LATVIJAS UNIVERSITĀTE

BAKALAURA DARBS

RĪGA 2021

UNIVERSITY OF LATVIA

FACULTY OF HUMANITIES

DEPARTMENT OF ENGLISH STUDIES

USE OF ARTICLES WITH PROPER NOUNS IN PROJECT REPORTS

ARTIKULU LIETOJUMS AR ĪPAŠVĀRDIEM PROJEKTU PĀRSKATOS

BACHELORS THESIS

Lilita Guitāne
Matriculation card No. : lg17044

Advisor: assoc. prof. Jana Kuzmina

RIGA 2021

ANOTĀCIJA

Darba mērķis ir izpētīt artikulu lietošanu ar īpašvārdiem projektu pārskatos. Pētījums balstās uz to biežuma noteikšanu veselības un digitālās ekonomikas projektu pārskatos. Turklāt abos tekstos identificētie īpašvārdi tiek sadalīti vairākas kategorijās. Pētījumā tiek izmantota diskursa analīzes metode. Iegūtie rezultāti atspoguļo to, ka visbiežāk tiek izmantots nulles artikuls; tā kā projektu nozīmīgas īpatnības ir atpazīstamība un unikalitāte, projektu un medicīnas testu nosaukumi ir lielākā īpašvārdu kategorija. Veselības projektu pārskatos lielākoties tiek lietoti ģeogrāfiskie nosaukumi, savukārt digitālās ekonomikas pārskatos biežāk tiek izmantoti zīmolu, organizāciju un iestāžu nosaukumi. Ģeogrāfiskās vienības galvenokārt tiek lietotas, lai atspoguļotu projekta atrašanās vietu un materiālu izcelsmi lielākoties medicīnas projektu pārskatos, tāpēc ka tie darbojas ar fiziskiem izgudrojumiem. Digitālās ekonomikas projektos galvenokārt tiek izmantoti tehniski izgudrojumi, tāpēc izšķiroša nozīme ir uzticamībai, pieminot zīmolus un iestādes, tāpēc noteiktais artikuls galvenokārt tika izmantots zīmolu, organizāciju un iestāžu nosaukumos.

Atslēgas vārdi: artikuli, īpašvārdi, projektu pārskati, diskursa analīze

ABSTRACT

The aim of the paper is to investigate article use with proper nouns in project reports. The research focuses on determining the frequency in two types of project reports concerning health and digital economy. Moreover, the type of proper nouns present in both corpora is established. The research method is discourse analysis. The results reveal that zero articles are most frequently used, and project and medical test names are the largest category of proper nouns as recognition and uniqueness is significant for any project. Health project reports predominately have geographical items, while in the reports on digital economy brand, organization, and institution names are used more frequently. Geographical names appeared mainly to show the project location and material origin, which is important for medical projects because they operate with physical products. Digital economy projects mainly use proper nouns to refer to technical inventions, thus, reliability through mentioning brands and institutions is crucial, therefore the definite article was mainly used in brand, organization, and institution names.

Key words: articles, proper nouns, project reports, discourse analysis.

Content

Introduction

As the world is becoming more and more globalised, the role of the English language has increased significantly for many business endorsements. Projects serve as one of key means to ensure small and medium business development, with project reports being essential documents to demonstrate project outcomes where the use precise language is required to ensure that project stakeholders do not misunderstand information. Thus, it is significant to apprehend elements of the English language for successful project report writing.

Project reports possess a lot of proper nouns describing project setting and processes, thus, the use of articles with them should not be ignored. The topicality of the theme is explained by the fact that projects are implemented in countries worldwide across various industries and reports are often written by non-native speakers. Thus, the current research results are applicable to a wider target audience because the grammatical category of definiteness and consequently article system are not typical of all modern languages. The use of articles may be challenging for second language users whose native language does not contain a similar grammatical structure. Incorrect article use can change the meaning of the text slightly, but more importantly, it would look unprofessional in the business environment, leaving a negative impact on project stakeholders. Proper nouns can be challenging for non-native language speakers because these are the nouns where the prior knowledge is needed to ensure the correct understanding. Plus, there are a lot of exceptions to the rules regarding article use with proper nouns. Thus, the paper discusses the variation of article use with proper nouns in the project reports to gain more in-depth understanding of these peculiarities in project discourse. For the empirical part, two domains of project reports were selected to proceed with the comparative analysis – Health and Digital Economy. These domains were chosen as in the conditions of the world pandemic more and more business ventures are operating online, and there is a notable increase in interest in medicine in the past year.

Thus, the abovementioned has determined the **aim** of the thesis, which is to analyze the use of articles with proper nouns in project reports in the domains of health and digital economy.

The following **research questions** were set:

1. Which article type is used most frequently? Why is it so?
2. Which type of proper nouns is used in the reports most frequently?
3. In which domain are the articles with proper nouns used more frequently?

The research sets the following **enabling objectives**:

1. to study and analyse the relevant theories on common nouns, proper nouns and the use of articles;

2. to examine materials on project report documentation and language used there;
3. to select project reports for a comparative analysis with the goal to analyse proper nouns with the definite, indefinite and zero article use;
4. to interpret the findings according to the theoretical background;
5. to draw the relevant conclusions.

The **theoretical framework** is based mainly on the previous secondary research of the following scholars: Biber, Johansson, Leech, Conrad (2002), Matushansky (2006) focusing on the grammatical features of article use with proper nouns. Furthermore, Biber, Johansson, Leech, Conrad, and Finegard (2007) looked through various registers and investigated the use of articles depending on the register. Thus, substantial research has already been conducted on the topic of proper nouns with articles. However, there is no research dedicated to the article use in the business documentation such as project reports. When it comes to project management and project writing Maylor (2006), Peticca-Harris (2015) Cicmil et al. (2016) Koneru (2008), Bhatia (2004), and Kuiper and Clippinger (2012) have investigated different aspects, the research on the use of articles in this discourse being scarce.

The research methods comprise the analysis of secondary sources as well as discourse analysis to ensure structured and clear finding representation. The Community Research and Development Information Service (CORDIS) website was taken as a project report selection source. It was determined to use this website because of the extensive project report database provided by the European Commission.

The paper consists of four chapters. Chapter 1 deals with the determiners and more specifically article use in the English language. Moreover, the chapter deals with the theoretical background where the difference between common nouns and proper nouns is discussed. It also gives an insight into the use of articles with proper nouns. Furthermore, in Chapter 2 the content of project reports is discussed and enhances the understanding of the structure and the importance of this document. Besides, in this chapter the information on project management discourse and report as a genre is provided. In Chapter 3, the methodology is described as well as the comparative analysis of the project reports is presented.

1 ARTICLES AND NOUNS

The following chapter is devoted to enhance the understanding of concepts such as articles and nouns. Firstly,the theory on different types of determiners is provided with a focus on articles and the use of them. Secondly, the chapter investigates nouns and their types, discovering differences between common and proper nouns. Thirdly, the indefinite, definite and zero article use with proper nouns is explored.

1.1. Determiners

Determiners in English are the words that often precede nouns in order to specify the reference. It is important to note that determiners are sometimes treated as adjectives by some scholars (Chalker, 1984:50). The classification can be different based on a researcher, for instance, Swan (2002) has classified determiners in accordance with the function, while Biber et al (2007) have a different approach. Determiners are classified according to their syntactic position, thus Biber et al. (2007:258) have determined subgroups among determiners:

1. predeterminers (all, both, half, double, once and twice),
2. central determiners (articles, demonstrative determiners and possessive determiners),
3. postdeterminers
    3.1.ordinal numerals and semi-determiners (same, other, former, latter, last and next)
    3.2.cardinal numerals and quantifying determiners

Thus, it can be seen that the determiners include articles, possessive pronouns, demonstrative pronouns, quantifiers and many other words.

Predeterminers form a certain category of mutually exclusive items that are applied before the central determiners with which they may be used simultaneously and are related to quantification. (Quirk, 1990: 75) When it comes to multipliers such as *once* and *twice* they possess the ability to be used in front of articles, the demonstratives, and the possessives. (ibid:76) Moreover, multipliers are used to establish frequency and multiplication. (ibid.)

As for central determiners, the most common are articles. There are two types of articles: definite *the* and indefinite *a/an*. (Quirk,1990:73) Moreover, central determiners include the demonstrative such as *this* and *that,* which are applied together with uncountable and singular countable nouns, *these* and *those*, and can be found with plural countable nouns. Possessive determiners are *my, our, his, her, its, their.* (ibid.)

The last group is post-determiners, which appear after the noun. The first subdivision includes ordinals and semi determiners such as *same, other, former, latter, last* and *next.* (Biber et al, 2007:258) Second division includes cardinal numerals *one, two, three, four, five* and quantifiers that are determiners a *seven, ninety, many few, plenty of, a lot of.* (Quirk,1990: 76)

To sum up, determiners can be divided into different groups, however it is possible to distinguish three types: predeterminers, central determiners and post-determiners. Determiners can act syntactically as adjectives because they are applied before nouns and give an additional attributive meaning. The following subchapter is devoted to describing articles as central determiners.

1.1.1 Article

When one starts learning the English language, one encounters a problem such an incomprehensible phenomenon as the article. As it is known, in the English language there are two articles - indefinite (a/an) and definite (the). An article (from Latin articulus) is a grammatical element that appears in a language in the form of a service word or an affix and serves to express the certainty-indeterminacy of a category (nominal), i.e. type of reference (Demenchuk, 2018:116).

Old English is a language of the Indo-European type, whose grammatical relations were expressed primarily through inflections - changes in the form of a word, for example, the declension of nouns and adjectives or the conjugation of verbs (Baugh, 2002:1-54). The interaction of different dialects and shifts in pronunciation led to the fact that this system gradually lost its functionality and disintegrated. (ibid.; 13) In parallel with this, there was the development of new elements of the grammatical system: some phrases and syntactic constructions with particular meanings acquired an integral form of analytical (i.e., consisting of several elements) grammatical structures and a generalized content (ibid.; 11). Thus, the phrase pronoun and noun was transformed into a noun with an article, carrying information about the definiteness of an object (ibid. 52)

According to Baugh (2002:1-54) an article is considered both as a service word and as a segment, auxiliary grammatical unit, a formal sign of a word, or an attributive group. An article is also treated as an independent word, or it is allocated to a separate, official, part of speech, or classified as adjectives or pronouns (ibid.) Even though the article has been studied for many years, grammarians still have different opinions about the article.

Contemporary English grammar is characterised by an analytical structure where the main means of expressing grammatical meanings are word order and function words, showing

the relationship between words or groups of words (Masaitienė, 2009:27). The article is a significant linguistic means of providing accurate expression and correct understanding of thoughts in English. Inappropriate use of the article in speech leads either to a distortion of the meaning of the statement or to a mutual misunderstanding of the interlocutors. (ibid.)

Articles is a frequently found determiner in the English language, which usage is determined by the noun. (Biber et al.,2007:260) Indefinite article *a* must be placed before the noun, which begins with a consonant as in *a performance.*, and *an* article has to be applied if the first letter of the noun is a vowel, for instance, *an act*. (ibid.) However, it is important to note that instances where nouns written form and spoken form is different, meaning if a noun begins with a vowel but sounds as a consonant indefinite article *a* must be applied: *a uniform*. (ibid.) Another aspect for choosing the indefinite article is that an adjective is added to a noun, then the article is chosen having in mind the consonant or a vowel of the adjective. For example, *an average performance*. Moreover, articles are also applied to acronyms. (Rivero, n.d.: Online)

By and large, the article possesses one of the most challenging set of grammar rules for English language learners. Throughout the time there was a grammatical transformation, and as a result there was a shift from the phrase "pronoun and noun" to "article and noun". The article has a purpose to express a more accurate meaning of a sentence or a text. The use of the indefinite article is determined by the first letter of a noun or adjective in a case if it is added to a noun. Also, indefinite articles can be changed from a to an if the noun's first letter sounds as a consonant rather than a vowel. The article is not only added to nouns in full form, but also to acronyms acting as nouns. The next subchapter provides a discussion on the definite article.

1.1.2 Definite article

The definite article is used with both singular and plural nouns. Biber et al. (2007: 263) The meaning of the definite article is close to the meanings of words such as this, the one, the one mentioned. The definite article distinguishes one particular, specific object or phenomenon from all similar objects or phenomena, for instance, *Close the door!* The reference in example is to close a specific door.

According to the authors such as Thomson and Martinet (1986: 6), Leech and Svartvik(2003: 259),and Biber et al., (2007: 245-247) definite article is applied with certain proper nouns, however, it is discussed in more detail further in the paper. The definite article can be used in the following cases:

- Before nouns in the singular and plural forms, whereas it is countable or uncountable, when it is already familiar or mentioned in a speech earlier (Biber et al., 2007:263) (*I met a dog. The dog seems to be lost.)*

- With the modifying phrase or clause makes uncountable noun more specific, therefore definite article should be used. For instance, *the lawyer that you suggested.* (ibid.264)
- With unique (the sun, the moon) or if the noun has specific reference to some unique event, *e.g. the Pentagon. (ibid.)*
- With superlatives as it implies one referent (*the most handsome)* (ibid.)
- A noun preceded by an adjective or ordinal requires definite article usage. (Thomson and Martinet,1986: 6)
- With noun phrases without head noun but is assumed *(The poor are always with us)* (Aart et al., 2016:218)
- With cases when surnames denoting members of the same family are written.(*The Smiths.)(*Leech and Svartvik (2003: 259)
- With cardinal directions if used as noun (*the North Pole)* (Thomson and Martinet, 1986: 6)

To conclude, the definite article is applied with singular and plural nouns that are specific in the meaning. The definite article also can be used with countable or uncountable nouns, and it is not important whether the noun is familiar or mentioned for the first time. It appears with nouns presenting additional information, or if a noun is introduced with the superlative adjective or ordinal. Moreover, singular nouns that refer to a class of objects, and with plural forms of nationalities. Further, nouns relating to a person or object or nouns that refer to a member of family, or nouns expressing uniqueness hold a definite article. Thus, the most significant part to determine if a definite article is needed is the meaning and context.

1.1.3. Indefinite articles

The indefinite article denotes that any single item from the entire class of items is meant. A noun with an indefinite article represents the name of an item in general, not a name for a specific item. (Biber et al 2007: 247) For example, a student evokes the general idea of a follower of an educational institution, but not of a particular person.

The indefinite article is used before a countable noun in the singular when it is represented for the first time in speech, for example, *e.g. A girl went home from school. The girl noticed a black cat near a house*. This type of article can indicate an affiliation with a group of people as in religion, school or profession. *e.g. She is a student at the University of Latvia.* (Biber et al.,2007: 263) Moreover, a/and article is applied before a noun, when it only names an object belonging to a class of homogeneous objects (*I decided to buy a sofa for the living room.)* Further, the indefinite article can be found before nouns in the function of the

nominal part of the predicate which usually emphasizes the belonging of the noun to a certain class (*My son will become a lawyer)* (ibid.)

Moreover, the indefinite article appears when subtext is present as in *Let`s go to a gig*, in the example a speaker does not indicate a specific gig, thus it can be concluded that he merely wishes to attend any gig. So, the focus is not the gig but the wish to go out. (ibid.)

Overall, the indefinite article can be used with singular countable nouns. The indefinite article represents general items, with no unique reference, and it is used for introducing items for the first time, before a noun that has a function to emphasise belonging to a class, before nouns with a sense of singularity and many other cases. Understandably, it can be concluded that the most difficult thing is memorising all stable combinations and expressions. The next subchapter is devoted to describing the zero article use.

1.1.4. Zero article

The absence of an article before a noun in English is usually contrasted with the use of the definite or indefinite articles and, thus, becomes a means of expressing a certain meaning. (Online 3) A noun used with the zero article acquires the most general or abstract meaning. (Biber et al., 2007: 261). For instance, *This book deals with the problem of garbage in Europe*. In the example one is talking about the problem of garbage in Europe in general terms.

The zero articles are often used with the names of materials, food items, abstract nouns, etc. It is important to note that many scientists from other countries, in particular, Russian-speaking linguists, do not agree with this formulation and believe that in the English language there are only two articles: the definite and indefinite, and the absence of an article is called significant (Barmina,2000:190). Along with this, there is an opposite opinion, which supports the English-language sources, in which the zero article is used (Слесарева, К. А., Петракова, Л. Н. ,2019:53). Thus, the key function of the article is to emphasize the concrete attitude to the object, its peculiarity or abstractness. The zero articles in English reinforce the meaning of both uniqueness and generality and show that the object we are talking about is one of a kind, has certain properties, or is indivisible.

According to Leech and Svartvik (2003: 257-258) and Biber et al (2007: 245-246, 261-262) the zero article is used with personal names, calendar items, festivals, with continents and countries. Moreover, lakes and mountains in singular form also hold the zero article. The zero article appears with proper nouns such as university names, street names,palace names and bridge names. (Leech and Svartvik,2003:258). Furthermore, in some cases predicative nouns with a reference to a unique job holds the zero article. (*Lukman was re-elected OPEC president.)* (Biber et al., 2003:69) Moreover, the zero article is applied with transport after

preposition *by* and communication method such as email. (ibid.) Biber et al (2003) further argued that in parallel structures article is omitted, especially with fixed phrases, for example, *eye to eye.*(ibid.)

Furthermore, when referring to news and newspaper headlines, advertisement signs usually are omitted. In this case, the article is often omitted even where it is required by the rules. This simplified grammar allows one to make the information message more capacious and effective for perception (*No Animals Allowed)* (Online 4)

Swan (2005:65) argued that the zero article is practised with not so important institutions such as *Newbury School of English.* However, it is noted by the researcher that article use in these cases might vary. Moreover, the article is omitted with "principal public buildings and organisations of a town when the title begins with the town name". As for example, *Oxford University, Manchester City Council.* (ibid.)

To sum up, zero article aims to emphasize a noun's attitude to an object or its specificity. The zero article is applied with uncountable nouns, and to describe abstract concepts and phenomena. Countable plural nouns can also appear with the zero article as well. The zero article also is used with a range of proper noun, namely, names of newspapers, advertisements, and other headlines. Some researchers have argued that the zero article merely signifies the absence of the definite and indefinite articles and is not considered as a determiner. Further the chapter describes nouns and their types with a greater focus on proper nouns.

1.2. Nouns and their types

According to the definition of the noun by Merriam-Webster, a noun is "any member of a class of words that typically can be combined with determiners to serve as the subject of a verb, can be interpreted as singular or plural, can be replaced with a pronoun, and refer to an entity, quality, state, action, or concept" In a general sense, a noun is a part of speech that answers the questions: Who is it? What is it? or What is its name? (Garcia-Gamez, A. B., Macizo, P. 2019:473-507.)

Nouns are used to denote a thing: (table, chair), living beings (cat, dog, man), destinations or places (London, Paris, square, field), materials (metal, wood), processes (scream, laugh), states of the body (rest, sleep), abstract concepts such as emotions (happiness, love), human qualities (cowardice, courage). (ibid.) In English, a noun is characterized by the presence of two categories:

1. category of number, consisting of two numbers - singular and plural. (Aarts,2019:246)
2. the category of definiteness (certainty - uncertainty), expressed by articles in the preposition. (ibid.)

The grammatical category of gender is not explicitly expressed. In English, there are both gender-specific and gender-neutral nouns. Many nouns are not gender sensitive. Examples of non-gender-specific nouns include sibling, author, person, or child. Some nouns can be gender specific. Examples of some gender-specific nouns include god/goddess, bachelor/bachelorette, or hero/heroine. (Aarts, 2019:25; Biber et al,2007:321)

In general, it can be noted that there are eight types of nouns in English, presented in Table 1.1.

Table 1.1. **Types of nouns in English**

Nouns	**Nouns**
• Proper • Countable (plural/singular) • Concrete	• Common • Uncountable (mass noun) • Abstract • Collective

Firstly, a noun can be determined as a common or proper noun. Proper noun types are personal names, place names, organization names, and time names. (Biber et al.,2003: 59) As opposed to PN common nouns refer to a class of entities like city, planet, country, and there are instances when a common noun is used about a specific class – a city, a planet, a country. Nouns that are not proper nouns are common nouns, which makes most of the nouns. (ibid.)

Secondly, nouns are grouped either into countable noun categories or uncountable ones. (Biber et al., 2007: 241) Countable nouns are the ones that can be counted. (ibid.) They have both singular and plural forms. Both singular and plural there is a contrast between definite and indefinite, signaled by articles. Uncountable common nouns refer to something which cannot be counted they do not vary for number. (ibid.) The uncountable CN cannot occur with an indefinite article, but a contrast between definite and indefinite is allowing, for instance, the milk/ milk. (Online 1)

The same noun can be also countable and uncountable at the same time but with a changed meaning. (Biber et al.2002: 57) For example,

- *There is no way to tell how old a rock is merely by looking at its minerals.* (countable)
- *Rock is defined as the inorganic mineral material covering the earth`s surface.* (uncountable)

The third category of nouns are concrete and abstract nouns. In short, concrete nouns are physical entities or substances whereas abstract nouns refer to the idea or concepts like events, state, time, and quantity. (ibid.) For example, concrete nouns would be *a lab, crew, chemicals, hair,* while abstract noun examples are *giant, niche, quality, desire*. The difference between these two concepts of nouns is semantic rather than grammatical. Moreover, concrete nouns and abstract nouns can be proper or common, countable, and uncountable. (ibid.)

Lastly, the noun can be collective. Collective nouns refer to a group of individuals, animals or things, which can be both singular and plural. Some examples of collective nouns include *audience, band, class* and so on. (Biber et al, 2007: 249) However, it is possible to use collective nouns in the plural form if it is considered to be a member of a group individually, for instance, the crew are all wearing their new uniform. (ibid.: 247)

By and large, the noun in English is one of the most important parts of speech which denotes objects, living beings, substances, abstract concepts, and various phenomena. Nouns have different types and features and can perform particular functions. The noun can be differentiated mainly as a common or a proper noun, other noun features are number, and perception (concrete, abstract or collective). The following subchapter is devoted to enhancing the understanding of the proper noun.

1.2.1. Proper noun

The focus of the study is the use of articles with proper nouns; thus, the subchapter is devoted to enhancing understanding of the concept. As it was determined previously, a proper noun is a subclass for a more extensive category of orthographically definable class. Sloath argued that “proper nouns (henceforth PN) and other countable nouns share the same set of

determiners, however PN are expected to have a zero allomorph with an underscore when in the singular and without either a restrictive adjective or a following restrictive conditional". (Sloath, 1969:27)

Significant PN are personal names, place names, organizational names, and time names. A proper noun is a noun denoting a word or phrase intended to name a specific, well-defined object or phenomenon, distinguishing this object or phenomenon from several similar objects or phenomena (Cacchiani,2019: 515-525). The information in the list below is based on theory of researcher such as Biber, (2007:245), Leech and Svartvik, (2003: 259), Swan, (2005: 65), Cacchiani,(2019: 515-525), and examples are provided by the author if this paper. Traditionally, proper nouns include :

- Personal names of people and their nicknames – *Sam, John*;
- Place names – *Canada*, Tokyo;
- A name used to refer to an ethnic group, tribe, or people, languages – *American, English*
- Animals' proper names or nicknames – *Buddy*,
- Unique items such as cosmographical toponyms – *Antares*, or name of a deity – *Adonai*, etc.
- Persons with a unique public function – *the Queen, the President;*
- Public buildings- *the Library of Congress, the British Library;*
- Mountains -*the Alps*
- Canals and deserts – *Sahara, the Panama Canal;*
- Objects and commercial products -*Voyager*, *Chevrolet*
- Political parties and political parties – *the Democrats*

The far more common for proper nouns is to be of an arbitrary type which has no inherent meaning.(Biber et al,2007: 245) For instance, the girl's name Anne does not hold any meaning, it is merely a reference to a female with a name Anne. This type of PN does not require any determiner as well as it is not considered to be neither singular, nor plural.

Trade names generally are used as common mass names, which, the same as arbitrary type, do not require a determiner and oftentimes they appear in the singular form.(Sloath, :26) For example, *I ate McDonald's every day for the last few days.* In the sentence McDonald`s PN is used as a common noun in a situation when a person or a family have made a call. (ibid.) For example, *when you were at work, the Blacks called.* The reference is to a certain family and in this case the definite determiner is applied. (Biber et al, 2007:245)

Another case a PN acts as a common noun is when comparing with someone. For example, *I used to wish I were a singer, however, I didn`t have the capacity of Beyoncé.* Beyonce is a talented singer with many achievements, in the example one is comparing his

own abilities to this singer. (ibid.) In the case of referring to one's ability or action that is associated to one person, the PN is also used as a common noun. For instance, *you could do an Arnold Schwarzenegger, just break the door*. In this case the actor Arnold Schwarzenegger is used as a measure of strength. Proper nouns also can be made up of ordinary lexical words. (ibid.)

PNs can be distinct by an initial capital letter, sometimes foreigners tend to overuse capitalization as what is considered a PN in English can be different in other languages. For example, in the English language months of the year are PN and are capitalized but in the Spanish language these PNs are not. (Traffis, n.d.: Online). However, not all capitalized words are proper nouns but adjectives and common nouns.

Table 1.2. Proper nouns vs adjectives vs common nouns (Biber et al,2003: 60)

Proper noun	**Adjective**	**Singular CN**	**Plural CN**
Buddha	Buddhist	A Buddhist	Buddhists
Finland	Finnish	A Finn	Finns
Paris	Parisian	A Parisian	Parisians

Proper nouns sound strange with the low-stressed word "some" because proper nouns are nouns that name specific people, names, places, and things. Thus, saying *I met some Grace*. sounds not only odd but it is grammatically incorrect. (Sloath,1969: 27) Proper nouns are considered to be definite nouns because they identify a specific name, company, person or thing. Thus, most of the time proper nouns are seen together with the definite article or in without article at all. In more rare cases indefinite articles are also used. Further, it will be explained in what cases the article should be used or omitted.

The relationship between common nouns and proper nouns is complex. On the one hand, proper nouns may derive from ordinary descriptive phrases. On the other, they may give rise to derivatives which behave like common nouns, or they may themselves acquire uses as common nouns. (Biber et al,2007:246)

To sum up, the proper noun can be distinguished by the capitalization of a first letter. However, not all capitalized nouns are in fact proper nouns as these can be common nouns or adjectives as well such as Finnish. These nouns are definite and arbitrary type nouns, meaning PN identify personal name, company, or thing. In most of the cases, PN appears with no article and the definite article, and a zero allomorph with an underscore when in the singular and without either a restrictive adjective or a following restrictive condition an indefinite article can be observed rarely. It will be explained further in which cases article should be present or omitted.

1.2.1.1. Proper nouns with zero article

The zero article is a definition used in the cases when the article is not used with nouns; in the English language zero article is applied with plural countable nouns with an indefinite reference. (Biber et al,2007: 261) The use of articles in English with proper names is a broad topic with many exceptions. However, to simplify the memorization process, it is possible to combine them into groups that adhere to certain patterns. Firstly, if an institution is named after a famous person or the locality in which it is located, zero articles are used. (ibid.) Some examples are:

1. *She entered Berklee College of Music.*
2. *We took off from Louis Armstrong International Airport.*
3. *We visited Buckingham Palace.[*Authors example*]*

The article is also omitted if a store, cafe, restaurant, bank, hotel, or other organization is named after someone with the ending -s or -'s, the article is not used. For instance, M*y kids love to celebrate their birthday at McDonald's.* This rule applies to churches, temples, and cathedrals named after saints as well. (ibid.) For example, *You should see St. Peter and Pauls' Church in Vilnius.* Further, the abbreviated names of some organizations can be used as independent words, and the article is not used with such proper nouns as for example, *UNESCO has compiled a list of world cultural heritage.*(ibid.) In addition, researchers like Biber et al (2007: 245-246, 261-262), Swan 10 (2005: 55, 63-66) and Leech and Svartvik (2003: 257-259) argued that the zero articles are used when referring to:

- Streets, parks, squares: *I am waiting for you at Regent Street.*
- Roads *I went to Piccadilly.*
- School names, University or College names *My nephews go to Ashford School.*
- Airports, airlines, train stations, bridges: *I only trust British Airways; I don't want to fly by charter.*
- Palaces, castles: *Please, can I get this bus to Windsor Castle?*
- Languages: *Do you speak English?*
- Days of the week, months, holidays: *See you on Friday! At Christmas.*

Newspaper titles have complex rules with the article; Thus, foreign names are used with the zero articles, for instance, *Have you read the latest issue of Libération?* However, some newspapers have the definite article in their titles such as *The Times*. (Swan, 2005: 64).

The zero article is used with toponyms like continent names (*Paris is located in Europe)*, names of individual islands, mountains, volcanoes (Swan (2005: 65) (*Madagascar became famous thanks to the cartoon of the same name.)*, countries whose names are nouns in

the singular, cities, villages, states, provinces (*I dream of visiting France.)* with the exceptions such as the United Kingdom or the Congo.

Besides, anthroponyms are used with the zero article if they are personal names (*Dasha, Anna, Jack),* personal names combined with the words Mr., Mrs., Doctor (*Dr. Karl's appointments are on Tuesdays.)* personal names in combination with titles (*Lieutenant Howard has arrived at his destination.)* personal names in the possessive case (*John's dog bit the postman.)* (Leech and Svartvik,2003: 257-258)

To conclude, the zero article is the predominately used with PN with the indefinite reference or if a noun is defined by a toponym or anthroponym. The zero article should be used together with institutions named after well-known people or if they containing a toponym, such as Buckingham Palace. Similarly, churches that carry Saint's name omit articles. The article is also omitted with stores, café, restaurant, and other organization names. Moreover, abbreviated names of organizations appear with no article even if the article is part of the title. PN of streets, roads, schools, airports, languages should be written with the zero article as well. Lastly, newspapers, toponym names, most countries and anthroponyms do not hold any articles. The exceptions are countries with "of", in plural form and unions such as the United Kingdom where definite article is present. Another exception is some newspapers like the Times. Thus, despite clear cut patterns exceptions in the use of articles are also present.

1.2.1.2.Proper nouns with definite article

Biber et al. (2007: 263) have argued that as opposed to the indefinite article, the definite article can be applied with countable nouns and uncountable nouns in both singular and plural forms. While PN usually appears with the zero article in some cases the definite article can also be used. According to Matushansky (2006:285–307; Leech and Svartvik, 2003: 259; Swan, 2005: 65; Biber et al., 2007: 245-247), the rules for using the definite article with proper names can be formulated as follows:

1. If a structure or institution is named after someone else's name (e.g.*In the summer, our school was on an excursion to the White House.)*

2. If the name of an institution or organization contains the preposition of, the definite article should be used.

The Great Wall of China is more than twenty kilometers long.

3. Some proper nouns have two forms: a long official name, which will be used with the article, and an unofficial abbreviated name, which is usually used without the article.

Last summer I was in the Cathedral and Collegiate Church of St Mary, St Denys, and St George. = Last week I was in Manchester Cathedral. - Last week I was at Manchester Cathedral.

4. As mentioned previously, the abbreviated names of some organizations can be used as independent words. The article is not used with such proper names. However, with full names, definite article is needed:

The National Aeronautics and Space Administration is an independent agency of the U.S. federal government.

5. Moreover, the definite article usually accompanies the names such as:

- Theaters, museums, galleries, cinemas, monuments, and other unique buildings and structures, for instance, *Someday we will definitely visit the Louvre.*
- Hotels, restaurants, pubs: *If you stay overnight in a hotel, then only in the Plaza.*
- Famous ships and trains: *My great-grandfather was one of the passengers on the Titanic.*
- Organizations, political parties: *I love watching TV shows about the work of the Federal Bureau of Investigation.*
- Political institutions: *The Senate approved this bill.*
- Sports events: *The Olympic Games are held every four years.*
- Historical eras and events: *The Renaissance has left a huge cultural heritage behind.*(Thomson and Martinet, 1986: 6; Leech and Svartvik, 2003: 259; *65; Biber et al., 2007: 245-247).*

7. Further, the definite article is used with place names that denote:

- Cardinal points: *the North / the north - North (as a territorial designation) / north (as a direction);* (Thomson and Martinet 1986: 6) It is important to note that when direction is indicated, both the definite article and the zero article can be applied. For instance, *The downtown is to the north of the city* or *They were going from east to west.* Technically both examples are grammatically correct.
- Countries with plural nouns:*All his relatives remained in the Philippines.*
- Countries with the words kingdom, republic, federation in their names: *Today the United Kingdom of Great Britain is not part of the EU. (*Leech and Svartvik,2003: 258)
- Oceans, straits, seas, rivers, canals / channels, currents: *The hammerhead shark lives in the Pacific Ocean;*
- Groups of lakes: *The Great Lakes are a freshwater lake system in North America.*
- Groups of islands: *We will spend the summer in the Canary Islands.*

To sum up, PNs with the definite article can appear with both countable and uncountable noun in singular and plural forms. The definite article is used if institution or organization is names in someone's else`s name and if the institution has a word "of" in it. Moreover, full forms of official names and organizations often appear with the definite article. Similarly, names of building such as galleries, cinemas, museums etc, hotels and famous ships hold "the" article. Further, the definite article is expected with political parties and institutions, and different kind of evens like sport or historical events. Place names (countries, regions, poles), water names (oceans, canals, rivers, group of lakes) and island apply definite article. The next subchapter will continue with the insight of the indefinite article use together with PNs.

1.2.1.3. Proper nouns with indefinite article

The indefinite article *a / an* is rarely used with proper nouns, and, firstly, it appears before anthroponyms if it is used as a common noun to denote distinctive features, skills and abilities. (*He can be called a Charlie Chaplin of his time.)* (Online 5) Moreover, it talks about a work of art created by a specific person (*Is that a Van Gogh in your living room?)* Further, the indefinite article is required with a name of a person to show unfamiliarity. (ibid.) (*A Mrs. Watson is on the phone.)* (ibid.) As it can be seen, the meaning of the statement depends on which article the personal name is used with. The following chapter focuses on project management discourse, reports as genre and project report writing.

2 PROJECT MANAGEMENT DISCOURSE

This chapter is devoted to the discussion on project management as well as describes project report as a genre. Moreover, the chapter includes a more detailed view on project reports and their use .

Chiapello and Fairclough, (2002), Hodgson(2004) argue that projects and project management have developed into a central discursive construct in a modern capitalist society, in which people involve everyday life in their organization. After World War II project management became an integral part of social science to convey views of modernists, technicians and rationalists. (ibid.) Moreover, in the business world project management grew into a crucial construct because of its ability to "distinct, delimited work packages, using tried and tested proprietary tools and techniques for planning, control, multiparty collaboration, team-building and delivery against uncertainty "(Cicmil et al.,2016:60) international and large professional organizations have been established such as PMI (Project Management Institute) and IPMA (International Project Management Association). This type of discourse is developed and promoted by work regulations in current business organizations. (ibid.)

One of the first researchers that focused on exploring the significance of projects for the integration of business functions and dealing with the emerging technical issues that arise during the production of new products were Clark and Wheelwright (1992). (ibid.) However, Galbraith (1971;1973) in his works defined four simple organizational models for new product development – functional, lightweight project, heavyweight project and project-based. (Maylor, 2006:664) Project managers have high position across coordinated projects as well these managers are able to control financial resources. There is no formal functional coordination among projects - the whole organisation is dedicated to one or more projects, and business processes are coordinated in individual projects. (ibid.) A few definitions of a project is are as follows:

1. "a specific plan or design" (Online 5)
2. ''A unique set of co-ordinated activities, with definite starting and finishing points, undertaken by an individual or organisation to meet specific performance objectives within defined schedule, cost and performance parameters'' Quoted in Maylor et al: 668)
3. ''a system of work activities for which there is a predefined outcome to deliver and an associated timeline with an end date'' (ibid.)

4. ‘‘a set of activities with a defined start point and a defined end state, which pursues a defined goal and uses a defined set of resources’’ (ibid.)

Organizations implement projectification in daily working lives more often in order to manage and organize activities. As Peticca-Harris (2015) argued that project gives a purpose for individuals and groups to strengthen the instrumentalization and masculinity of life, and they are considered to be the dominant life-defining and personal worth justifying involvement (Peticca-Harris et al., 2015), which is passed onto society as whole. As project reports are maintained through dedicated work and in a way addiction to work, it can negatively affect people's lives. (Cicmil et al,2006:61). However, project-based organizations employ disciplinary features that allow an employee to increase dedication and viability into the work, t.i., project management technologies have managerial control of when the work should be completed and what action should be taken in what time. (ibid.). That way rest and work is separated, and an employee can bring better result to the company.

Nevertheless, researchers have argued that projectification leads to the loss of procedural freedom and increases the control that later forces society to sacrifice lifelong plans, stable conditions and even social regularity. (Chiapello and Fairclough, 2002; 2004; Lindgren and Packendorff, 2006;). However, there are quite number of positive outcomes as a individual can experience professional fulfilment, achieve goals in a more controlled way and thus achieving goals more efficiently, (Morris, 2013) Moreover, “a projection of ambitions, dreams and hopes into specific and well-defined sequences of action; channelling of ideas and visions into work packages which allows professional freedom and creativity; yielding satisfaction, pride and aesthetic fulfilment.” (Cicmil,2016:62)

By and large, project management has developed into a significant construct in modern society, and the business world. The main aspects of project management are to establish a concrete framework for project execution and possible problems that can arise. It coordinated projects through setting specific objectives and timeframe for project development. The negative aspect is that employees might experience lack of freedom and limited personal life. However, from a positive side it provides a sense of professional fulfilment and achieves goals in an efficient way. The following subchapter is devoted to enhancing understanding report as genre. Even though project management has been gaining appeal to researchers, not much investigation from a linguistic perspective is done.

3.1. Reports as genre

Koneru has defined a report as “a description of an event or an analysis of factual information carried back to someone who was not aware of it or who was interested in knowing it” (2008:

177). Thus, reports have a certain purpose that is clearly stated through describing procedures, collecting and analysing the data and conclusion. (ibid.) Bhatia (2004) argued that "reporting is perhaps one of the most popular and overly used 'generic values' in all contexts of professional discourse across disciplines and domains today". (Bhatia, 2004:81)

Furthermore, reporting systems are defined as the processes, procedures, and capabilities used to create and aggregate reports using one or more information management systems. This particular project management system is also responsible for distributing the report to the project stakeholders. (Online, management). Koneru stated that the structure for writing report is presenting systematically collected, verified and analysed data to meet the needs or requirements of a specific audience. (Koneru, 2008: 178). Structure for report writing presented by Cardiff University is abstract, introduction, background, specification and design, implementation, results and evaluation, future work, conclusions, and reflection (2011: 6-14, 22). While there are many ways to structure a report, it mostly depends on the type of report.

Koneru stated different types of reports like written or spoken reports, formal or informal. (2008.: 180). However, Bhatia elaborated on the concept and listed a few types of reports such as news reports, business reports, law reports, accident reports, first information reports (FIR), inquiry reports, medical reports, and scientist`s reports. However, these types of reports might have other variations, as for example, business report is a broader category where company reports, financial reports, annual reports etc. might be included. (ibid.) While these reports are from different areas of expertise and the context, the similarity is the purpose and of display of lexico grammatical features as well as rhetorical variations. (ibid. 82) Moreover, in his previous work, Bhatia discussed that reports have a shared genre features, differences include specialist lexis. (Bhatia,1993: 157-74) In addition, there is variation in business reports which are as follows:

- Investigation report (suggests solutions for existing problems)
- Performance report (evaluates an individual product, service or activity)
- Progress or Status report (reports development as part of a project/activity)
- Feasibility report (reports on chances of failure or success of projects)
- Sales report (reports on periodic sales figures; may include market analysis)
- Field trip report (records business activities at various locations)
- Annual report (reports on overall perspectives on an organization)
- Audit report (indicates economic efficiency) (Bhatia. 2004:82)

This categorisation allows "to view individual genres as part of a specific disciplinary domain, it is equally possible to view some other aspects of these very genres as displaying

overlaps across a number of disciplinary domains". (ibid.) This puts forward the fact that the reality of a situation can therefore only be perceived through a more complex and possibly dynamic picture that shows similarities as well as overlaps within and between disciplines and discursive practices. (ibid.:83) For this paper project reports are chosen to be analysed, and according to abovementioned classification it is classified to be a status report.

To conclude, report is written with a purpose to outline objectives, data and procedures. There are various classifications for reports as it can appear not only in business environment but also academics, law or even news. In addition, each type can have subtypes . The present research investigates the use of articles in status and progress reports. Moreover, a report can be present in written and oral form with formal or informal tone. The next subchapter discusses business status reports, more specifically project reports.

3.2. Project reports

As the focus of the study is project reports the subchapter will explain in more detail business reports, which project report is part of. Kuiper and Clippinger (2012) in their work on contemporary business reports stated that "reports are organized as objective presentations of observations, experiences, or facts". (ibid.: 21) However, Shadan (2012: 3) argues that "a project is made up of a group of interrelated work activities constrained by a specific scope, budget, and schedule to deliver capital assets needed to achieve the strategic goals of an agency".

Sufficient reports are the ones that successfully 'contribute to the advancement of the reporter's career as well as to the success of the organization'. (Kuiper and Clippinger 2012: 3) Report writing is a final step in a project preparation, it has all information and analysis to communicate ideas to potential investors or other stakeholders. Also, reports are an essential part of business as they provide the ideas in a way that can reach investors. (Online 6) The aim is to produce a successful report with necessary data and research made to ensure validity and reliability. (Online 7) Project reports use specific conventions such as usage of past tense, passive voice and third person. Business reports are usually assigned to help one to:

- "Examine available and potential solutions to a problem, situation, or issue.
- Apply business and management theory to a practical situation.
- Demonstrate your analytical, reasoning, and evaluation skills in identifying and weighing-up possible solutions and outcomes.
- Reach conclusions about a problem or issue.
- Provide recommendations for future action.
- Show concise and clear communication skills." (ibid.)

Even though there is no standard format for project reports, according to the article posted in Massey University, project reports structure can consist of an executive summary, introduction, discussion or analysis, conclusions, recommendations, other sections, business report pre-submission checklist. (Online 8) Besides project reports have specific language that should be used to enhance reader friendliness and maintain professionalism:

- specific, concise and clear language
- use of clearly legible font and font size (Times New Roman is the most common font and 12 point is the most common size)
- consistent and accurate verb tenses: - simple tenses in order express facts, current actions and conclusions - past tense for completed actions and references - present perfect for things happening in the past up to now.
- Avoiding emotional language and jargon
- the active voice with short sentences and clear actors and actions using specific verbs and adverbs.
- Avoiding words such as ‘considering’ and ‘having’ (ibid.)

Table 3.1. Types of project reports

N	Length of Project	Reports to Donors
1	One year project	Quarterly report or mid-year report One year report
2	Three-five year project	Mid-year report Annual report Mid-term report Final project report

There are different kinds of project reports (see Table 3.1.) Firstly, a project can be a one-year project, where quarter reports or mid-year reports are needed as well as one-year reports. Secondly if three-five-year projects, where mid-year, annual, mid-term and final reports are required. (Online 6)

In each section there are main suggestions what should be included. However, these are only suggestions not a specific outline as there are various ways to present the information. (Online 7) In the introduction a clear statement where projects aim, and scope of the project is described in an understandable manner. In this section summary of set goals and the project background should be present, as well as show relevance and contribution. It is important to note that introductions should not be technical but rather give main objectives. (ibid.) Moreover, background information that can be present either in introduction or in a separate chapter. Background information includes past industry achievements and failures, as well as current status and future opportunities. (ibid.) The justification behind the target

market, as well as why it might draw consumers or clients in the chosen market, should be discussed in the first section (local, national or global). Here groundwork can also be presented. (ibid.)

Secondly, a description of the process by which a product or company can produce the desired outcomes is presented in an executive summary, which generally is regarded as one of the most critical aspects of any paper. As a result, it should include finance, operations, and company processes of management and execution. (ibid.)

Furthermore, the body of the report is where technical work should be written, usually in a chronological development of project reports, design implementations, experimentations, optimisations, evaluations etc. Design implementation is significant for the software projects to justify the use. Another important aspect to be discussed in the body of a report is integration and testing. (ibid.) Manufacturing capability and operation, machinery and equipment (prices and specifications), raw material and power and water requirements, skilled and unskilled labour work requirements, project marketing costs, demand, financial assessments, infrastructure, and economic feasibility are advised to be presented in this section in a detailed way to ensure reliability. (ibid.)

Overall, a project report is a part of business type reports, where observations, experiences and factual information are shown. Project report is important to ensure funding and successful outcome of a project, thus establishing better brand recognition. When it comes to writing a project report, there is no specific outline but rather suggestions of the information that should be included. As for the use of articles, there are no specific guidelines made regarding them, thus it is believed that general grammar rules should be applied.

3 ANALYSIS OF PROJECT REPORTS WITH PROPER NOUNS

The empirical analysis was conducted to investigate the use of articles with proper nouns in project reports. This chapter covers the applied method, data collection and the procedure of the research. Lastly, the results of the analysis are presented and discussed.

3.1.Methodology

The goal of this research is to examine how articles are used together with PNs in the project reports collected from the Community Research and Development Information Service (henceforth CORDIS). In order to examine the use of articles with proper nouns project reports from two different domains were collected – Health and Digital Economy. The independent variable is randomly chosen project reports from CORDIS, and the dependent variables are articles with PNs. To execute the empirical part of this research qualitative and quantitative perspectives have been chosen and discourse analysis (henceforth DA) is applied.To pursue the analysis of quantitative approach frequency analysis is employed. Thus, the data is converted into numerical form like graphs and tables.The qualitative approach means a hypothesis is tested or research questions are answered by collecting and interpreting the data which is categorized and coded. (Rasinger,2013:9) Further subchapter is dedicated to discuss DA analysis, which was used as a method.

3.2.Definition of discourse analysis

The empirical research method of the study is DA, which was chosen to examine the use of articles with PNs in project reports. The aim of discourse analysis for linguistics and social science is to analyse the relationship between language and society and formulate a normative perspective from which such attitudes can be critiqued in the light of the possibilities for social change. (Jorgensen and Philips, 2002: 2)

A general definition of discourse analysis is: “discourse analysis is concerned with the study of the relationship between language and the contexts in which it is used” (McCarthy 1996: 5). However, the meaning of DA is difficult to explain because of the variety of fields it is used in, and it has many different approaches.For this paper the central definition used to enhance understanding is the one by Bhatia (2004), who argued that the discourse in itself is written and spoken, and DA concerns the study of natural written discourse with a particular focus on its analysis outside the sentence. (Bhatia,2004: 3) Consequently, the main focus of DA is “lexicographic and other textual features, the use of the local language in an

institutional, professional or organizational context or the use of the language in various highly configured social contexts, often emphasizing social relations and identities, asymmetries of power and social struggles." (ibid.)

According to Bhatia, there are three historical development stages of analysis of written discourse:

1. Textualization of lexico-grammar, which is considered to be the earliest analyses of written discourse by Halliday, Mcintosh and Strevens in 1964 as part of register study. It concentrated mainly on statistical features of lexico-grammar used in a certain subset of texts related to a certain discipline. Further, Bhatia and Swales highlighted nominations in legislative discourse as the purpose of the observations. However, focus was rather surface level on specialized text and interest was merely to describe function variations in discourse while concentrating on statistics in lexical and grammatical features. (Bhatia,2004: 9)
2. Organization of discourse – The focus shifted to focus more on the context of language both in a direct context and in a broader sense. According to Bhatia, the most significant development is the emergence of genre theory for the analysis of written discourse. At this stage, a greater role for the context can be seen in the broader meaning given to the real world, in particular academia and professions in order to ensure greater validity to the analytical conclusions. (Bhatia, 2004: 10) Popular examples of this stage of DA are "the works of Miller (1984, 1994), Bazerman (1994) and Berkenkotter and Huckin (1995); the Sydney school of systemic-functional approach to genre, as developed by Martin, Christy and Rothery (1987) and Martin (1993); and the British ESP school, as represented in the works of Swales (1981a, 1990) and Bhatia (1982 , 1993)." (ibid.)
3. Contextualization of discourse, where a more detailed way was developed with focus on not only what makes these genres possible but also on external aspects as purpose, product, discursive practises and professional community. Genre specialists still continued to focus on extending the engagement in profession and disciplinary fields. Nonetheless, inclusion of social concepts allowed us to look at discourse as a tool of social control, influence and social structures and relations. Such works of Scallon (1998) and Gee (1999) are great examples of critical discourse analysis that is known now. (Bhatia,2004: 11)

Yet, the definition by Schriffrin and Tannen provides an excellent summary of all the points. DA "fall into the three main categories noted above: (1) anything beyond the sentence, (2) language use, and (3) a broader range of social practice that includes non-linguistic and non-

specific instances of language" (Mithun, 2015: 1). For the purpose of the present research the first definition with the focus on the use of lexicogrammar will be used.

3.3. Data collection tool, corpus, and procedure

The paper uses elements of quantitative analysis, thus at first it is crucial to understand the usage of it.

As Babbie (2010) described "quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon.". In the study absolute frequency was applied to establish the count of PN cases in both corpora, meaning these cases were counted. Moreover, relative frequency was used in order to successfully compare two corpora as both texts have different amounts of PN.

For the data collection CORDIS database was chosen because it is the main source of European Commission results of projects funded by the EU Framework Programmes. As it was discussed previously in the paper, two types of project reports were taken in order to see if there is different tendency for article use with proper nouns in the compared PR. To investigate different PR two categories were chosen- health and digital economy. Nowadays, both categories are quite an important part of a person's life due to quarantine, resulting in people's increased interest in public health and a boost of online work in various spheres. Thus, there was an assumption that a large amount of data would be available. In the empirical part the comparison of these two types of PR will be discussed. Even though the reports were chosen randomly, there is no overlapping information due to the contrasting nature of these topics.

Totally, 41 pages of project reports were analysed to answer the research questions. As the PR vary in their length and it is necessary to make both corpora equal in size, it was decided to review word count and pages collected. The PR related to health contains 7125 words and the PR about the digital economy has 7088 words, and both corpora are around 20 pages each. Photos and images were removed from the PR because of irrelevance for the empirical analysis as well as formatting was adjusted for all texts.

After collecting the necessary data, the proper nouns were detected and categorized into the tables, where they were organized according to the article use. Overall, the 490 cases of proper nouns were found in an analysis of both corpora; 296 of these cases occurred in PR under the health section, and 194 cases were found in digital economy PR. The cases where the PN appeared as a noun`s modifier were highlighted in the text, however these cases were excluded from analysis.

Further step in analysing process, the data was grouped into 6 categories based on the meaning:

1. Calendar item – mainly months were observed in the research, thus only one type of PN is categorized here.
2. Projects – names of projects and tests, which mainly occurred in PRs about health.
3. Brands, companies, organizations and institutions – In this category names of universities, institutes, organizations such as *the World Health Organization* and other brands were included. Some types of research program titles were also put under this category as they can be considered as a brand in the specific occupancy, for example, *the Fifth Framework Programme's (FP5's).*
4. Personal names – the category contains all names found in corpora. A name together with surname is counted as one case as well as if the title appeared with name (e.g., Prof. Stefania Boccia). If the personal name occurred repeatedly but omitted the name (e.g., Prof.Boccia) it was not counted as a new case in this step of analysis. Instances when title occurred with surname only were also counted as single cases.
5. Geographical objects – the category includes place names as continent names, country names, city names, region names as well as names of areas such as *Tibetan area* or *Sub-Saharan Africa.* The category included an interesting case, where a reference was to many countries indirectly: *EU Member States*. Thus, it addresses the countries that are in the European Union.
6. Other cases included the instances of occupancy, periods, associations, and journal titles.

In this step the analysed PN were reduced because repetitions like the EU or Germany etc. were excluded. The smaller amount of data was considered as appropriate because as opposed to the previous step where categorization was made by article use, here the meaning did not change in most cases. Some repetitions were present in considerable amount, for example, *Europe, the EU* and European, re-occurrence is believed to be due to the fact the PR are presented to the European Commission and the implementation takes place in Europe. In health-related PRs 109 unique instances were taken into account, and in digital economy PR 74 cases were counted. For each category the percentage was calculated, taking into consideration each section's overall count of instances.

3.4.Results

This subchapter is describing results in the collected project reports where tendencies of article usage with PNs are observed.

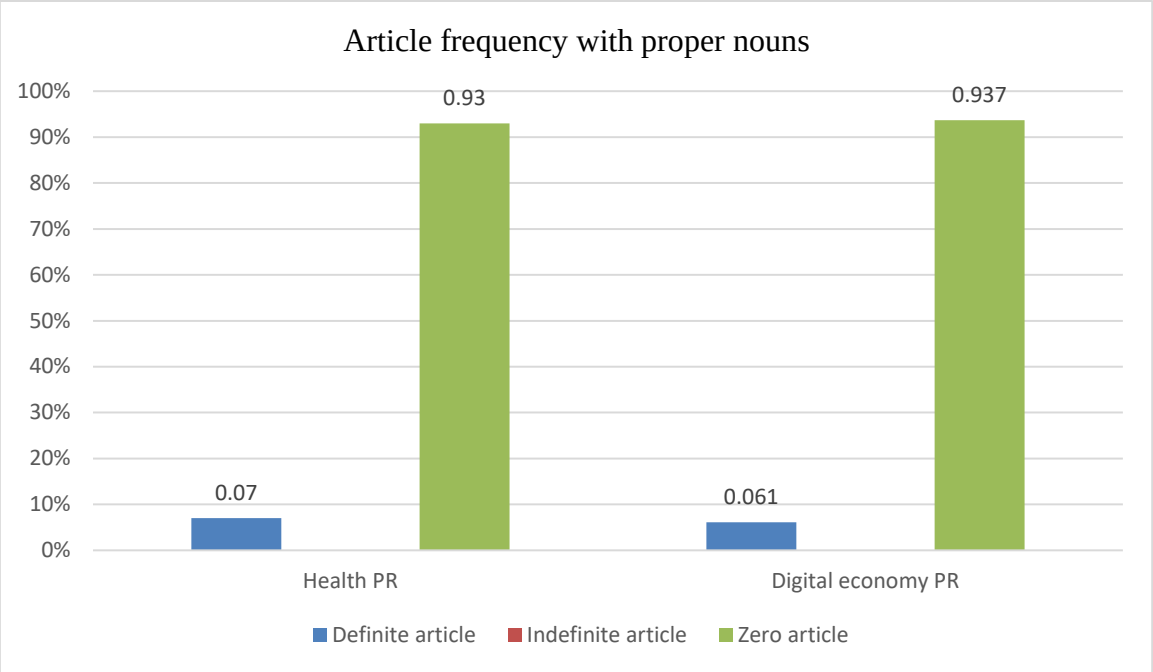

Figure 3.1. Article occurrence with proper nouns

In Figure 3.1. it can be observed that the predominantly PNs occurred together with the zero article in both types of project reports; 93 per cent in health-related PRs and 94 per cent in digital economy. Further, the definite article use with PNs have fewer instances recognised, which was almost three times less than with the zero articles: 7 per cent in PRs about health and 6 per cent in digital economy. However, the indefinite article was used only in the cases where PNs were changed into the proper adjective, resulting in the shift of the focus. For example, *the EU- project* has uniqueness and specificity to it, however *an EU-project* primary refers to any project. Thus, in the analysis it was excluded in both corpora.

Some problematic cases while analysing the corpus were names of diseases, however after consulting the theory it was found that they are considered to be a common noun even if they are capitalized. For instance, HIV and AIDS, which were found in PR with a title "Improving access to medicines". Another thought-provoking case was the term "amchi" that was not capitalized. At first it was understood to be a nationality, however after researching the meaning was found out to be an ancient system of medicine used in Tibetan rural areas. Thus, it is not considered to be a PN.

3.4.1. The zero-article appearance in project reports

As shown in Figure 3.2., in the research it was revealed that zero article is the most frequent in both corpora, from analysed 490 instances, 457 were found to be without any article. As it was discussed previously most of the instances observed were in health PR, namely 274 instances.

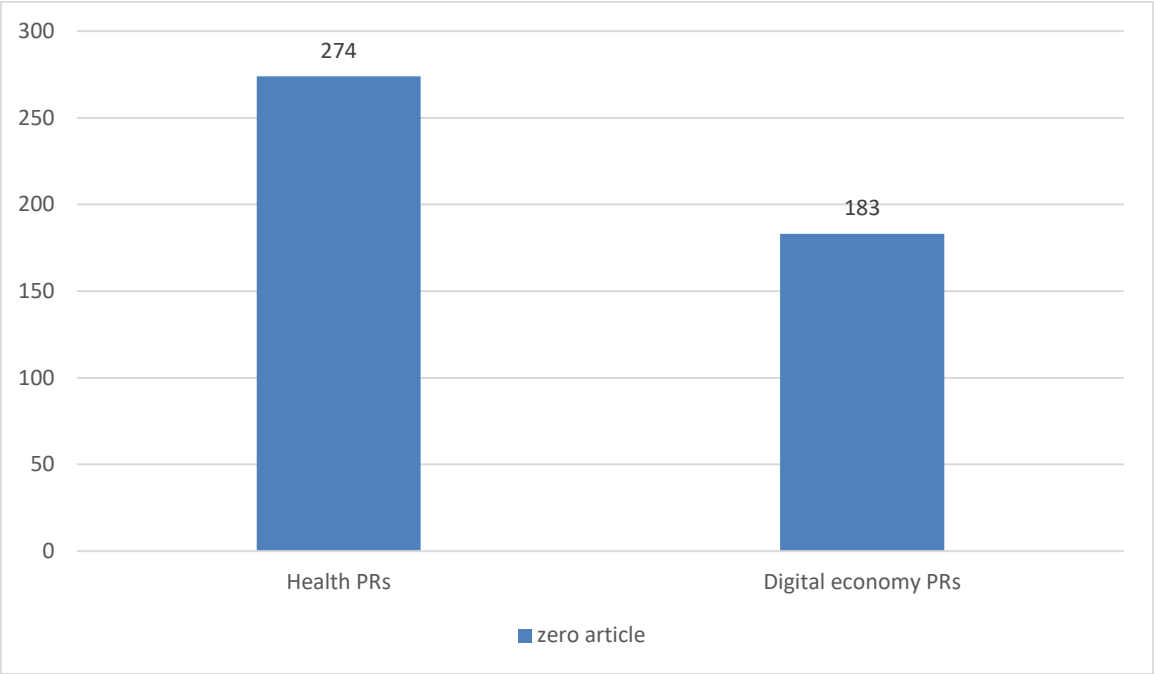

Figure 3.2. Zero article usage in project reports

PNs usually appear with the zero article when places are mentioned such as *Colombia, Bolivia, Germany, Barcelona, Cape Town, Asia, Europe, Member States, African countries and so on.* It can be seen that the definite or indefinite s are rarely used with countries, cities, continents, regions as well as when referring to a group of countries in a certain union or continent. Even if an instance was repeated in a different context, the article did not apply.

Further, it was found that positions with anthroponyms do not require any article P*rofessor and Director of Studies Joice* and *Innovation Procurement Consultant Higgins.* Here it was interesting to see that when referring to one's occupation as in the first example, "professor" is not considered a PN while the word "Director" is capitalized and used as PN in the text. It is important to note that the article is not required with PNs that follow the title. Another aspect when an article is omitted is with a person's name, name with surname and name with abbreviated form of titles *"Dr Di Marco, Liz Currie, John Schofield, Chekhova, Dr Chekhova* and so on. Some personal names occur more than once in PRs in different forms, for instance, *Dr.Maria Chehova, Chekhova, Dr Chekhova*. Similarly, *Georgios Meditskos* and later in text first name disregarded and only last name used *Meditskos.* Also, *Panagiota Syropoulou* later in the text was referred to only by last name *Syropoulou.*

Further, it was observed that the zero article appears with all titles of projects. Thus, it is deduced that project titles rarely have articles. However, it is important to note that the definite article appeared when the project name was used as a proper adjective. For instance,

2. *RELIEF uses pre-commercial procurement (PCP) to allow extensive development and testing of the most promising solutions aiming to empower patients to self-manage current and future pain.*
3. *Pre-commercial procurement under the RELIEF project aspires to put innovation at the service of chronic pain patients.*

When project title is used as PN it has no article, some other examples are: *MONITORING MEDICINE, PERMED, AMASA* and *PROMISE*. Similarly, test names also do not carry any article when used as PN – "*One of the deliverables Prof. Boccia is most proud of is the production of a set of recommendations for policymakers, scientists and industry, based on PRECeDI results."* Some other tests mentioned were *BRCA, PATHAG, PATHOD* and *IMS-Question and Test Interoperability (IMS-QTI).*

Another large amount of PN of companies were observed with no article use. In both corpora all company names occurred with zero article, and it is believed that article in these cases is not commonly used. Some examples found in a text are *British Telecom, BTexact Technologies, FD Learning, Flickr.* The same way centre names do not hold any article – "*operation centre B.USOC*".

Findings also revealed that universities (*e.g. Loughborough University*) and institutions (*e.g. TATE)* do not appear with article if it is not present in the title and has no word "of" in it. Also, *King's College London* in digital economy PR appeared with no article because the name starts with a PN "*King`s*", the thus article is omitted.

The zero article is used with the acronym of union used as noun modifier, respectively EU, while if used as a noun it had the definite article. However, in this case the PR is used as qualifier rather than noun and has an indefinite reference, thus article is omitted. Some examples are as follows:

1. *"EU pharmaceutical companies"*
2. *"as between EU countries regarding[..]"*
3. *"Towards personalised medicine for all EU citizens[..]"*

In the analysis of both corpora, it was discovered that platforms and portals usually appear with the zero article. As for example in digital economy PR found instance – *"In parallel we have been working on creating a portal called PRESERVEWARE – a digital preservation hub[..]"* Other examples was found in health PRs – "*Science X' website"*

Moreover, it was presumed on data findings that program titles do not hold any article, except for cases when the article is a part of the name itself as in "[..]*operating under Horizon 2020"*. Besides, technologies and databases usually appear with no article in PRs as for

example, "*innovative technologies called LAMP and CRISPR-Cas"* and *"Internet of Things and Industry 4.0"*.

The analysis also showed that all cases found of months in both corpora had the zero article. Thus, it is considered that this type of PNs usually does not hold articles when written in texts. Some examples found are "*May 2022, April, June 2020, December 2013* etc.". Likewise, when PN refers to a certain period, article is rarely needed. In the research all found cases appear with no article – *Pre-Columbia, Pre-European.*

3.4.2. Definite article appearance in project reports

Further, specific cases where the definite article occurred will be presented. When it comes to the definite article use, 21 instances in health-related PR were found from different categories while in the digital economy data the figure was almost twice less, namely 12 instances. (See Figure 3.3.)

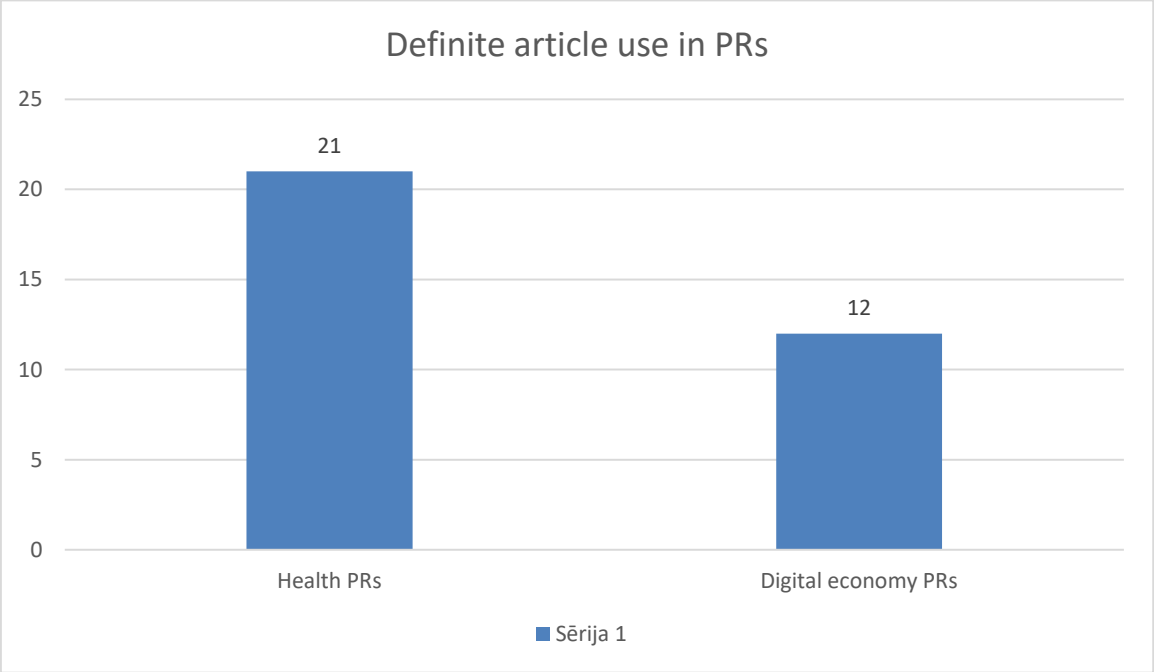

Figure 3.3. Definite article use in project reports

Firstly, the definite article was applied with names of schools, institutes, and universities with "of" present in name. Examples are as follows:

1. *the University of York.*
2. *the Andalusian School of Public Health*
3. *the Belgian Institute of Health*
4. *the Royal College of Obstetricians and Gynaecologists (RCOG).*
5. *the Technical University of Denmark.*

The general rule of the English language is that the article is omitted with these types of PN that was observed in digital economy PRs *"Loughborough University*", where no

article was used.However, if the school, institute, or university name has “of” in it, definite article is applied, which can be observed in the PR analysed. (Online 9) Another case found in digital economy PR *“the Max-Planck Institute for the Science of Light”* shows that definite article is used if institute carries name of someone else, in this case, Max-Planck. In addition it was disclosed that definite article is applied if the institute name itself carries an article as in example found in digital economy PR *“the Centre for Research and Technology Hellas (CERTH)”.* It is interesting to note that the definite article was observed when the department of university is mentioned “*the Department of Digital Humanities at King's College London*”.

Furthermore, PR about health had one instance of a country name with definite article, t.i., *the United States* and one case in digital economy PR – *the United Kingdom.* As stated in the theoretical background no article is needed with countries, however definite article should be present if a countries name includes words *kingdom, republic, federation.* The United States also has article as it is plural form and is referred to a political union, and a present noun “States”. Thus, the definite article is used in this instance.

It was also revealed that the definite article is used with printed media such as journals, for instance, *the Journal of Ethnopharmacology*. The definite article was applied with a certain project name *“the Nanomed”*. Generally, project titles occur with the zero article, except if the article is used in the original title, which is the case of the example. Also, the ‘*Science X’* website uses definite article in the analysed health related PR; Similarly, platform “the Unity game engine” in Digital economy PR appeared with “the” article. Moreover, digital economy PRs showed the definite article use with program names and board titles “*the EC Information Technologies programme”* and *“the Integrated Technology Board (ITB).”*

Moreover, it was found that political organizations (also if presented in acronym form) such as “*The European Commission*”, which occurred overall 7 times in both corpora. Another case was “*the EU*”. However, is some cases article is omitted with unions, especially used attributively:

1. *“[..]help EU pharmaceutical companies[..]”;*
2. *“This situation brings a huge economic burden to EU[..]”;*
3. *“[..]Globally as well as between EU countries regarding[..]”*

Likewise, definite article occurred with such organizations as *the World Health Organization (WHO).*

The definite article was used in the cases when PN was used as qualifier and adjective such in:

1. *“Another important milestone was the founding of the GP-TCM Research Association”.*
2. *programme the Fifth Framework Programme's (FP5's)*
3. *the Marie Curie Research and Innovation Staff Exchange (RISE)*

The PN here is merely asserted to specify which program, research or funding is meant.

The definite article was applied to make a specification of the PN, for example, “*The 'Governance, health and medicine.”* Here the definite article is a tool to ensure precision of what kind of governance is meant. Governance usually does not have article, and it has the meaning of the way society or groups organize work and make decisions. In other words, it is a framework for a group of people working together to control and systemize the work. (Online 12).

3.4.3. Proper names by category

The chapter is devoted to discussing the meaning of PN usage by categories and to discover frequency of article usage in each category in order to comprehend which type appears with definite article the most.

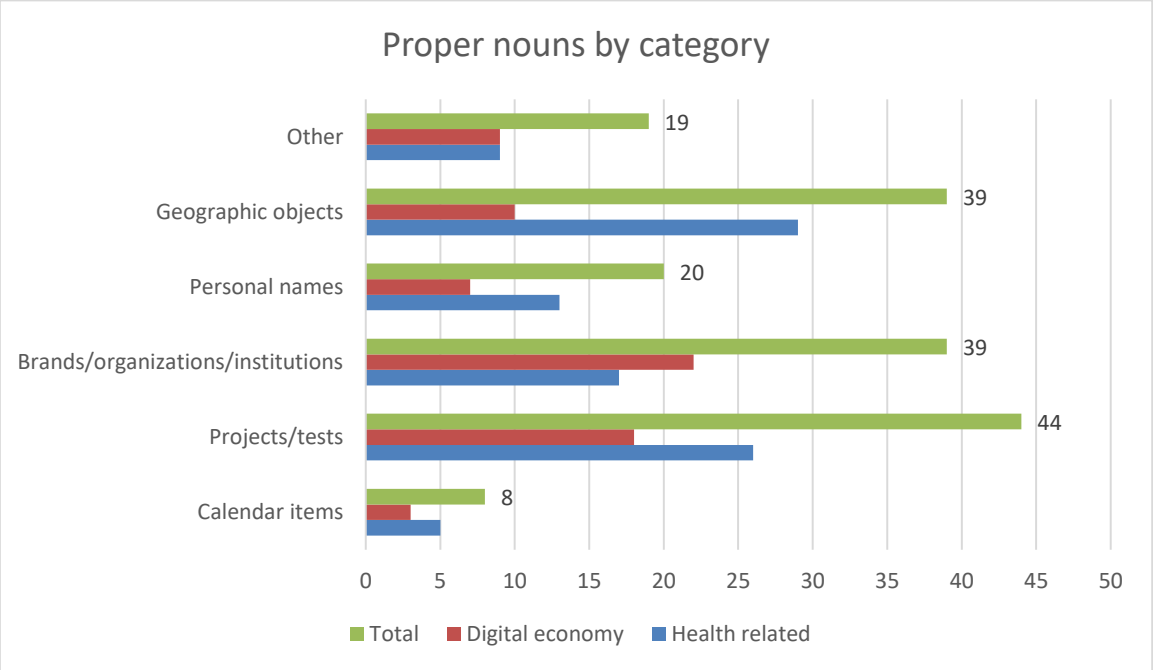

Figure 3.4. Proper nouns by category

The presented data in the Figure 3.4. shows that two categories have a large amount of PNs in PR related to health, 29 items of geographic objects were observed, and 26 items in the category of project titles. The third largest category in the health-related PRs was brand, companies, and organization names, which makes up to 17 instances. Moreover, personal names were found in 13 cases. Yet, the least number of instances were calendar items and other types of PNs.

However, in digital economy related PRs project titles predominately were used, namely 18 cases. Category of brands, institutions and organization category had 22 instances. While other type of proper nouns took up to 9 cases. Geographic objects were found in 10 cases. Moreover, personal names were observed in 7 cases. Calendar items were used not so often, only 3 cases were put in this category. In general, digital economic PRs practised less PN than health related ones.

As the PRs focus on attracting financial support in order to achieve successful execution of a project, it is expected that geographic items, brand and corporation and project titles are most common PNs. Geographic items allow to show the focus of the project and where it will take place. Brands and corporations are essential part for financial documents to ensure reliability and validity, and project titles are commonly found in PRs to establish uniqueness and recognition.

The next subchapter will discuss the reason for geographic place usage in both corpora.

3.4.3.1. Geographical items

As discussed previously geographical items are the third largest group. Geographical items found in health are in a greater amount than in digital economy ones. This can happen because project reports focus on improving either medicine or technological development in certain areas of the word, and sometimes geographic places help with establishing more precise information provided to ensure credibility. Health PRs had 29 instances, and digital economy merely 10, which is almost three times less. (See Figure 3.5.) The research shows that place names are usually used with zero article, except two cases “the United Stated” and “the United Kingdom”. The zero article was commonly found as it indicates generalization of noun phrases, and PNs are indefinite. Thus, it can be concluded that the category rarely uses the definite article only in cases where theory of English grammar specifies.

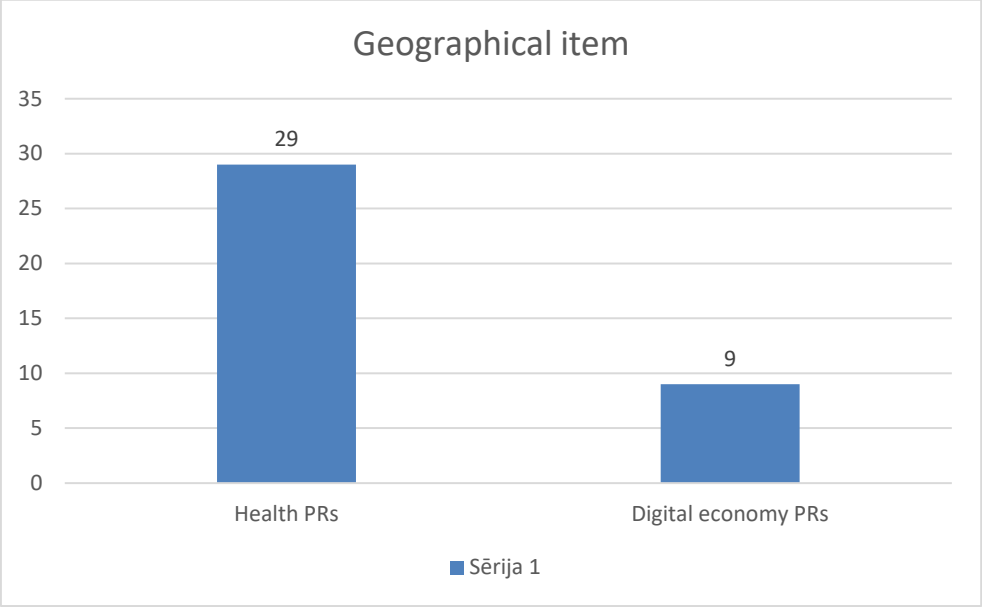

Figure 3.5. Proper nouns in geographical item category

As mentioned before, many repetitions were omitted in the process of analysis because in some cases such as PR about "How gender affects Tibetan medicine", where Tibet or Tibetan area were mentioned 14 times and the meaning does not change. This PN was mainly used to introduce PRs purpose and location because this specific PR focuses on traditional medicine in Tibetan areas. However, some other locations mentioned were to indicate and clarify certain community – "*They are known as amchi and are found in Tibetan areas of China, the Tibetan exile community in India, and in Mongolia and Nepal"*. Essentially, India, Mongolia and Nepal perform the function of determining the location of said amchi.

As project reports are presented in the European commission, and it is not surprising that PN *"Europe"* is mentioned in abundance. However, the reasoning behind the use is diverse in different PRs. In this example, *"TERM activities and outcomes should help rapidly bridge the innovation gap between Europe and the United States",* Europe is indicated as a target for the project to help with the innovation gap. So,the location is provided to show what one can expect from the product project invented. Similarly, the aim to include Europe in the text was in different PR – *"[...] scientific and engineering challenges has helped researchers to develop ground-breaking technologies that help Europe to compete in the global marketplace."*

Other use for this particular PN to show how far-reaching the impact of the project is, for instance, *"systems across Europe", "expert stakeholders from across Europe", "in the delivery of CAM services in Europe.".* Negative connotation is present as well, to display the need and the importance of a project in Europe – *"Europe has a long way to go before these services can even be discussed in common terms."* As for PRs it is important to prove the use so that it can be financed and thus manufactured as much as possible.

Another use for Europe is to indicate a level of specific knowledge that is assumed to be in the location. It is believed that the need is to show competitiveness – *"It also gives pertinent knowledge and recommendations to funding institutions at the national and European level so that Europe can maintain its momentum in QIST research and application."*

Further, many PRs on medicine are focused on how to improve medical help in regions and how traditional practices can be implemented in modern medicine. As in this example *"Researchers chose India, South Africa and Uganda to assess the affordability of drugs [..]"*it is discussed that developed countries are lacking accessibility because of inefficient routs and the PR is focused on improving it, thus certain areas were chosen for this purpose. These locations are indicated in order for the developed research to establish reliability and truthfulness of facts.

Moreover, instances such as *"[..] the project included a consortium of 11 partners from Africa, Asia and Europe"* use place names to reference where the brands, partners or university is located to ensure credibility. In the example it is believed place names are used to show how impactful the project can be not only in one county but around the globe.

Another case why place names were used is to show where supplies come from to ensure transparency. For example, "*An EU initiative traced seven different drugs along the entire supply chain in sub-Saharan Africa and South Asia".*

Place names were practised in some project reports to show where conducted study took place. The reason for this is similar to the examples described above, in order to create credible PR and to specify place of business. One example is: *"To assess the health needs of contemporary indigenous communities, the Andalusian School of Public Health at Granada has developed training modules on approaches and issues that specifically affect refugees and migrants."*

In PR the location is also used to indicate place of the university or place where pilot technology occurred. For instance, *"[...] the Max-Planck Institute for the Science of Light in Germany […]"* and *"[..] industrial site in Belgium"*. This type of PR mainly focuses on technology and prototype development, and usage. It is believed that place names are not commonly used because it is not a physical project, meaning usage of these projects happens in the digital environment, where the country or continent is not the significant.

To sum up, geographical items are mainly used in health-related PRs because applied services and developed product are to be used physically rather through technology as in digital economy. The locations are used to ensure credibility, transparency of data and to establish activity of a project. Another reason for usage is to demonstrate the extent of a

project. As for article usage, zero article is applied predominately to place names with some exceptions due to grammar rules. The results can be interpreted that project reports have a need to ensure trustworthiness and reliability. Moreover, geographical items show the quality of the project by indicating the countries involved. The next subchapter shows results of projects and test names found, and the use of those.

3.4.3.2. Projects and medical test names

After analysing collected PRs in health categories project names are second most common PNs, that is 26 cases, and in the digital economy PR 18 cases were spotted, which makes it a third most frequent PN category. (See Figure 4.6.) However, PNs under this category is the largest group when data from both corpora is united. It is hardly surprising that project names are frequently used in project reports. For the most parts projects have titles to ensure uniqueness, level of indication, clarity, and find-ability.

It is believed that projects and medical test names are used to give the reliability of the project; thus, they are mentioned in both corpora as well. When it comes to article usage with PN all cases were written with zero article. Similarly, to geographical items, only cases where definite article was applied was when converted to proper adjective. Project names equivalently like brand titles and corporations rarely appear with article unless it is part of a title. While in conversation brand names might appear with definite article, it would be peculiar to see this type of usage in formal documents.

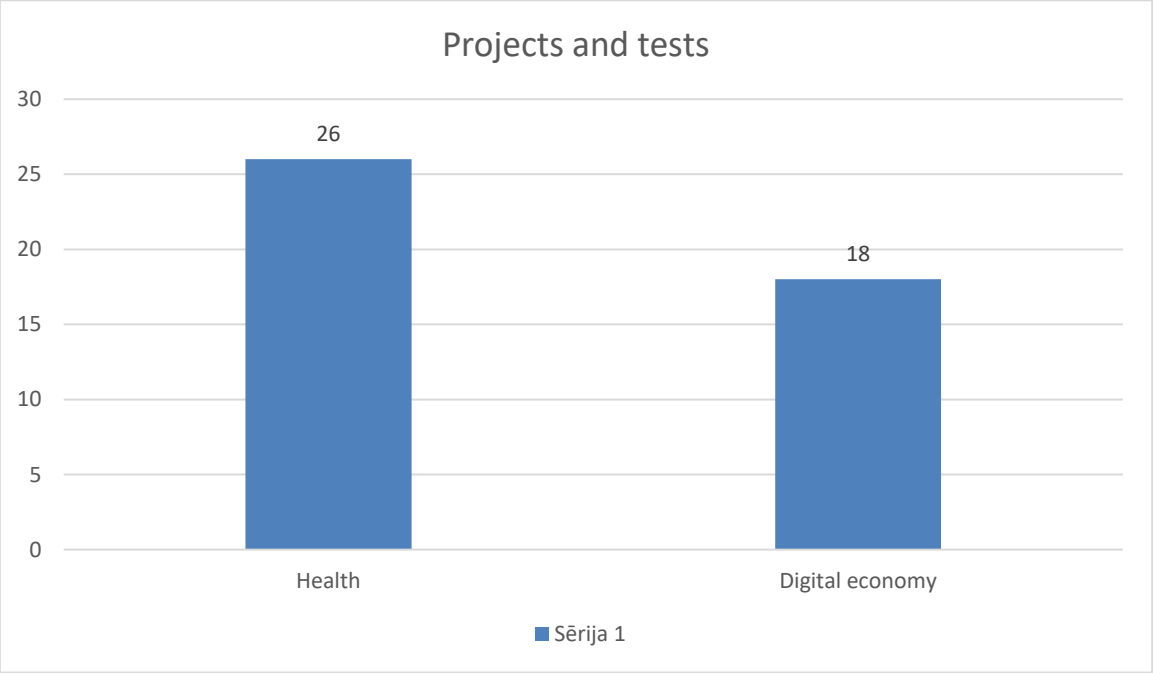

Figure 3.6. Proper nouns in project and test category

In the substantial amount of cases project report names were used as acronyms to make a text efficient and quick to read as well as not redundant. Moreover, shortening the form can make a text more reader friendly. For instance, Multi-disciplinary university traditional health initiative was abbreviated as “MUTHI”, “Accessing medicines in Africa and south Asia' became AMASA”, “Research and Innovation Staff Exchange”- “RISE” , “Empowering young women through learning for technical professions and science careers” project was shortened to “IFAC” and “Product lifecycle management and information tracking using smart embedded systems” was abbreviated and used in further text as “Promise”.

Another interesting occurrence was that project names were written in capital letters, for example, “MEDICINE”, “PERMIDES”, “RELIEF”, “OMNISCIENTIS”, “TOXI-triage”. The explanation could be that capitalization helps with highlighting a project name. Moreover, project title “MEDICINE” can create confusion for the reader if not differentiated because it can be perceived as a common noun rather than proper noun. In other words, capitalizations give new connotation to the term. Thus, in this case capitalization was used to avoid misunderstanding.

To conclude, project names more often appeared in health PRs. They are used to ensure indication and uniqueness as well as find-ability. Test names have a similar purpose, which are individuality and recognition among other tests. Project names and tests commonly appeared in an acronym form and with all letters capitalized to ensure reader friendliness and avoiding redundancy. Capitalization also allows to highlight particular title in a text. It was revealed that only zero article is applied with project and test names. The following subchapter discussed the use of PN of brands, companies, organizations and institutions.

3.4.3.3 Brands/companies/organizations/institutions

This category includes all PN that refer to brand, companies title, organization, institution, and universities present in both corpora. The total amount of PNs added in the category makes it second largest. Without taking into account the repetitions, in PR under the health division 17 cases were spotted, making it the third largest category. In Figure 4.7. it can be seen that while in digital economy PR, 22 cases were observed that represent the second most common PN in this type of PR. Even though health PR has less data in this category, the difference is not as contrasting as in previously mentioned categories. When it comes to article usage, in both categories zero article and definite article was observed in some cases. In digital economy PRs the definite article was applied in 4 cases while health PRs had 9 cases with definite article even though data was smaller. As previously discussed,the definite article was

mentioned with some universities, political organizations, unions, and programs, which can be observed in this category.

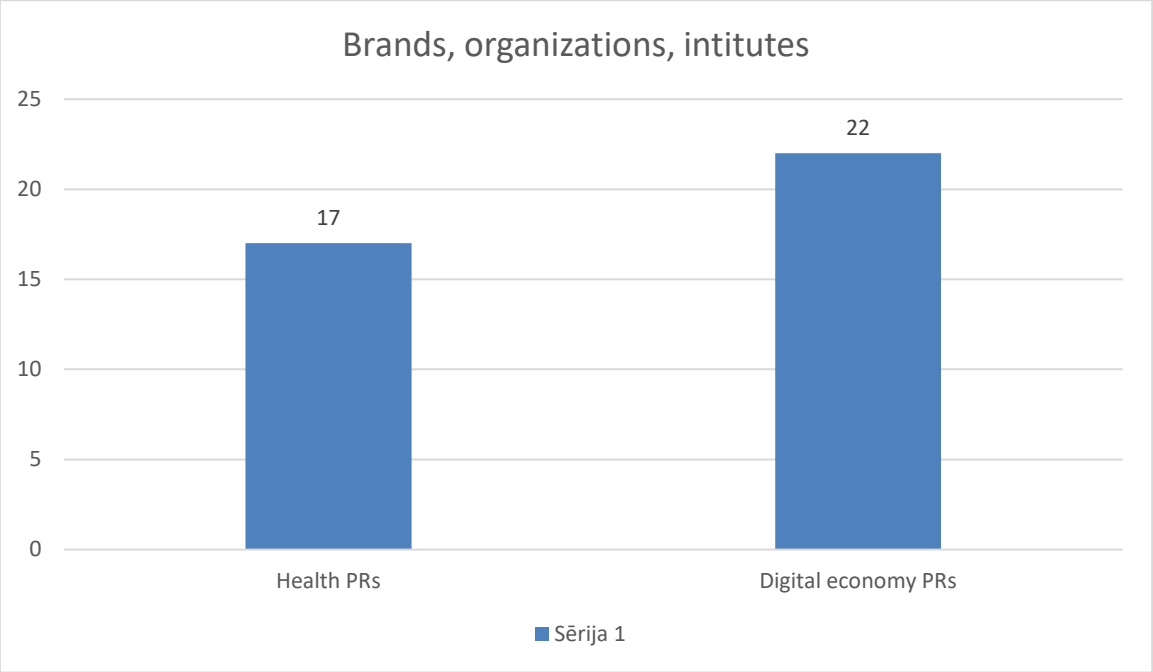

Figure 3.7. Proper nouns in brands, organizations, institutes, and universities category

In this category heath PRs mostly contained names of education institutes like universities, schools and institutions. This type of PNs is believed to be used to ensure credibility of a partners involved in the development of project as usually they appear after mentioning a person, for instance:

1. "*confirmed Hans-Christian Slotved of Danish project partner Statens Serum Institut"*
2. "*stated Anna of project partner Vita-Salute San Raffaele University,"*
3. *"Scientific coordinator Anders Wolff of the Technical University of Denmark",*
4. *"Marie Delnord, Marie Skłodowka-Curie fellow at Sciensano, the Belgian Institute of Health,",*
5. *"explains John Schofield , professor and Director of Studies in Cultural Heritage Management at the University of York.".*

One school was mentioned in order to display the involvement of the organization itself without highlighting specific person *"To assess the health needs of contemporary indigenous communities, the Andalusian 24School of Public Health at Granada has developed training modules [..]"*

Proper nouns of website names, platforms or consortiums were also added to the category as the names can be viewed as brands of some sort. "European Health Data Space" is a platform that helps to record health related data, register patience and so on. This specific PN referred to a platform that could be beneficial in the EU, thus ensuring topicality of the

PR. “Linkcare Health Services” is a software platform that helps to create integrated care, which was mentioned as an evidence of a person's skills in order to show trustworthiness. “*Dr Di Marcofrom Sapienza University who was seconded for 7 months at Linkcare Health Services in Barcelona, Spain”*.

The tendency of digital economy PRs shows that company names and data technologies names are used more often than in health-related ones. Companies are substantial fundamental part in digital environment as the financial funds and recognition is important to execute project successfully. Instance found *“This has caught the attention of such companies as British Telecom, BTexact Technologies and FD Learning”* shows the usage of company names allow demonstrate project’s ability for achievement, and that it appeals to a wider party. Another case proves that company names are used for credibility and transparency of the project, t.i. to prove where funding comes from - *“[..]the initiative received funding from the Bio-Based Industries Joint Undertaking[..]”.* It is important to note one instance, where companies name is used as a system through which the Internet is used. However, Wi-fi is a trademark and in some cases could be considered as a company’s name.

Furthermore, databases were mentioned in PRs about the digital economy. “*The platform also includes a database of the state-of-the-art ICT, Internet of Things and Industry 4.0”.*

Technologies are specified for the readers understanding how the research was made and where the provided information comes from. In the example above databases were mentioned to ensure legibility. Another interesting case was mentioning of social media platform *Flickr*, which was used as the part of the launched prototype. In addition, other technologies found were *Bluetooth* and *Tag and Trace technology* to explain how technology will work.

To sum up, technical projects rely on brands also because innovations are focused on better services provided in the digital economy where brands implement them to a wider audience. Health related projects mostly rely on scientific research and education because innovations are mostly on biological involvement. Article usage is substantial in this category when comparing to other categories; overall 13 cases had article. The further subchapter describes personal names found in both corpora.

3.4.3.4. Personal names

The category included person names found in both corpora. However, the category excludes different cases when referred to a one person, for instance, Prof. Boccia and Prof. Stefania Boccia were counted as one item. Thus, health PRs contained 13 instances, making it 4th

largest category while digital economy had 7 cases in all PRs analysed, putting it in 5th place. As for article usage in this category, all cases found were with zero article in both corpora. Thus, it can be concluded that personal names usually do not appear with either definite or indefinite article.

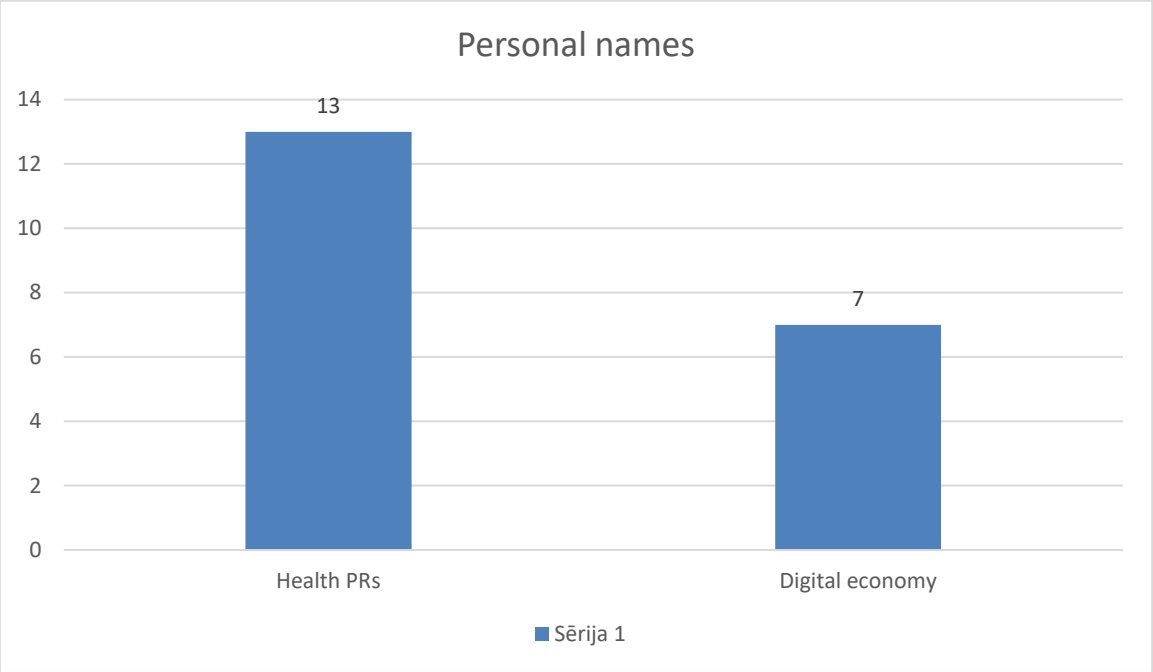

Figure 3.8. Proper nouns in personal names category

Firstly, the discussion of the use of personal names in health-related PRs will be presented. PNs of person names appeared mainly in reported statements to establish who is the speaker and provider in the information cited; The information was displayed similarly, how interviews in magazines or newspapers are presented. Thus, it works as a reference. Some examples form PRs are as follow:

1. *"For these reasons, the PRECeDI project has fostered collaboration on personalised medicine research and training with special emphasis on the prevention of chronic diseases," explains Prof. Stefania Boccia, scientific coordinator of the project."*
2. *"The MEDICINE project7 has demonstrated that Andean indigenous cosmology, with its unique way of understanding the world and responding to it, has survived across a tumultuous 500 years, albeit clearly changed in several key respects," explains John Schofield , professor and Director of Studies in Cultural Heritage Management at the University of York."*
3. *"Compared to other systems, PATHAG has the advantage of being faster and cheaper, and does not require any special equipment," confirmed Hans-Christian Slotved of Danish project partner Statens Serum Institut in a press release posted on the 'Science X' website."*

These statements were put in quotation marks to ensure higher reliability and to confirm ideas. It is interesting to note that in many cases profession was added to a person's name.

Another way person names were found to be used refer to a work done by a specific person, showing the reliability of the presented facts. This is shown in the sentence taken from PR about traditional medicine and contemporary health system. "*Twenty years ago, a study of the Salasaka people and their beliefs, myths and rituals by cultural anthropologist Rachel Corr indicated that many distinctive indigenous Andean beliefs had survived and were thriving."*In addition, person names allow to display aim of the research through mentioning person involved -"*With BAHCI, Delnord aimed to bridge the gap between".* In health PRs interesting goal to use personal name was to indicate example of a successful endeavour such in "*Just one notable example is Dr Di Marco from Sapienza University who was seconded for 7 months at Linkcare Health Services in Barcelona, Spain."* The use of person's name makes the information more legitimate. Compelling use of personal name was to show achieved goals and who has done it, as in *"One of the deliverables Prof. Boccia is most proud[..]"*

Similarly, to health-related PRs in PRs of digital economy used personal names for referencing purpose: *"says project coordinator Dr. Maria Chekhova", "says project coordinator Panagiota Syropoulou., "notes Judit Anda", "says Dr Marc Hedges", "as Stefanos Vrochidis, senior researcher at the Centre for Research and Technology Hellas (CERTH) and coordinator of the project, explains."* and *"According to project coordinator Prof. C. L. Paul Thomas, Chair of Analytical Science at Loughborough University"* Digital economy PRs show another application for personal name usage, which is to provide information to argue different aspects of the project, for example, "*But Georgios Meditskos, postdoctoral research associate at ITI-CERTH and also the technical manager of the project, doesn't exclude other potential applications."*

By and large, health PRs include person names more often in texts. Personal names are frequently used in reported statements and when one's work is being referred to. Moreover, personal names to indicate one's achievement, one's contribution and one's thoughts. Personal names in PRs ensure reliability of presented facts as well as creates transparency aspect of a project. In both corpora only zero article usage was observed. Thus, it is concluded that personal names rarely appear with article in PRs.

3.4.3.5. Calendar items

The category includes calendar items such as months and decades. It is important to note that decades in PRs were written as years, however, they were also considered in analysis because when spelled in full form, these are PN. For example, *the 1960s* in full form would be *the*

Sixties. This is the smallest category among other ones in both corpora, only 8 cases were observed. Health related PRs had 5 calendar item PN, and digital economy had 3 instances. Thus, both corpora data is quite small, and the amount of data is similar. In the category PN rarely appear with the article, only one instance had definite article *"the 1960s"*. Consequently, it was revealed that no article is needed with calendar items, except when speaking of decades.

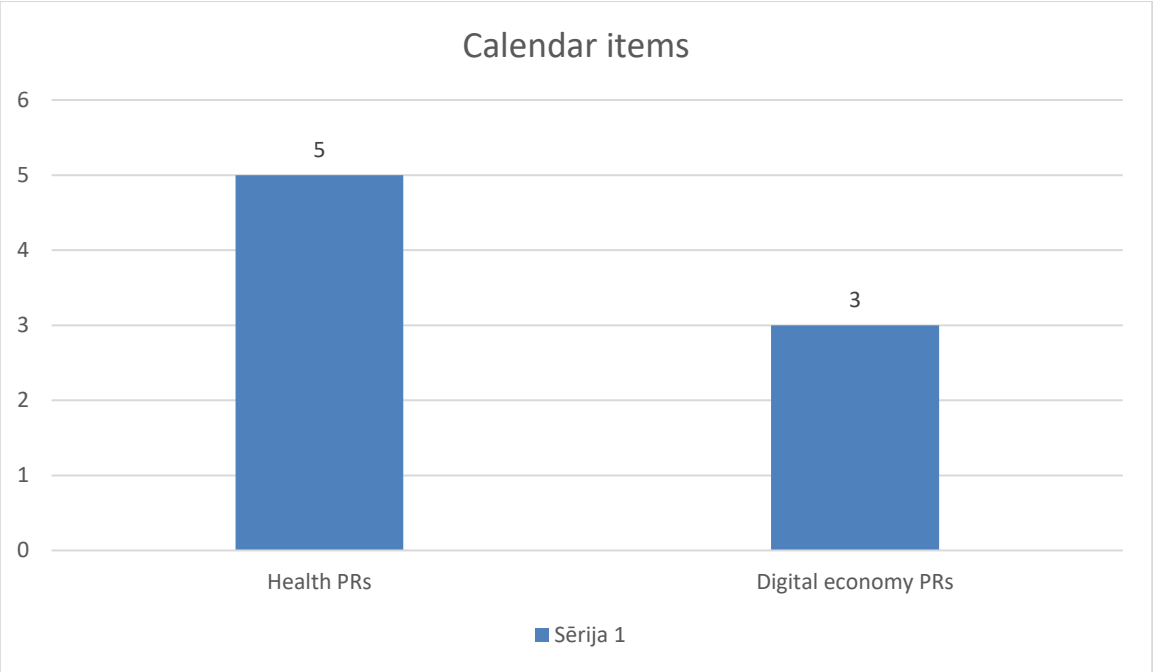

Figure 3.9. Proper nouns in calendar items category

Calendar items in PRs appear to indicate expected completion and launching of the project. It is done to ensure that deadlines are met, and that the project has a potential to function. It can be seen in examples below:

1. *RELIEF was scheduled for completion in February 2020 but the team has requested an extension to complete all its objectives.*
2. *Should the extension be approved, the project will finish at the end of June 2020.*
3. *It was launched in March 2017 and comprises integrated semantic algorithms to facilitate intelligent matchmaking.*

Calendar items also were used to show a time where the information provided was gathered and is correct – *"An e-learning training package was developed and was followed by almost 400 people as of December 2013."* It is significant to establish it because while the number of practitioners is accurate as of data 2013, it can be different if project is launched or read later than expected. The same purpose was for a decade mentioned in the same PR, only it indicated the beginning of increase in some data, here it is women practitioners – "*Not only that, but since the 1980s there has been an increase in Tibetan women practitioners."*

In digital economy PRs calendar items have a similar purpose, that is to indicate the beginning or some kind of time limit:

1. *This specific quantum state of light has been known about since the 1960s but has only recently attracted serious scientific attention.*
2. *Users will be able to access the platform until May 2022.*
3. *In April, the team will be publishing a white paper delineating their approach to other organisations beyond those primarily engaged with preservation, but still facing challenges in this regard.*

To conclude, this category includes a smaller amount of data than other categories. The use for calendar items in PRs is to specify expected timeframe for completion and launching of the project. Calendar items are also mentioned to reveal the date when information was collected. Decades mentioned had a purpose to indicate the beginning of something happening. When it comes to articles, predominantly zero articles were found with months, while decades used definite article.

3.4.3.6. Other

The category includes all other PNs that could not be added to previously discussed categories due to uncommon usage in PRs, thus it is unnecessary to create a separate category. The category is second smallest after calendar item PNs. Both corpora had 9 cases of other types of PN.

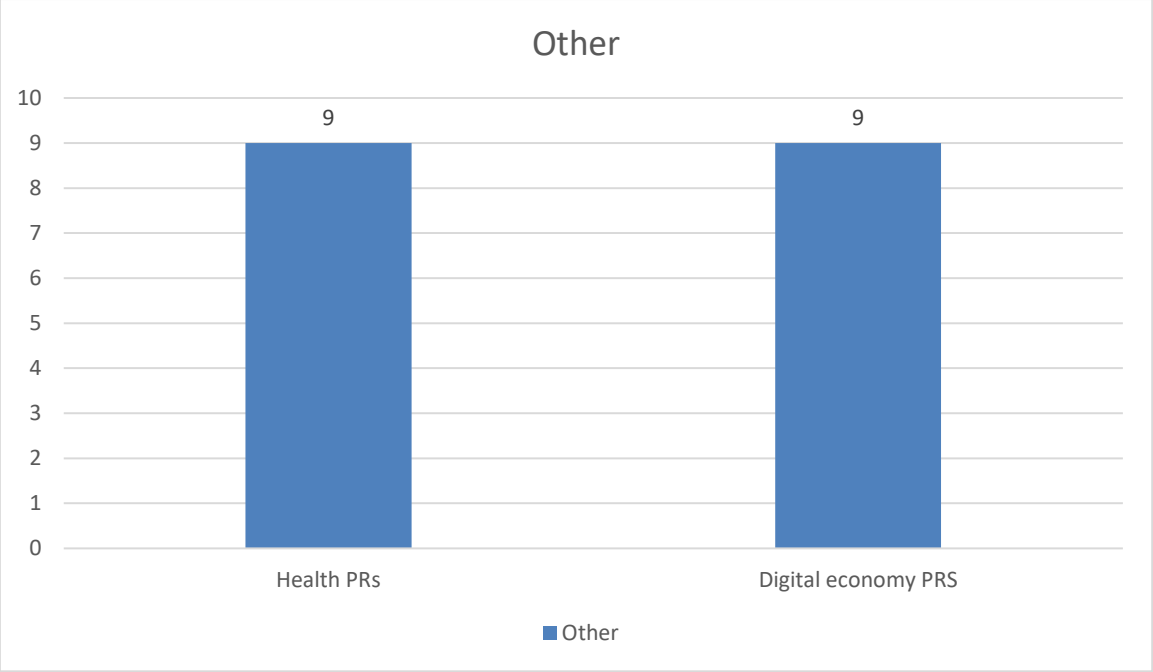

Figure 3.10. Proper nouns in others category

To ensure validity of one's skills and knowledge work titles were mentioned after personal names. These instances were described in personal name category as well – *"says*

project coordinator Dr. Maria Chekhova, Head of Quantum Radiation","*explains John Schofield 9, professor and Director of Studies in Cultural Heritage Management at [..]"*and "*[..]project coordinator Prof. C. L. Paul Thomas, Chair of Analytical[..]*". Also, eras were found and put under this category, more specifically two instances in health PRs:

1. *"Archaeological and ethnohistorical records testify to the presence of shamanistic beliefs and practices related to healing in pre-Columbian and early colonial period contexts."*
2. *"First, the team studied archaeological, ethnohistorical, ethnographic and bibliographic sources to trace key ancestral (pre-European) indigenous".*

As it can be seen in examples, eras are mainly used to speak about archaeological discoveries for PRs that focus on using ancestral medicine to implement in a modern world. Thus, these PNs are practised to indicate previous research made, and specify the location of it in order to ensure clarity. Another purpose to show location through mentioning the region was "The Andes region", the PN was not included in the geographic item category as the Andes are mountains, thus is not technically a region but rather an indirect way to explain location.

In health PRs one instance of journal title was observed, and it is believed the purpose is that official sources were involved in the research and has caused the interest of the public – "*Furthermore, guidelines for harmonising research across the EU were published in the Journal of Ethnopharmacology."* Further one association was mentioned to show outside support of the project, thus displaying potential. Example from health PR is as follows: *"Another important milestone was the founding of the GP-TCM Research Association, which will continue to promote the sustainable development of TCM research worldwide".*

Digital economy PRs as expected have more technical related PN as for example prototype title- "*Based on this data, project members developed a prototype Odour Information System"*, technical program names *"With the foresight of the EC Information Technologies programme [..]"* or system names "*IMS- Information Management System"*. All above mentioned examples share the purpose to ensure validity and accuracy of a research.

Moreover, instances of name of programme and technologies were noticed in analysis. This PN type is not practised in corpora often, and when used is to state prevision or projects capacity. First example presents program mentioned – *"With the foresight of the EC Information Technologies programme",* and in a second example two instances of specification names can be seen *"It does however rest upon metadata provided by IMS for education and training, and TV-Anytime and MPEG-7 specifications for the audiovisual and personalised TV applications."*

A considerably compelling instance was of experiment "*Shrodinger's cat",* which was mentioned to explain phenomena about quantum computer exportation of subatomic particles described in the PR. The well- known experiment is a device to explain complex scientific idea through example so wider audience can understand a concept. Moreover, ethnic group, is indicated when talking about culture and beliefs one has that could improve the projects outcome, specifically medical practises. Example is as follows: *"Twenty years ago, a study of the Salasaka people and their beliefs, myths and rituals"*

To sum up, other category has different types of PNs such as professions, which in PRs appeared to establish reliability of a person. Eras found in health-related PRs indicate the previous research made and locations of those. One case of journal and one case of association were noticed with an aim to indicate acknowledgment of outside sources. Also, prototypes names, system names and technological program names were found, and these types of PN were used to show validity and credibility of a research. Lasty, one case of a specific experiment observed in PRs had a goal of explaining scientific concept through example.

CONCLUSIONS

This chapter describes the conclusions of the study by providing the summary of the theoretical and the empirical parts. Besides, the chapter provides the limitations and suggestions for further research. The goal of the research was to investigate the use of articles with proper nouns in project reports of two domains. The subsections chosen were Health and Digital Economy. The research was performed to determine which is the most frequent article in both corpora as well as frequency in domains. For this purpose, the discourse analysis was applied. The goal of the thesis was attained after theoretical study and analysis of the results of the empirical part.

The review of the theoretical sources provides the definition of the nouns, i.e. things, living beings, destinations, places, abstract concepts and human qualities . Nouns are commonly classified in two large groups – common nouns and proper nouns. These groups can be countable or uncountable, concrete or abstract or collective. Proper nouns can be differentiated from common nouns by capitalization and the absence of article use as they express uniqueness. However, some instances are complicated to understand whether it is a common or proper noun. It is because sometimes proper nouns can be used as common nouns. Proper nouns are names of person, place, buildings, canals and so on.

Researchers such as Biber et al.(2007), Swan(2005), Leech and Svartvik (2003) and Matushansky (2006) outlined the patterns of the article use with nouns and proper nouns. The zero article is mainly used with proper nouns and nouns with general and abstract meaning. Thus, the zero article is applied with the uniqueness and peculiarity of an object. Proper nouns such as streets, some school names, airports, palaces, languages, days, months, holidays, newspapers, continent names, personal names and stores do not hold any article. When it comes to the definite article, it is used to specify one object or phenomenon, as well as familiar concepts. With proper nouns the definite article appears in institution names that are names after famous person, institutions with preposition “of”, official names. Moreover, theatres, museums, hotels, ships names, political organizations, some organizations, sport events and historical eras also usually carry definite article. The indefinite article is applied with singular nouns with general meaning, with an unspecific object. Thus, the indefinite article is rarely used with proper nouns, only to signify a piece of art named after its author.

Further, in the theory project management discourse was discussed, and report types and linguistic peculiarities were listed. As the chosen corpora consisted of project reports, this type was discussed in a more detailed manner. Project reports are an important part of any corporation’s daily work life as it is used to ensure funding and successful project outcome. Nowadays more companies use project writing to establish credibility, validity and

transparency of the research, finances and other aspects. The project reports for the analysis were collected from the CORDIS system because of the large data available, and for comparison purposes two subsections were chosen – health and digital economy.

In both corpora 490 instances of proper noun usage were observed, with predominant occurrences in health project reports. It was concluded that zero article is predominately used with proper nouns, 93% in health related and 94% in digital economy respectfully. Other cases appeared with definite article, and indefinite article was not found with proper nouns.

After article analysis, the next step was to categorise proper noun into categories and discuss the usage as well as to establish which type is most commonly used in project reports. It was found out that the most common category was project and medical test names, which is expected as a project usually has names to establish uniqueness and recognition. The second largest category was brand/ institutions and organization names, which is the division where digital economy had more instances of proper nouns. Brands and other organizations are a key part for project reports because they help with funding, operation matters as well as execution. Brands appear to show recognition and topicality of a project. Moreover, universities names were included,and mainly found in project reports about health in reported statements to display integrity. Another substantial category was geographical items, and it is believed to be used for the purpose of establishing the location of a project as well as to describe more specifically research method or partners. Moreover, geographical items show the impact of the project. Other categories are less frequently used. When it comes to article use, all categories predominately have used zero article. However, the definite article was mainly used in brand, institutions, and organization category because of frequent use of university titles with the preposition “of” in health project reports. The definite article was also observed in geographical item, calendar item and other sections.

While research questions were answered, the improvement by extending research corpora would show more certain understanding of proper noun usage in project reports. By extending data, research would gather more instances, where other instances could possibly be observed and thus more reliably conclusion set.

THESES

1. While nouns can be categorized by meaning, function and countability, the main division is common and proper nouns.
2. Proper nouns can be differentiated from common nouns by capitalization and not being definite.
3. There are three types of articles: the zero article, the definite and the indefinite article.
4. Articles are a part of the central determiner category, modifying a noun.
5. In report writing several types can be distinguished such as law reports, business reports or new reports.
6. Project reports are business type of writing with a purpose of informing about the status of the project or announce its completion.
7. In the empirical part proper nouns were firstly divided by the article usage, and later categorized into 6 categories: calendar items, project names and test names, brands/organizations/institutions, personal names, geographical objects and other.
8. Zero article is used predominately in both corpora, and definite article was applied in specific cases.
9. The most frequent category was found to be project and test names, which mainly were found in health-related project reports. The use of project titles is to ensure brands recognition and uniqueness.
10. The second most frequent category was brands, institution and organization names (digital economy had a larger data here) as they help with funding and research made for projects as well as ensure credibility and topicality.
11. Another large category was a category of geographic items, which appeared mainly in health project report, and only small amount of data was observed in digital economy.
12. The definite article was mainly used with brands, institutions and organizations, highlighting their uniqueness.

Word count: 17 888

REFERENCES

1. Aarts, B. (2019). *The Oxford handbook of English grammar*. Oxford University Press, USA. Available from file:///C:/Users/User/Downloads/The%20Oxford%20Handbook%20of%20English%20Grammar%20by%20Bas%20Aarts%20(editor),%20Jill%20Bowie%20(editor),%20Gergana%20Popova%20(editor)%20(z-lib.org).pdf
2. Babbie, E.R. (2010) The Practice of Social Research. Wadsworth: Cengage Learning. Available from https://books.google.lv/
3. Baugh, A. C., & Cable, T. (2002). *A history of the English language*. Routledge. Available from: https://www.academia.edu/30355120/A_History_of_the_English_Language_by_Albert_C_Baugh_and_Thom
4. Bhatia, V. K. (2004) Worlds of Written Discourse: A Genre Based View. London: Continuum. Available from bhatia_worlds of written discourse.pdf
5. Biber, D., Johansson, S., Leech, G., Conrad, S. and Finegan, E. (2007) Grammar of Spoken and Written English. Essex: Pearson Education Limited. Available from Longman Grammar of Spoken and Written English by Douglas Biber, Stig Johansson, Geoffrey Leech, Susan Conrad, Edward Finegan (z-lib.org).pdf
6. Biber,D. Conrad, S. Leech, G. (2003) *Student grammar of spoken and written English.* London: Longman Available from Longman Student Grammar of Spoken and Written English by Douglas Biber, Susan Conrad, Geoffrey Leech, Longman (z-lib.org).pdf
7. Cacchiani, S. (2019). Proper names in English Noun-Name constructs. In XXVII AIA Conference (pp. 515-525). Pisa University Press. Available from https://iris.unimore.it/handle/11380/1200597#.YK4mpKgzbIV
8. Chiapello, E. and N. Fairclough (2002), 'Understanding the New Management Ideology: A Transdisciplinary Contribution from Critical Discourse Analysis and New Sociology of Capitalism, Discourse & Society 13, 2, 185–208. Available from https://www.researchgate.net/publication/240705928_Understanding_the_New_Management_Ideology_A_Transdisciplinary_Contribution_from_Critical_Discourse_Analysis_and_New_Sociology_of_Capitalism
9. Cicmil, S. Packendorff, J. (2016) *The project (management) discourse and its consequences: On vulnerability and unsustainability in project-based work*. New Technology Work and Employment. 31(1):58-76 Available from: (PDF) The project (management) discourse and its consequences: On vulnerability and unsustainability in project-based work (researchgate.net)

10. Demenchuk, O. (2018). Contrastive Lexicology of the English and Ukrainian Languages. *Contrastive and Typological Studies*.
11. Fairclough, N. (1995) Critical Discourse Analysis. Longman. London
12. Garcia-Gamez, A. B., & Macizo, P. (2019). Learning nouns and verbs in a foreign language: The role of gestures. Applied Psycholinguistics, 40(2), 473-507.
13. Hodges, D.B., Kuper, A., Reeves, S. (2008) *Discourse analysis.* Available from: https://www.researchgate.net/publication/23156530_Discourse_analysis
14. Hodgson, D. (2004), 'Project Work: The Legacy of Bureaucratic Control in the Post-Bureaucratic Organization', Organization 11, 1, 81–100.
15. Hough, C., Izdebska, D. (2018). The Oxford handbook of names and naming. Oxford, United Kingdom: Oxford University Press.
16. Jorgensen, M. and Phillips, J.L. (2002) Discourse Analysis as Theory and Method. London: SAGE
17. Koneru, A. (2008) Professional Communication. New Delhi: Tata McGraw-Hill Publishing Company Ltd.
18. Kuiper, S., & Clippinger, D. (2012). *Contemporary business reports*. Nelson Education.
19. Leech, G. and Svartvik, J. (2003) A Communicative Grammar of English. The UK: Routledge. Available from https://epdf.pub/a-communicative-grammar-of-englishthird-editiona26268f858ffe7be220feb23d8b2f39c43960.html
20. Lindgren, M. and J. Packendorff (2006), ''What's New in New Forms of Organizing?' – On the Construction of Gender in Project-based Work', Journal of Management Studies 43, 4, 841–866.
21. Masaitienė, D. (2009). Introduction into linguistics: a teaching guide. VMU Press.
22. Matushansky, O. (2008) *On the linguistic complexity of proper names*. Linguistics and Philosophy. 31(5):573-627 Available from: https://www.researchgate.net/publication/225944139_On_the_Linguistic_Complexity_of_Proper_Names
23. Maylor, H., T. Brady, T. Cooke-Davies and D. Hodgson (2006), 'From Projectification to Programmification', International Journal of Project Management 24, 8, 663–674. Available from: https://www.escholar.manchester.ac.uk/api/datastream?publicationPid=uk-ac-man-scw:1b10240&datastreamId=POST-PEER-REVIEW-PUBLISHERS-DOCUMENT.PDF

24. Morris, P. (2013), 'Reconstructing Project Management Reprised: A Knowledge Perspective', Project Management Journal 44, 5, 6–23
25. Peticca-Harris, A., J. Weststar and S. McKenna (2015), 'The Perils of Project-Based Work: Attempting Resistance to Extreme Work Practices in Video Game Development', Organization 22, 4, 570–587.
26. Quirk, R. and Greenbaum, S. (1990) A Student's Grammar of the English Language. London: Longman Group UK Limited.
27. Rasinger,M.,S. (2013) *Quantitative research in linguistics. An introduction.* New Delhi: Bloomsbury Academic.
28. Rivero, S. (n.d.) *Use of articles*. Available from: https://www.law.cuny.edu/legal-writing/students/multilingual/grammar/articles/
29. Sloat, C.(1969) Proper Nouns in English.*Language*. JSTOR. 45(1) 26-30 Available from :www.jstor.org/stable/411749.
30. Swan, M. (2002) Practical English Usage. Oxford: Oxford University Press. Available from http://ieltshouse.net/Ebook/Vocabulary/Practical%20English%20usage.pdf
31. Swan, M. (2005) Practical English Usage. Oxford: Oxford University Press. Available from http://ieltshouse.net/Ebook/Vocabulary/Practical%20English%20usage.pdf
32. Taylor, S. (2013) *What is discourse analysis?* India: Bloomsbury Available from: https://books.google.lv/books?hl=lv&lr=&id=ZAzfBAAAQBAJ&oi=fnd&pg=PP1&dq=meaning+of+discourse+analysis&ots=FFm7B6fL8m&sig=OxC3m8nd8wqyY0eos3Vmt_2H6sQ&redir_esc=y#v=onepage&q=meaning%20of%20discourse%20analysis&f=false
33. Traffis, Catherine. *What Are Proper Nouns, and How Do I Use Them?* Available from: https://www.grammarly.com/blog/proper-nouns/
34. Бармина Л.А. (2000) Практикум по английскому языку: Артикли. Наука, 190 с.
35. Слесарева, К. А., & Петракова, Л. Н. (2019). Неопределенный артикль и его роль в грамматике английского языка. *ББК 6\8 М 75*, 53.

Internet sources:

1. [Online 1] Available from: https://dictionary.cambridge.org/ru/%D0%B3%D1%80%D0%B0%D0%BC%D0%BC%D0%B0%D1%82%D0%B8%D0%BA%D0%B0/%D0%B1%D1%80%D0%B8%D1%82%D0%B0%D0%BD%D1%81%D0%BA%D0%B0%D1%8F-%D0%B3%D1%80%D0%B0%D0%BC%D0%BC%D0%B0%D1%82%D0%B8%D0%BA%D0%B0/nouns_2
2. [Online 2] Available from: http://writing.umn.edu/sws/quickhelp/grammar/articlesproper.html

3. [Online 3] Available from: https://www.thoughtco.com/zero-article-grammar-1692619#:~:text=The%20zero%20article%20is%20also,where%20the%20reference%20is%20indefinite.
4. [Online 4] Available from: https://www.englishclub.com/grammar/determiners-zero-article.htm
5. [Online 5] Available from: https://www.merriam-webster.com/dictionary/noun [Accessed on 16 April 2021]
6. [Online 6] Available from: https://csnm.kku.ac.th/learning/course/module/lesson/114-elements-project-proposal
7. [Online 7] Available from: https://www.tifr.res.in/~cccf/data/InternDocs/How_to_write_a_structured_Project_Report.pdf
8. [Online 8] Available from: https://owll.massey.ac.nz/assignment-types/what-is-a-report.php
9. [Online 9] Available from: https://crofsblogs.typepad.com/english/2006/08/university_name.html
10. [Online 10] Available from: https://www.adelaide.edu.au/writingcentre/sites/default/files/docs/learningguide-articlesinenglishgrammar.pdf
11. [Online 11] Available from: https://csnm.kku.ac.th/learning/course/module/lesson/114-elements-project-proposal
12. [Online 12] Available from: https://www.governanceinstitute.com.au/resources/what-is-governance/

Analysed project reports

Health project reports

1. [T 1] (2020) Traditional medicine and contemporary health systems: a symbiotic relationship. Available from: https://cordis.europa.eu/article/id/421610-traditional-medicine-and-contemporary-health-systems-a-symbiotic-relationship [Accessed on 6 April 2021]
2. [T 2] (2014) Regenerative medicine — The final solution. Available from: https://cordis.europa.eu/article/id/92648-regenerative-medicine-the-final-solution [Accessed on 6 April 2021]

3. [T 3] (2016) How gender affects Tibetan medicine. Available from: https://cordis.europa.eu/article/id/170368-how-gender-affects-tibetan-medicine [Accessed on 6 April 2021]
4. [T 4] (2013) Modern medicine can learn from traditional practices. Available from: https://cordis.europa.eu/article/id/91212-modern-medicine-can-learn-from-traditional-practices [Accessed on 6 April 2021]
5. [T 5] (2013) Improving access to medicines. Available from: https://cordis.europa.eu/article/id/90247-improving-access-to-medicines [Accessed on 6 April 2021]
6. [T 6] (2020) Easy, affordable, ultra-rapid testing for COVID-19. Available from: https://cordis.europa.eu/article/id/422400-easy-affordable-ultra-rapid-testing-for-covid-19 [Accessed on 6 April 2021]
7. [T 7] (2020) Technological enablers for the self-management of chronic pain . Available from: https://cordis.europa.eu/article/id/413336-technological-enablers-for-the-self-management-of-chronic-pain[Accessed on 6 April 2021]
8. [T 8] (2011) Is nano-medicine good for you? Available from: https://cordis.europa.eu/article/id/85998-is-nanomedicine-good-for-you[Accessed on 6 April 2021]
9. [T 9] Alternative medicine in Europe. Available from: https://cordis.europa.eu/article/id/91333-alternative-medicine-in-europe [Accessed on 6 April 2021]
10. [T 10] (2013) Strengthening pharmacovigilance. Available from: https://cordis.europa.eu/article/id/91610-strengthening-pharmacovigilance [Accessed on 6 April 2021]
11. [T 11] (2016) Evidence-based medicine for maternal health care. Available from: https://cordis.europa.eu/article/id/175129-evidencebased-medicine-for-maternal-health-care [Accessed on 6 April 2021]
12. [T 12] (2016) Towards personalised medicine for all EU citizens. Available from: https://cordis.europa.eu/article/id/182837-towards-personalised-medicine-for-all-eu-citizens [Accessed on 6 April 2021]
13. [T 13] (2016) Better health in Africa by combining science and traditional knowledge. Available from: https://cordis.europa.eu/article/id/91606-better-health-in-africa-by-combining-science-and-traditional-knowledge [Accessed on 6 April 2021]

14. [T 14] (2019) Online matchmaking services for personalised medicine research. Available from: https://cordis.europa.eu/article/id/247453-online-matchmaking-services-for-personalised-medicine-research [Accessed on 6 April 2021]
15. [T 15] (2019) Omics and ethics applied to chronic disease prevention. Available from: https://cordis.europa.eu/article/id/358592-omics-and-ethics-applied-to-chronic-disease-prevention [Accessed on 6 April 2021]
16. [T 16] (2011) Healthy interaction for improved healthcare. Available from: https://cordis.europa.eu/article/id/87769-healthy-interaction-for-improved-healthcare [Accessed on 6 April 2021]
17. [T 17] (2021) Putting the impact of health data under the microscope. Available from: https://cordis.europa.eu/article/id/429473-putting-the-impact-of-health-data-under-the-microscope [Accessed on 6 April 2021]

Digital economy project reports

18. [T 18] (2011) Prompting women to choose science and technology. Available from: https://cordis.europa.eu/article/id/87455-prompting-women-to-choose-science-and-technology [Accessed on 6 April 2021]
19. [T 19] (2010) Europe's quest for better QIST research. Available from: https://cordis.europa.eu/article/id/85880-europes-quest-for-better-qist-research [Accessed on 6 April 2021]
20. [T 20] (2016) Dazzling future of possibilities for Bright Squeezed Vacuum light. Available from:https://cordis.europa.eu/article/id/182747-dazzling-future-of-possibilities-for-bright-squeezed-vacuum-light [Accessed on 6 April 2021]
21. [T 21] (2019) New technology platform harnesses citizen science to monitor air pollution. Available from: https://cordis.europa.eu/article/id/314290-new-technology-platform-harnesses-citizen-science-to-monitor-air-pollution [Accessed on 6 April 2021]
22. [T 22] (2021) Archived data gets a second life with a new application for architects and virtual reality game designers. Available from: https://cordis.europa.eu/article/id/429047-archived-data-second-life-new-application-for-architects-and-virtual-reality-game-designers [Accessed on 6 April 2021]
23. [T 23] (201) Smart sensing system for sinister smells. Available from: https://cordis.europa.eu/article/id/151373-smart-sensing-system-for-sinister-smells [Accessed on 6 April 2021]

24. [T 24] (2005) Digital information tailored to personal preferences. Available from: https://cordis.europa.eu/article/id/81069-digital-information-tailored-to-personal-preferences [Accessed on 6 April 2021]
25. [T 25] (2010) Ions trapped on a chip. Available from: https://cordis.europa.eu/article/id/85845-ions-trapped-on-a-chip [Accessed on 6 April 2021]
26. [T 26] (2016) A prototype for cyberspace security. Available from: https://cordis.europa.eu/article/id/174988-a-prototype-for-cyberspace-security [Accessed on 6 April 2021]
27. [T 27] (2006) Information service for the elderly and disabled. Available from: https://cordis.europa.eu/article/id/82549-information-service-for-the-elderly-and-disabled [Accessed on 6 April 2021]
28. [T 28] (2010) Technology follows nature's example. Available from: https://cordis.europa.eu/article/id/85893-technology-follows-natures-example [Accessed on 6 April 2021]
29. [T 29] (2010) Smart tracking for life. Available from: https://cordis.europa.eu/article/id/85769-smart-tracking-for-life [Accessed on 6 April 2021]
30. [T 30] (2020) Information technology is key for biomass success. Available from: https://cordis.europa.eu/article/id/425625-information-technology-is-key-for-biomass-success [Accessed on 6 April 2021]
31. [T 31] (2019) Information and medical technologies combined with AI enhance triage of the masses.Available from: https://cordis.europa.eu/article/id/407043-information-and-medical-technologies-combined-with-ai-enhance-triage-of-the-masses [Accessed on 6 April 2021]
32. [T 32] (2017) A new approach to digital content preservation. Available from: https://cordis.europa.eu/article/id/196579-a-new-approach-to-digital-content-preservation [Accessed on 6 April 2021]

APPENDIX 1

Proper nouns by categories

Table 1 Digital economy

Calendar items	Projects/tests	Brands organizations institutes	Personal names	Geographic objects	Other
1. The 1960s	1. (IFAC) project	1. TATE	1. Dr. Maria Chekhova	1. Europe	1. Head of Quantum Radiation
2. May 2022	2. BRISQ2	2. EU	2. Panagiota Syropoulou	2. Germany	2. Odour Information System
3. April	3. V4Design	3. IFAC	3. Stefanos Vrochidis,	3. Norway	3. The EC Information Technologies programme
	4. OMNISCIENTIS	4. The European Commission	4. Georgios Meditskos,	4. Belgium	4. IMS
	5. GUARDIANS	5. the Max-Planck Institute for the Science of Light	5. Judit Anda	5. Finland	5. TV-Anytime
	6. the GESTA	6. 7. Wi-fi	6. Prof. C. L.	6. Ireland	6. MPEG-7

	LT project		Paul Thomas		
	7. Test Interoperability (IMS-QTI)	8. Flickr	7. Dr Marc Hedges	7. Spain	7. Shrodinger`s cat
	8. Microtrap	9. the Centre for Research and Technology Hellas (CERTH)		8. Andalusia	8. Chair of Analytical Science
	9. CAPER	10. the Unity game engine		9. The United Kingdom	9. PRESERWARE - portal
	10. NISIS	11. ITI-CERTH		10. EU Member States	
	11. PROMISE	12. British Telecom			
	12. PLM	13. FD Learning			
	13. TOXI-triangle	14. The Integrated Technology Board (ITB)			
	14. PERICLES	15. ICT-BIOCHAIN			
	15. B.USOC	16. Loughborough			

		University			
	16. hackAIR	17. Bio-Based Industries Joint Undertaking			
	17. SAID (project)	18. Horizon 2020			
	18. EuDEco	19. Internet of Things			
		20. Industry 4.0.			
		21. Tag and Trace technology			
		22. The Department of Digital Humanities			

Table 2 Health related

Calendar items	**Projects/tests**	**Brands organizations institutes**	**Personal names**	**Geographic objects**	**Other**
1. February 2020	1. MEDICINE	1. The University of York	1. John Schofield	1. Ecuador	1. Director of Studies
2. June 2020	2. TIBETANMEDICA	2. The Andalusian School of Public	2. Rachel Corr	2. Bolivia	2. Pre-Columbia

		Health			
3. December 2013	3. Traditional Chinese Medicine	3. The EU	3. Hans-Cristian Slotved	3. Colombia	3. Pre-European
4. March 2017	4. GP-TCM	4. Statens Serum Institut	4. Anna	4. Andean region	4. The Journal of Ethnopharmacology
5. The 1980s	5. AMASA	5. Vita-Salute San Raffaele University	5. Anders Wolff	5. Granda	5. The GP-TCM Research Association
	6. CORONADX	6. Science X - website	6. Patricia Martinez	6. The United States	6. Innovation Procurement Consultant
	7. PATHAG	7. The Technical University of Denmark	7. Tamara Högler	7. Tibetan areas	7. American depositary receipt (ADR)
	8. PATHPOD	8. SRIA	8. Prof. Stefania Boccia	8. China	8. Salasaka
	9. PATHLOCK	9. The European	9. Dr Di Marco	9. India	9. Quichua people

		Commission			
	10. LAMP	10. The World Health Organization (WHO)	10. Marie Delnord	10. Mongolia	
	11. CRISPR-cas	11. The Marie Curie Research and Innovation Staff Exchange (RISE)	11. Marie Skłodowka-Curie	11. Nepal	
	12. RELIEF	12. Linkcare Health Services	12. Delnord	12. Europe	
	13. VR-RELIEF	13. The Governance	Flavio Maia	13. EU Member States	
	14. EPIONE	14. The Fifth		14. Sub-Sah	

		Framework Programme`s (FR5`s)		aran Africa	
	15. Nanomed	15. The Belgian Institute of Health		15. South Africa	
	16. CAMBRELLA	16. European Health Data Space		16. Uganda	
	17. CAM	17. Sapienza University		17. Africa	
	18. Recovering Life Wellbeing through Pain Self-management Techniques Involving ICTs)			18. South Asia	
	19. MONITORING MEDICINE			19. African countries	
	20. PERMED			20. Asia	

	21. PerMed			21. Milan	
	22. MUTHI			22. Denmark	
	23. H2020 (Horizon 2020)			23. Member states	
	24. Meduse			24. Cape Town	
	25. BAHCI			25. Berger	
	DrBox			26. Oslo	
				27. Spain	
				28. Barcelona	
				29. The Andes	

APPENDIX 2

Corpus Sample

[T 5] (2013) Improving access to medicines.

Improving access to medicines

Accessibility to medicines is lacking in developing countries because of inefficiencies along the route from supplier to customer. An EU initiative traced seven different drugs along the entire supply chain in sub-Saharan Africa and South Asia.

Researchers chose India, South Africa and Uganda to assess the affordability of drugs for major diseases such as HIV/AIDS, malaria, tuberculosis and diabetes, as well dias for reproductive health, mental health and pain management. The EU-funded project 'Accessing medicines in Africa101 and south Asia' (AMASA) aimed to identify how patenting, drug regulations, foreign donations, and the availability of production and medical facilities affected access to medicines. To achieve this, the project mapped the production, distribution, supply and consumption of medicines in key health care areas. Researchers examined how these supply chains were factors in accessing essential medicines in African and south Asian countries. They published a report that identified central early and late actors in the distribution chains, and how medicines reached the consumer. The focus was mainly on Brazilian, Chinese and Indian exporters. Project members focused on seven drugs in the various health care domains along the supply chain. This resulted in an analysis that provides background information on each of the seven medicines based on their respective public health situation. The document looks at public health from an international and a country-based perspective. This was instrumental in exploring the complicated pharmaceutical supply chain for each medicine within its given domain. AMASA brought its findings to the attention of policymakers, and presented concrete approaches for how such findings should drive policy and action in the focus countries. The project's work has implications for other developing countries as well, and it will serve as a useful toolkit for both national and international actors involved in access to essential medicines.

[T 6] (2020) Easy, affordable, ultra-rapid testing for COVID-19.

Coronavirus test results in under a minute? EU-backed researchers are developing a fast, non-commercial test that can be performed on-site with minimal or no training.

Even when they don’t show any symptoms, people infected with the coronavirus SARS-CoV-2 may still be transmitting the virus. Quick and accurate diagnostic tests are

therefore vital to prevent further spread of the disease. However, current testing for COVID-19 is costly and usually takes days to obtain the results because samples need to be sent to well-equipped labs and analysed by specialist staff. In response to the need for rapid and affordable detection systems, the EU-funded CORONADX project plans to develop three alternative tests that can be performed by personnel with little or no training. What's more, the samples don't need to be sent anywhere for analysis – the tests can be carried out at hospitals, clinics, mobile labs or even at home. The CORONADX team is already in the process of developing the first ultra-rapid test that will be used to screen for SARS-CoV-2. Called PATHAG, this non-commercial test requires no auxiliary equipment and hardly any training. Furthermore, it will cost less than EUR 1 per sample and provide results in less than 60 seconds. "Compared to other systems, PATHAG has the advantage of being faster and cheaper, and does not require any special equipment," confirmed Hans-Christian Slotved of Danish project partner Statens Serum Institut in a press release posted on the 'Science X' website. "We want to be able to tell people whether they test positive or not in a matter of minutes." Because of its rapidity and simplicity, PATHAG is ideal for monitoring people quarantined at home and screening at places such as airports and train stations where many people gather. "COVID-19 testing is key not only for clinical management but even more so for epidemiological surveillance and control of the COVID-19 epidemic," stated Anna of project partner Vita-Salute San Raffaele University, Milan, in the same press release. "The availability of rapid and highly sensitive tests represents a unique opportunity in the fight against COVID-19, given their potential effects on the provision of effective preventive services and their positive societal and economic impacts."

How PATHAG works

In the PATHAG test, SARS-CoV-2 antibodies are embedded in microscopic latex beads and the solution is then mixed into the patient's sample. If the virus is present in the sample, the antibodies bind to the virus' particles, carrying the latex beads with them to form a clump that can be seen with the naked eye. The reaction takes 10 to 20 seconds and can be performed on a small strip of paper. PATHPOD and PATHLOCK, the other two diagnostic tests the researchers are working on, are based on innovative technologies called LAMP and CRISPR-Cas13, respectively. "With the reopening of schools and activities, mass monitoring with fast and affordable tests becomes paramount. Our three systems will save time and ease pressure on laboratories, which we badly need during a pandemic," scientific coordinator Anders Wolff of the Technical University of Denmark observed in the press release. The CORONADX (Three Rapid Diagnostic tests (Point-of-Care) for COVID-19 Corona Three Rapid Diagnostic tests (Point-of-Care) for Coronavirus, improving epidemic preparedness,

public health and socio-economic benefits) team expects to have PATHAG ready by the end of 2020. Field tests will first be conducted in Denmark before the diagnostic kit is deployed in other countries.

[T 7] (2020) Technological enablers for the self-management of chronic pain

Pre-commercial procurement under the RELIEF project aspires to put innovation at the service of chronic pain patients. The two technologies it has been focusing on are expected to empower patients, enable self-management and improve treatment outcomes.

Chronic pain is the embodiment of healthcare systems hitting a ceiling. The heterogeneity of symptoms and causes from one patient to another calls for optimised therapies for each individual. But how can this be achieved in light of limited resources in healthcare systems? Even though the technologies exist to provide better, more personalised treatment, there is still a wide gap between research and commercialisation. "RELIEF (Recovering Life Wellbeing through Pain Self-management Techniques Involving ICTs) tries to foster and accelerate the access to market for innovative solutions, while respecting the public procurement directives," explains Patricia Martinez,Innovation Procurement Consultant at sme and coordinator of the RELIEF project. RELIEF uses pre-commercial procurement (PCP) to allow extensive development and testing of the most promising solutions aiming to empower patients to self-manage current and future pain.

Unmasking unmet requirements

The project specifically focuses on needs and requirements yet to be met. By means of expert meetings, workshops, open market consultations, questionnaires and interviews with both patients and health providers, the project consortium has identified nine such needs. These consist of collecting data prior to clinical visits, follow-up on treatment effects, feedback to the patient, decision-making tools for self-management, information and education, better communication between patients and specialists, access to social networks, clinically validated information, and data for research purposes. "We are in Phase 3 of the PCP, which consists in field testing," says Martinez. "The primary objective is to evaluate how specific ICT solutions improve patients' empowerment and self-management in managing their pain condition. From thereon, we will evaluate whether these solutions increase adherence to treatment and bring satisfaction to both patients and healthcare professionals."

A focus on two technologies

Phase 3 focuses on two specific technologies, the first one being VR-RELIEF. Its specificity? The fact that it can be integrated with a virtual reality (VR) system to improve patients' self-management, empowerment and engagement. The system revolves around a set of apps compatible with smartphones and smart watches: a virtual coach, a 'patient profiler', personalised reminder and feedback, and a library of VR applications for pain treatment, relaxation and rehabilitation. VR-RELIEFis powered by an interoperable and open cloud-based platform where clinicians can access patient data. The second technology is EPIONE™:a patient-centred treatment experience with a coaching system at its core. EPIONE™ features unobtrusive monitoring of treatment effects, a visual analytics platform, a chatbot-enabled assistant for patients, an online peer support community portal, and an intelligent videoconferencing system to enable discussions between experts and patients.

More tests to ensure field-testing readiness

RELIEF was scheduled for completion in February 2020 but the team has requested an extension to complete all its objectives. "It was necessary to implement more tests than we had planned to check that all prototypes were prepared for field testing with end users. In addition, recruitment is moving more slowly than expected," Martinez explains. Should the extension be approved, the project will finish at the end of June 2020. Despite these delays, RELIEF is on track to help improve self-management of chronic pain, and Martinez hopes the project will also contribute to informing the broader public of the problems faced by chronic pain patients.

Is nano-medicine good for you?

Dialogue with patients and stakeholders prepares the ground for reliable two-way communication on the benefits and risks of nano-medicine.

Nano-medicine is a fascinating field that promises medical treatment based on nanotechnology. It involves very tiny particles used in medically-related materials, medications and biosensors, as well as molecular nanotechnology. However, this technology is not without its unknowns and risks. This is why a safe, responsible approach is needed to develop nano-medical research in Europe. To address this challenge a project called the Nanomed round table brought together expert stakeholders from across Europe to probe different topics in nano-medicine. The discussions revealed that patients are open to nano-medicine and want to know more about it from reliable sources. The European Commission, national governments, and trade and research associations all have a role to play in ensuring dialogue with patients. Ethical and societal aspects were also discussed at the round table, outlining the need to inform all stakeholders on the philosophical and social aspects of nano-medicine and its purpose. These stakeholders included nano-medical researchers, physicians,

patients, and policy-makers. The round table identified the need for reliable data to predict the economic impact of nano-medicine on healthcare costs and benefits, as well as on market growth. This enables the European Medicines Agency to take strategic decisions early on. It also allows national governments to manage finances more efficiently. In addition, the project concluded that a proactive regulatory system is required for better coordination and harmonisation of regulatory procedures. This would involve dialogue with users and stakeholders at early stages of research and developing, and account for the economic cost implications of regulation. The project has outlined who is best fit to play this role. Lastly, the round table has identified 45 different types of products based on nano-medicine that are already on the market. The policy recommendations emerging from this exercise can serve as a timely and substantial response to the need for genuine engagement and involvement of all the key stakeholders (public and private) in the nano-medical field. Now that nano-medicine has become a reality, the results of this project will prepare the groundwork for optimised, collective decision making at the European level.

[T 22] (2021) Archived data gets a second life with a new application for architects and virtual reality game designers.

Architects and virtual reality game designers' work will soon get much easier and more inspired thanks to technology developed by the V4Design project. The new technology can take any existing visual content and textual information, and convert this into exploitable, semantically rich 3D models.

Our societies almost literally bathe in data. Some 2.5 quintillion bytes are produced by humans every day. In the last 2 years alone, we generated 90 % of the world's currently available data. For some of the most creative of us, say, virtual reality (VR) game designers and architects, this amount of information is a blessing. But its heterogeneous nature calls for innovative means to reuse it by means of 3D reconstructions and models. This is precisely what V4Design (Visual and textual content re-purposing FOR(4) architecture, Design and video virtual reality games) is about, as Stefanos Vrochidis, senior researcher at the Centre for Research and Technology Hellas (CERTH) and coordinator of the project, explains. "V4Design provides the ability to reuse and repurpose existing visual and textual content from content providers and public web resources. We integrated and combined state-of-the-art technologies in computer vision, 3D generation, text analysis and generation, as well as semantic integration and interlinking. With these, we provide architects, VR game developers and designers with innovative tools to reuse and repurpose heterogeneous multimedia

content.” Imagine you’re a game designer and would like to draw inspiration from archive footage and documentaries. Of course, these are great sources of inspiration, but there are currently no means to repurpose them. V4Design fills this gap by performing automatic content analysis and seamless transformation into exploitable 3D reconstructions. It’s a considerable time and, by extension, money saver. “Architects and video game designers currently use conventional analogue prototypes. These include scale models and physical demo environments such as rooms and apartments. Building such prototypes is much more expensive and time-consuming than using existing digital content. Additionally, these prototypes are static,” Vrochidis out. With V4Design, producing prototypes is faster, cheaper and more efficient, and allows for easy modifications on top of 3D dynamic models.

A world of opportunities

V4Design encompasses two authoring tools: One for VR game designers and one for architects. Both apply innovative 3D model reconstruction techniques to the visual content (videos and images) in order to extract 3D assets of interest like buildings and objects. From there, computer vision and text analysis solutions process the content, extract annotations and dynamically enrich the generated 3D models with information. By the end of the workflow, all available information is semantically interlinked in rich knowledge graphs, offering advanced indexing and retrieval capabilities. Meanwhile, text generation is used to create multilingual summaries of the assets and assist end users in using the information. The V4Design project is due to be completed in March 2021, however the two solutions are already operational. The one for architects is presented as a plugin built on top of the well-established Rhinoceros 3D application, while the second one for game designers can be launched either through the Unity game engine or directly via the VR environment. Architects can use the application for architectural design related to existing or historical buildings and sites. Meanwhile, VR game designers can, for instance, create a time-travel VR experience. But Georgios Meditskos, postdoctoral research associate at ITI-CERTH and also the technical manager of the project, doesn’t exclude other potential applications. “Examples include first response in a disaster event, where the creation of a 3D, semantically enriched environment could increase the situational awareness of every person involved and improve decision-making,” he outlines. “In healthcare, we could create digital twins of patients and integrate them inside a VR environment for high-value monitoring and treatment solutions. We could also think of automotive design and cultural heritage.” The project is now in its final phase and the team are busy preparing the final version of the platform. This work includes rigorous testing and resolving of any emerging issues to guarantee the high quality and reliability of the platform. “With the last stages of the project now in full swing, we are organising the final

evaluation phase to validate and assess the solution in real world architecture and VR game design use cases," Meditskos concludes.

[T 23] (201) Smart sensing system for sinister smells.

Researchers have created an information system that crowd-sources information about odours that are troubling citizens. The development will help to better mitigate these public annoyances.

Industry and agriculture are responsible for producing unpleasant odours that can trouble citizens in urban areas. It is important, therefore, to understand how citizens are affected by bad smells in their communities. The EU-funded project OMNISCIENTIS (Odour monitoring and information system based on citizen and technology innovative sensors) has made significant inroads in this regard, with the aim of mitigating odour annoyance. To begin with, OMNISCIENTIS documented the ideal specifications for odour measurement, dispersion modelling and information technologies. In parallel, the needs and expectations of citizens, regulatory authorities and industrial bodies were taken into consideration. Citizens provided feedback on odour acceptability levels through smartphones. Over 5 000 observations were made, and this information was combined with measurements from e-noses and odour dispersion models. Two in situ e-nose sensors and a meteorological station were installed as a pilot in an industrial site in Belgium. Eighteen industrial parameters were collected in real time, and 15 odour field surveys have been conducted to understand odour sources and characteristics. Based on this data, project members developed a prototype Odour Information System that produces statistics and impact levels for local authorities, and allows citizens to give feedback. The mobile application is now operational and used by some 20 guards around the Belgian test site. Researchers adapted an existing pollutant dispersion model to develop a fast odour dispersion modelling system using real-time meteorological and industrial emissions data. The model was validated with the odour emission rates, along with electronic and citizen observations. The OMNISCIENTIS project has used smart technology to advance odour data collection practices and make it easier for local authorities to manage odour problems. One of the new earth observation systems, can be seen in the project's video.

[T 24] (2005) Digital information tailored to personal preferences

With the foresight of the EC Information Technologies programme, a project known as Gateway for User Access to Remote Distributed Information and Network Services, or simply GUARDIANS was started with the aim of developing a modular training and education service. Today that vision has materialised into a generalised architecture that uses various emerging technologies that filter information; thus users are only provided with information they have specifically requested.

Based upon the results generated by the GESTALT project during the fourth-framework programme, GUARDIANS has identified the technology for the next generation of Information Management. In general terms, the model recognises that the users may have several information access devices, and that information providers collate information from content resources and channel it to end-users. Current access devices permit the end-user to search only one information provider for each resource. However this mediator acts as a broker and searches all the content resources of all metadata registered Information Service providers. This powerful feature enables the system to proof read all content resources because it is independent of metadata schemas. It does however rest upon metadata provided by IMS for education and training, and TV-Anytime and MPEG-7 specifications for the audiovisual and personalised TV applications. This system was also able to benefit from the commercial sector by introducing television-based learning to the IMS metadata schema. This allows the system to understand the end-users personal preferences and user motivations when they access a provision made available by a multitude of service providers. Supporting functionalities that digital and interactive TV users are already familiar with, users may watch one programme on any given subject and be offered an educational course on that subject. The system defines users into two categories; those who lean forward and actively interact with the system and those who lean back. The learning environment supports a messaging service enabling the users to participate in question and answers based for programmes and this is based upon IMS- Question and Test Interoperability (IMS-QTI) metadata specifications. Further, the system demonstrates the use of IMS-QTI in European broadcasting because it has the potential to present assessment material with TV based learning in a uniformed way. Additional developments have arisen due to the ability to exploit the results as soon as they have become available. This has caught the attention of such companies as British Telecom, BTexact Technologies and FD Learning, and it is envisaged that this will promote future development for the GUARDIANS mediation service. On the whole, the uniformed technology, the system interactivity, information filter processes and the

ability to exploit results almost immediately, presents GUARDIANS with a very healthy future indeed.

[T 25] (2010) Ions trapped on a chip

It has been the dream of scientists for the past century to delve into the atomic world and develop technology on the smallest scale. A European project has demonstrated that slowing down and capturing fast-moving atoms shows considerable promise as the basis for a quantum computer.

The Microtrap project has made an important step towards this goal by developing state-of-the-art techniques for trapping ions – atoms/molecules that lose or gain electrons - on a chip. With ions nearly motionless and lined up neatly along the trap axis, a laser beam can interact with one specific ion, then a different one and control the complex interactions between them. This makes trapped ions promising information carriers in quantum computing. Conventional computers store and process information as bits with one of the two values: '0' and '1'. But a quantum computer would exploit the ability of subatomic particles to embody more than one state at a time. Scientists try to explain the phenonemon using the example of Shrodinger's cat – a thought experiment in which a cat in a box is both alive and dead until someone opens the box to determine it. In a quantum computer, every qubit is simultaneously '0' and '1'. With two qubits together, you have a system whose values are simultaneously every value from '0' to '3'. The essential building blocks for quantum computing have been realised over the last decade using linear strings of a few ions. To achieve the full potential of trapped-ion quantum computing, the Microtrap project sought to scale them up to involve many ions interacting with one another in different combinations. One way of achieving this was through the miniaturisation of trapped ion architectures. To divide traps into segments so ions can be sorted in arbitrary arrangements was another. But the Microtrap researchers went further. They also fabricated microtraps using existing manufacturing techniques from the chip-making industry. For this purpose, a number of competing technologies were considered, including ceramic wafer three-dimensional (3D) layered traps, two-dimensional (2D) planar surface traps and 3D silica-on-silicon traps. Working on this basis, the researchers were successful in building microtraps suitable for quantum information processing. Mounted on standard chip carriers, these microtraps allow ions to be confined under vacuum conditions and their states manipulated using a laser. This has the advantage of generating less noise (interference) because the electrodes keep the particles much further apart than usual. A quantum computer literally stops working if any

interference - even thermal noise - gets in from the outside world. What the Microtrap project has achieved moves the frontier of what scientists can do and gives tantalising insight into the smallest building blocks of our world.

APPENDIX 3

Dokumentārā lapa

Bakalaura darbs „Use of articles with proper nouns in project reports" (Artikulu lietojums ar īpašvārdien projektu pārskatos) izstrādāts LU Humanitāro zinātņu fakultātē.

Ar savu parakstu apliecinu, ka pētījums veikts patstāvīgi, izmantoti tikai tajā norādītie informācijas avoti un iesniegtā darba elektroniskā kopija atbilst izdrukai.

Autors: Lilita Guitāne 26. 05. 2021.

Rekomendēju/nerekomendēju darbu aizstāvēšanai

Vadītāja: asoc. profesore Jana Kuzmina 26. 05. 2021.

Recenzents:

Studiju metodiķe: Ieva Melnbārde 26. 05. 2020

Darbs iesniegts Anglistikas nodaļā 26. 05. 2021.

Darbu pieņēma:

Darbs aizstāvēts bakalaura gala pārbaudījuma komisijas sēdē

2021. gada…… jūnijā, prot. Nr. ….., vērtējums ……..

Komisijas sekretāre:

Approved by:

Department of English Studies

1 March 2021