones:

- 1.How interactive these systems are (Pituch and Lee, 2006)
- 2.How user-friendly is its interface design (Selim, 2007)
3. The called “effort expectancy” which is referred to as perceived ease of use by Chiu and Wang (2008), or else the behavioral control of them.
4. How complete and easy-to-use and understand the system is.

2.1.4 The use of the LMSs to raise an online learning environment

Learners obtain their ability to freely manage their academic workloads as central and progressive online learning environments improve (Al-Fraihat et al. 2020; Alkhasawneh & Alqahtani, 2019; Murcia, 2016). By actively participating in courses, cognitive methods enable learners to develop awareness and cherish their own autonomy (Murcia, 2016; Wang, 2011). Instructors lead and model discussions in online settings, organize online activities, provide learning goals, give participants options and choices, and assist them in problem-solving and decision-making (Jung & Huh, 2019; Murcia, 2016).

Murcia (2016) claims that online facilitators give learners the opportunity to inquire and build on prior knowledge to develop new ideas. Learners can maintain their independence, passion, and motivation with the help of facilitators. By remaining active in the LMS community, online instructors encourage active learning. Examples include answering participant inquiries, contributing to course discussions on the LMS, and provides learners with performance comments.

According to Al-Fraihat et al. (2020) and Alkhasawneh and Alqahtani (2019), integrating LMS into various types of activities encourages student learning and self-regulation. LMS utilization offers flexibility, customization, and modularity to practitioners (Kehrwald & Parker, 2019). Innovative online educators are encouraging the use of LMS

to support user-driven web - based learning environments that make use of a range of media and communication technologies and encourage participant choice in the selection and usage of web - based tools (Kehrwald & Parker, 2019).

Users of LMSs now have access to various smart devices, including reasonably priced desktop and laptops powerful yet portable tablets, high-end mobile phones, and more recently wearable technologies, as users' technology accessibility improves (Kehrwald and Parker, 2019).

2.1.5 An overview of the LMSs. Exploring of some platforms.

As mentioned before, there are thousands, maybe millions of LMSs platforms, and all of them have different use and characteristics and it is upon the users which one will select, which is the most suitable for the need they have. Some LMSs tend to be very famous because they are used widely such as Blackboard and Moodle platform which is used in many Universities around the world.

The adoption of learning management systems, such as Moodle, enables implementation of learning information and high levels of instructor-learner engagement. The extensive range of tool possibilities in the learning management system enables one to reduce the workload on an instructor during the course design process and to provide a learner with a multipurpose and stimulating learning course (S. Zelinskiy, 2020).

We are going now to refer to some learning management systems such as Moodle, Learnworlds, Blackboard, Uqalio and more and will give a brief introduction to their characteristics so as to see how different they are and what are roughly their possibilities.

Moodle (Modular Object-Oriented Dynamic Learning Environment)

Moodle (Modular Object-Oriented Dynamic Learning Environment) allows everyone to be both potential instructors and trainees at the same time. With the help of this concept, relationships enter a new stage where teachers must guide students' autonomous information-seeking as well as acting as a source of knowledge for them. It enables all learners to exchange ideas, listen to others, ask questions, and coordinate communication, all of which promote the creation and growth of independence and self-sufficiency. Without a doubt, distant learning technologies help students develop their abilities for working in the Internet's global network and, as a result, their creativity. As personal responsibility increases, more time is given to self-control and evaluation, allowing for a significant improvement in the quality of students' autonomous work.

The Moodle system has several tools and techniques that are essential for organizing distant learning. There are many excellent course components in it, but some of them may be pulled out, including the following: a questionnaire, a repository, an external tool, a glossary, a task, a lecture, feedback, a poll, a SCORM package, a seminar, a test, a forum, and chat.

Analysis of the possibilities of the MOODLE learning management system for organization of distance learning in the conditions of the university.

LearnWorlds

As Samuel Fletcher says (Samuel Fletcher, 2022), white-label LMS, LearnWorlds is a popular and easy to use. With the help of the platform, you can design in-depth online courses with engaging video lectures that are all housed on a website that you can customize. For independent course developers and businesses wishing to provide internal training programs, it is a perfect choice. LearnWorlds is perfect for businesses searching for a platform for internal training as well as first-time online course makers eager to offer their skills. The platform also works with a variety of well-known e-commerce and marketing applications.

You can construct interactive video classes with LearnWorlds in addition to written information, and you may gamify the cognitive development with quizzes and progress indicators.

It has integrated marketing and sales capabilities if you want to offer your courses online. To improve income per sale, for instance, you may include upsells and cross-sells on the checkout page. Additionally, you may provide memberships, course packages, and free courses. LearnWorld's integrated affiliate management tool assists you in setting up an affiliate program.

Schoox

Workforces in the office, on the front lines, and everyone in between can benefit from Schoox, a cloud-based, distinctively agile learning and talent software platform. Schoox assists companies of all sizes in a variety of sectors, such as transportation, manufacturing, construction, retail, hospitality, and finance, to make the transition from conventional, compliance-based learning to a strategy that maximizes employee potential.

The platform offers a complete solution for learning, information curation, social collaboration, objectives, skills and performance appraisal, professional growth, and business impact is Schoox. It integrates effective yet user-friendly solutions for each of these areas. The platform was created with the user in mind and enables them to interact with relevant skill-building courses, information, and programs through user interfaces that are cutting-edge and simple.

No matter how complicated a business' organizational structure is, Schoox may be set up to precisely match it. This improves learning effectiveness by ensuring the appropriate learners have access to the appropriate areas of the platform. Global corporations with hundreds of sites, scattered operations, and matrixed staff in several nations are some of our happiest clients. The platform may also be altered to turn on and off different components as needed. Platform was designed to encourage efficient learning and information exchange within the company. With Schoox, supervisors can manage and monitor employee's performance on skill retention and evaluations, online and offline training, and both. Schoox can provide the appropriate data to the correct users just at the time—and enable L&D professionals to develop learning programs that really

produce profitable business results—by utilizing adaptive learning and individualized career pathways.

Edmodo

In order to communicate and work together with both parents and kids, instructors can use Edmodo, a cloud based LMS. The system enables educators to set up study groups, give tasks and homework, plan online assessments, and monitor student progress. Additionally, Edmodo provides collaboration capabilities so that students may ask questions, hold polls, and communicate with one another.

Based on their achievement in online quizzes and examinations, instructors can award students with certificates and badges. Instructors may keep tabs on academic development, keep tabs on student performance, and examine forthcoming classes thanks to the snapshot function. Parents may sign up with Edmodo and monitor their child's academic progress in real time. Using Edmodo, instructors may organize their content into categories, offer premium educational stuff, and ask students or parents for information. For smartphones and tablets running Android, iOS, and Windows, it provides specialized mobile apps. There is a help center online where you may get assistance, if needed.

Skillsoft

Delivering revolutionary learning opportunities, Skillsoft helps businesses and individuals advance together. To train today's workers for the economy of the future, the company collaborates with enterprise groups and offers its services to a worldwide community of learners. Customers have access to mixed, multimodal learning experiences with Skillsoft, which go beyond simply developing skills to create more competent, flexible, and engaged workforces.

Skillsoft fosters continuous development and performance for both employees and their companies by bridging critical weak areas and unleashing human potential through an asset of best-in-class content, a system that is customized and linked to customer requirements, cutting-edge technology, and a large ecosystem of partners.

Blackboard

Since the creation of its holding company (Blackboard) in 1997, Blackboard Learn operates. Previously, it was known as the Blackboard LMS (Bradford et al., 2007, Matthew McGravey). Over the course of its lengthy existence, it has undergone remarkable change, with the most recent edition being a long cry from a web store of data and course materials. Blackboard Learn's interaction features are highly developed and include chat, discussion forums, and emailing as well as asynchronous classroom activities carried out within the LMS's feature-set. These features would become commonplace in many LMS platforms that would come after Blackboard Learn.

Blackboard is a comprehensive platform with such a wide range of possibilities for users when it comes of admin uses. Features including gradebooks, manual and self-enrollment options, calendars, and analytical tools ("LMS Comparison," 2019, Matthew McGravey). Blackboard Learn is also available in a more feature-rich version called "Blackboard

Learn Ultra," which includes additional features than the standard Blackboard Learn ("LMS Comparison," 2019, Matthew McGravey). In addition to offering choices that are significantly feature-rich than the regular platform, these features also include cloud storage alternatives.

Around the past 23 years, academic institutions all over the world have continued to use Blackboard Learn, a sophisticated and mature LMS. Blackboard Learn is still a very well-liked option in the academic LMS industry, despite fierce competition from competitors like Canvas.

Blackboard Learn provides a sophisticated set of online tools that provide users flexibility and convenience (Alokluk, 2018, Matthew McGravey). Course management software, according to many university instructors, "helps them structure their courses effectively and provides new levels of engagement both between students and between learners and professors," as stated by Carvendale (2003). Blackboard has also responded well to customer comments. Blackboard intends to maintain the platform as the industry leader through the Blackboard Learn as well as Blackboard Learn Ultra products by making current platform improvements and enhancements (McKenzie, 2018, Matthew McGravey).

Blackboard is now one of the most extensively used course management systems in the world. It is employed for classroom instruction both offline and online. Blackboard LMS was praised by educators and learners in a variety of EFL courses for meeting their demands (Bradford et al., 2007, Heirdsfield et al., 2011). According to Ali (2017), using Blackboard helped EFL students stay motivated.

uQualio

uQualio is a cloud-based web application and all-in-one audio learning platform created to make it simple for you to generate excellent video training for private, public, and eCommerce purposes on any device and available around the clock. You may build a library of cutting-edge, adaptable, and digital eLearning courses using uQualio to instruct and teach your staff members, business partners, and future clients. In order to generate and expand the information you need to enlighten others, uQualio addresses a wide variety of business and industrial demands.

Some of uQualio's best characteristics:

- Simply and quickly create eLearning courses from anywhere, at any time.
- On personalized dashboards, you can quickly assess user performance thanks to real-time tracking and analysis.
- Utilize the platform to message your users instantly and effectively.

uQualio is an all-in-one eLearning platform that you may personalize to meet the demands of your company.

The platform enables the admin to produce and distribute training materials using videos. It gives the company tangible benefits like time and money savings, greater sales and brand exposure, and associate and customer loyalty by offering: A powerful motivator

that uses short movies and gamification, a user-friendly platform that enables interaction with your main target audiences, an inexpensive and straightforward training option.

2.2 The need for digitalization and collaboration management within startup companies.

Startups are priority routes for social and economic growth, industrial transformation, and renewal, according to the literature. By enabling industrial transformations through innovations and new technologies, these newly formed enterprises demonstrate the ability to enable and promote the shift of local communities, and occasionally of entire economies, toward development, competitiveness, and borderline knowledge.

According to one of the most well-known definitions of Blank (2012), startups are temporary organizations because they can quickly diversify in relation to sales, the value of output, and/or the number of employees by seizing a development market opportunity and proposing a repeatable and scalable business model. However, their fate lies on their inability to be fully or partially acquired by another company, as a business concept.

More than 60% of businesses fail globally within their first stage of operations, which generally lasts 3-5 years. Failure is a result of their operating in a highly competitive market that is chaotic, fast moving, and uncertain while being confined by scarce resources. In reality, despite the fact that startups exhibit greater inventiveness than more established businesses, they nonetheless have to deal with a variety of problems throughout their lifespans, which might take on different forms and intensities at different stages. The causes for this include a lack of enough financial resources, issues with managing teams and human resources, a lack of acceptable business and managerial experience, a lag in technology, and perceived risks by startup suppliers. To put it another way, startups must fight for their own existence.

Consequently, having a great company concept is insufficient. Failure might be caused by elements unrelated to the proposal. Naturally, a system with a high failure rate may suffer undesirable effects. In one hand, rising startup costs deter would-be entrepreneurs from launching a firm; on the contrary, they reduce the rate of territorial entrepreneurship and business idea diffusion.

According to researchers, establishing a network of cooperative relationships with various business ecosystem actors (such as investment firms and business angels, educators, technology organizations, science parks, various stakeholders, suppliers, etc.) will increase their chances of survival and help them fill knowledge and resource gaps and successfully address various challenges. In the framework of the holistic view to the entrepreneurship ecosystem (Shwetzzer C., 2019), a group of linked actors with roots in the innovation ecosystem encourage new entrepreneurs formally and informally by offering bottom-up methods to promote new venture development and their success.

These various institutions, organizations, and individuals (actors) help startups at key phases of growth and have specialized roles. Digital technologies, which define new

methods of working with various actors to acquire and gather resources, offer an extra crucial resource in this context. Finding the proper operators just at time of their development is the key problem for new businesses. A startup should understand when it is appropriate to contact a venture capitalist. Sometimes a startup fails because it lacks the skills necessary to join the market, deal with an entrepreneur, choose the right supplier, or expand internationally.

As written before, this thesis aims to determine how much new companies, startup companies have the need for digitalization and how much do they need and use learning management systems to accomplish their learning and development targets.

2.2.1 Important facts why businesses need Learning Management Systems.

It may be difficult for companies of all sizes to establish a training strategy that meets all their needs. One benefit of using an LMS suit your staff training, is that you can provide all your company's employees with the same high caliber instruction.

In this section we are going to provide some facts why businesses, especially startups or newly constructed need to invest to a Learning Management Systems.

Who can profit from utilizing LMS? This might be a question F. Lyzanets (2022) says. The usage demonstrates that LMS is an option for both individuals and companies. It has no boundaries. Education, finance, agriculture, and healthcare are all industries where learning and training are essential. As a result, managing and developing all associated procedures is effective. Everyone benefits from it. Everyone may save time and money, boost income, and perform better in diverse positions by using LMS effectively. Let's examine now who can use an LMS most extensively.

Educational Organizations, Universities, Schools

LMS use in classrooms is a commonplace. We already talked about it, when we briefly gave the information of some Learning Management Systems before, like Moodle or Blackboard who are extensively used in education. An LMS it's a useful tool for everyday course management, control, and advancement. Teachers shouldn't squander their time on routine tasks. Instead, they cater their instruction to the learners' interests and learning preferences, making it considerably more engaging for the students. Although not new, learning management systems (LMS) are a useful approach to develop the tech-savvy generation by improving learning outcomes and engagement (F. Lyzanets 2022).

NGOs, Government Organizations

Governments or nonprofit organizations can offer internal training to their employees and outward training to the public using LMS. The proper distribution of resources is the responsibility of the organization's staff. LMS for corporate training can urgently assist in resolving the issue using software and AI technologies. LMS solutions assist government

agencies and nonprofit groups in utilizing contemporary technology to depend on data analytics as evaluate the success of next projects.

Companies, Startups, Organizations

This is surely our case. The best strategy to increase corporate learning across all divisions is to do this: Use an LMS. The solution enables the rapid and efficient onboarding of new employees as well as their career progression. LMS enables company owners to cut expenditures associated with travel, lodging, renting meeting space, and other events. The online content may be continuously updated, changed to meet contemporary learning requirements, and distributed to the staff. Managers may keep track of who has finished the course, how well they completed it, and any gaps in their comprehension by using an LMS for business. One aspect of a growth plan for a firm is staff development. Administrators can discover methods to enhance the training plan based on the report.



Image 1. (Technogaze, 2022)

Why a company needs an LMS?

Everyone needs to understand, the importance of going above and above in a cutthroat industry whether he owns a large or small business. It might be difficult to stay on top of the many departments' operations because of the evolving learning requirements and rigorous deadlines. However, an LMS may assist the business in the learning process to develop the staff into qualified professionals in their field. A company owner most likely is aware of what an LMS for the businesses is. But in short, it's a great approach to manage and provide training programs within your company. It may preserve employee expertise, so they are able at any moment contribute to the expansion of the company by updating training modules on a regular basis (F. Lyzanets 2022).

We are going to give now in bullets, some of the most important facts of the benefits LMSs have for businesses.

- Time and money efficiency.
- Accessible and customized training for all staff members
- All training materials in one location.
- A timeframe that works for everyone.
- Continual enhancements to training quality.
- Data security for clients.
- Monitoring of the staff's development.
- KPI improvements from employee training.
- Effortless onboarding.
- Employee engagement and satisfaction.
- Increase in sales, and customer service improvements.

2.2.2 Remote working and the need for LMSs

There are now many different meanings of remote work. Working from home (WFH), telework, remote job, work from anywhere (WFA), and flexible workplace are some terms that are widely used to describe it. Additionally, remote labor may be described as a sort of employment that does not take place in production lines or central office headquarters, as advocated by the World Labor Organization. As a result, the employee doesn't get to connect with coworkers in person, but on the plus side, current technology makes it possible to work from home by opening new communication channels Beno says (2018).

The telework it is true that created the need for businesses of all sizes to develop ways to stay connected, to communicate, to distribute information, to support learning procedure with their staff, that is why the need for LMSs got higher during the COVID era.

2.2.3 Primary LMS attributes we can emphasize in the efficient LMS for business

Every business could have a distinct understanding of and needs for an LMS. However, the LMS's features have to be in line with the system's fundamental requirements, which include managing students and courses and assessing the effectiveness of training (F. Lyzanets 2022). Let's explore the attributes below.

Learning route

A business may develop intricate program stages using a similar capability. It makes it possible for everybody to follow the order of learning. Additionally, it may implement precise assessment standards, establish course deadlines, and change the course materials.

Personalized branding

Businesses should put attention on the option to change the platform's view if they want to make their instruction customized with a prospect to their future. can at least come up with an original layout and include a logo to help customers identify their business.

User Management

Businesses may invite users, modify them, split them into groups or departments, and assign them with particular duties thanks to user management.

Track of Progress

Rapid analysis of training effectiveness and learner performance evaluation are crucial. It assists in avoiding obstacles including a lack of engagement, low course participation, and a lack of a fit with the expectations and requirements of the learners.

2.2.4 Reasons for companies to invest in LMSs

Every organization places a high importance on resource management. While some companies consistently embrace new trends, others have their doubts. It's not as simple as it would appear. Every firm should consider the opinions of its staff, resources, and choice of the best solution before integrating it. LMS for companies is a solution to consider. If they properly get the relevance of LMS for their organization, they can benefit greatly from it (F. Lyzanets 2022).

Now, let's briefly explore some of the most important reasons why businesses to invest in Learning Management Systems.

The foundation for automating and improving your training and essential business processes

LMS enables businesses to adhere to particular procedures that simplify daily operations. Sales, customer support, HR, IT, accounting, and other business activities depend on these processes to run smoothly. The company won't experience inconsistent training sessions thanks to a fully functional LMS that formalizes the learning procedures. It's a great tool that enables both new and seasoned personnel to easily comprehend current operations and be prepared to meet the organization's objectives.

Gathering learning resources in one location

Prior to the advent of LMS for businesses, all training materials and schedules were dispersed and difficult to manage. With LMS, you can easily offer the appropriate material to the right trainees at the right time, place, and device. The simple integration of Learning Management Systems with other essential business software is a further advantage (F. Lyzanets 2022).

Monitoring staff competence

It's crucial to identify employees' competency levels and close any knowledge and skill gaps. LMS offers insights on the effectiveness of staff members' individual and group

performance. The task of eliminating all current hurdles falls to the L&D staff. Businesses may design easy - to - access exams and courses for expertise evaluation using LMS systems for businesses. They assist in determining training requirements and course completion rates.

Staff onboarding

Members of staff may be forced to spend time and money on teaching new ones by managers. But it's not a wise strategy. Therefore, a well-planned onboarding process increases output and lowers the personnel turnover rate. But how, and is it simple, to design a totally suitable orientation course? For business training, yes, using LMS. An LMS, provides you with a wide range of capabilities. It may assist you in producing quality writing, incorporating content into any format, and gaining access to experts and other pre-made training programs. The same training materials may be modified, improved, updated, and reused for each new employee group thanks to LMS.

Growth of ROI

Training sessions and programs typically have expenses for facilities, instructors, transportation, and other things. When new workers are hired or new standards are needed, expenditures also reoccur. For this reason, an LMS is a useful tool that offers a lot of long-term benefits if the firm routinely wants to sustain staff growth. The advantages of online learning over traditional training include frequent content utilization, frequent updates as needed, and accessibility to training sessions from any location or any time.

Cost- and time-effectiveness

Learning using an LMS is quicker and more efficient than learning in a traditional classroom. It reduces disturbances caused by training. When workloads grow, the timetable should be modified to meet the demands of each learner. LMS oversees everything, including leasing the classroom, publishing our flyers, and employing instructors. One organization may teach from 10 up to 50,000 people using a course that is offered on a particular LMS. Managing and controlling in-person training and monitoring course effectiveness are simple with an LMS. You can hold many programs in one LMS. Additionally, businesses may modify, edit, and utilize them again for other costs and purposes.

Integration of experiences for social learning

Social media platforms are simple to include to engage individuals of all ages, places, and interests. The learning approach can change and be updated using a similar concept. Links to different social media networks, such as Facebook, Twitter, LinkedIn, discussion forums, and the ability to submit feedback or comments, can be included. The learners will undoubtedly find it engaging, and you'll have a larger student base.

Efficient delivery and personalization

Business may adapt their learning session upon the needs of the learners by using a corporate LMS. Additionally, they may automate the distribution of content through API interfaces. Uncertainly, the learners will therefore receive the necessary information at

the appropriate moment. Making learning pathways for learners using an LMS is another advantage since it eliminates confusion or queries about where to go next in the learning process.

Improved LMS user's experience

Businesses may build up and provide members fascinating information on a variety of topics using a learning management system. Traditional learning might be tough to cover many topics due to constraints on time and space. However, utilizing an LMS enables businesses to select the subjects and learning courses for your students and provide them with the most important and crucial information for their job.

Optimization for mobile devices

Nowadays, everyone utilizes smartphones and other mobile devices since they are convenient and effective. There is an excellent LMS compatibility, but how about mobile optimization? What if you can access the corporate LMS on your smartphone, but not all of the content is presented well? What happens if it's just for a larger or smaller screen? It may only mean that the learners won't utilize it and will choose another, more practical, user-friendly platform. One step toward creating a completely customized experience is microlearning. Businesses may user-optimize all the training materials. Users are free to learn however and wherever they like. All parties gain, as a consequence, including the company and the clients.

As a conclusion of this exploration of reasons why a company should use an LMS we could say, that because it is a significant tool for simplifying training procedures in organizations. It's simple to give students more choice over their learning experience, boost customer service, and achieve more scalability. LMS may undoubtedly offer significant advantages for business training if the learning section has been managed manually. Nowadays, a lot of businesses provide LMS for nothing or at a little cost. You can test out various free platforms if you have any doubts. Try comparing the program and its capabilities before creating your own or utilizing a current one to understand the potential, value, and benefits of using LMS. Setting your company goals for audience training and analysis is more worthwhile than spending time and money right now (F. Lyzanets 2022).

2.2.5 Learning and Development in startups

These days, employees expect more from their employers. Most staff members anticipate that their employer will assist them in gaining additional job-based skills in addition to providing them with a competitive salary and a pleasurable work environment. One of the main responsibilities of the Learning & Development (L&D) department for younger professionals, is the development of professional skills, whether in startups or large corporations.

There isn't a single advantage of L&D for large corporations as well as startups. The advantages include the following:

- No matter how tiny the firm might be, development and learning will assist to increase the performance and productivity of the employees.
- A startup company's L&D program will increase employee satisfaction and lower the possibility of losing staff members.
- Startups may boost their earnings and marginal profitability by investing in staff training, just like big enterprises can.
- Using cloud based LMS systems, companies may save money on training expenses.

Top Advantages of using LMSs in startups

Following our discussion about the Learning and Development in startup companies, we are going to present the top four advantages of LMSs in these newly constructed companies.

Make the start easier

Running a new company means that you are always constrained by a timeline and a financial plan. Your need is for something that is accessible to everyone and inexpensive. The simplest approach to teach your staff at their own speed from any location at any time is with an LMS and its many capabilities.

Use more interaction

These days, Gen Z workers make up the majority of new enterprises. They are well enlightened. They won't participate in training sessions if they are not engaging or intriguing enough. With features like Micro-learning, gamification, and on-the-Job Training, LMS enables entrepreneurs to design dynamic courses and entertaining activities.

Support Social Learning

Social learning is crucial for any startup business. It makes it possible for group learning. LMS elements, like as rankings and a dashboard, allow workers to compete with one another and advance their abilities. Additionally, social learning in the classroom increases morale and employee commitment while also improving the working environment.

Encourages Continuous Development

LMSs allow both the business and the staff to develop during the period of their employment at the business. LMS characteristics like multimedia support, connection, and statistics, ensure that the staff members' CPD (Continuous Professional Development) skills will undoubtedly develop.

2.3 Literature and research summary

Both startups and large corporations must prioritize employee training and development. The future of employee retention and training is fully online. Therefore, the potential for LMS in both large and small enterprises is substantially greater. As mentioned above,

entrepreneurs can profit greatly from implementing an LMS into their operations. To build a successful and long-lasting firm in a tech-driven future, startup companies must invest in LMSs.

3. Research

3.1 Research Design

To investigate the use of Learning Management systems in startups, this research followed three steps, as presented in the following graph.

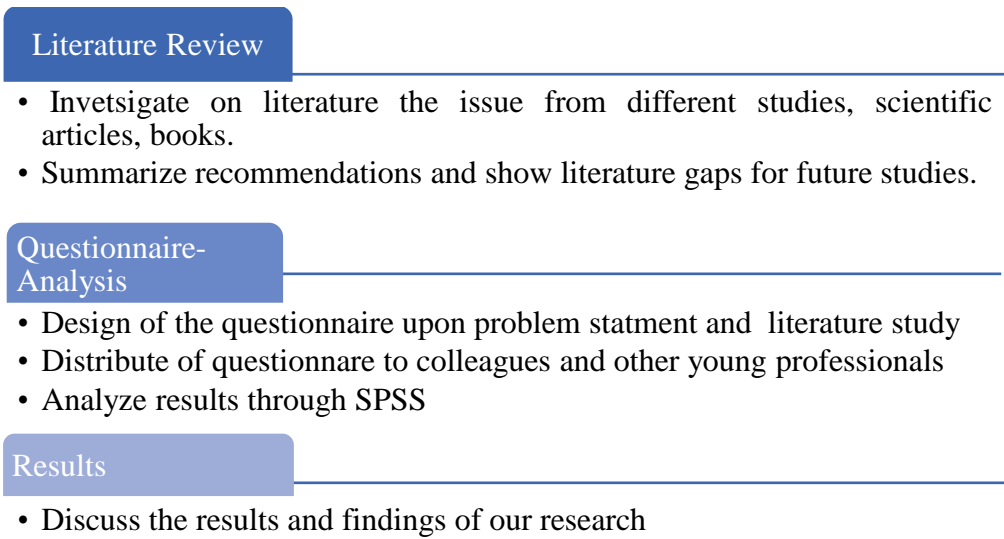


Table 1., Research Design Steps

The first step of the study, was to conduct a literature review to learn about the history and definitions of the LMSs, the Asynchronous and Synchronous structure of them, the LMSs vs CMSs and their differences, the LMS design, the use of the LMSs to raise an online learning environment, an overview of some LMSs and their characteristics, the important facts why startups need LMSs and other important facts that should be explored in this theoretical and practical study.

Next step was to create with the help of Pearson's book (2019) the questionnaire of our study collecting questions related to our research and distribute it firstly to our colleagues and other young professionals working for startup companies and right after analyzing it through the help of SPSS software.

On our last step, we are going to discuss our findings and results of the SPSS analysis and to give our suggestions for future studies.

3.2 Methodology and Questionnaire Design

In the present Thesis, we wanted to deeply explore in Literature and in general, the use of learning management systems (LMS) within Startup companies and for our study we have built and distribute a questionnaire. Using this questionnaire, the research tries to investigate what are the LMSs (a briefly approach), how extensively they have been used, and the main question, if they are commonly used in startup companies. We made use of the information gathered from a Google Forms survey.

The questionnaire distributed via email to my colleagues of the International Hellenic University, to friends, to close people who have been working for startup companies and to some other young professionals of an Alumni team.

Part A: Responder's demographics and background

Six questions in the first section of the questionnaire, which also includes demographic information, attempt to map the respondent's personality.

Q1. What is your gender?

Female

Male

Other

Q2. What is your age?

18-30

31-40

41-50

over 50

Q3. What is the highest degree or level of education you have completed?

Secondary

Bachelor's Degree

Master's Degree

Ph.D.

Q4. What is your marital status?

Married or live in cohabitation arrangements

Single

Divorced or separated

Widower/Widow

Q5. In which industry/sector do you currently work?

Private sector

Public Sector

Unemployed

Other.....

***Note:** Please rate the level of agreement with the following statements: (On the scale of 1 to 5, being 1 strongly disagree and 5 strongly agree.

Q6. Do you know what a Learning Management System is?

1. Yes
2. No
3. Have heard of it

Part B: Subchapter

On this point, and because some of the responders might answer that they don't know what a Learning Management Systems is, we gave a rough and briefly description of what an LMS is, and we have used an image giving an example of its functions.

Part C: Rating and other exploring Questions

In the third part of our questionnaire, we examined the existing challenges and their level of impact. The idea was to investigate how much a startup company needs an LMS to achieve its learning and development targets, if the responders understand the differences between a CMS and an LMS, how important is for a Startup Company to use LMS.

Q7. By your opinion, how much a startup company needs a LMS to achieve its learning and development targets?

1. 2. 3. 4. 5.

Q8. From a range 1 to 5, do you know the differences between a CMS and LMS?

1. 2. 3. 4. 5.

Q9. By your opinion how important is for a Startup Company to use LMS?

1. 2. 3. 4. 5.

Consequently, we gave to the respondents some of the thousands or millions LMSs exist, to say whether they recognize some of them and which and we asked which parts of an organization can an LMS support and if they believe that LMSs support the remote working model.

Q10. Do you recognize any of the following LMS? If yes, click which.

Leanwords

Schoox

Moodle

Edmodo

Skillsoft

Blackboard

uQualio

Q11. Which parts of an organization can a LMS support?

Productivity

Communication

Learning

Development

Other

Q12. How much do you believe LMSs support the remote working model?

1. 2. 3. 4. 5.

Continuously, we have asked our participants to give us from a range from 1 to 5 if there is any statically significant difference between users according to gender or majors, how effective they believe an LMS is run into a startup company and how useful it is for those companies.

Q13. From a range 1 to 5, do you believe that is there any statically significant difference between users according to gender or majors?

1. 2. 3. 4. 5.

Q14. How effective do you believe is an LMS run into a startup company?

1. 2. 3. 4. 5.

Q15. How useful do you believe is an LMS run into a startup company?

1. 2. 3. 4. 5.

Q16. At your opinion how much influence correlation exists between each component and the LMSs effectiveness?

1. 2. 3. 4. 5.

Lastly, we have asked them from a range 1 to 5, how do they believe that an LMS is a point of support in a startup company, which of some presented factors can affect the LMS effectiveness, how much do they believe that LMSs supported workers during Covid-19 period and what impact an LMS have within startup companies.

Q17. From a range 1 to 5, do you believe that an LMS is a point of support in a startup company?

1. 2. 3. 4. 5.

Q18. Which of the following factors can affect the LMS effectiveness?

information quality

system use

user satisfaction

perceived usefulness.

Q19. How much do you believe that LMSs supported workers during Covid-19 period?

1. 2. 3. 4. 5.

Q20. How much impact do you think an LMS has within a startup organization?

1. 2. 3. 4. 5.

3.2.1 Participants information and demographics

Participation in the research was anonymous and without any reward. Our final sample consisted of 151 participants (53% women and 43% men, and 6% answered other).

1. What is your gender?

151 απαντήσεις

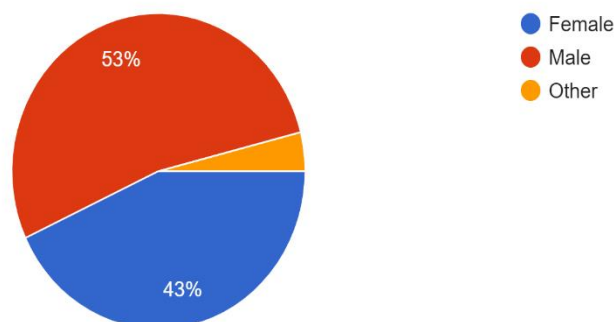


Table 2., Gender question

From the 151 participants, 64,9% of them are between 31-40 years old while, the 27,2% is 18-30, 6,6% is 41-50 and the rest, only 1,2% is over 50 years old as shown on the table 3.

2. What is your age?

151 απαντήσεις

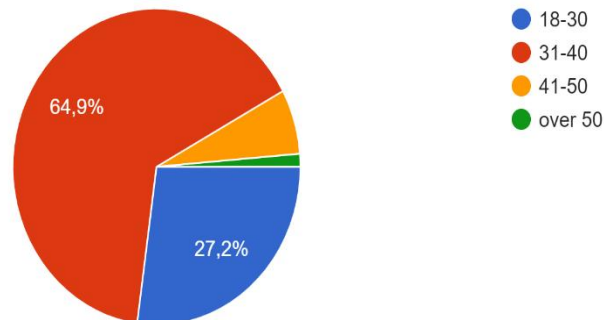


Table 3., Age question

As of the level of their education, participants answered that the most of them, the 68,2% are holding a Master's degree, 24,5% are holding a Bachelor's degree and the rest, meaning the 4% have finished Secondary schools, and only the 3,3% holds a Ph. D.

3. What is the highest degree or level of education you have completed?

151 απαντήσεις

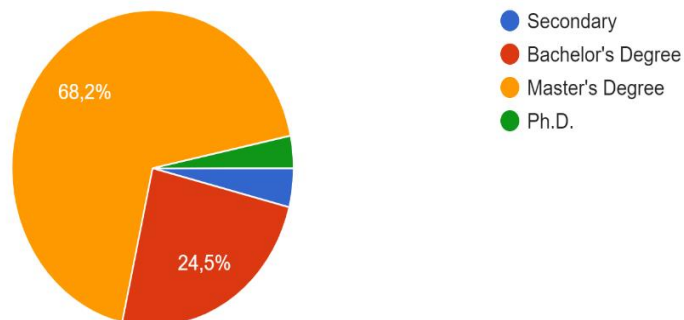


Table 4., Level of Education

Concerning their marital status, 73,5% of them are single, 14,6% of them are married or they live in cohabitation arrangements, 9,3% are divorced or separated and 2,6% is

widower/widow. The same results are obvious through SPSS statistics on frequency tests, as it shown here. The most of our participants have a high level of education and hold a MSc.

		Education Level			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	5	3,2	3,3	3,3
	Bachelor's Degree	37	23,7	24,7	28,0
	Master's Degree	103	66,0	68,7	96,7
	Ph.D.	5	3,2	3,3	100,0
	Total	150	96,2	100,0	
Missing	System	6	3,8		
Total		156	100,0		

Table 5., SPSS, Level of Education

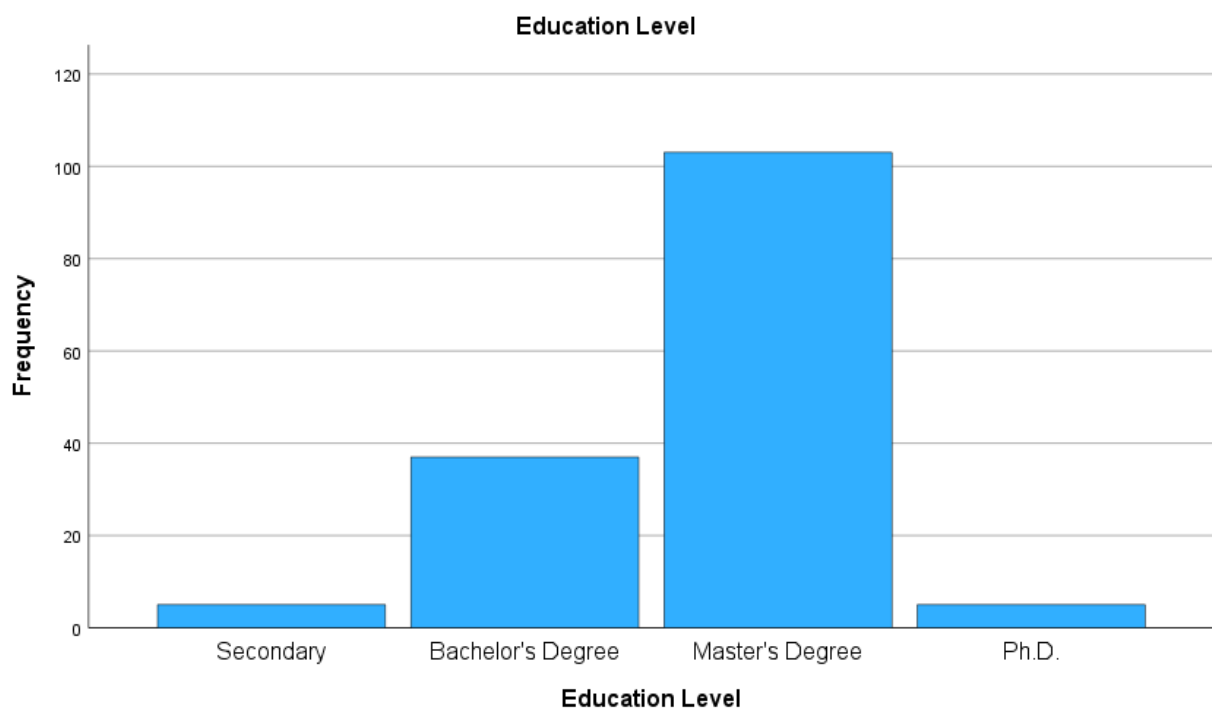


Table 6., SPSS chart, Level of Education

4. What is your marital status?

151 απαντήσεις

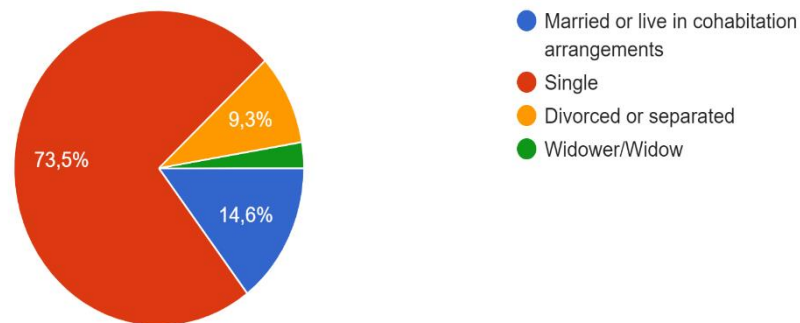


Table 7., Marital Status

In the question about the industry-sector that our participants work, 62,9% of them works in the private sector, 25,8% in the public sector, 9,9% is unemployed and 1,3% have answered other as an option.

5. In which industry/sector do you currently work?

151 απαντήσεις

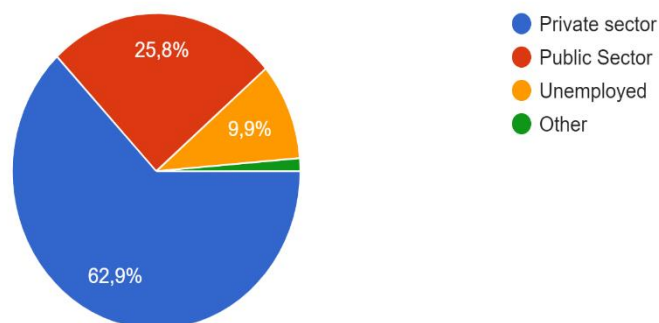


Table 8., Industry-Sector Question

On the last question of our first part, we have asked our participants to answer if they know what an LMS is. 60,9% of them have answered yes, 24,5% of them have heard of it and 14,6% answered they don't know what an LMS is.

6. Do you know what a Learning Management System is?

151 απαντήσεις

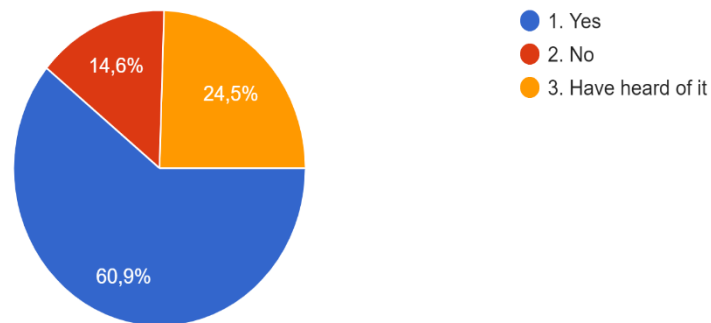


Table 9. Question for LMSs

To help the participants who have answered no to this question, we added an extra part, where we briefly described what an LMS is. Here's a print screen of that section.

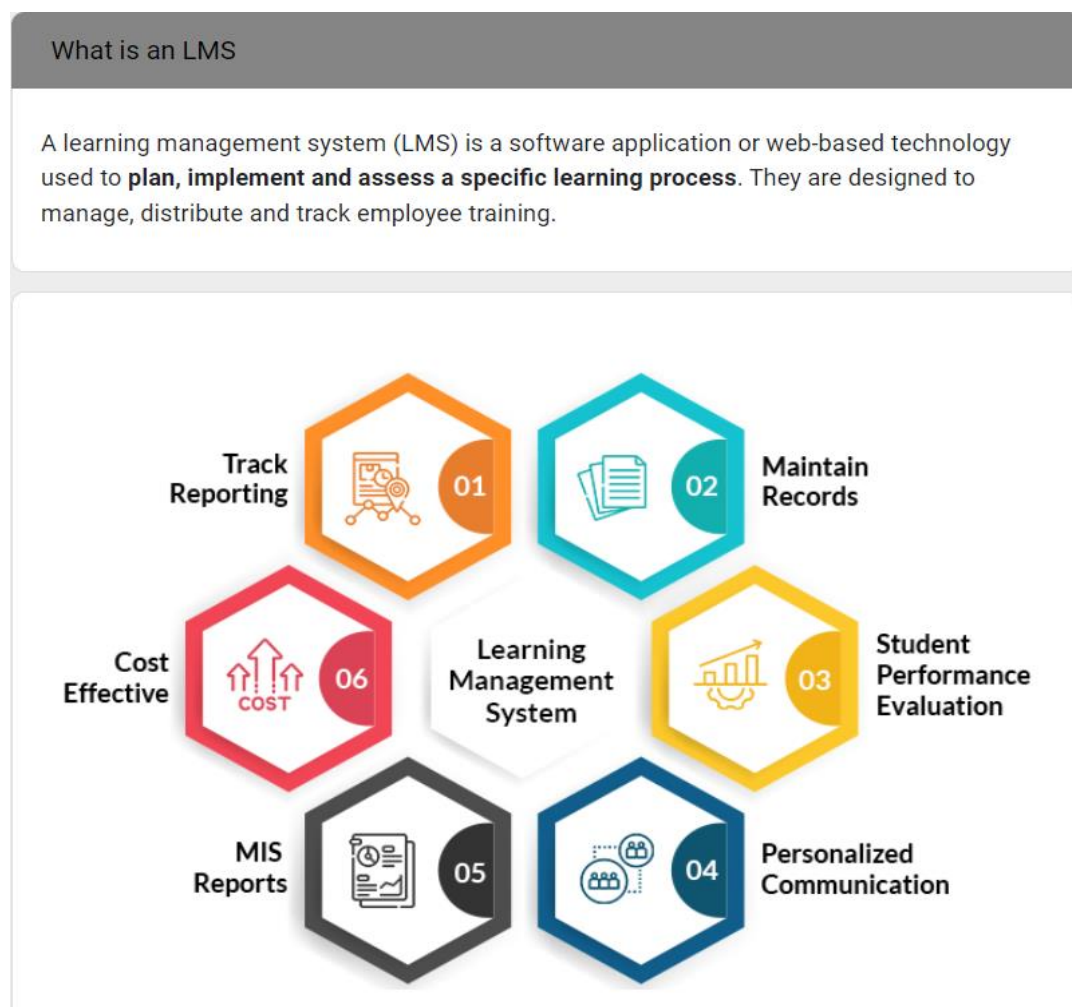


Table 10., What an LMS is

3.3 Results

We include the survey findings in this section. The analysis of problems and their associated variables is the focus of this section.

On our first main question of the questionnaire, we have asked our participants to say by their opinion how much from 1 to 5 (On the scale of 1 to 5, being 1 strongly disagree and 5 strongly agree, or indicate the level of understanding/knowing from 1 to 5, being 1 not knowing and 5 understand/knowing well.) a startup needs an LMS to achieve its learning and development targets. As it shown on the graphs below, most of the answers are between 4 (54,7%) and 5 (25,3%), while 0% have answered 1, 5,3% have answered 2, and 14,7% answered 3.

7. By your opinion, how much a startup company needs an LMS to achieve its learning and development targets?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	8	5,1	5,3	5,3
	3	22	14,1	14,7	20,0
	4	82	52,6	54,7	74,7
	5	38	24,4	25,3	100,0
	Total	150	96,2	100,0	
Missing	System	6	3,8		
Total		156	100,0		

Table 11., SPSS table, Startup need for LMSs to achieve L&D targets

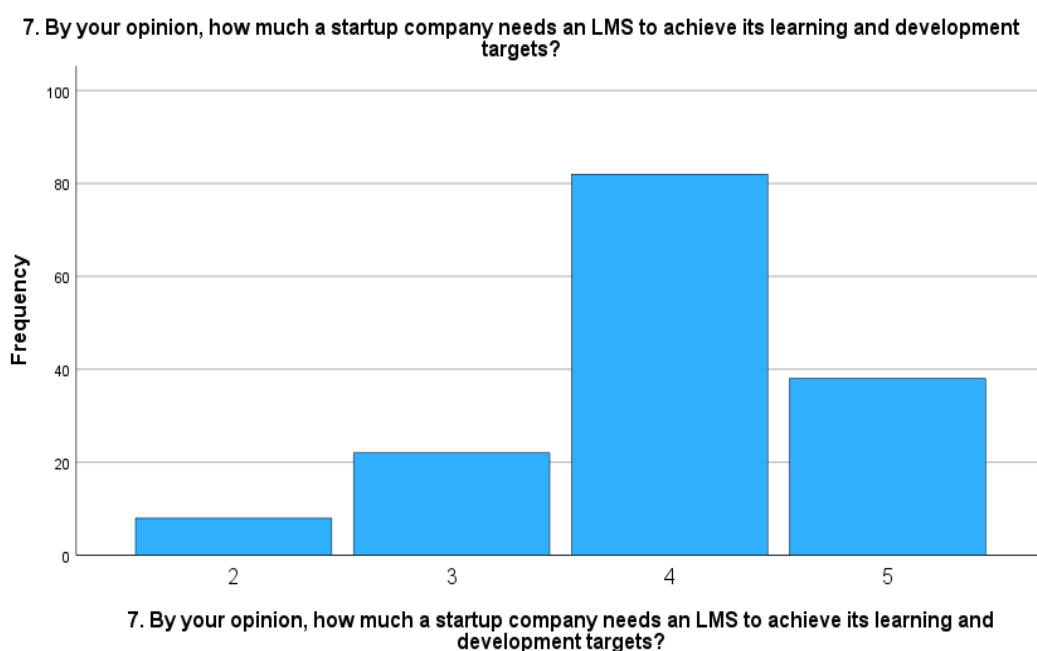


Table 12., SPSS chart, Startup need for LMSs to achieve L&D targets

On our next question, we have asked the people participated, how much do they understand the differences between CMSs and LMSs. On the pie chart coming from SPSS, we see that most of the people have answered 4 (32,7%) and 5 (24%) that shows most of them do know and understand those differences, while 5,1% have answered 1, 6,4% of them have answered 2, and a high percent of 17,9% have answered 3, that shows that they are not quite sure what are those differences between those systems and give us a clear option to suggest that further research about the differences should be made.

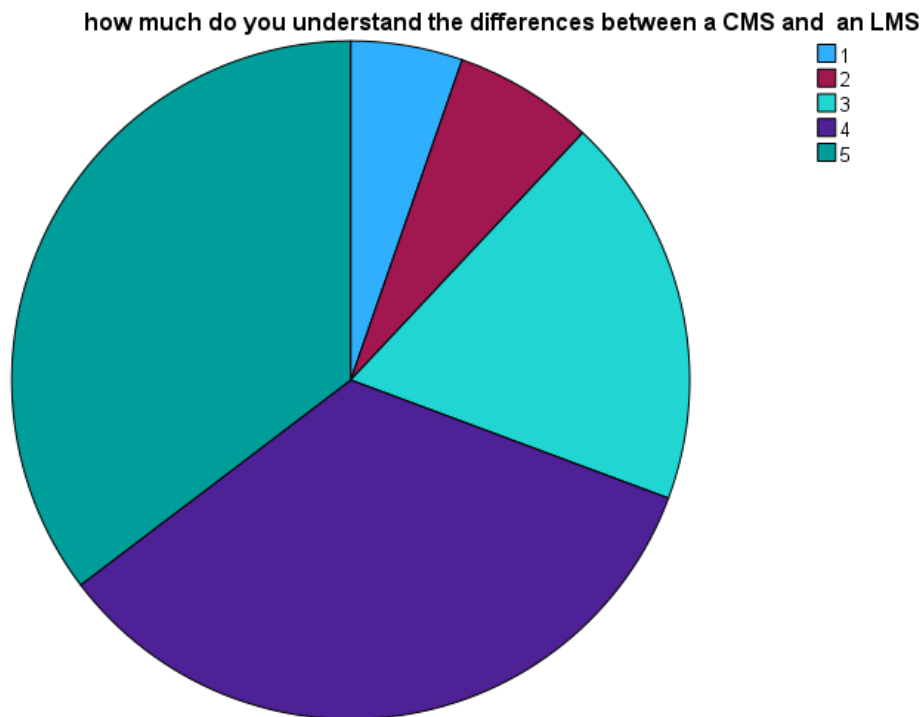


Table 13., SPSS pie chart, Differences between CMSs and LMSs

how much do you understand the differences between a CMS and an LMS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	5,1	5,3	5,3
	2	10	6,4	6,7	12,0
	3	28	17,9	18,7	30,7
	4	51	32,7	34,0	64,7
	5	53	34,0	35,3	100,0
	Total	150	96,2	100,0	
Missing	System	6	3,8		
Total		156	100,0		

Table 14., SPSS table view, Differences between CMSs and LMSs

Stepping to our next question, we have asked the people participated, how important is for a Startup Company to use LMS. We run a T-Test, because from the literature we came up with the conclusion that LMSs are important for startups companies so we set the test value to 5, which means it is of high importance. On the next tables we see that indeed most of our answers are close to 5.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
9. By your opinion how important is for a Startup Company to use LMS?	150	4,20	,786	,064

One-Sample Test

Test Value = 5

	t	df	Significance		Mean Difference	95% Confidence Interval of the Difference	
			One-Sided p	Two-Sided p		Lower	Upper
9. By your opinion how important is for a Startup Company to use LMS?	-12,469	149	<,001	<,001	-,800	-,93	-,67

One-Sample Effect Sizes

		Standardizer ^a	Point Estimate	95% Confidence Interval	
				Lower	Upper
9. By your opinion how important is for a Startup Company to use LMS?	Cohen's d	,786	-1,018	-1,214	-,820
	Hedges' correction	,790	-1,013	-1,208	-,815

a. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation.

Hedges' correction uses the sample standard deviation, plus a correction factor.

Table 15., SPSS T-test, Importance of LMSs for Startups

As it is also shown on the next table that shows the frequency of our test. On the bar we see that the 41,7% have answered 5 to this question, 37,1% 4, 20,5% have answered 3, 0,7% have answered 2 and 0 have answered 1.

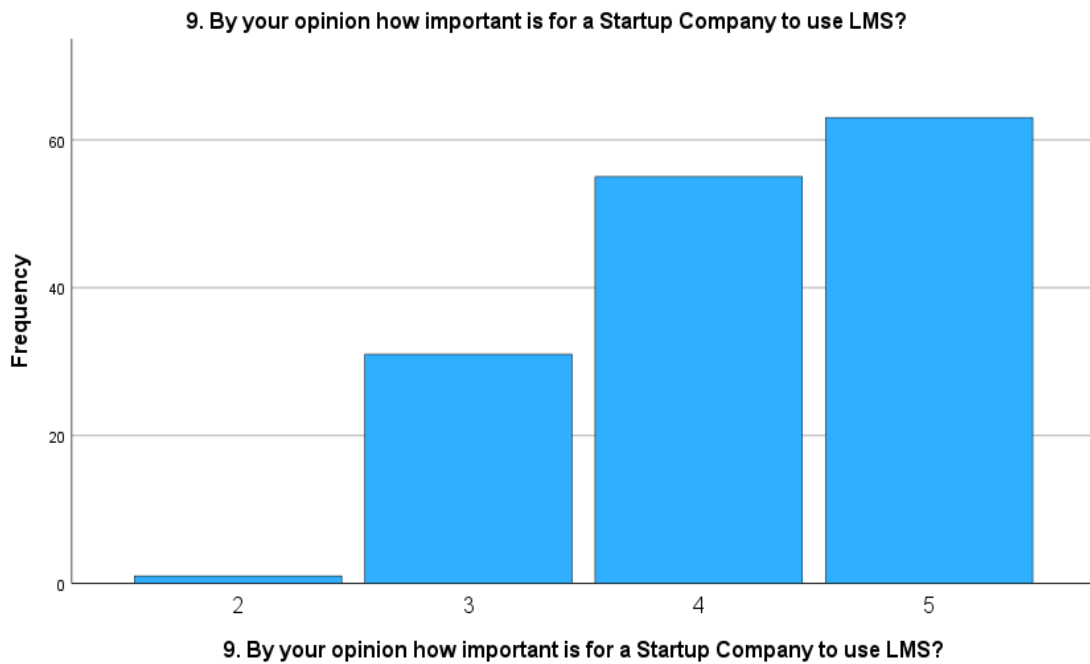


Table 16., SPSS bar, Importance of LMSs for Startups

Moving to our next two questions we have asked whether they recognize some of the presented LMSs from a list and we wanted to understand which of them are widely popular. The graph it is shown here.

10. Do you recognize any of the following LMS? If yes, select which.

151 απαντήσεις

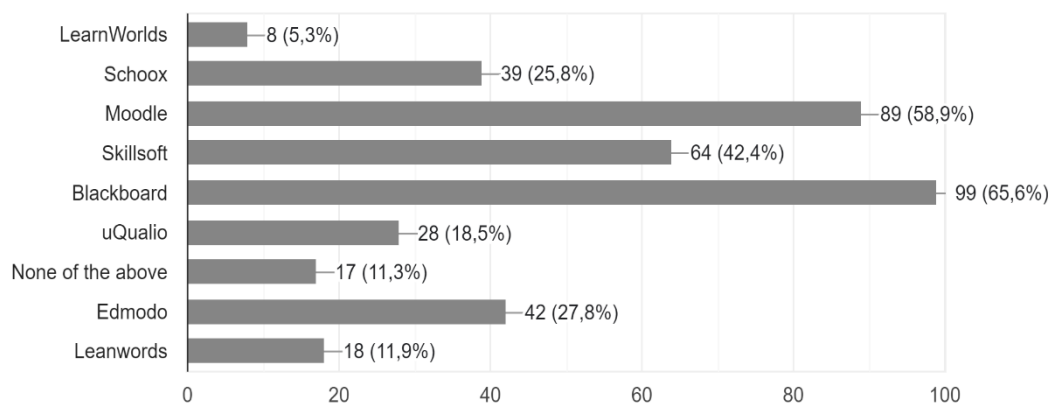


Table 17., List of LMSs

The higher percentage of people have answered they know Moodle platform (58,9%), and Blackboard (65,5%) and this is something very normal, because that two software are widely used by universities all over the world. Some also know, was Schoox, Skillsoft and Edmodo.

The second question mentioned was, which performance factors of an organization can an LMS support.

11. Which performance factors of an organization can an LMS support?

151 απαντήσεις

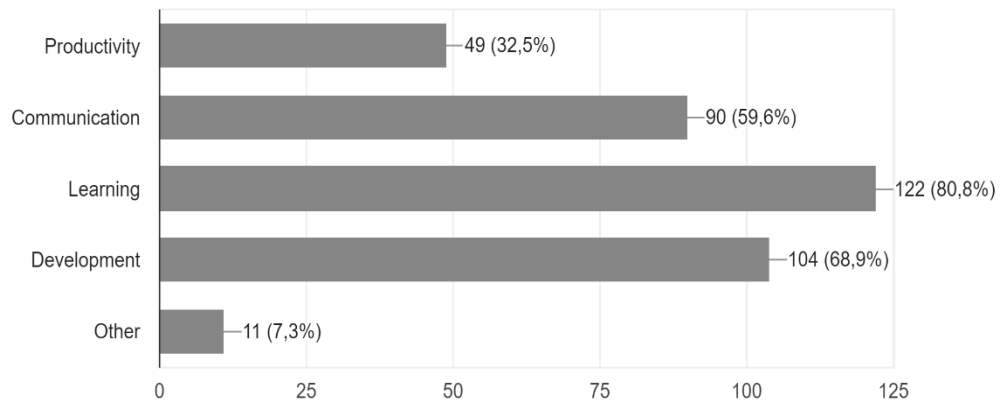


Table 18., Performance factors of organizations LMSs support

Here's all answers. The 80,8% percent of people have answered Learning, 68,9% have answered Development, 59,6% have answered Communication, 32,5% have answered Productivity, and 7,3% answered other.

On our next question we wanted to explore how important LMSs are to support teleworking model.

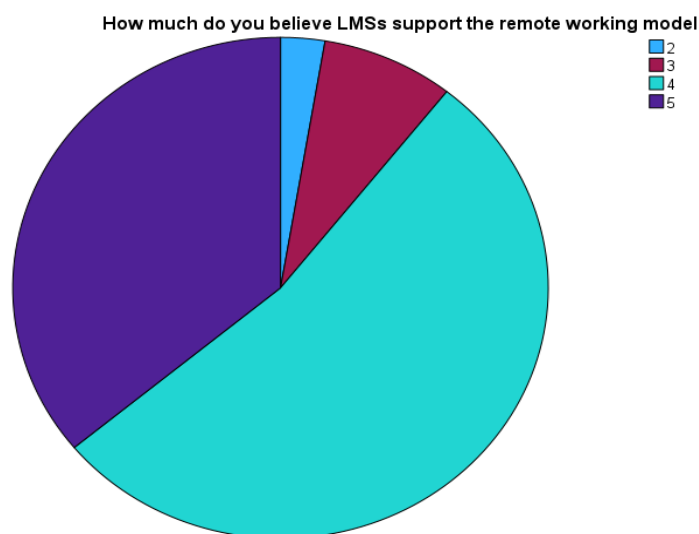


Table 19., SPSS pie chart LMSs support remote work

As shown on the diagram, most of the people have answered between 4-5 that shows that is of high importance depend on the answers the LMSs support remote working model.

Stepping forward, we have asked the participants, from a range 1 to 5, to answer if they believe that is any statistically significant difference depending on users' gender or majors.

13. From a range 1 to 5, do you believe that is there any statistically significant difference depending on users' gender or majors?

151 απαντήσεις

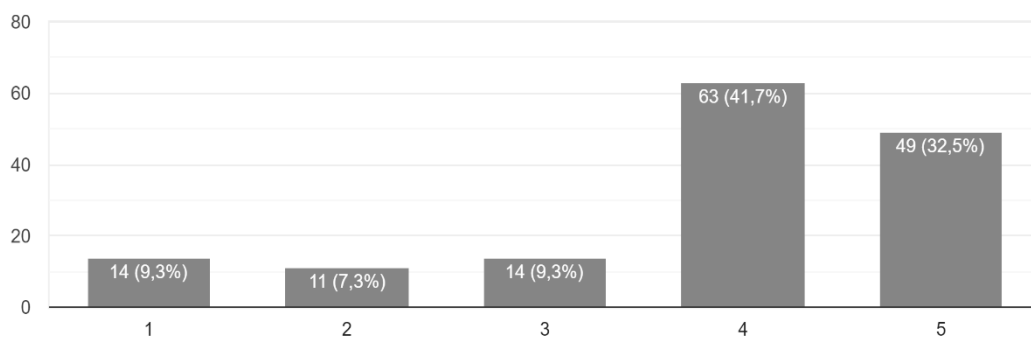


Table 20., Statistically significant difference depending on users' gender or majors

41,7% of them have answered 4 which is the highest percentage. 32,5% have answered 5 which is also a high percentage shows that yes, they believe that there is a significant difference between user's gender or majors, and 9,3% have answered 1 and 3, and the 7,3% have answered 2, which shows that most of the rest are quite neutral about this question.

On our next two questions, we wanted to explore how effective the run of an LMS is for a startup company's growth, and how useful is to be run into a startup company. The graph number 21., showed with its histogram that most of the answers are between 4 and 5 again, which shows that it is of high effectiveness its use, while the same result it is shown on the diagram number 22., with again most answers between 4-5 concerning its usefulness will run into a startup company.

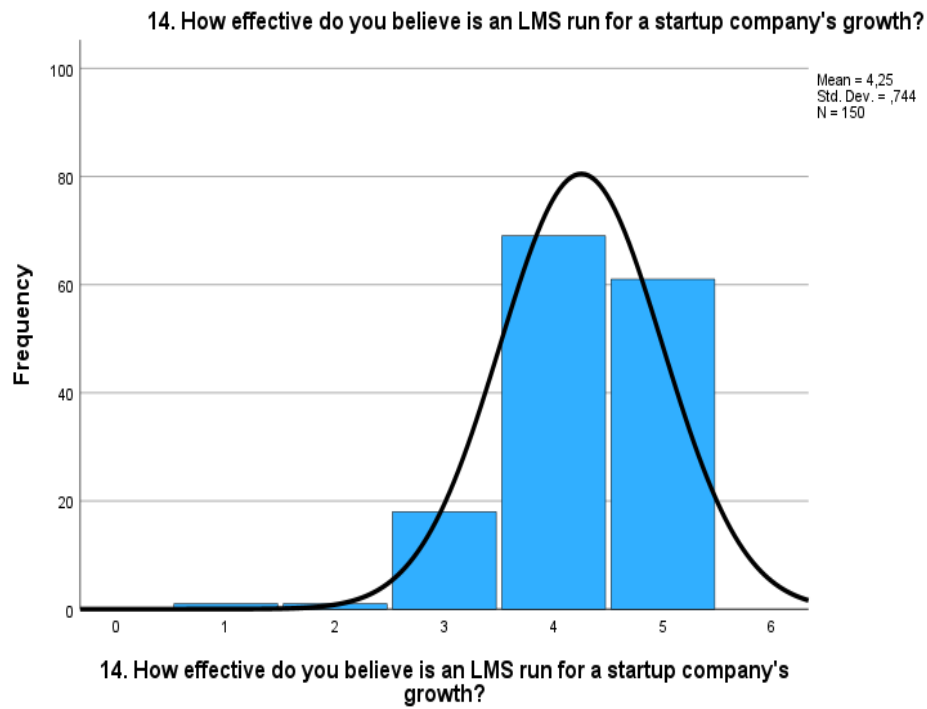


Table 20., SPSS histogram, Effectiveness of LMS run into a startup for its growth

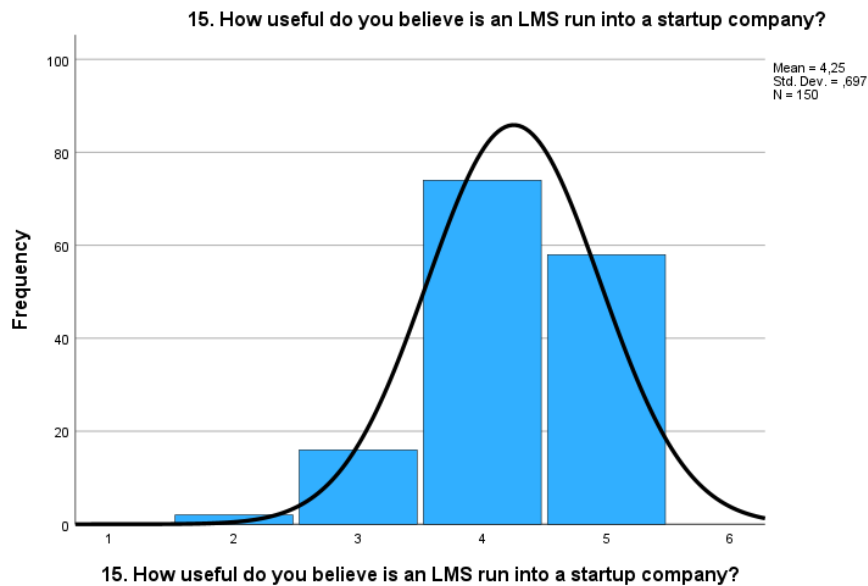


Table 21., SPSS histogram, Usefulness of LMS run into a startup company

Moving forward we asked the participants from a range 1 to 5, how much do they believe the LMS's usefulness impact is to the level of workers' satisfaction.

The answers are 41,7% 5, 43% have answered 4, the 13,2% answered 3, and only 2 % have answered 2.

16. From a range 1 to 5, how much do you believe the LMS's usefulness impact in level of workers' satisfaction?

151 απαντήσεις

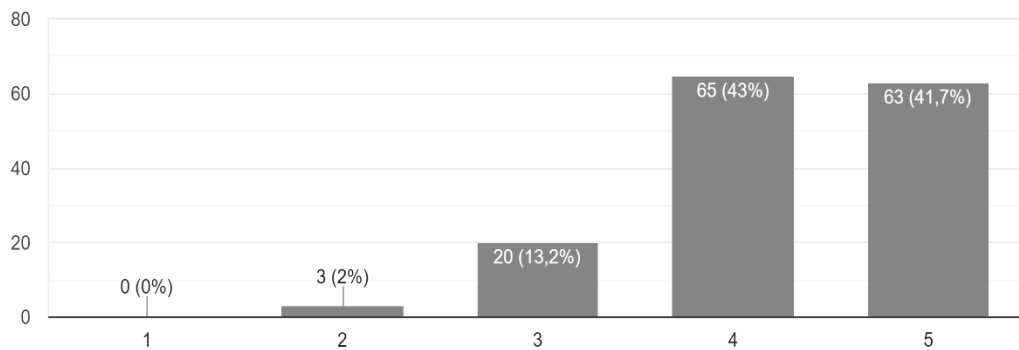


Table 22., LMS usefulness impact level on workers' satisfaction

Leading to the end, next question is from a range 1 to 5, if they believe that an LMS is a point of support in a startup company.

Here are the answers. 39,1% have answered 5, 45% have answered 4, 13,9% have answered 3 and only 2% have answered 2.

17. From a range 1 to 5, do you believe that an LMS is a point of support in a startup company?

151 απαντήσεις

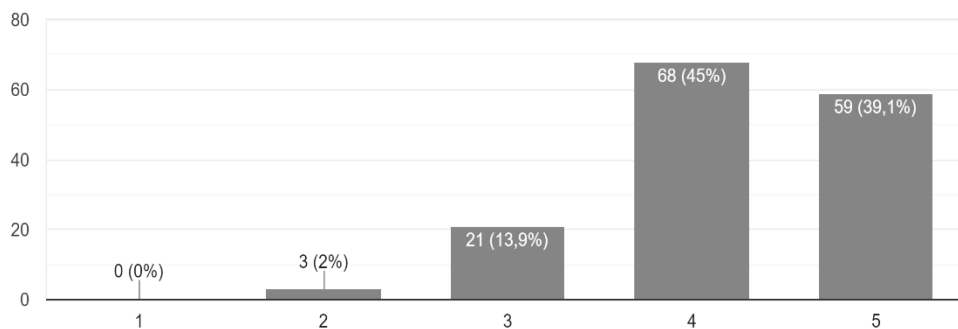


Table 23., LMS as a point of support in a startup company

On the next question, we gave the participants four options to choose concerning the factors that can affect the LMS effectiveness. Our questioned people answered that System Use with 76,8% is most important and User Satisfaction with 67,5% as well. A 36,4% have answered Perceived Usefulness and 34,4% have answered Information Quality that shows that almost all of them seem to be of high importance factors affecting LMS effectiveness.

18. Which of the following factors can affect the LMS effectiveness?

151 απαντήσεις

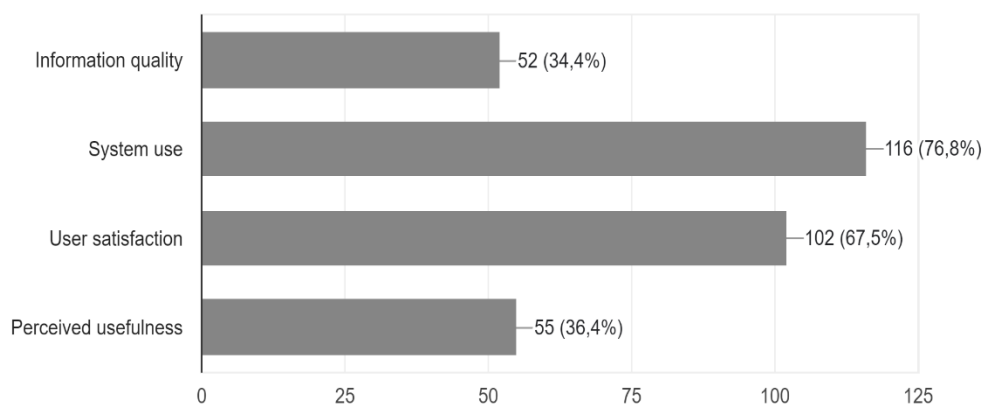


Table 24., LMS factors affect effectiveness

Lastly, we are presenting our final two questions to our participants. The first was about how much LMSs supported workers during Covid-19 period and the second was about the impact of an LMS within a startup organization. We run on SPSS frequency tests.

On table 25. and 26. concerning the support of LMSs in covid era, a very high number was between answers 4 and 5 that mean they support the fact that LMSs assisted workers in covid era.

19. How much do you believe that LMSs supported workers during Covid-19 period?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	,6	,7	,7
	2	4	2,6	2,7	3,3
	3	11	7,1	7,3	10,7
	4	56	35,9	37,3	48,0
	5	78	50,0	52,0	100,0
	Total	150	96,2	100,0	
Missing	System	6	3,8		
Total		156	100,0		

Table 25., LMS support in covid period

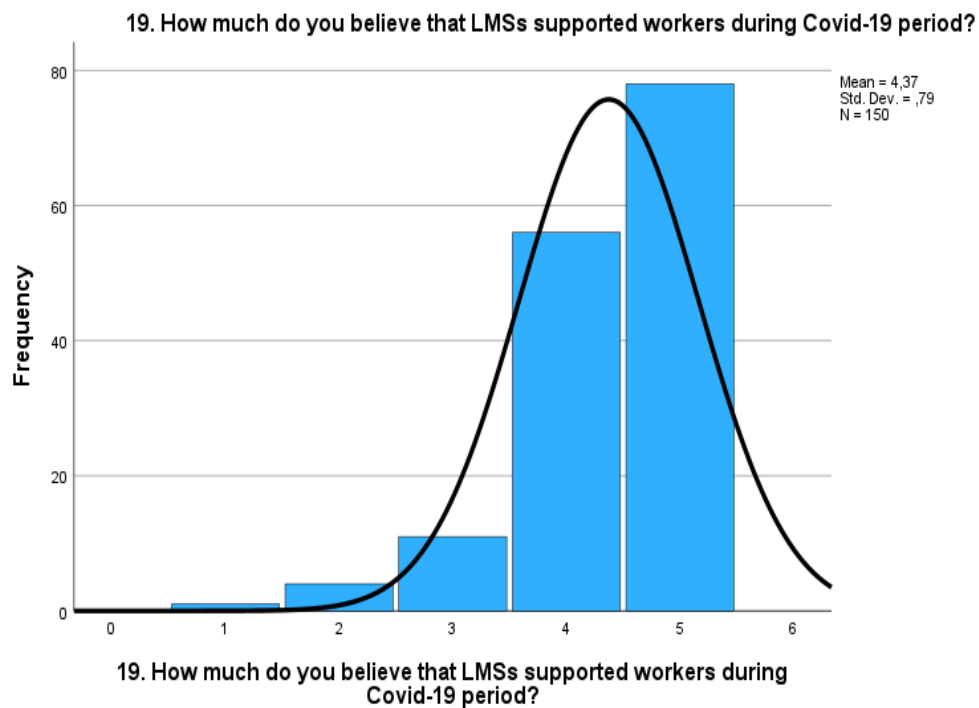


Table 26., SPSS histogram, LMS support in covid period

On the next to diagrams are visible the results of the impact that people believe has an LMS in a startup organization. The results showed that most answers are between 3-5 that means our participants do believe that LMS have an impact within startup businesses and corporates.

20. How much impact do you think an LMS has within a startup organization?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	3	1,9	2,0	2,0
	3	21	13,5	14,0	16,0
	4	85	54,5	56,7	72,7
	5	41	26,3	27,3	100,0
	Total	150	96,2	100,0	
Missing	System	6	3,8		
Total		156	100,0		

Table 27., LMS impact on startups

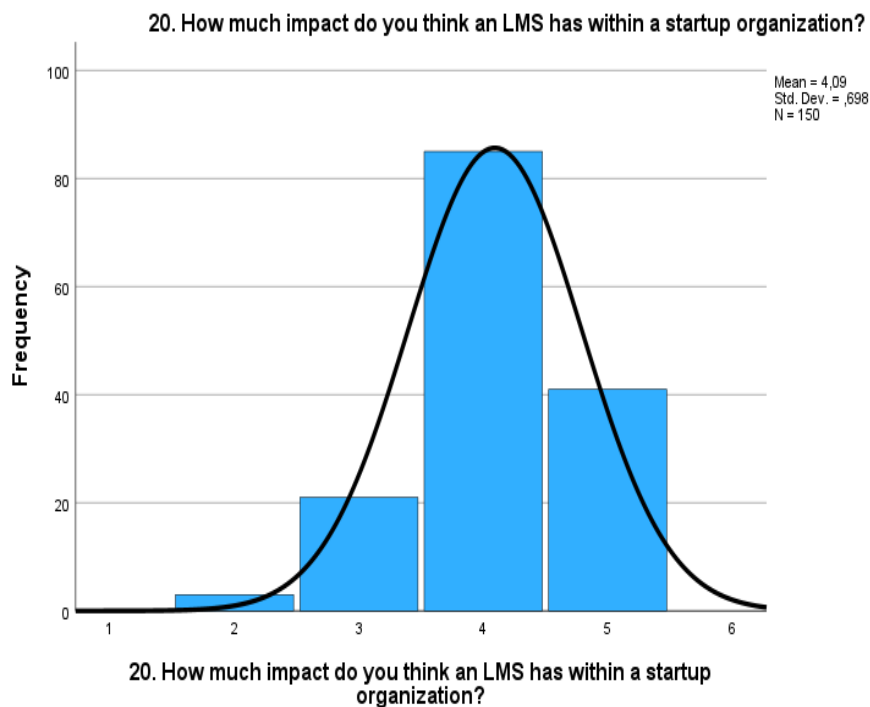


Table 27., SPSS histogram, LMS impact on startups

3.4 Conclusions

Our research came up with some specific conclusions upon the answers from all our participants and upon the literature review that have been done. All in all, our findings showed that LMSs are widely used, especially after the covid period and supported people to work on that period and showed that it is a very important tool for startup companies,

but also for other bigger or small enterprises and organizations. LMSs have a long history and there are millions of different one which share some characteristics but also differentiate from the competitors. It is the decision of its company and head people which software will they use and why and it is crystal clear that the use of those systems cause positive impact to the people of one company.

There are many facts that might be considered while choosing an LMS, and probably the need of some companies so as to differentiate is to build their own one. Either decision they'll make, the LMS will support the Learning and Development procedure within the company and will make the environment vivid and fresh and a place everyone wants to participate in.

As a final conclusion, LMSs are very important in the modern world and their presence gave people some possibilities that couldn't even image before the appearance of those systems. It is for sure that LMSs will develop further year to year and this fact will make it even more important for startups to acquire them but also for other organizations.

3.5 Future research suggestions

Our future research suggestions, coming straight from the results of our findings. We suggest future researchers to explore deeper the use of Learning Management Systems, because we couldn't find many sources of this specific case. There haven't been made deep research for this case, but this seems quite normal, as new startups created almost every day but not all of them can stand within the time, that is why it comes later to us the information about the inside working ethics and that is why it is hard to be explored.

While LMSs is an issue found million times on the literature, most researchers point out their characteristics and uses and not many of them deal with other issues like on which enterprises are commonly used, or which ones developed on Covid period or our main concern, if they have been used to startup companies. For sure, LMSs are widely used in universities, that is why most of our research participants knew about them and could answer and participated to our survey.

Let's hope that future research will come with more findings and results and will spread more information about this case.

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5. Appendix

A. Questionnaire

1.What is your gender?

Female

Male

Other

2.What is your age?

18-30

31-40

41-50

over 50

3. What is the highest degree or level of education you have completed?

Secondary

Bachelor's Degree

Master's Degree

Ph.D.

4.What is your marital status?

Married or live in cohabitation arrangements

Single

Divorced or separated

Widower/Widow

5. In which industry/sector do you currently work?

Private sector

Public Sector

Unemployed

Other.....

***Note:** Please rate the level of agreement with the following statements: (On the scale of 1 to 5, being 1 strongly disagree and 5 strongly agree.

6. Do you know what a Learning Management System is?

1. Yes
2. No
3. Have heard of it

7. By your opinion, how much a startup company needs a LMS to achieve its learning and development targets?

1. 2. 3. 4. 5.

8. From a range 1 to 5, do you know the differences between a CMS and LMS?

1. 2. 3. 4. 5.

9. By your opinion how important is for a Startup Company to use LMS?

1. 2. 3. 4. 5.

10. Do you recognize any of the following LMS? If yes, click which.

Leanwords

Schoox

Moodle

Edmodo

Skillsoft

Blackboard

uQualio

11. Which parts of an organization can a LMS support?

Productivity

Communication

Learning

Development

Other

12. How much do you believe LMSs support the remote working model?

1. 2. 3. 4. 5.

13. From a range 1 to 5, do you believe that is there any statically significant difference between users according to gender or majors?

1. 2. 3. 4. 5.

14. How effective do you believe is an LMS run into a startup company's growth?

1. 2. 3. 4. 5.

15. How useful do you believe is an LMS run into a startup company?

1. 2. 3. 4. 5.

16. From a range 1 to 5, how much do you believe the LMSs usefulness impact in level of workers' satisfaction?

1. 2. 3. 4. 5.

17. From a range 1 to 5, do you believe that an LMS is a point of support in a startup company?

1. 2. 3. 4. 5.

18. Which of the following factors can affect the LMS effectiveness?

information quality

system use

user satisfaction

perceived usefulness.

19. How much do you believe that LMSs supported workers during Covid-19 period?

1. 2. 3. 4. 5.

20. How much impact do you think an LMS has within a startup organization?

1. 2. 3. 4. 5.