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## Localization choices in indie games : A study on the influencing factors

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**Localization choices in indie games:  
A study on the influencing factors**

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Mémoire présenté à la Faculté de traduction et d'interprétation (Département de traitement informatique multilingue (TIM)) pour l'obtention de la Maîtrise universitaire en traduction, mention technologies de la traduction

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# 1. Introduction

In 2018, the global video games market generated over 137 billion dollars in revenues, with the United States and Canada representing a share of 23.7% (Newzoo 2018). While this is far from being a negligible amount, it is only second to the share of 51.8% occupied by the Asia and Pacific regions (i.e. China, Japan, South Korea and Australia among others); furthermore, Newzoo (2018, p.3) highlights an accelerating revenue growth in all regions, particularly in Middle East and African countries. Not only proving that the video games market is worth more today than ever before, these numbers also highlight the increasing globalization of video games – and with globalization always comes a need for translation and cultural adaptation, or in the present case, what is referred to as game localization.

Game localization has often been and is increasingly becoming an area of research in the field of translation studies since the 1960s. However, most of the research carried out on video games from a localization perspective to date focuses on high-priced, big-budget games sold in stores internationally, also referred to as “AAA” games. While these games already raise a great number of interesting questions, researchers like Smith (2016) stress that products outside these standards have existed since the early days of video games; yet these games, often called “independent” or “indie” games, have scarcely been examined from a localization perspective.

Indie games are particularly relevant to game localization research in that they often imply characteristics very different from those of AAA games, as well as a largely different production process. Nowadays, especially, they are sometimes considered an entirely new category of video games, with the main property of being fundamentally different from – if not opposed to – AAA games. As a result, it has already been asserted (Consalvo 2012; Toftedahl *et al.* 2018) that they undergo different localization processes, carried out by different agents, and motivated by different reasons. In particular, the correlations between the specific characteristics of indie games and their localization are largely unexplored.

This thesis aims to add to the preexisting research by investigating factors that might drive an indie game to be localized into a higher number of languages, as well as factors that might result in an indie game receiving a higher level of localization. After briefly defining the main concepts of game localization and examining the current research areas in the field, chapter 2

of this thesis attempts to approach a definition of “indie” games, highlighting that although the term etymologically stems from the word “independent”, both are not always understood as synonyms. An overview of the existing indie game localization research allows for stressing areas which remain unexplored. Then, chapter 3 describes the research questions and hypotheses investigated as well as the exploratory methodology used in this study, including categories of data collected for a number of carefully selected indie games, selection criteria, and collection methods. Chapter 4 presents and discusses the results of a descriptive analysis based on Pearson correlation coefficients, offering possible interpretations to the correlations computed, yet stressing the numerous limitations of the approach used in this thesis. Finally, chapter 5 summarizes the methodology and results of the current study, highlighting a number of observations as well as certain of the numerous areas left for future research.

## **2. Literature review: Indie video games and localization**

This thesis aims to examine the localization of indie video games, a field that is situated at the meeting point of two different areas of research: a) game localization, which can be categorized as a sub-domain of translation studies, and b) indie video games, which can be investigated by game studies scholars. While an introduction to translation and game studies in general would not fall within the scope of this thesis, the first goal of this chapter is to briefly assess the area of game localization by examining why it is different from other types of translation, defining a number of concepts that it entails, and providing an overview of game localization research to date. Then, the very different and controversial definitions of indie games are discussed and a difference between “independent” and “indie” games is made. Finally, this chapter ends with an overview of the admittedly very little research conducted on the localization of indie games to date, highlighting numerous areas to be explored in further studies.

### **2.1 Translating video games**

This first section is meant to present a brief introduction to the translation of video games in general, including both a very short overview of video game translation history and the characteristics setting video game translation apart from other types of translation. Then, a few concepts essential to the discussion of video game translation are introduced, and an overview of preexisting research on video game translation is made.

#### **2.1.1 What is game localization?**

Despite being a subject only discussed in translation studies since the booming of the industry in the late 1990s and early 2000s (O’Hagan and Chandler 2016), video game translation – which is usually and will from now on be referred to as “game localization” – is increasingly becoming an area of interest for researchers both in the translation and in the game development fields, although in the latter case O’Hagan and Chandler (2016, p.234) regret a “very lack of interest in game localization which still remains marginal and not wholeheartedly taken up by game studies scholars”. While this study neither dwells on the history of video games nor on the history of game localization, this is most probably due to the fact that the video game industry only dates back to the 1960s and did not account for a considerable part of the entertainment market until the 1980s, after which its growth quickly

became exponential (Bernal-Merino 2011). Incidentally, this exponential growth coincides with the rising of the interest towards game localization in translation studies (Bernal-Merino 2011); this is only natural given that, the bigger the share of the market an industry makes up for, the more profitable it is, and the more people are likely to become interested in it. Video game history is discussed more extensively in Egenfeldt-Nielsen *et al.* (2009) and Donovan (2010), whereas the history of game localization has been thoroughly described in the works of Bernal-Merino (2011) and O’Hagan and Mangiron (2013).

Game localization is particularly interesting, however, in that it is widely different from any other kind of translation or even localization. Whereas the term “localization” can refer to the cultural adaptation and translation of all types of digital products, such as websites or computer software, game localization implies the translation of a great number of game-specific assets, which are listed in Thayer and Kolko (2004), Chandler and Deming (2012) and O’Hagan and Mangiron (2013). Game localization, Thayer and Kolko (2004) state, is very different from other types of software localization due to video games including dialogues and a storyline, rather than error boxes and help messages; furthermore, game tutorials do not have the same goal as most software help systems, and games often display cultural elements that need to be recreated in order to be understood and enjoyed in other regions. Chandler and Deming (2012) and O’Hagan and Mangiron (2013) complete this point of view by assessing that the assets that need to be translated in a video game include not only the text that appears on screen (also called the “in-game text”), but also the audio content, referred to as “voiceover” in this thesis, that can be heard while playing and either be broadcasted during the interactive parts of the game or in short in-game movies called “cinematics” or “cut scenes”. This audio content can be either subtitled or recorded again in the target language, a process referred to as “dubbing” in this thesis. In her article on the challenges of audio localization, Le Dour (2007, p.2) describes the three types of voiceover that a video game can include, all of which require a specific treatment: from “AI cues”, voiceover that is triggered by the artificial intelligence of the game and can consist in non-verbal lines (that still need to be recorded in each localized language in order to avoid voice discrepancy), one-liners or ambient dialogue, to “scripted dialogue” and “high resolution cinematics”. Both of them usually require sound synch and the latter can also require lip

synch<sup>1</sup>. Furthermore, cinematics are movies and thus need to be localized as such; whenever the art included in the game contains text, these images also need to be edited. Finally, the localization of a game released in a physical box is not complete until all the text on the box and in the instructions is also translated.

### 2.1.2 Levels of localization

Levels of localization, as defined by Chandler and Deming (2012, pp.8–10), indicate the quantity of assets that are translated and adapted in a game. Chandler and Deming state that there exist four different levels of localization:

- *No localization*

This is when the game is not adapted in any way to the target language, and is sold fully in its source language version in the target region. This is obviously the easiest and the least expensive level of localization; however, Chandler and Deming highlight that while this level of localization allows for the selling of a few copies of the game in target regions, it will also probably make the game uninteresting to players whom it would have interested had it been localized (i.e. for instance players with little to no knowledge of the source language).

- *Packaging and manual (“box and docs”) localization*

This level of localization applies when the game itself is not adapted in any way to the target language, but the packaging and all playing instructions are translated. Slightly more costly than the previous level, this option presents mostly the same drawbacks as no localization, although it can make playing easier for interested players with some knowledge of the source language. According to Chandler and Deming, it is also the level of localization that makes simultaneous shipment (see section 2.1.3) the easiest.

- *Partial localization*

This is when only some of the in-game assets are adapted in the target language. In most cases, this level of localization is achieved when the game contains voiceover that is not

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<sup>1</sup> Le Dour (2007, p.3) highlights that different recording constraints can apply to different types of voiceover. Some of the localized recordings are free of constraints, but others need to be as long as the source recordings, for instance. Sound synch goes a step further in requiring not only that the localized recording is precisely the same length as the source recording, but also that silences happen at the same time in both files. Finally, lip synch is the hardest constraint to apply, as it requires either that the localized recording fits the movement of the character’s lips displayed on screen, or that the character’s lip movement is adapted to the localized recording.

localized in the target language. Thus, the in-game text is fully translated, but the voiceover remains in the source language; in some cases it can be subtitled in the target language, but not always. Both of these options (source-language voiceover with or without subtitles) are considered to be “partial localization”.

- *Full localization*

Finally, a game is said to be fully localized when all in-game assets are adapted in the target language, including voiceover if there is any. If that is the case, the voiceover is recorded again in the target language and adapted using the dubbing processes researched about by audiovisual translation studies. Otherwise, this thesis considers that a game which does not include voiceover is fully localized as long as all the in-game text is fully translated; a game without voiceover can therefore not be only partially localized. As one might expect, Chandler and Deming assert that this level of localization is the riskiest, most expensive and most challenging, but has the considerable advantage of providing a gaming experience tailored to the player’s needs.

Although it is not the classification used in this study, another interesting proposal is made by Thayer and Kolko (2004, p.482). They suggest levels of localization based on the amount of adaptation carried out in translating the game: “basic localization” thus refers to translating only the text that appears on screen (i.e. the in-game text), without modifying the user interface and icons, while “complex localization” implies the adaptation of the user interface and icons. Finally, they use the word “blending” to describe cases in which not only the in-game text, user interface and icons are adapted, but the story of the game is also rewritten and the art recreated in order to allow for cultural adaptation. The reason why this classification is not used in this thesis is that it does not account for voiceover, which is described as a crucial element of modern video games by many (Le Dour 2007; Chandler and Deming 2012; O’Hagan and Mangiron 2013; Bernal-Merino 2015). Gnatek (2004)’s and Clemens (2012)’s accounts seem to indicate that this may be due to voiceover having only began being the norm in video games in the 2000s.

Furthermore, it could be argued that what Thayer and Kolko (2004, p.482) describe as “basic localization” no longer exists nowadays. Indeed, both Chandler and Deming (2012, pp.132–133) and O’Hagan and Mangiron (2013, pp.93–94) mention that user interfaces need to be adapted in video games, seeming to suggest that actors in the current industry no longer

consider not adapting them. If that is the case, then “complex localization” and “blending” as defined by Thayer and Kolko (2004) could be used to indicate whether a game undergoes any cultural adaptation during the localization process. Comparatively, levels of localization described by Chandler and Deming (2012, pp.8–10) seem to assume that cultural elements are always adapted in a “blending” process.

Last but not least, an observation should be made about both Thayer and Kolko (2004)’s and Chandler and Deming (2012)’s classifications: each of the categories that they introduce represents a new grade on the scale of localization costs and efforts. This means, for instance, that “basic localization” is easier and cheaper to achieve than “complex localization” or “blending”; whereas full localization is considerably more expensive than box and docs or even partial localization. Le Dour (2007, p.3) adds that the localization of different types of voiceover (see subsection 2.1.1) comes at different prices, suggesting that full localization could imply different costs, depending on the type of voiceover that is included in the game. Obviously, these costs impact localization choices made by game developers or publishers: O’Hagan and Mangiron (2013, pp.141–142) notably highlight that games localized into English almost always receive a full localization, whereas the localization of games for the European market is often only partial, despite elements that seem to suggest a current shift towards full localization in general.

### **2.1.3 Sim-ship vs. Post-gold localization**

Another crucial property of game localization, “sim-ship” and “post-gold” are terms related to the moment when the localized versions of a game are released. “Sim-ship” stands for simultaneous release, also referred to as simultaneous shipment, in which the localized versions of the game are released on the same date as the source language version. According to Chandler and Deming (2012, p.72), sim-ship has a number of considerable benefits which make it a goal that most publishers and developers aim for: for instance, it prevents players from importing the game from regions where it was released first (a practice referred to as “gray market imports”)<sup>2</sup>, and it allows for the creation of an international community of

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<sup>2</sup> When discussing gray market imports, Chandler and Deming (2012) do not mention region-locking, a practice of programming barriers directly into consoles and games in order to prevent games released in one region from being played on a console released in another (Moriarty 2017; Padilla 2017). Although it is said to be easy to get around, it could be argued that region-locking, too, can prevent gray market imports to some degree, possibly making sim-ship localization less essential in this regard.

players. However, in order for sim-ship to be possible, localization must be integrated into all aspects of the project from the very beginning, as localized versions need to be created while the source language version is still being developed.

As a result, it is much easier to choose the other option, which is referred to as “post-gold” localization and consists in developing the localized versions once the game is released in its final source language version. According to Chandler and Deming (2012, p.74), the main advantage of this option is that localized versions are then being created from the basis of a final, completed version of the game, which means that their realization and testing is not slowed down by bugs or delays encountered during the development of the source language version. However, this option presents all the drawbacks that sim-ship localization allows to avoid.

O’Hagan and Mangiron (2013, pp.116–117) argue, once again, that the use of either model varies from one market to another. For instance, they state that games developed in Japanese are often released in European languages long after the initial Japanese release, while American games often receive a sim-ship localization into European languages.

#### **2.1.4 Brief overview of game localization research**

Despite game localization being a relatively recent area of research, an increasing number of studies are being conducted in the field. These studies approach the subject from a variety of angles, which are very efficiently summarized by O’Hagan and Mangiron (2013, pp.26–39) and Mangiron (2017).

For instance, according to O’Hagan and Mangiron (2013, p.34), a great number of studies aim to either define game localization or delimit its place inside the larger field of localization or translation, notably by comparing game localization to other types of localization (such as software localization). Other, more practical approaches, Mangiron (2017, p.82) states, seek to describe the processes and the agents involved in game localization, all the while highlighting the numerous technological, commercial or cultural challenges encountered in the field. In this regard, she highlights that the localization of specific game assets is also often discussed, with studies often using text types to approach localization strategies for different assets. Translation strategies are also investigated in the game localization field as part of discussions on the cultural dimension of games: whenever games are seen as cultural

products, it indeed becomes necessary to mention the cultural adaptation that game localization entails, as well as the hybridization of culture that can result from such practices. Finally, as there exist numerous examples of games localized by non-professionals, game localization prompts extensive discussion about community translation and fan translation, with a certain number of studies researching the motivations behind these practices, the processes used by non-professionals, and the quality of the resulting localization. A small number of further works also focus on the training of localizers (Mangiron 2017, p.83). Mangiron (2017, p.82) further comments that game localization to date has essentially been descriptive and interdisciplinary, with a predominant focus on the localization of Japanese console games into English and other languages.

These observations obviously allow for the identification of a number of areas scarcely investigated. In particular, both O'Hagan and Mangiron (2013, p.35) and Mangiron (2017, p.87) stress that a solid theoretical framework for game localization still needs to be established. Mangiron (2017, p.82) also highlights that more research on the relationship of game localization with other sub-domains of translation is necessary, especially audiovisual translation and the practice of localizing voiceover. The impact of new technologies on the current processes of game localization should also be investigated, she states, while sociological approaches are needed to provide deeper analyze of the agents involved. In terms of translation strategies, not only could cultural adaptation be investigated more thoroughly, but issues such as creativity, the translation of humor and the censorship often caused by game age ratings merit further research (Mangiron 2017, p.87).

Finally, Mangiron (2017, p.88) emphasizes that a number of areas remain largely unexplored, such as the reception of game localization and game accessibility. Besides, she stresses that no research seems to have been carried out on language combinations that do not include English to date, that mobile games are typically overlooked, and that certain game genres or categories (as well as any comparison between these genres and categories) are very rarely investigated. These categories are for instance online games, social and casual games, multiplayer games or indie games, also referred to as independent games (O'Hagan and Mangiron 2013; Mangiron 2017).

Research on game localization should however take into account the predominant challenge, Mangiron (2017, p.86) highlights, that is obtaining data regarding video games. Indeed, due to

video games often being commercial products subjected to confidentiality, actors of the industry only rarely agree to provide researchers with the necessary materials. In order to get around this problem, Mangiron suggests examining independently-developed games rather than commercial games, due to independent game developers being more willing to give out information. This claim is supported by the findings of Sánchez Espinoza (2015), who was able to obtain a 100% response rate to her questionnaire targeting the developers of a selection of non-commercial open-source games. Mangiron (2017, p.86) also states that certain non-profit game organizations provide relevant materials, and that investigating materials provided by fans (such as specialized websites or walkthroughs, i.e. video recordings of the game content) is also a possibility. Finally, she mentions extracting relevant data from games without explicit authorization from the game copyright holders, but warns that this practice is often considered illegal, even when the goal pursued is academic and strictly non-commercial.

## **2.2 Defining indie video games**

Section 2.1.4 mentioned that independent or indie games (the differences between both terms are discussed in subsections 2.2.2 and 2.2.3) are a widely under-researched area of game localization, yet they are a category of games that may be easier to investigate than commercial games due to data being supposedly more available. In order to examine indie games, however, it is first necessary to describe what indie games are and how they can be recognized exactly, a goal that is by no means easy to achieve. By synthesizing and confronting various sources, this section first highlights the multiple controversies surrounding the definitions of “independent” and “indie” games, stressing that these terms do not always refer to the same idea. Then, the concept of independence is examined through a classification proposed by Garda and Grabarczyk (2016), and the various characteristics that can make a game “indie” are discussed. Finally, section 2.2.5 phrases a series of concluding remarks, summarizing decisions made and what should be kept in mind while reading this thesis.

### **2.2.1 The need for and absence of a definition**

Independent – or indie – video games are often referred to as a relatively new area of both game development and game studies. While the latter may be true, with the first scientific papers discussing independent games dating back to 2002 (Parker 2013, p.2) and game studies

mostly neglecting the area until around 2006 (Simon 2013, p.2) (although it might be argued that this is actually quite ancient when examined through the lens of the short history of video games), researchers such as Lipkin (2013), Ruffino (2013) and Smith (2016) highlight that games that could be considered independent have existed ever since the early days of video games. For instance, Ruffino draws attention to production conditions, which allowed game developers to work independently from publishers until the 1990s, whereas Smith examines what he calls the “pre-history” of modern independent games, pointing out numerous games which showed factors of independence from the 1960s to the late 1990s. Finally, Lipkin goes even further in stating that independent games are a central part of video game history: “no history of video games should be complete without them, yet no history of video games has ever documented them” (2013, p.16). He argues that this is mostly due to these games remaining poorly-known and little played before the advent of digital distribution<sup>3</sup>.

It is true that the independent – or indie – video game industry only boomed very recently. Using SteamSpy<sup>4</sup>, a tool for extracting statistics from the digital video game distribution platform Steam (which is introduced more extensively in section 3.2.2), Stöckel and Pettersson (2016, pp.5–6) find that the number of independent games available on the platform doubled over a year, going from 2280 in May 2015 to 4800 in May 2016. A few clicks on the same tool allow for the observation that this number is now, as of May 2019, just short of 21’000, supporting claims (Smith 2016; Stöckel and Pettersson 2016; Toftedahl *et al.* 2018) that the independent game industry boomed in the late 2000s/early 2010s and has not stopped growing since. Yet, Smith (2016, p.28) highlights a “gap” between the independent game production of the late 1990s and that of the mid-2000s, suggesting that certain changes may have occurred along the way, an opinion shared by Hoogendoorn (2014) and Garda and Grabarczyk (2016), among others; thus, the question that should be asked seems very well to be, what are independent – or “indie” – games exactly? More importantly, what are independent games *today*? And what should they be called: indie, or independent?

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<sup>3</sup> In the video game industry and game studies, “digital distribution” and “physical distribution” refer to the two methods of releasing a game to the audience. In the case of digital distribution, the game is made available on online platforms and downloaded as immaterial data; whereas in the case of physical distribution, it is printed on a material object such as a CD-ROM or a cartridge and shipped or sold in a box (D’Argenio 2016).

<sup>4</sup> SteamSpy is the work of self-described “games addict” Sergey Galyonkin, who works in the industry and authored a book on video game marketing. More information about this project, how it works and the kinds of information that it provides can be found on its about page: <https://steamspy.com/about>.

Answering these questions is, by far, not an easy task. The main reason for this is that the only point that everybody, researchers and game industry actors alike, seems to agree upon is that there is no consensus regarding the definition of independent games. Simon (2013, p.2) even goes as far as claiming that there is “no point in seeking a formal definition or classification of ‘indie games’”, as a definition would be dependent on the culture surrounding independent games and this culture changes too fast for research to keep up. Still, it is believed that examining independent or indie games without at least elements of definition to base selection and discussion upon would be both a painstaking and an eventually futile task; this is why this thesis attempts to, at least, distinguish between the concepts of “independent” and “indie” games, which are discussed separately in the following subsections.

### **2.2.2 The concept of independence**

As Garda and Grabarczyk (2016) put it, independence cannot be examined or quantified without, first, describing what the object is independent from: “There is no independence as such, you have to be independent from something”. This is a point of view shared by Ruffino (2013, p.107). This means that the first question that should be asked is: what are independent games independent from? Garda and Grabarczyk (2016) provide a very useful classification in suggesting that independent games can, in fact, display three different types of independence: financial independence, creative independence, and publishing independence. These three types of independence are detailed below.

- ***Financial independence***

Financial independence is, according to Garda and Grabarczyk, “constituted by the developer – investor relation”; this means that, in order to be financially independent, game developers need to be able to fund their games without requiring the monetary participation of, for instance, a bigger company or a government. As this type of independence is rather easy to assess, it is what most imply when discussing independent games: for instance, Stöckel and Pettersson (2016, p.3) define independent games as games produced by “a studio with few developers that lacks outside economic influence in the form of a publisher or investor”, while Hoogendoorn (2014, p.6) and Smith (2016, p.8) assert that independent games once referred primarily to games produced without the participation of publishing companies. According to Garda and Grabarczyk (2016), such companies indeed impact the financial independence of the game, as well as its publishing independence.

It should be emphasized, however, that the definition of financial independence provided by Garda and Grabarczyk includes all external sources of funding, and only external sources of funding. As such, they consider that game companies funding their newest games with the earnings for their previous titles are financially independent as long as they have no external investors, while game developers funding their titles via crowdfunding campaigns<sup>5</sup>, which imply the monetary participation of interested players, are not. This is an interesting point, due to the fact that crowdfunding is often cited as a process typical of independent games: Smith (2016, p.78), for instance, cites crowdfunding as one of the new sources of funding that recently emerged for independent developers, while Lipkin (2013, p.21) states that with crowdfunding, “independence’s primary problem serves here as an advantage”. Stöckel and Pettersson (2016, p.4) add that in doing so, crowdfunding allows independent developers to compete more easily with bigger companies. Nonetheless, these remarks should not be understood as rendering Garda and Grabarczyk (2016)’s classification inefficient; rather, they are the first indications that a game may sometimes lack a type of independence, yet still be considered “independent” by many, a point that is discussed at the end of this subsection.

- *Creative independence*

Whereas being financially independent means not to depend on any investor, Garda and Grabarczyk explain creative independence as the independence of game developers from the intended audience of their games. Obviously, this type of independence is quite harder to assess than financial independence, as the influence that the intended audience has or does not have on the game cannot be summarized by a question as simple as asking whether the developers received third-party funding; this is why Garda and Grabarczyk (2016) suggest simply asking whether the developers see themselves as the intended audience. This can be discovered, in their opinion, by examining the statements made by developers about their own games.

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<sup>5</sup> A relatively recent practice of collecting the funds necessary for a project before its launch, crowdfunding campaigns emerged in the early 2000s and boomed in the mid-2010s (Freedman and Nutting 2015). In the video game industry, they consist in developers offering interested players the opportunity to invest small amounts of money in the game that they are planning to create, often in exchange for rewards such as a copy of the game upon release. Popular platforms for crowdfunding campaigns are for instance Kickstarter (<https://www.kickstarter.com/>) and Indiegogo (<https://www.indiegogo.com/>).

In such a case, the only criterion that developers would need to meet in order to be considered creatively independent is explicitly stating that they create games according to their own tastes only. This obviously does not account for cases in which developers might not want to admit that they are aiming for their games to fit certain standards, or cases in which developers do not realize that they are conforming to certain industry norms or market demands. Furthermore, Garda and Grabarczyk draw attention to the fact that, although it is not to be confused with financial independence, creative independence often depends on the sources of funding of the game, as any investor could very well request that the game be modified in order to fit certain criteria. They consider, for instance, that developers who use crowdfunding platforms (and are as such financially dependent on crowdfunding participants) also lack creative independence, possibly due to rewards often including a promise of control over some of the game elements, such as the opportunity to create a character to be included in the game.

- *Publishing independence*

Finally, publishing independence is the term used by Garda and Grabarczyk to refer to a situation in which game developers do not depend on, i.e. do not work with, a publisher. This means that game developers should publish their games themselves in order to achieve publishing independence. Garda and Grabarczyk add that this type of independence should only be assessed from the viewpoint of the first release of the game; indeed, it is increasingly frequent that games start out being published by their developers, before being taken over and published again by bigger corporations.

As stated by the authors, whenever this type of independence is not achieved, the game is most often also financially dependent, as publishers are considered external investors. Yet, this type of independence is also arguably the easiest to achieve currently, thanks to the increasing availability of digital distribution platforms. Indeed, Martin and Deuze (2009, p.280), Guevara-Villalobos (2011, p.1), Lipkin (2013, p.12), Hoogendoorn (2014, pp.17–18) and Smith (2016, p.12) all highlight the central role played by the advent of digital distribution in the rise of independent games, stating for instance that it allowed developers to avoid costs linked to the release of a physical game (Martin and Deuze 2009), as well as simply escape the traditional model of working with a publisher (Smith 2016).

To summarize, although they might not yet be adopted and used by the entire game studies community, and although they might be slightly objectionable in some aspects, the three types of independence suggested by Garda and Grabarczyk (2016) are regarded in this study as a very useful classification of what it takes for a game to be “independent”, with the considerable advantage of making the independence of a game rather easy to judge. As mentioned by the authors and briefly seen earlier in this subsection, it should nonetheless be taken into account that a game only needs to show one of these three types of independence to be considered independent. Rather than being a set of conditions to be declared independent, these three types are to be understood as signs or factors of independence, the combination of which could allow for the measurement of a certain “degree” of independence.

Finally, the term “independent” is understood in this thesis as a neutral word defining whether a game is independent from the three sources of influence – external investors, the intended audience, and publishers – identified by Garda and Grabarczyk. As a result, independent games are games that are independent in one, two or three of the ways described in this subsection.

### **2.2.3 Attempting to define “indie” games**

Subsection 2.2.2 introduced a definition of the term “independent games”. Yet, a certain number of studies seem to refer to these games as both “independent” and “indie” interchangeably (Guevara-Villalobos 2011; Parker 2013); furthermore, other works (Jahn-Sudmann 2008; Ruffino 2013; Juul 2014) seem to use the word “independent” in a sense arguably different from that described by Garda and Grabarczyk (2016). As a result, this thesis accepts Garda and Grabarczyk’s proposal that the words “independent” and “indie” may be starting to mean different things. This subsection attempts to investigate the meanings given to these two terms and, assuming that the definition of “independent” is that of Garda and Grabarczyk, to highlight elements of definition for the term “indie”.

The first observation to be made when trying to define the word “indie” is that most of the research seems to agree that this is no easy task. Lipkin (2013, p.1), for instance, states that “what defines ‘indie’ in indie games remains confusing”. Using “independent” in the sense of what is referred to as “indie” in this research, Ruffino (2013, p.107) adds that “independent gaming has not yet found a clear definition”; while both Smith (2016, p.5) and Hoogendoorn

(2014, p.12) explicitly write that the definition of what is “indie” is at the core of an “academic debate”. So, as Simon (2013, p.1) judiciously asks: “What is this Indie thing?”

Grayson (2012) provides a first answer by stating that “‘indie’ has a connotation now, and it’s very much coloring the expectations of gamers and indie developers alike.” In his article criticizing the very existence of the word “indie” for, he asserts, imposing limits upon developers, he highlights the variety of contradictory impressions that people – supposedly the players as well as the developers themselves, making up the gaming community as a whole – have of “indie” games. He concludes that, although it may have held sense at some point (with a definition that resembles the one that Garda and Grabarczyk (2016) give the term “independent”), “the word “indie” has become effectively meaningless”.

Yet Lipkin (2013, p.10) claims that in most cases, indie games are first and foremost described in opposition to anything related to what is called “mainstream” or “AAA” games; simply put, indie and AAA games are nearly always considered opposites and everything that is AAA is not indie, while anything that is indie is not AAA. This means that indie games cannot be defined before first defining AAA games. Although Lipkin (2013, p.10) argues that there is no consensus on the meaning of AAA games either, O’Hagan and Mangiron (2013, p.5) define AAA games as “[g]ames with high production budget, usually referring to flagship titles involving substantial resources”. While Lipkin (2013, p.9) stresses that AAA games can imply not only a huge budget but also a high profitability, popularity, considerable advertising efforts or even quality, this definition presents the advantage of being short and easily understandable, while retaining what seems to be the main defining element of AAA games.

If considering indie games the opposite of AAA games, then, it seems coherent that the characteristics of indie games could be investigated and understood in opposition to those of AAA games as well. As such, the ways in which indie games differ from AAA games are very well described by Kogel (2012), who investigates the audience’s expectations of what indie games are supposed to entail. He points out four main characteristics: business model, format, the game itself, and a parameter that he refers to as the “indie ethos”. In order for a game to be considered indie by its audience, Kogel (2012) thus finds that its developer should not resemble a company or corporation with hundreds of employees; another more precise point of view, he states, is that the game should have been published by the developers themselves rather than an external publisher. The latter definition greatly resembles that of

publishing independence provided by Garda and Grabarczyk (2016), highlighting once again that the types of independence described in section 2.2.2 often mix with other elements in definitions of the term “indie”. According to Kogel (2012) still, an indie game is also supposed to be downloadable and free or at least cheap, to belong to certain genres that are considered indie, and to demonstrate what he calls an “indie ethos”, i.e. its developers “need to show some disregard for money” as, the author stresses, money absolutely cannot come first in an indie game. Kogel (2012) however shows that the lines between indie and AAA games are blurry in every respect, and that there exist many games that could very well fit either category depending on which aspect is considered the most important by the audience rendering the judgment.

This could mean that, whereas independent games are independent in the ways described in subsection 2.2.2, indie games are games that 1) show opposition to AAA games and 2) are ultimately declared as such by the audience. This approach is however deemed “naïve” by Ruffino (2013, p.119), who asserts that indie approaches to game development should rather be considered parallel or different to AAA approaches. The findings of Latorre (2016) support this opinion in that they highlight the many tensions and nuances linking the concepts of indie and “mainstream” or AAA games, showing that both approaches may have more in common than is expected upon reading the work of Kogel (2012). Finally, using “independent” in the sense that is understood as “indie” in this thesis, Jahn-Sudmann (2008, p.9) confirms: “Accordingly, independent games, in general, are – compared to independent films – even less to be understood as the ‘radical other’ in the face of an (imagined) mainstream culture.”

It seems, as a result, that although indie games may imply a certain opposition to AAA games, they cannot be described only in such terms; furthermore, their properties are not necessarily opposed to those of AAA games, and might even change depending on the person attempting to define the concept. It is in this matter that lies what this study believes to be the core element of indie games. Whereas “independent” is considered a neutral term defining the types of independence that a game displays, it is here assumed that “indie” is first and foremost a subjective term, defining whether a game meets a mostly similar but often varying set of criteria of “indie-ness”, which ultimately depend on the person assessing the game. This is an opinion mostly shared by Garda and Grabarczyk (2016), who argue that the term “indie” nowadays describes only a certain category of independent games, and examine a series of properties often found in games referred to as “indie”.

Subsection 2.2.4 attempts to classify and examine these criteria.

### **2.2.4 Criteria for “indie-ness”**

Although Garda and Grabarczyk (2016) list a set of nine markers that they believe often indicate whether a game could be referred to as “indie”, it was chosen here to regroup these properties under three main categories: “indie-ness” as specific means of production and distribution, as a certain game “style”, and as a set of political and moral values. These categories are similar to the ones established by Jahn-Sudmann (2008), who takes inspiration from research on independent films to propose that indie games could be defined by their industrial location, their aesthetic strategies and the social, cultural, political or ideological elements that they imply.

This subsection aims to classify properties of indie games mentioned by various studies under these three categories, and to briefly introduce these properties. It is obvious, however, that these properties are closely intertwined and often quite subjective or contradictory; as a result, it should be stressed that the only purpose of this subsection is to give an overview of the angles that could be adopted to approach the idea of what makes an indie game “indie”, rather than provide a formal definition of the term.

#### ***2.2.4.1 As specific means of game production and distribution***

In regards to the production of indie – rather than independent – games, studies firstly focus on production tools, which long remained (and probably still are) expected to be less expensive and less technologically advanced than tools used in AAA game production. Lipkin (2013, p.11) explains that this was once due to the separation of the indie from the “mainstream” or AAA: since they were not part of bigger game companies, indie game developers did not have access to quality development tools. Stöckel and Pettersson (2016, p.13) confirm that AAA development tools were both expensive and, sometimes, even exclusive to large companies. As a result, indie game developers had no choice but to work with basic tools, and consequently produced technologically “lesser” games, notably in terms of aesthetic appearance. Both Smith (2016, p.86) and Stöckel and Pettersson (2016, p.13) highlight, however, that indie game development tools underwent an evolution: nowadays, an increasing number of tools intended for indie game developers are becoming available at affordable prices, and semi-professional and professional software companies are offering

deals targeting indie game developers especially. Stöckel and Pettersson (2016, pp.15–16) believe that this will help bridge the knowledge gap that used to exist between indie and AAA games; however, Garda and Grabarczyk (2016) draw attention to the fact that many indie game developers now use the same tool, which, they assert, led to the creation of another informal standard regarding the tools used in indie game production.

Secondly, another important point of indie game production seems to be what is referred to as “co-creation” or as “participatory culture” by Smith (2016, p.72). These words describe the fact that the indie game community – comprised of both other indie game developers and players – often plays a considerable role in indie game production. Guevara-Villalobos (2011), for instance, uses ethnographic methods to find that other indie game developers often take part in the production of a game through code-sharing, by providing experimentation and testing, or by offering feedback. Furthermore, he discovers that game jams<sup>6</sup> and other community events often influence indie game developers to create new indie games. He concludes that not only can the community of other indie game developers give new game ideas, but it is also a source of motivation, it helps in acquiring skills, and it allows for the transference of knowledge. Garda and Grabarczyk (2016) also stress that while indie games are often produced by small teams or individuals, it is a central point that these small teams or individuals do not work completely alone, but rather take advantage of resources shared by the community. Similarly, the intended audience of an indie game can influence its production greatly: subsection 2.2.2 mentioned that crowdfunding was considered as an impediment to creative independence by Garda and Grabarczyk (2016), who highlight that players investing in the game are also often granted a certain power over game development choices. Smith (2016) brings further evidence of this power by investigating the ways in which feedback received from the players and the relationship between the developers and the players-investors influenced two different examples of indie games.

In regards to the distribution of indie games, many (Martin and Deuze 2009; Lipkin 2013; Garda and Grabarczyk 2016) emphasize the importance of digital distribution, which is even described as a need by Lipkin (2013, p.12): thanks to digital distribution, indie game

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<sup>6</sup> As described by Guevara-Villalobos (2011, p.8), game jams are community events intended for indie game developers that challenge them to create a game prototype in a very limited amount of time, usually on the basis of a common theme or restriction. As such, they force developers to think fast and find experimental solutions to the problem(s) at hand.

developers can indeed save considerable amounts off the publishing of their games. Irwin (2008, cited by Lipkin 2013) finds that digital distribution allows game publishers (in this case the indie game developers themselves) to receive 85% of the retail price, whereas they only receive 17% in physical distribution; furthermore, it allows indie game developers to keep selling previously released games without needing to afford stocking costs.

The second main point is that indie games are often expected to be released on computers or mobile devices rather than consoles. Jahn-Sudmann (2008, p.3), for instance, asserts that most indie game developers cannot afford to publish their games on consoles due to the extremely complex and expensive process that is mandatory in order to be able to do so. His claims are supported by the figures that he provides: “[f]or instance, developing a PlayStation 3 game costs between 15 and 30 million US-dollar”. This point of view is shared by Hoogendoorn (2014, p.25), who highlights that publishing a console game presents a high risk of it ending up not profitable. It should be noted, however, that slightly more recent articles by Latorre (2016, p.18) and Maxwell (2017) also mention that a growing number of indie games are becoming available on consoles such as Microsoft Xbox One or Sony PlayStation 4. Although stressing that achieving console release is often out of reach for indie game developers, Maxwell (2017) states that there exist processes through which indie game developers can submit their games for approval to be released on consoles, while Latorre (2016, p.18) cites the distribution platforms of console companies as a channel through which indie game developers can now publish their games.

Most of the properties described above could be closely related to or even summarized by markers that Garda and Grabarczyk (2016) call “small budget and low price”, and “small size”. The first of these markers implies that, being seen as either small teams or individuals who produce games with inexpensive tools and save up on publishing costs, indie game developers are expected to produce games with low production costs and, as a result, low retail prices. The second marker implies that, due to being produced with limited resources, these games are often expected to have a small size as well. According to Garda and Grabarczyk (2016), this is also due to file size limits having first been imposed on downloadable games; although this is no longer the case today, they assert that small file sizes remain associated with indie games.

#### 2.2.4.2 *As a certain game “style”*

Whenever discussing the definition and characteristics of indie games, many (Jahn-Sudmann 2008; Lipkin 2013; Hoogendoorn 2014; Juul 2014; Garda and Grabarczyk 2016; Latorre 2016) mention a certain type of indie “style”, in terms of the visual and design aspects of the game. While Garda and Grabarczyk (2016) argue that part of this visual style might emerge from aspects of production and distribution (for instance, they highlight that the development tools used have an influence on the aesthetics and mechanics of the game), it is deemed useful to mention some of the visual elements seemingly often encountered or expected in indie games.

A first element is, as Jahn-Sudmann (2008, p.7) puts it, that indie games are often described as “aesthetically alternative”, an opinion shared by Juul (2014). A jury member of the Independent Games Festival (IGF), Juul (2014) examines the winners of the IGF Grand Prize to distinguish the appearance and characteristics of an indie style, and states that setting itself apart from the aesthetic style of AAA games is an essential part of this indie style. Indeed, this allows the indie style to be regarded as “authentic” and “honest” by the community. Jahn-Sudmann (2008), Lipkin (2013), Juul (2014) and Garda and Grabarczyk (2016) all argue that this indie style is embodied by simpler features, similar to what would be produced with simpler technology. Jahn-Sudmann (2008, p.8) mentions “technically conditioned reduced aesthetics” similar to those of older computer games, whereas Juul (2014, p.2) discusses the rise and current omnipresence of low resolution graphics and pixels style art. All of these characteristics could be summarized by what Garda and Grabarczyk (2016) call “retro style”, meaning that the main element of the visual identity of (or expected of) indie games is that it should appeal to the nostalgia of players, for instance by resembling older games that used to be produced with older technology.

However, Jahn-Sudmann (2008) finds that, except for this visual “retro style”, it is difficult to point out other forms of expression that would clearly oppose to conventional game aesthetics or design choices, even in games widely recognized as aesthetically innovative and indie. Furthermore, Juul (2014, p.1) draws attention to the fact that this aesthetic indie style is in fact not a consequence of the production tools used to the budget at hand, but rather “a careful construction to appear as a counter to large-budget game productions”; as a result, Hoogendoorn (2014, p.42) argues that this indie style can easily be copied by corporations

that are not indie, yet create games that meet these aesthetic criteria and are as such recognized as indie by the community.

#### *2.2.4.3 As a set of political and moral values*

Last but not least, a certain number of studies emphasize that a game being indie also implies that it is produced, distributed and advertised with a specific mindset. This “indie mindset”, Garda and Grabarczyk (2016) state, is sometimes embodied by a will to oppose AAA games, a point already discussed in subsection 2.2.3; however, it is also related to other factors, such as the will to “give the appearance of a direct connection between players and game developers” (Juul 2014, p.1), which corresponds to seeking to give out the “authentic” and “honest” feeling described in subsection 2.2.4.2 above. This is an opinion shared by Lipkin (2013, p.13), who adds that indie games are defined by the close connection between indie game developers and the community. Coincidentally, Smith (2016, p.66) mentions the importance that indie games reflect the opinions and ideas of their developers, whereas Jahn-Sudmann (2008) discusses indie games whose aim is specifically to promote a cultural or political message. Finally, Garda and Grabarczyk (2016) add that the indie mindset could also consist in indie game developers aiming to simply create better games, or being considered better developers due to creating indie games. This idea could be linked with what they call the “experimental nature” of indie games, in that indie game developers could also search for ways to produce new, creative games, in order to transform the industry.

As assessing elements such as the political or moral values present in a game is both an extremely difficult and subjective task, the definition of “indie-ness” as a set of values can be constituted of no more than these first few elements.

#### **2.2.5 Discussion**

As a conclusion to this section, it seems useful to discuss several of the aforementioned aspects:

(1) Firstly, a certain number of characteristics described as markers of “indie-ness” in subsection 2.2.4 are similar to the factors of independence mentioned in subsection 2.2.2: for instance, digital distribution is described as both a mean for indie game developers to achieve publishing independence, and a mean of distribution characteristic of indie games. It is believed that this should be understood as a further indication that the definitions of

independent and indie games match in various aspects, and that video games can very well be both independent (in one or more of the ways described in subsection 2.2.2) and indie, independent yet not indie, indie yet not independent, or neither independent nor indie, depending on the characteristics that they present and the criteria that they meet.

(2) Furthermore, while this thesis accepts Garda and Grabarczyk (2016)'s definition of independent games, it agrees with Hoogendoorn (2014, p.47) when he states that it is first and foremost the audience who judges games and classifies them as indie or not, giving the examples of games manufactured by huge publishers to “look indie” and therefore being classified as indie by fans, despite actually being far from meeting most of the criteria detailed in subsection 2.2.4. This means that the definition of indie games, rather of being based on markers of “indie-ness”, mostly depends on a consensus; to some degree, it could even be argued that indie games are games that a considerable number of people agree are indie.

(3) As a result, while it is important to keep in mind that no definition of indie games is objective or widely agreed upon, this thesis chooses to understand indie games as games which are described, classified or advertised as being indie, for instance on the platforms where they are distributed. Indie games are discussed, rather than independent games, due to both the wide availability of this specific information and the fact that the word “indie” still seems to be the most widely used in the community, both in studies referenced in this section and among the developers, publishers and players.

(4) Finally, it should be reminded that the aim of this section was merely to provide a short, easily-understandable overview of the most discussed points regarding the definition of independent and indie games. While investigating independent and indie game studies as a whole does not fall within the scope of this thesis, Parker (2013) very efficiently surveys research conducted in this area from the years 2002 to 2013.

## **2.3 Indie game localization research**

Section 2.1.4 highlighted that the localization of independent and indie games was an area of translation studies still widely overlooked to date. Although a large number of resources are nowadays available online for indie game developers seeking to localize their games (notably guides written by localization vendors such as Indie Localizers (2019), or articles such as the

ones by Yoccoz (2017) and Petyushin (2019)), this claim is supported by the very few scientific papers and articles that have yet been written on the subject; furthermore, it should be noted that all studies to date seem to be conducted from a game production or game industry perspective, rather than from a localization perspective. This section aims to provide an overview of these studies and point out the numerous areas left for future research from both perspectives on the subject of indie game localization.

A first observation to be made is that most studies on indie games do not mention game localization, or only briefly. Only the work of Consalvo (2012) provides a case study of the localization of an indie game, stressing in particular the essential participatory component of indie game localization. Notably, the author draws attention to the fact that, at least in the case of Japanese indie games being localized into English, localization has long been mostly and still is often carried out by what she calls “player-localizers” (Consalvo 2012, p.61), i.e. players who are fluent in both languages and willing to localize the game for reasons yet unexplored. She proposes a classification comprising of four different models of “player-localizers”, which are described as follows (2012, p.62):

- **ROM Hackers:** These are players who access the data of the game, usually without official authorization, in order to identify assets that need to be translated (see subsection 2.1.1) and create a file that, upon being installed on top of the game, will make the game assets display in the target language.
- **Scanlationists:** These players do not localize the game *per se*, but help other players understand game assets by translating, for instance, strategy guides.
- **Scriptwriters:** These are players who first play the game in its source language version entirely, all the while taking note of the in-game text assets that appear on screen. Then, they translate these text assets and release them separately of the game, as a target language script only.
- **Indie localizers:** Finally, these players sign official contracts with source language game developers in order to be able to produce and release a licensed localization of the game.

This study highlights that the participatory component of indie game localization could be researched about more extensively, for instance by investigating different types of “player-

localizers” and asking questions such as how they proceed to localize games, what is the influence of their localization efforts on the interest of other players in the game, or why they choose to localize indie games at all. Furthermore, it shows that the work of indie localizers, whether they localize indie games or non-indie games, could also be examined more closely, with questions such as why certain localizers could be considered indie or how they choose the games that they wish to localize.

Another, perhaps even more relevant work is that of Toftedahl *et al.* (2018), who are the first – and only ones, to the best of our knowledge – to seek to examine the process of indie game localization. Using interviews, they investigate why, when, by whom and at which level (see section 2.1.2) the games of six indie developers are localized. Although the representativity of their findings could be questioned, due to the interviewed developers having been selected according to a convenience criterion, they find that interviewed indie game developers do not cite profit as their main motivation behind localizing their games; rather, they mention that they wish to spread their game, to satisfy regional communities of players requesting that the game be localized into their language, or that they see localizing as a need due to their home country having no real game market. Secondly, in terms of when indie games are localized, they find that localization often happens after the release of a first version, notably upon request from the publisher (if any) or upon contact with the player community. It is carried out by an in-house localization department only in the case of the largest interviewed company, whereas in other cases, it is done by localization companies, by freelance translators, or by the player community itself. Finally, the indie game developers interviewed by Toftedahl *et al.* (2018, p.14) assert that only the text assets of their games are localized, due to both the costs that a higher level of localization would represent and difficulties encountered in finding, for instance, voice actors native of the target languages in their home region<sup>7</sup>.

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<sup>7</sup> Interestingly, Le Dour (2007, p.2) states that voice acting agencies chosen to record localized voiceover in a target language “need to be local: they have bigger talent pools and a good grip on the market”. This seems to suggest that indie game developers seeking to fully localize their games should not search for target language actors in their home region in the first place, but rather hire actors who live in the target regions. While it is obvious that indie game developers may not have enough resources to hire actors on the other side of the world (or even hire professional actors at all), this point also raises the question of whether games created in certain regions could be more easily fully localized in certain target languages, due to a higher availability of native

Two observations that could be made about this article regard the levels of localization of the investigated games, and the definition of indie games used by the authors. First, Toftedahl *et al.* (2018, p.6) state that they are using the classification of levels of localization proposed by Thayer and Kolko (2004); however, section 2.1.2 explained that this thesis uses those defined by Chandler and Deming (2012, pp.8–10) instead. As a result, Toftedahl *et al.* (2018, p.14)’s claim that “all of the developers in this study have focused on basic localization, i.e. only text” is here understood as meaning that all the investigated indie games had been localized at a partial level, a concept that fits the definition quoted. Second, Toftedahl *et al.* (2018, p.8) state that “[t]he game companies interviewed all fall under the independent flag; all factors proposed by Garda and Grabarczyk (2016) including creative, financial and publishing independence are fulfilled in all of the examples”, while referring to examined games as both “independent” and “indie” throughout their article. In doing so, it is considered that they do not make an explicit difference between independent and indie games, such as the one that section 2.2 aimed to establish. Since their approach is based on Garda and Grabarczyk (2016)’s definition of independence, however, it is considered in this thesis that their findings regard independent games, which may or may not also be indie.

As previously mentioned, despite providing interesting first answers to the questions of why, when and how indie games are localized, the work of Toftedahl *et al.* (2018) highlights the need for similar studies to be conducted on a larger and more systematically-selected sample of indie game developers, in order for conclusions to be generalized to all indie games. Still, the authors provide an interesting set of characteristics of indie game localization, all of which could be researched about more extensively; for instance, the reasons for localizing indie games could be investigated in more detail, along with the question of whether indie game localization usually achieves its goals. Furthermore, it could be asked whether the timing of localization has any influence on the localization itself or the reception of the game by the audience, and one could wonder about the ways in which indie game developers select and recruit translators to carry out the localization of their games.

It should be noted, however, that all possible research questions mentioned in this section constitute by no means a complete overview of what is left to explore in the field of indie

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local voice actors. For instance, it could be interesting to research whether full localization from one official language into another can be more easily carried out in multilingual countries.

game localization: since so little scientific research has been carried out to date, much of the area indeed remains to be investigated. For instance, none of the papers discussed in this section mention the quality of translation, although this is a central concern of most research on fan translation and indie games are said (Consalvo 2012) to be often localized by non-professionals. Similarly, most of the areas of game localization research (see section 2.1.4) could be explored in the specific case of indie games; further research could also take into account the varying definitions of independent and indie games, as well as the existence of a difference between these concepts (see section 2.2) or between categories of indie games.

Having defined the main game localization concepts, attempted to synthesize the main elements of independent and indie games along with the differences between both terms, and highlighted both the current need for more research on indie game localization and the numerous areas of indie game localization yet unexplored, this thesis takes inspiration from the works of Mangiron (2017) and Toftedahl *et al.* (2018) and focuses on the different factors that may influence the languages and the levels of localization that indie games receive. Chapter 3 presents the research questions investigated and the methodology used, with a focus on the factors examined and how data was collected.

### 3. Methodology

This thesis aims to investigate the factors influencing the localization of indie video games in terms of two sub-areas: the languages of localization and the levels of localization. In the former area, the objectives are to determine a) into which languages indie games are the most commonly localized and b) the main motivations for localizing an indie game into a higher number of languages. In the latter area, the objectives are to examine a) the levels of localization that indie games most commonly receive and b) the main reasons for choosing a certain level of localization.

Due to the field of indie game localization remaining largely unexplored to date (see section 2.3), this study attempts to cover a high number of hypotheses, which are introduced – along with the two main research questions of this study – in section 3.1 of this chapter. These hypotheses are investigated by comparing a number of factors that could influence the researched sub-areas to a) the number of localized versions available for and b) the different levels of localization received by a number of indie games. In order to do so, a number of 108 indie video games which fit the criteria described in subsection 2.2.5 were first selected, using the methods described by section 3.2. Then, drawing from the works of Chandler and Deming (2012), O’Hagan and Mangiron (2013), DellaFave (2014), Nawal (2018) and Toftedahl *et al.* (2018), four types of relevant factors were identified, and data corresponding to these types of factors was collected for each of the selected games. Section 3.3 describes these factors in detail and presents the methods used for data collection. The analysis of this data is finally carried out and commented extensively in chapter 4.

#### 3.1 Research questions

In order to achieve its goals, this thesis discusses two research questions: a) “Which are the factors influencing the number of languages that an indie game is localized into?” and b) “Which are the factors influencing the choice of the level of localization that an indie game receives?”

According to Chandler and Deming (2012, pp.47–51), in AAA games, “[p]ublishers usually decide what games are localized into which languages based on financial viability” and “[u]ltimately, the level of localization depends on how much the publisher wants to invest.

[...] The publisher will already have a level of localization in mind when figuring out how many localized units will be distributed.” This seems to mean that, in AAA games, the main or even only motivation behind the decision to localize a game in a given language is the revenues that the game is estimated to earn. Similarly, the choice of a level of localization is mainly or mostly dependent on the amount of money that the publisher agrees to spend on the game, which obviously depends on the projected *return on investment*. Chandler and Deming also highlight that both of these decisions are taken by the publisher.

Subsections 2.2.3 and 2.2.4 mentioned, however, that digital distribution is among the main components of both independent and indie games, in that it allows indie game developers to publish their games themselves rather than use the services of a publisher. It can therefore be inferred that, in these games, decisions such as the ones that this study aims to analyze are taken by the developers themselves. In their paper, Toftedahl *et al.* (2018) show that certain indie game developers are indeed very invested in the decisions taken about the localization of their games, regardless of whether they work with a publisher or not. Furthermore, according to Toftedahl *et al.* (2018) still, certain indie game developers do not consider profit or money as the main motivation behind their choices to localize a game or not. Rather, interviewed developers cite social impact and market selection and expansion as their motivations.

Although these observations cannot be generalized due to the study not being fully representative (see section 2.3), they suggest the starting hypothesis that indie game developers do not take decisions about localized languages and levels of localization in the same manner that AAA game publishers do, meaning that in indie games, the expected profit is *not* the main reason for a) producing a certain number of localized versions and b) choosing a certain level of localization for each localized version. This is the main hypothesis that this study aims to investigate. In order to do so, this study hypothesizes that there exist four different types of factors which can influence the aforementioned decisions: game characteristics, game development and localization processes, feedback received on the game, and game pricing and funding, only the last of which includes (but is not limited to) the profit generated by game sales. Each of these categories comprises a certain number of individual factors, which are also hypothesized to have an influence on both the number of localized versions and the chosen levels of localization. The influence of the individual factors is examined and compared in chapter 4.

## 3.2 Game selection

After section 2.2 highlighted the difficulties often encountered when attempting to define indie games, subsection 2.2.5 stated that this study discusses indie – rather than independent – games, assuming that indie games are simply games which are declared to be indie. However, as mentioned in subsection 2.2.1, it is obviously impossible to collect information or provide an analysis of all existing indie games, due to the rapidly increasing number of indie games available. This is why subsection 3.2.1 first introduces a number of criteria designed to select a representative sample of indie games both relevant to the research questions and easy to investigate. Then, subsection 3.2.2 describes the small number of digital distribution platforms where games meeting the selection criteria can be found. Finally, it should be noted that using the selection criteria and the relevant platforms allowed, in the present study, for the selection of 108 individual indie games.

### 3.2.1 Criteria

The selection criteria described below are a mandatory step in ensuring that a reasonable number of games can be sampled from the overwhelming number of all indie games. While similar data is unknown for other platforms, subsection 2.2.1 indeed highlighted that a single digital distribution platform called Steam already offers almost 21'000 indie games, as of May 2019 (Galyonkin 2019). The following criteria were established with two goals in mind: a) to allow for the selection of indie games regarding which a consistent and comparable set of data can be collected, and b) to prioritize games in which localization is a relevant component.

- *Distribution: digital*

As discussed in section 2.2, there exist two types of video game distribution, referred to as physical and digital, and both independent and indie games are predominantly distributed digitally. Although digital distribution is not a requirement for games to be considered indie and certain indie games are also distributed physically (see subsection 2.2.4), this thesis focuses on digitally-distributed indie games, which are deemed to be both more representative of all indie games and easier to investigate.

- *Device: personal computer (PC)*

Nowadays, digitally-distributed video game are available on a great number of devices, including – but not limited to – game consoles, personal computers (PC), smartphones and tablets. Games available on the last two of these are usually referred to as “mobile games”. Despite mobile games currently representing the largest share of the global games market, going as far as to exceed 50% in 2018, and console games still having a bigger share than PC games (Newzoo 2018 cited in Mobvista 2018), this study focuses on PC games.

There are two reasons for this decision. Firstly, while console and mobile games are often distributed digitally, both can most of the time only be bought and downloaded through one official platform, either the platform integrated into the console (such as the PlayStation Store on Sony game consoles) or the platform developed by the creators of the mobile operating system (such as Google Play Store for all Android devices). Secondly, due to being distributed through these official platforms, console and mobile games usually must observe numerous rules and regulations imposed by this platform. In a message on question-and-answer platform Quora, game developer Adam Maxwell explains that regardless of how one develops a game for PS4 or Xbox One consoles, “you’ll still have to pass the technical certification process for either platform before you can ship on them, which can be challenging and expensive in itself” (Maxwell 2017). In this study, this is regarded as a form of dependence from a publisher (i.e. the official platform). While games do not need to meet the criteria of independence to be considered indie, subsection 2.2.4 highlighted that indie games are often expected to be created without the influence of a publisher; this is why it was feared that console and mobile games could be considered “less indie” than PC games to a degree, and chosen to examine PC games only in this thesis.

- *Operating System (OS): Windows*

The software that manages the hardware and other software on a computer, thus allowing it to perform the required tasks, is referred to as an operating system. While many PC operating systems do exist, (Tanenbaum and Bos 2015) focus on two: Windows, which runs on most desktop and laptop computers nowadays (Computer Hope 2018), and variants of UNIX such as Linux, an open-source OS often preferred by experienced users. They also mention Mac OS X, a proprietary OS that runs on all Apple computers. Due to the time constraints imposed on this study, however, it focuses solely on indie games for Windows, which is the operating system with the highest number of users (Computer Hope 2018).

- *Languages available: English + at least one more*

In order to study the localization of indie games, and particularly the factors which may or may not influence choices regarding the levels of localization, selected games need to have been localized in at least one language. Assuming that the most widely used language among indie game developers is English, and given that this thesis is also conducted in English, it is believed that selecting games available in English and at least one more language helped ensure that all selected games have been localized at least once.

- *Selection: by popularity*

Finally, as studying all indie games corresponding to the previously mentioned criteria would still have been no realistic task, one more criterion was used: popularity. This means that only indie games that had reached a certain level of popularity were selected. This decision is by no means related to the belief that less popular games are unworthy of analysis; rather, it seemed crucial to select games with a number of players high enough to justify localization. As mentioned in subsection 3.2.2, since games were effectively selected from three different platforms with different ways of displaying game popularity, it proved impossible to use the same popularity criteria in every case. As a result, a specific criterion was chosen for each platform in order to ensure that 30 to 40 games were selected in each case.

### 3.2.2 Platforms selected

The first step in selecting indie games that fit the criteria described in subsection 3.2.1 is identifying digital distribution platforms where such games are available. This goal was achieved by drawing from three articles (Sanville 2016; Ninichi 2017; CodesWholesale Blog 2018) recommending indie game developers platforms where they can publish their games digitally. These three sources evaluate a total of 11 individual platforms. As can be observed in Table 1, only one of these platforms is mentioned by all three authors, and five of these platforms are mentioned by two of the three authors.

	Sanville (2016)	Ninichi (2017)	CodesWholesale Blog (2018)
Desura	x		
Game House		x	
Game Jolt		x	x
Gamer's Gate		x	x

	Sanville (2016)	Ninichi (2017)	CodesWholesale Blog (2018)
<b>GOG.com</b>		x	x
<b>Humble Bundle</b>		x	
<b>Indiegamestand</b>	x		
<b>itch.io</b>	x	x	x
<b>Kongregate</b>	x	x	
<b>Roast My Game</b>	x		
<b>Steam</b>		x	x

*Table 1. Crosses indicate the platforms mentioned by each author.*

In order to allow for the collection of data relevant to this thesis, however, selected platforms needed to fit three criteria. First of all, the games available or at least part of them obviously needed to be classified as “indie” (see subsection 2.2.5), either via the existence of an “indie games” category somewhere on the platform or because the platform itself was dedicated solely to indie games. Secondly, platforms needed to include a way to filter results by the languages available for each game, or at least display the languages available for each game, a feature essential to the selection of localized games only. Lastly, for easier comparison between games, this study focuses solely on games that can be downloaded; games available thus needed to be downloadable as well.

Out of the initial set of eleven recommended platforms, two are no longer available, while six do not allow players to filter games by language nor, in a few cases, even visualize the languages available for each game. As a result, the eight aforementioned platforms were discarded in this study, and the three remaining platforms, which all offer downloadable indie games and allow for filtering games by language, were selected. These three platforms are Steam, itch.io and GOG.com. Table 2 below summarizes the criteria met by each of the eleven recommended platforms and highlights the platforms selected.

Platform	Downloadability	Existence of an "indie" category	Option to filter by language
<b>Desura</b>		platform no longer available	
<b>Game House</b>	Yes	Yes	No

<b>Platform</b>	<b>Downloadability</b>	<b>Existence of an "indie" category</b>	<b>Option to filter by language</b>
<b>Game Jolt</b>	Yes	Yes, platform dedicated to indie games	No
<b>Gamer's Gate</b>	Yes	Yes	No
<b>GOG.com</b>	Yes	Yes	Yes
<b>Humble Bundle</b>	Yes	Yes	No
<b>Indiegamestand</b>	platform no longer available		
<b>itch.io</b>	Yes (most games)	Yes, platform dedicated to indie games	Yes (not in the menu)
<b>Kongregate</b>	No	Yes, platform dedicated to indie games	No
<b>Roast My Game</b>	Yes	Yes, platform dedicated to indie games	No
<b>Steam</b>	Yes	Yes, as a user-generated tag	Yes

*Table 2. Summary of the selection criteria met by the platforms.*

The three platforms selected are introduced below.

### **3.2.2.1 GOG.com**

Launched in 2008 by Polish game publisher CD Projekt, GOG.com is a platform well-known for offering DRM-free<sup>8</sup> digital games, including a number of older games patched to run on modern computers and various indie games. The platform also sells a small number of “Movies for gamers”, i.e. movies adapted from video game franchises or documentary movies about video games as a topic. Game developers can submit their games to GOG.com by clicking a link at the bottom of any page and filling a form. It is unknown whether filling the form automatically allows for the distribution of the game on GOG.com; however, as the

<sup>8</sup> DRM, or “Digital Rights Management”, include all practices aiming to restrict the use of digitally-purchased content, usually in order to prevent the unauthorized redistribution of copyrighted content (Rouse 2009).

platform announces that it offers “a curated selection of games” on its about page<sup>9</sup>, it can be assumed that not all games submitted to the platform end up being made available. Each available game is presented on a full webpage that includes at least a game description, game details such as the developer(s) and publisher(s), available languages and system requirements. At the bottom of the page, logged in users can give the game a rating of one to five stars and write a review of the game. Although the overall rating is displayed, there seems to be no way to display either the number of ratings or the number of reviews left on a game.

**Description**

"Legends speak of a cursed cave hidden beneath the desert, so twisted by time that its passages shift like the sand under which it lies. The cave is said to be filled with fabulous riches, but also incredible danger!"

Spelunky is a unique platformer with randomized levels that offer a challenging new experience each time you play. Journey deep underground and explore fantastic places filled with all manner of monsters, traps, and treasure. You'll have complete freedom while you navigate the fully-destructible environments and master their many secrets. To stay or flee, to kill or rescue, to shop or steal... in Spelunky, the choice is yours and so are the consequences!

**Content notice:** The Daily Challenge is not included in the DRM Free version.

- Randomly-generated, fully-destructible levels filled with monsters, traps, treasure, and secrets.
- Offline multiplayer supports up to 4 explorers in madcap cooperative and deathmatch modes.
- IGF "Excellence in Design" Award-Winner, Gamespot's "Platformer of the Year", Edge's #2 "Best Game of 2012".

© 2009-2013 Mossmouth, LLC

**Goodies**

Avatars Soundtrack Wallpapers Spelunky Classic Soundtrack Spelunky Classic

**System requirements**

Minimum system requirements:

System:	Windows XP / Vista / 7 / 8 / 10
Processor:	Intel Core 2 Duo 2.8GHz or equivalent
Memory:	2 GB RAM
Graphics:	3D graphics card compatible with DirectX 9.0c
Storage:	200 MB hard drive space
Sound:	DirectX 9.0c-compatible sound card

Please be advised that Windows 10 operating system will receive frequent hardware driver and software updates following its release; this may affect game compatibility

**Why buy on GOG.com?**

- **DRM FREE.** No activation or online connection required to play.
- **Money back guarantee.** 30 days coverage after purchase.

**Game details**

Genre:	Action - Adventure - Platformer
Works on:	Windows (XP, Vista, 7, 8, 10)
Released:	August 8, 2013
Company:	Mossmouth / Mossmouth
Size:	148 MB
Links:	Forum discussion

**Game features**

Controller support	>
Co-op	>
Multi-player	>
Overlay	>
Single-player	>

**Languages**

English	✓ audio	✓ text
Deutsch	✓ audio	✓ text
español	✓ audio	✓ text
français	✓ audio	✓ text
italiano	✓ audio	✓ text

Figure 1. Screenshot of the page dedicated to the game “Spelunky” on GOG.com (as of May 2019).

<sup>9</sup> This page can be consulted here: [https://www.gog.com/about\\_gog](https://www.gog.com/about_gog).

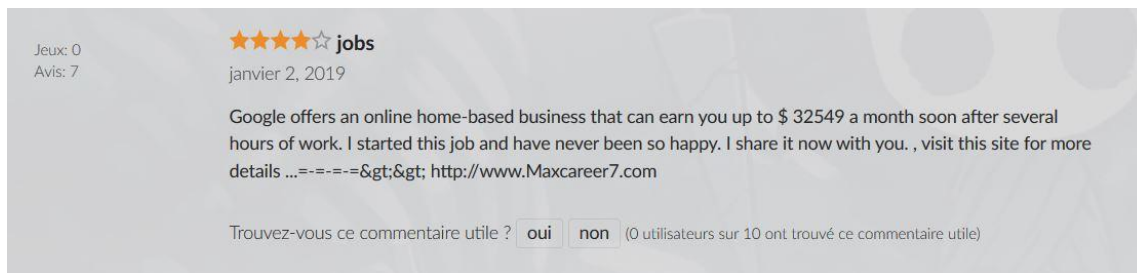
GOG.com classifies games into eight main categories: Action, Adventure, Indie, RPG, Shooters, Simulation, Sports & Racing, and Strategy. These include an “indie” category, although it is unknown why or how each game in this category came to be considered indie. When browsing all games or each specific category, games can be sorted by “bestselling”, alphabetically, by “user rating”, by “date added”, by “bestselling of all time”, by showing the oldest games first or by showing the newest games first. It is possible to choose to see all games in the category, only new releases, only upcoming games or only games that are on sale at the moment. Using the left side menu, games can be filtered by price, operating system, included features (such as the number of players) and language. There are 20 languages available in the menu: English, German, French, Spanish, Italian, Brazilian Portuguese, Portuguese, Russian, Polish, Japanese, Czech, Dutch, simplified Chinese, Korean, Turkish, Hungarian, Swedish, Finnish, Norwegian and Danish.

In this study, it was chosen to browse the “indie” category only, display all games and filter the results by each of the languages available in turn, after having unchecked English in order to filter games available in English only out of the results. Then, games were sorted by bestselling and the number of reviews for each game was counted manually, in order to select only games that had received a total of at least 60<sup>10</sup> reviews.

Although every effort was made to design and follow a strict process of selecting games according to the selection criteria described in subsection 3.2.1, a few limitations to the approach used in this thesis were encountered. Firstly, the 20 languages listed in the left side menu do not include all the languages available on GOG.com; some of the browsed games were also available in Bulgarian or in Greek, for instance, meaning that the method used may have left out relevant games. Furthermore, it should be noted that the calculated number of reviews also includes spam reviews (such as the one seen in Figure 2), and that reviews left on games still in development or on preorder are not displayed until the official release date of the game, making for possible further inaccuracies in the selection.

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<sup>10</sup> As of January 8th, 2019.



*Figure 2. Screenshot of a spam review left on the game “Hollow Knight”; it is obvious that this comment was not written by a player of the game and is therefore no indication of the popularity of the game.*

Following these criteria, 39 games were selected on this platform. The list of all selected games is available in Appendix A.

### 3.2.2.2 *itch.io*

A platform dedicated to the distribution of digital content, *itch.io* was launched in 2013 by Leaf Corcoran and allows independent creators of any kind to share or sell their work at a price that they choose themselves. Although it features different kinds of digital content, including for instance books and music, *itch.io* mostly hosts games. Each game is presented on a full customized webpage, with a game description written by the game creator and a drop-down box titled “More information” (see Figure 3). Logged in users are given the opportunity to give games a rating of one to five stars and leave comments.

Games can be sorted in five different ways: by popularity, by newness and popularity, by “Top Sellers”, by “Top Rated” and by “Most Recent”; and filtered by playing platform, price, newness, genre, accessibility and multiplayer features, input methods and average session length, as well as a number of miscellaneous settings. It is, however, impossible to filter games by language directly using the left side menu. In order to display games available in a specific language, one needs to add the mention “lang-” followed by the ISO 639-1 code of the language to the *itch.io* URL<sup>11</sup>. As a result, browsing all games available in at least one language other than English can prove difficult.

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<sup>11</sup> This URL is: <https://itch.io/games>. In order to browse games available in German, for instance, the URL that needs to be consulted is: <https://itch.io/games/lang-de>.

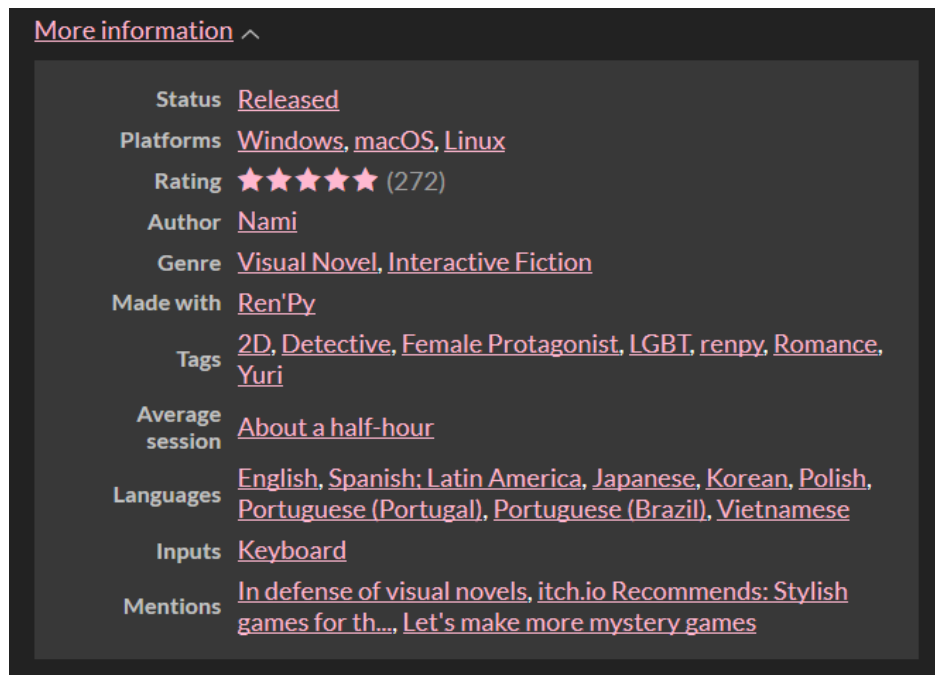


Figure 3. Example of the information contained in a “More information” box, here from the game “Romance Detective” (as of May 2019).

In this study, it was chosen to use the aforementioned method to browse games available in as many languages as possible: thus, games available in German (de), French (fr), Spanish-Castilian (es), Spanish-Latin America (es-419), Portuguese (pt), Italian (it), Russian (ru), Polish (pl), Thai (th), Vietnamese (vi), Japanese (ja), Korean (ko), simplified Chinese (zh\_Hans) and traditional Chinese (zh\_Hant) were browsed. The games were sorted by “Top Rated” and only games that had received a total of at least 55 ratings<sup>12</sup> were selected.

The main challenge encountered on this platform is directly related to this method of browsing games by language. Given its incomplete nature and the absence of a complete list of languages supported by the platform, it is indeed possible that some of the available languages were left out of this research. Furthermore, as available languages are not specified for all itch.io games (it was indeed noticed that, in some cases, the “More information” box does not include information about available languages), it is possible that some of the multi-lingual games did not appear in the results and were thus left out of this research; although it is possible as well that these games did not have any language specified due to being available in English only.

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<sup>12</sup> As of January 8th, 2019.

Following these criteria, 39 games were selected on this platform. The list of all selected games is available in Appendix A.

### 3.2.2.3 *Steam*

Created by game development studio Valve Corporation in 2003, Steam is currently one of the most widely used platforms for purchasing digital video games, digital software and even some items of hardware. Developers interested in distributing their games via Steam are invited to follow a number of steps referred to as the “Steam Direct” submission path<sup>13</sup>. While it is unclear whether all submitted games will be made available on the platform, the rules and guidelines for game submission<sup>14</sup> seem to indicate that any game following these rules and guidelines will be accepted. This is further emphasized by the existence of a mandatory “product submission fee” of \$100 USD (also mentioned on the “Steam Direct” information page) that developers are required to pay for each product that they wish to distribute through the platform. Each available game is presented on a full webpage including videos and screenshots of the game, a summary of general information, recent updates, press reviews, a game description, system requirements, and a great number of further game details (see an example in Figure 4), although details available can vary from one game to another. At the bottom of the page, logged in users who have purchased the game are given the opportunity to write a review for the game and choose whether they would recommend it or not. Their reviews are summarized as an overall impression ranging from “overwhelmingly negative” to “overwhelmingly positive”. The numbers of recent reviews (i.e. reviews posted within the last 30 days) and overall reviews are also displayed.

On Steam, games can be browsed by various properties, including genres. There are ten genres on this platform (Action, Adventure, Casual, Indie, Massively Multiplayer, Racing, RPG, Simulation, Sports and Strategy) and “indie” is considered one. Within each genre category, users can choose to display games in four different ways: “New and Trending”, “Top Selling”, “What’s Popular” and “Upcoming”. The only way to further restrict the results via this page is to use the “narrow by tag” function, which allows for displaying results containing a certain tag. When browsing games via the search function, it is also possible to narrow results by product type, number of players, OS, various features, and language.

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<sup>13</sup> Details of this process can be consulted on <https://partner.steamgames.com/steamdirect>.

<sup>14</sup> *ibid.*

In this study, it was chosen to simply browse the “indie” category while displaying the most popular games first (“What’s Popular” option), in order to make sure that both recently published and older games would appear in results. Then, games were checked individually, and only games that both were available in at least one language on top of English and had received a total number of at least 500<sup>15</sup> recent reviews were selected.

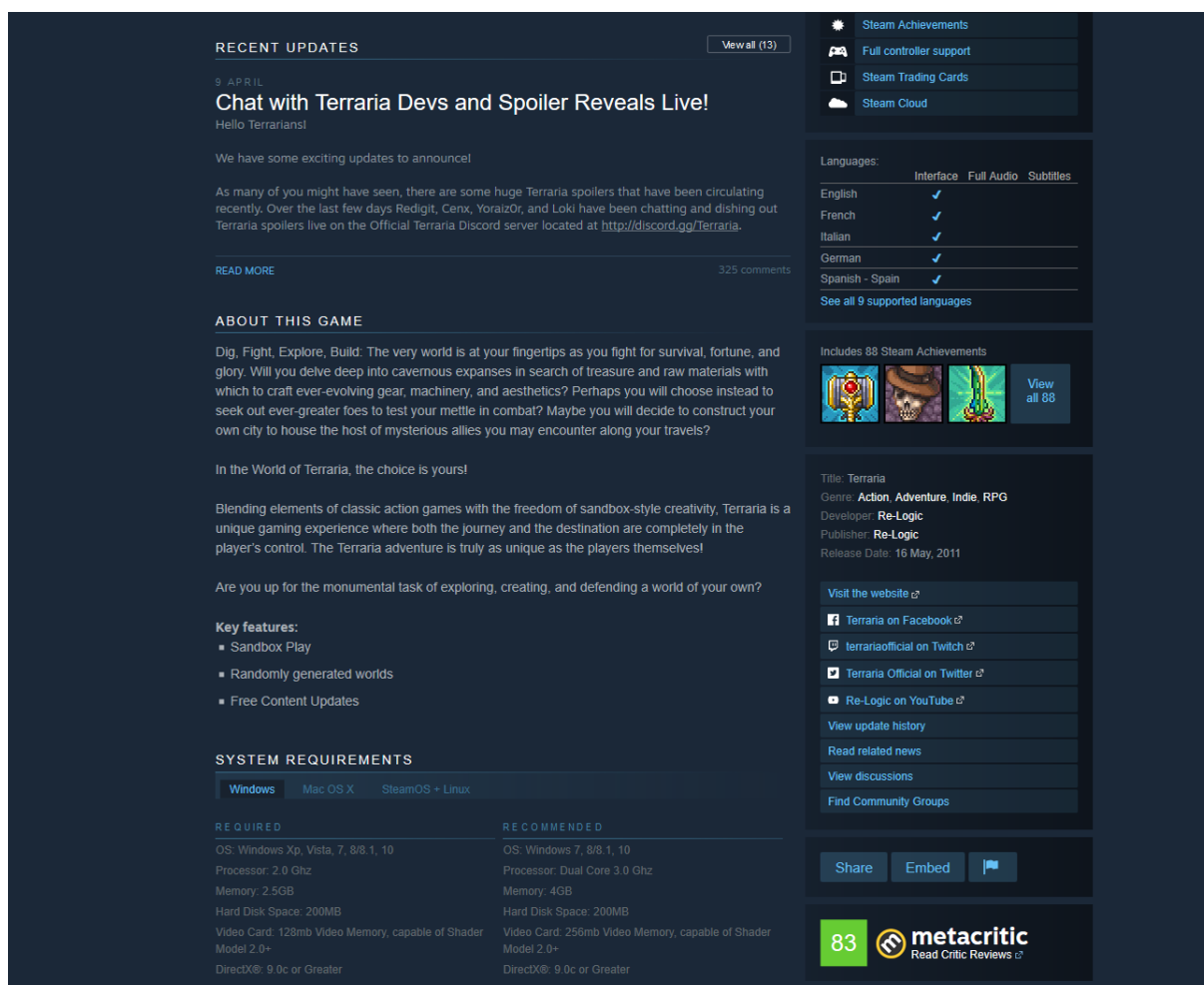


Figure 4. Example of game details which are usually available on Steam, here from the game “Terraria” (as of May 2019).

The main limitation to the method used on this platform is related to the definition of indie games (see subsection 2.2.5). Although “indie” is considered a genre according to Steam’s main menu, it is also displayed as a user-generated tag on game pages, and it is unclear whether games displayed in the “indie” category possess the genre “indie”, have been tagged

<sup>15</sup> As of January 8th, 2019.

“indie” by users, or both. Furthermore, it is unknown who decides that a game belongs to the “indie” genre; as for the “indie” tag, Steam explains on each game page that “These tags are applied to the product by the most users”, meaning that games tagged “indie” are labeled as such by the players themselves. As a result, it is possible that some of the games browsed via this method may have been questionably indie (see subsection 2.2.5: in some cases, “indie-ness” can be “faked” by publishers), and that indie games bearing neither the genre nor the tag “indie” may have been filtered out of the results.

Following these criteria, 36 games were selected on this platform. The list of all selected games is available in Appendix A.

#### *3.2.2.4 Adjustments made following game selection*

Using the selection methods described in the previous subsections, a total of 114 indie games were selected among the three platforms. However, 6 games turned out to have been selected on two different platforms, due to being both available and popular enough on both platforms. In order not to collect the same information twice, these games were only counted once, bringing the number of individual selected games down to 108.

### **3.3 Data collection**

As mentioned in section 3.1, four types of possible factors were taken into consideration in this study: game characteristics, game development and localization processes, feedback received on the game, and game pricing and funding. The variables corresponding to these factors are then to be compared with a) the number of localized versions available for each selected game and b) data regarding the levels of localization that each game received, in particular the numbers of subtitled and of dubbed languages (see subsection 2.1.2, partial versus full localization) in games containing voiceover.

Subsection 3.3.1 first describes the collection of the data regarding these two points used for comparison. Then, subsection 3.3.2 describes the factors identified within the four aforementioned types, as well as the corresponding data that was collected from the games. As explained in subsections 3.3.3 and 3.3.4, two different data collection methods were used: product page analysis and questionnaire. Firstly, in the product page analysis phase, which was conducted in the first two weeks of January 2019, the page introducing each game on the

selected platforms was consulted; as all three platforms offer different kinds of information regarding the games, this step did not allow for the collection of the exact same categories of data in every case. Thus, in some cases, data needed to be obtained or double-checked from visiting the official website of the game, playing the game, or watching recordings made of people playing the game. Secondly, certain types of information could not be collected through the observation of the games themselves and their descriptions online, as they were likely known by people who had taken part in the development of the game only; therefore, a questionnaire was designed and sent out directly to game developers, and remained open from March 12<sup>th</sup> to April 10<sup>th</sup>.

### 3.3.1 Variables used for comparison

In order to find elements of answers to the research questions, data related to the four types of possible factors identified needed to be compared to two specific pieces of information: first, information related to the languages available for each game, and second, information related to the level of localization for each game that contained voiceover. In particular, this thesis investigates a) the number of localized versions available for each selected game and b) the percentage of localized versions containing subtitles and the percentage of localized versions containing target-language voiceover, in selected games that include voiceover only. These two points used for comparison are described below.

- *Languages available*

The comprehensive list of languages that each game was available in (excluding English, since all selected games are available in at least English plus one other language) was made. In this study, languages were written down as their ISO 639-1 code and a distinction was made between different locales, i.e. regional varieties, whenever possible. Then, the total number of languages available was counted for each game.

This information is available on all three platforms, but was further confirmed by a question in the questionnaire (see subsection 3.3.4).

- *Voiceover and levels of localization*

Firstly, it was noted down whether each game contained voiceover or not. For games that contained voiceover, the comprehensive list of languages subtitled and dubbed was then made. This way, it became possible to compute not only the number of subtitled and dubbed

languages available for each game, but also the percentage of all available languages that also included subtitles and/or recorded voiceover.

Two of the three platforms (Steam and GOG.com) display whether each game contains voiceover or not. Yet, only one (Steam) displays the languages in which subtitles and voiceover are available for each game, whereas the other (GOG.com) only displays the languages in which voiceover is available. As a result, this information was collected from playing the games or watching recordings of the game made by other players in some cases, then further confirmed by a question in the questionnaire (see subsection 3.3.4). The questionnaire did not always allow for the collection of the information regarding which languages were available as subtitles and/or voiceover, however, as is discussed in subsection 3.3.4.

### **3.3.2 Possible types of factors**

Using an exploratory method, types of factors that seemed likely to influence the number of localizations, the levels of localization or both were identified in different game localization or game development-related works. The summary of these findings is given below.

#### **3.3.2.1 *Game characteristics***

Different games require different localization processes and decisions, point out various sources (Darolle 2004; Crosignani *et al.* 2008) cited in O'Hagan and Mangiron (2013, p.66). Thus, it was supposed that all game characteristics could possibly have an impact on the localization of a game. Since the parameters that could be considered "game characteristics" are numerous and rarely agreed upon, however, it was decided to take into consideration first and foremost characteristics that were described on most platforms, and that were likely to have the biggest influence on game localization.

As a result, the following information was collected:

- ***Source language***

In this thesis, it is considered that the source language of a game is the language that the in-game text was first written in, and thus the language from which the game needs to be localized.

Since most research on game localization is conducted in English and most game companies operate in either the USA or Japan, it could be assumed that most games (or at least most AAA games) are first developed and written in English. In their study, however, Toftedahl *et al.* (2018) interviewed game developers based in Sweden and in China, proving that indie game development does not always occur in English or Japanese-speaking countries.

This information could be inferred from the country that the game developer or game development company is based in, but is usually known by the game developer only. Thus, in this study, it was obtained via the questionnaire (see subsection 3.3.4).

- *Number of words in game text*

This is the number of words which constitute the entire text that was written to be displayed in the game and that thus needs to be translated when localizing the game.

This information is likely to be known by game developers only. Furthermore, as games are interactive products usually not following a linear structure, collection this information by playing through the game and writing down all the text that appears on screen would be a tedious and unreliable process. Even extracting the in-game text from the games would have been time-consuming, on top of bringing forth legal issues highlighted by Mangiron (2017, p.86). In the present thesis, it was thus obtained via the questionnaire (see subsection 3.3.4).

- *Voiceover characteristics (in games with voiceover only)*

Whenever the game included voiceover, three pieces of information were collected: the source language of the voiceover, the number of words that made up the script of the voiceover, and the number of actors who had taken part in the recording of the voiceover. Knowing the source language of the voiceover was deemed interesting for the same reasons described in the aforementioned point *Source language*: because previous studies seem to indicate that indie games are less systematically developed in English than AAA games. As for the number of words in script and the number of actors hired, these properties are described as determining factors in the localization of a game by Chandler and Deming (2012, p.53): in their work, these properties are included in the list of factors that developers should take into account when budgeting for the localization of their games, indicating that they could have a considerable influence on localization costs. On top of the number of words that need to be recorded in the target language and the number of actors who need to be hired, Le

Dour (2007, p.2) stresses that the categories of voiceover (see subsection 2.1.1) included in the game also affect the localization schedule and budget. Analyzing this variable would however have required precise data on the voiceover included in each of the selected games; this is why it was deemed to fall beyond the scope of the present study.

This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4).

- *Age rating*

The age rating indicates the minimum age group for which a game is suitable, according to an approved territorial agency. While it is not typically mentioned as a factor influencing game localization, this information is often considered crucial, as games need to meet specific criteria in order to be given a certain age rating. Furthermore, in many countries, selling unrated games is not allowed, and game publishers have been known to sometimes censor or modify games to make sure that they would receive a certain age rating in a certain region. In the latter case, it can be argued that age ratings, or at least a wish to achieve a certain age rating, influence the localization of the game, or at least the ways in which it is adapted to the target region.

A great number of different age rating systems are used across the globe, making for a difficult comparison in some cases. In this thesis, it was chosen to use the PEGI rating system, as this is the most widely used system in Europe; thus, all games rated using another system were given a corresponding PEGI rating. Table 3 below displays the ratings of six of the most widely used rating systems: the PEGI rating system, the ESRB rating system (which is used in the USA, Canada and Mexico), the USK rating system (which is used in Germany), the Australian Classification Board rating system (which is used in Australia), the CERO rating system (which is used in Japan), and the GRAC rating system (which is used in South Korea). The information provided below is summarized from Chandler and Deming (2012, pp.35–42), in which they are described more thoroughly, and from the official websites of each system.

Appropriate age	PEGI	ESRB	USK	Australian Classification Board	CERO	GRAC
All ages			0	G (General)	A	All
3 and older	3	EC (Early Childhood)				
6 and older		E (Everyone)	6			
7 and older	7					
8 and older				PG (Parental Guidance)		
10 and older		E10+ (Everyone 10+)				
12 and older	12		12		B	12+
13 and older		T (Teen)				
15 and older				M (Mature) MA 15+ (Mature Accompanied)	C	15+
16 and older	16		16			
17 and older		M (Mature)			D	
18 and older	18	AO (Adult Only)	18	R 18+ (Restricted)	Z	18+

*Table 3. Ratings provided by the PEGI (Europe), ESRB (North America), USK (Germany), Australian Classification Board (Australia), CERO (Japan) and GRAC (South Korea) rating systems.*

In order to make comparison possible, it was decided that equivalences would be established between PEGI rating categories and the categories of other systems, and that the PEGI system would be used. In this thesis, the age rating of each game is thus one of the following: 3, 7, 12, 16 or 18. Games rated for all ages and ages three and older are considered similar to PEGI

3; games rated for ages six, seven or eight and older are considered similar to PEGI 7; games rated for ages ten, twelve or thirteen and older are considered similar to PEGI 12; games rated for ages fifteen, sixteen or seventeen and older are considered similar to PEGI 16; and games rated for ages eighteen and older are considered similar to PEGI 18. Although based on the descriptions of each rating category given on the websites of each rating agency, this classification is obviously very arbitrary, especially when considered that, as O’Hagan and Mangiron (2013, p.222) explain, “each country tends to have its own ideas about what is acceptable for a particular age group”, due to ratings being mostly dependent on cultural values. Still, establishing equivalences was considered a necessary step in order to make the analysis described in chapter 4 possible.

This information is sometimes – but not always – displayed on Steam, and could be found on the official websites of some of the selected games. In most cases, it was however obtained (or at least confirmed) via the questionnaire (see subsection 3.3.4). It should be noted, however, that while submitting the game for rating by the territorial rating agency is often recommended – if not required by law – before the release of console games and physical PC games (Chandler and Deming 2012, pp.35–36; O’Hagan and Mangiron 2013, pp.222–223) (for instance, Chandler and Deming (2012, p.36) mention that numerous retailers refuse to sell unrated games), it appears that digital distribution platforms do not require that the game be rated before making it available for purchase or download. As a result, this information could not be found for many of the selected games.

- *Completion time*

Completion time refers to the average time, in hours, that it would take a player to complete the game. As a result, it is an indicator of the total length of the game: in most cases, a game with a higher completion time should make for a lengthier adventure, possibly with more in-game events, whereas a game with a shorter completion time could more easily be called a “short game”. In this study, whenever a time bracket for the average completion was provided, it was chosen to keep the higher value for analysis.

This information is sometimes hinted to on itch.io (where the length of the “average session” is indicated for certain games), but does not appear on either of the other two platforms. As a result, it was obtained via the questionnaire (see subsection 3.3.4).

- *Genres*

Game genres are among the strongest indications of the differences between games, and each different genre usually implies that the game possesses various very specific characteristics. However, it has often been agreed that it is difficult, if not impossible, to classify games by genres, notably because there exists to date no exhaustive list of all game genres (O’Hagan and Mangiron 2013, p.67). For instance, although all three platforms used in this study display their own lists of game genres and associate each game with a number of these genres, no two game genres lists are the same. Furthermore, when compared with the reference list created by O’Hagan and Mangiron (2013, p.68), it appears that none of the three lists are the exact same as the reference list either. As a result, it was chosen to use a list made up of all genres included in the lists of the selected platforms; Table 4 below provides a summary of the final list created and used in this study. The final list used in this study comprises: Action, Adventure, Card Game, Casual, Educational, Fighting, Indie, Interactive Fiction, Massively Multiplayer, Platformer, Puzzle, Racing, Rhythm, RPG, Shooter, Simulation, Sports, Strategy, Survival and Visual Novel.

O'Hagan and Mangiron (2013)	Steam	itch.io	GOG.com
Action	Action	Action	Action
Adventure	Adventure	Adventure	Adventure
		Card Game	
	Casual		
		Educational	
		Fighting	
	Indie		Indie
		Interactive Fiction	
Massively Multiplayer Online Game (MMOG)	Massively Multiplayer		
Platform		Platformer	
Puzzle		Puzzle	
Racing	Racing	Racing	Racing
		Rhythm	
Role Playing Game (RPG)	RPG	Role Playing	RPG

O'Hagan and Mangiron (2013)	Steam	itch.io	GOG.com
Serious Games			
Shooter		Shooter	Shooters
Simulation ("God Games")	Simulation	Simulation	Simulation
Social Games			
Sports	Sports	Sports	Sports
Strategy	Strategy	Strategy	Strategy
		Survival	
		Visual Novel	
		Other	

Table 4. Comparative table of game genres lists provided by O'Hagan and Mangiron (2013, p.68) and the three selected platforms.

Although the reasons that make a game belong to one genre or another are both debatable and frequently debated, this information is of particular interest to this research because, as O'Hagan and Mangiron (2013, p.70) put it, "genre signals text conventions to an extent". They assert that game genres are similar to text types, which often help translators make translation choices, and can as such provide information both on the characteristics of the in-game text and on the amount of text included in the game. The latter point could be considered similar information as game characteristics factor *Number of words in game text*; however, it was chosen to treat the number of words in game text and the genres of the game as different factors for now, with the potential interdependence of factors being discussed in chapter 4.

This information was collected from the game pages on the corresponding platforms.

### 3.3.2.2 Game development and localization processes

Chandler and Deming (2012) mention numerous times that the localization of a video game is a process that goes hand in hand with game development, through a number of three phases: the planning, production and post-production phases. According to their checklist (Chandler and Deming 2012, p.13), the determination of the languages to localize into and of the appropriate level of localization for each language occurs during the planning phase, which

also includes a number of questions that the localization manager should ask in order for this phase to go smoothly. While not all of these questions fall within the scope of this thesis (for example, it was chosen to overlook questions listed as “technical considerations” due to them being either only relevant in console game localization, or too technical to be analyzed in the way provided for by this methodology), some of the broader questions listed as “other considerations” inspired the collection of the data described below.

- *When was it decided to localize the game?*

Although this is not one of the planning phase questions mentioned by Chandler and Deming (2012, p.13), it is often stated in their work that the earlier localization is planned into the development of a game, the easier it is to localize the game, notably because localization best practices are more easily implemented when taken into consideration since the very beginning of development. In Chandler and Deming (2012, p.49) as well, interviewed localization manager Bénédicte Laborie says that “the production schedule should always account for the localization schedule in the whole process as early as possible”, so that the localization process can run smoothly and be easier and quicker. This observation is further confirmed by Toftedahl *et al.* (2018, p.11), who highlight that the moment when localization occurred in the development processes described by their interviewees had repercussions on the localization process. One interviewee explains: “I didn’t see through that [my game] should be translated into many languages. So many parts of it [were] hard coded in English. It was not linked to a database. [...] I had to work on that afterwards. It was a double kind of work.” This shows clearly that, for this developer, choosing to localize the game after getting started with development made localizing the game harder. The work of Donoso (2002) supports this argument in highlighting how what he refers to as internationalization, i.e. the preparation of software for localization, is closely related to the speed and quality of the localization process. It seems plausible, thus, that not taking localization into account early in the development process could also have consequences on the choices made regarding the localization of the game. As a result, it was supposed that the moment when the decision was taken to localize a game could influence its localization greatly.

This thesis investigated whether game developers had started planning for localization before starting development, at an early stage of development, near the end of development or after the source language release of their games. This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4).

- *Who made the translations?*

In their planning phase checklist, Chandler and Deming (2012, p.13) recommend game developers and localization managers to ask themselves: “Will external vendors be producing the localizations?” This seems to be due, as described in chapter 6 of their book, to the fact that working with localization vendors usually raises localization costs, while also allowing for the saving of time. As a result, it was supposed that the person producing the localization could have an influence, or even various types of influence, on the factors surrounding the localization of a game, and thus an influence on the decisions made regarding localization. Chandler and Deming (2012, chaps6–7) seem to indicate that a developer or localization manager should choose between working with a localization vendor, who takes charge of the entire localization process from start to finish, and a professional translator, who only translates the game text, leaving it to game developers to include it in the game. Chapter 2 highlighted, however, that indie games are not always translated by professionals, with fan translators often playing a huge role in indie game localization; thus, it was judged relevant to research which type(s) of translators had effectively localized the selected games.

This study investigated whether the selected games had been translated by in-house translators, freelance translators, translators recruited via crowdsourcing methods, fan translators, acquaintances of the developers, some of the development team members themselves, other translators, or any combination of these options. This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4).

- *Sim-ship or post-gold*

In their planning phase checklist, Chandler and Deming (2012, p.13) recommend game developers and localization managers to ask themselves whether the localizations will ship simultaneously with the source language version. As seen in subsection 2.1.3, this is due to sim-ship localization requiring advanced planning and generally more time and effort than post-gold localization, despite having quite a number of benefits. In this study, it was thus supposed that the decision to ship all versions simultaneously or separately could influence localization choices such as the number of localized languages and the level of localization. A difference was made between games for which all localizations had been released simultaneously, games for which only certain localizations had received a sim-ship release

while other localized versions were released post-gold, and games for which all localizations had been made available after the initial source language release.

This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4).

### 3.3.2.3 *Feedback received on the game*

In their article, Toftedahl *et al.* (2018) find, upon asking indie game developers why they chose to translate their games in specific languages, that such a decision can be prompted by the desire to spread the game as much as possible, and thus localized languages can be determined by the nationality of players who will play or who are already playing the game. For some of the developers interviewed, the release of an “early access” version<sup>16</sup> of their games is what made them realize that their players came from a great number of different regions, and that localizing the game in the languages spoken in these regions could be advantageous. For instance, one of the interviewed developers explains that they chose to localize their game in Russian upon realizing that a lot of Russian players were playing the early access version and asking for the game to be made available in their own language. Furthermore, another developer says that “there was a demand from [our publisher’s] side. They had more requirements but [localization] was one of the important things from their part.” (Toftedahl *et al.* 2018, p.11) This means that, in their case, it was the publisher with whom they worked who requested that the game be localized.

In all cases described above, the idea or decision to localize the game in a given language was prompted or taken by someone other than the developers. In this thesis, it was chosen to group these instances under the term of “feedback”, meaning that any kind of feedback received about a previous, unfinished version of the game might have an influence on its localization. As a result, the following three pieces of information were collected:

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<sup>16</sup> “Early access” is, according to Steamworks (2019), the state of a game that is still being developed but already playable, and is thus sold as “not yet finished” until the final release date is reached. There exist different phases of unfinished but already playable games, such as demo, alpha or beta versions. For an easier understanding, however, it was chosen that, in this study, all game versions that had been first released as unfinished before a final version was available would be considered early access.

- *Early access or demo version*

This study researched whether each game had been available as an early access, demo, or any kind of “unfinished” version before its final source-language release.

This information is sometimes (although very rarely) available in the game descriptions displayed on the platforms. However, it is likely to be known only by game developers (and possibly early players of the game), and was thus collected via the questionnaire (see subsection 3.3.4).

- *Feedback from players*

This includes all comments or requests that players may have made about the localization of the game following their playing of the early access/demo version, whenever one was available.

This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4). However, it should be noted that this was considered relevant only in games that had been first released as an early access version; this information was therefore not collected in all games.

- *Languages requested by the publisher*

This includes all localizations that the publisher may have requested whenever the game had been released with the help of a publisher.

This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4). However, it should be noted that this was considered relevant only in games that had been released with the help of a publisher; this information was therefore not collected in all games.

#### *3.3.2.4 Game pricing and funding*

Finally, although not the main concern mentioned by indie game developers in Toftedahl *et al.* (2018), it was believed that the list of factors likely to have an influence on localization choices would not be complete without taking into account monetary matters. As explained in section 3.1, it is very clear, according to Chandler and Deming (2012, pp.47–51), that money (both in the form of projected profits and calculated costs) is the primary concern in AAA

game localization; therefore, although Toftedahl *et al.* (2018) show that it is not necessarily the main motivation behind localization in indie games, it was deemed important to analyze its influence on indie game localization as well.

Due to the scope of this thesis, it was decided to focus on two specific aspects of monetary matters. This first aspect is directly related to the projected profits of a game. While these profits can come from numerous factors, the main element is the amount of money that the game earns the developers. This is especially true in indie games, where in-game transactions or by-products, for instance, are rare. This is why the decision was taken to focus on game price, a factor that was analyzed via two pieces of information:

- *Business model*

The business model of a game refers to the way that the game is making profit, in particular in regards to who is paying and when. Nawal (2018) provides extensive descriptions of the six business models that exist on the current video game market, which are as follows:

- *Premium* games: The most traditional of business models, premium games refer to games that require one upfront payment before being downloaded and/or played in full.
- *Freemium* games: The most widely encountered business model beside premium games, freemium games are free to download and play but include micro-payments, i.e. the possibility for the player to purchase additional content while playing the game. This means that the version of the game that can be downloaded and played for free could be considered an incomplete version.
- *Ad-supported* games: These games are also free to download and play, but include advertisements that the players must sometimes watch to continue playing.
- *Hybrid model* games: These games include elements from the freemium and the ad-supported models, i.e. they usually incorporate both micro-payments and advertisements, which can however often be removed by paying a small fee.
- *Crowdsourcing model* games: This business model cannot be applied to any type of game. Its main principle is that players provide some kind of information while playing, and that this information is later sold to a third-party who needs it.
- *Blockchain-based* games: The rarest of business models to date, blockchain-based games are designed to mimic the functioning of blockchains (as used in cryptography

and most widely known for their use in the creation of cryptocurrencies such as Bitcoin), which consist in establishing a chain of information that keeps flowing from the information generated by each user.

The last two models described by Nawal (2018) are very rarely encountered and do not apply to indie games for PC, however. Therefore, in this thesis, it was chosen to use the following classification: premium games are referred to as *priced* games; freemium, ad-supported and hybrid model games are considered to belong in the same category of games that are free to download but earn revenue from either micro-payments or advertisements, called *free to play* games; and finally, the last two business models are discarded and two new categories of free games are taken into consideration. These categories are *free* games, which are completely free and do not allow the player to pay anything in any way nor watch advertisements to support the game, and *name your own price* games, which can be downloaded and played for free but allow the player to pay any price that they wish to support the game upon download. These categories correspond to the ones encountered in this study, with more details being given in subsection 3.3.3.2.

This information is available on all three platforms.

- *Game price*

This is, simply put, the price that the game is sold at. A higher selling price means that the revenue earned from the game should be higher, provided that the number of buyers is the same.

This information is available on all three platforms. In some cases, games were sold at slightly different prices on different platforms; thus, it was chosen that the game price collected would be the one displayed on the platform where the game was selected. In order to allow for comparison between games, however, all game prices were collected in USD only, as this was the only currency that could be displayed on all three platforms.

The second aspect of monetary matters is not related to calculated costs, due to both the fact that numerous factors should be taken into account in order to compute the costs necessary to the release of a game and the fact that it was decided to list some of these factors under the previously mentioned categories. It is related, however, to a subject rarely discussed in AAA

games but which was deemed particularly important in indie games: game funding. AAA games are indeed, as explained in chapter 2, usually developed or commissioned and funded by big corporations with similarly huge financial means. Indie game developers, however, do not release nearly as many games as these corporations, and the games selected in this study are sometimes even their first games, meaning that they cannot always fund development with the earnings of previous games. As a result, it seemed crucial to know how the selected games had been funded, and if possible try and estimate how much funding they had received. Monetary matters being a touchy subject, however, it was chosen to focus on collecting non-sensitive information, such as the following:

- *Publisher*

It was supposed that a game that had been released with the help of an external publisher may have received financial help from this publisher. Alternatively, it does not seem too far-fetched to imagine that an external publisher would shoulder at least some of the game release costs, effectively making for a reduction of costs paid for by the developer.

In this thesis, games were considered to have been released with the help of an external publisher whenever the names of the developer and the publisher were different. This information is available on two of the three platforms (Steam and GOG.com) and sometimes hinted to on the third one (itch.io). It was further confirmed by a question in the questionnaire (see subsection 3.3.4).

- *Crowdfunding campaign*

DellaFave (2014) suggests, among other solutions, that indie game developers looking to fund their games turn to crowdfunding. This can be done using platforms such as Kickstarter or Indiegogo (already discussed in subsection 2.2.2), where anyone can submit any project and have interested buyers or players invest any amount into the project, sometimes in exchange for a reward. This option is interesting for indie game developers because it allows them to be assured early on that enough people are interested in playing the game to make development financially worth it.

This information can be found by searching on crowdfunding platforms, but was mostly collected via the questionnaire in this thesis (see subsection 3.3.4).

- *Grant/Fund*

Another solution mentioned by DellaFave (2014), grants or funds are sometimes granted to the development of indie games. These can come from numerous institutions and take different forms, it is why it was chosen not to research about each grant or fund separately, but rather simply to learn whether each game had received a grant or fund.

This information is likely to be known by game developers only and was thus obtained via the questionnaire (see subsection 3.3.4).

- *Number of sources*

Finally, the total number of funding sources mentioned by developers was computed, in order to have an estimation of the amount of funding that each game may have received.

Table 5 below provides a summary of the factors described in this subsection, the corresponding variables, and the methods used to collect these types of information in the selected games.

Category of factors	Variable	Possible value	Collected via
<b>Comparison variables</b>	Number of languages available	Numerical	Platforms Questionnaire
	Existence of voiceover	Yes/No	Platforms Game itself Game videos Questionnaire
	Number of languages subtitled	Numerical	Platforms Game itself Game videos
	Number of languages dubbed	Numerical	Platforms Game itself Game videos
<b>Game characteristics</b>	Source language	Any language	Questionnaire
	Number of words in game text	Numerical	Questionnaire
	Source language (VO)	Any language	Questionnaire
	Number of words in script (VO)	Numerical	Questionnaire
	Number of actors (VO)	Numerical	Questionnaire

Category of factors	Variable	Possible value	Collected via	
	Age rating	PEGI 3; PEGI 7; PEGI 12; PEGI 16; PEGI 18 <sup>17</sup>	Platforms Official websites Questionnaire	
	Completion time (in hours)	Numerical	Questionnaire	
	Genres:	Action	Yes/No	Platforms
		Adventure	Yes/No	Platforms
		Card Game	Yes/No	Platforms
		Casual	Yes/No	Platforms
		Educational	Yes/No	Platforms
		Fighting	Yes/No	Platforms
		Indie	Yes/No	Platforms
		Interactive Fiction	Yes/No	Platforms
		Massively Multiplayer	Yes/No	Platforms
		Platformer	Yes/No	Platforms
		Puzzle	Yes/No	Platforms
		Racing	Yes/No	Platforms
		Rhythm	Yes/No	Platforms
		RPG	Yes/No	Platforms
		Shooter	Yes/No	Platforms
		Simulation	Yes/No	Platforms
		Sports	Yes/No	Platforms
		Strategy	Yes/No	Platforms
Survival	Yes/No	Platforms		
Visual Novel	Yes/No	Platforms		
<b>Game localization and development processes</b>	Timing of localization	Before development; At an early stage; Near the end; After release	Questionnaire	
	Agent of localization:	In-house translators	Yes/No	Questionnaire
		Freelance translators	Yes/No	Questionnaire
		Crowdsourced translators	Yes/No	Questionnaire
		Fan translators	Yes/No	Questionnaire
		Acquaintances	Yes/No	Questionnaire
		Member of development team	Yes/No	Questionnaire

<sup>17</sup> See subsection 3.3.2.1, "Age rating".

Category of factors	Variable	Possible value	Collected via
	Translation agency	Yes/No	Questionnaire
	Sim-ship localization	Yes/No/In some cases only	Questionnaire
Feedback received on the game	Early access	Yes/No	Questionnaire
	Feedback from players	Yes/No	Questionnaire
	Feedback from publisher	Yes/No	Questionnaire
Game pricing and funding	Business model	Priced; Free to play; Free; Name your own price	Platforms
	Price (in USD)	Numerical	Platforms
	Publisher	Yes/No	Platforms Questionnaire
	Crowdfunding campaign	Yes/No	Questionnaire
	Grant/Fund	Yes/No	Questionnaire
	Number of sources of funding	Numerical	Computed on the basis of the previous variables

*Table 5. Summary of the types of information collected, possible values for each variable, and collection methods used in each case.*

### 3.3.3 Collecting information on the platforms and other sources

This subsection details the information that could be collected through the product page analysis conducted on each of the selected platforms, as well as the ways in which this information was verified or completed using other methods, such as playing the games. Firstly, the information regarding the number of localized versions and the levels of localization is described; then, available information is classified using the categories introduced in the previous part.

#### 3.3.3.1 GOG.com

As of January 2019, GOG.com clearly displayed the languages that the game was available in under “Game details”, in a table where each language name was written in the language in question, making it easier to understand for speakers of all languages. The table also made clear whether a game included voiceover by indicating which languages were also available

as “audio” content. However, it did not show whether the game contained subtitles, making it difficult to know, for instance, if a game that possessed both audio and text content in English but only text content in Spanish at least offered Spanish-subtitled voiceover in the Spanish localization. Since this is common localization practice, however, it was assumed that any localized version without audio content of a game with voiceover included subtitles; this is due to the only way to confirm this information being playing all localized versions of each game in question, which would have taken too much time and been too expensive since all games selected on GOG.com were priced games. Still, it should be noted that this decision may have had an influence on the reliability of this specific set of information; this is discussed more extensively in chapter 4.

It should be noted that, contrary to Steam product pages (see subsection 3.3.3.3), GOG.com product pages do not include links to the official websites of the selected games (see Figure 1). Therefore, official websites were not used as a source for GOG.com games.

- *Game characteristics*

Of all game characteristics factors analyzed in this study, the only information available on GOG.com product pages was the genres of the game. These were listed under “Game details”, where exactly three genres are specified for each game. However, while the first (and the second in some cases) of these genres always belonged to the list established in subsection 3.3.2.1, the last ones almost systematically did not. These genres, being for instance “Point-and-click”, “Detective-mystery” or “Metroidvania”, were not listed anywhere on the website and could thus therefore not be included in the list established in subsection 3.3.2.1 for fear of failing to include them all. In this thesis, they were understood as subgenres aiming to specify the first genre or the first two genres indicated; although it would have been just as interesting to investigate them as well, they were considered not to fall within the scope of this study. They may, however, serve as an area for further research.

- *Game development and localization processes*

None of the game development and localization processes factors were displayed on GOG.com product pages.

- *Feedback received on the game*

None of the feedback-related factors were displayed on GOG.com product pages.

- *Game pricing and funding*

Of the game pricing and funding factors, three were available on GOG.com product pages: the business model of the game, its price, and whether it was released with the help of an external publisher. In the case of business models, games on GOG.com were either free or priced, with no difference being made between entirely free games and free to play (but micro-payments or advertisements including) games. When accessing the website from Switzerland, prices could be displayed in CHF, EUR or USD, and were chosen to be displayed in USD in this study to make comparison possible between the three platforms, as it was the only currency available on all platforms (see subsection 3.3.2.4, *Game price*). Finally, the publisher was specified under “Game details” as “Company”: two names were given, with the first one being the name of the developer and the second one being the name of the publisher. As mentioned in subsection 3.3.2.4, only games for which the two names were different were considered to have been released with the help of an external publisher.

### 3.3.3.2 *itch.io*

It has been mentioned in subsection 3.2.2 that itch.io product pages are fully customized to the game that they are offering and that, as a result, they do not always include the same information: for instance, the full list of languages available is not always displayed. Due to the selection method used and described in subsection 3.2.2, this list was displayed on the product pages of all games selected on the platform; however, in some cases, it was noticed that not all languages available were actually listed as “Languages” in the “More information” menu. In these games, the game description usually included a list of available localized versions which did not match with the list displayed under “More information”. As a result, the language list written in the game description, if any, was systematically compared to the language list displayed under “More information” to make sure that all mentioned localizations would be taken into account in this study.

Furthermore, as of January 2019, itch.io product pages did not offer any kind of information about voiceover. Except in one case where the game description credited voice actors, making it obvious that the game should include voiceover, it was not possible to know whether the games included voiceover and whether this voiceover was subtitled and/or dubbed in the localized languages from browsing the product pages alone. To gather this information, it was decided to play all games that could be obtained at no cost, which are the majority of the games selected on itch.io, while making sure to play them in all available localized versions

whenever they appeared to include voiceover in order to check for subtitles and/or localized voiceover. In the rarer cases of priced games, recordings made of other players playing the games were watched on platforms such as YouTube, allowing for the collection of similar information; since no priced game selected on itch.io was found to include voiceover, however, it was not necessary to search for recordings in all available languages to confirm the presence of subtitles and all the necessary information could be collected.

It should be noted that, contrary to Steam product pages (see subsection 3.3.3.3), itch.io product pages do not include links to the official websites of the selected games (see Figure 3). Therefore, official websites were not used as a source for itch.io games.

- *Game characteristics*

Only one of the game characteristics factors was usually available on itch.io product pages: the genres of the game, which were almost always displayed as “Genre” in the “More information” menu, although unspecified in some cases. In these cases, the game was searched for on the two other platforms and the genres specified on these platforms were taken into account instead. All games whose genres were not specified on the itch.io product page were also available on another of the selected platforms. On top of that, the completion time of the games was hinted to on some product pages, where it was indicated as “Average session” under “More information”; however, the term “Average session” seems to refer to the average time that players spend playing the game at once, rather than the overall time that they spend playing the game in average. Thus, it was chosen not to consider the “Average session” to be equivalent to the completion time, and this information was not added to the set of data collected.

- *Game development and localization processes*

None of the game development and localization processes factors were displayed on itch.io product pages.

- *Feedback received on the game*

None of the feedback-related factors were displayed on itch.io product pages.

- *Game pricing and funding*

Both the business model and the price of each game were always displayed on itch.io product pages. itch.io games were free, priced at a price displayed in USD only, or offered in a model

specific to this platform called “Name your own price”. As subsection 3.3.2.4 explained, “Name your own price” games can either be downloaded and played for free or paid at a price chosen by the player, allowing players to support game developers with any amount that they can afford or wish to pay. In some cases, the publisher was displayed as “Publisher” in the “More information” menu, but these cases were extremely rare. Whenever the publisher was not mentioned, it was assumed that the game had not been released with the help of an external publisher at all. While this assumption may be incorrect in some cases, it seemed coherent due to the fact that most games selected on itch.io are either free or sold as “Name your own price”; it was furthermore confirmed by all itch.io developers who answered the questionnaire described in subsection 3.3.4.

### 3.3.3.3 *Steam*

Subsection 3.2.2 highlighted that a considerable quantity of information is available on the Steam product pages of the selected games. As of January 2019, the available languages were listed in a table which also made clear whether the game included target-language subtitles and/or target-language voiceover in any of the available languages. This not only allowed for easy computing of the number of available localizations, but also for the collection of all necessary data regarding the levels of localization applied to each game.

On top of that, it should be noted that most of the Steam product pages of the selected games included a link to the official website of the game, displayed as a “Visit the website” link (see Figure 4). As a result, official websites could be used as another source of information for games selected on Steam.

- *Game characteristics*

The genres of the games were always specified on Steam product pages. They were listed as “Genre” in one of the information boxes on the right area of the product page and were limited to genres included in the list of genres used by the platform and summarized in Table 4. On top of that, the PEGI age rating was sometimes displayed right below the languages table, but it was not always the case. Whenever no age rating was displayed, the official website of the game was visited and it was checked whether it displayed any kind of age rating for the game. In cases where no official website was linked or the official website did not specify the age rating of the game, the age rating was considered to be unknown and not added to the set of data collected.

- *Game development and localization processes*

None of the game development and localization processes factors were displayed on Steam product pages.

- *Feedback received on the game*

None of the feedback-related factors were displayed on Steam product pages.

- *Game pricing and funding*

Similarly to the previous platforms, business models and prices of the games were always displayed on Steam product pages. Games on Steam were classified as free, free to play (i.e. including micro-payments or advertisements), or priced at a price that was displayed in the currency used in the country that the website was accessed from. In this thesis, in order to allow for comparison with the other platforms, Steam product pages were thus accessed using VPN software that made the page display as if it were accessed from the USA, with prices in USD.

### **3.3.4 Collecting information via the questionnaire**

As mentioned in subsection 3.3.3.4 above, the data collected through the product page analysis of the game distribution platforms was confirmed and completed by a questionnaire. This subsection aims to explain why it was decided to use a questionnaire, as well as the way that this questionnaire was designed and used, with the types of information that it allowed to collect and the way in which it was tested out.

#### **3.3.4.1 Aim of the questionnaire**

As seen in subsection 3.3.2, the investigation of the identified factors required, in some cases, the collection of data likely to be known by the game developers only. Thus, the aim of the questionnaire was to collect this data from the developers of the selected games. Following the methodology used by Toftedahl *et al.* (2018), interviews could also have been conducted, either instead of the questionnaire or on top of it. The data that was aimed for is mostly quantitative, however; this is why it was believed that a questionnaire would be more convenient and more effective than interviews, which would have more easily provided qualitative data. Furthermore, interviews would have proven difficult to conduct within the scope of this study, as they would have required traveling (in the case of in-person interviews) or managing time zones (in the case of phone or direct messaging interviews), and it is likely

that it would have been possible to interview only a very small percentage of game developers selected. Therefore, due to the scope and limitations of the current study, only a questionnaire was used as a complementary data collection method.

#### *3.3.4.2 Scheduling and sending out the questionnaire*

The questionnaire was launched on Tuesday, March 12<sup>th</sup> 2019, and it remained active and accepted responses until Wednesday, April 10<sup>th</sup> 2019, i.e. for a total period of about a month as per the recommendations of Cornford and Smithson (2015, chap.7), who suggest that a questionnaire should remain open for a period of at least two to three weeks. During this period, a reminder to developers that had yet to answer the questionnaire was sent out on Tuesday, April 2<sup>nd</sup> 2019, i.e. one week before the closing of the questionnaire. Similarly to the numbers observed by Hernandez (2017, p.68) in the conducting of her own survey, the majority of answers were received in the week following the opening of the questionnaire, with information about 33 games (out of 108) having been received by Thursday, March 28<sup>th</sup> 2019, i.e. two weeks after the initial opening, whereas sending out the reminder allowed to receive 2 more responses. Thus, the response rate for the questionnaire is of 35 games out of 108, which implies a ratio of about 32%.

Both the questionnaire and the reminder were sent to the developers of the selected games primarily by email. In order to do so, the email addresses of the developers thus needed to be collected: in most cases, these could be found on the official websites of the games or on the personal websites of the developers, usually linked to on the official websites of the games. Whenever more than one email address was available (for instance because the developers possessed both a general contact email address and an email address dedicated to press or business inquiries, or because the addresses of more than one person from the development team were specified), it was chosen to send the questionnaire to the localization-related email address or team member if there was one. If not, it was sent to the general contact email or the chief developer/team leader; and if there was none, it was sent to the press-related email address. Both the initial email and the reminder were sent to the same address.

In the cases of 14 developers (corresponding to 12 individual games), however, no contact email address could be found, most probably due to these developers not wishing to be contacted via email. In these cases, another way to contact the developers was sought: some developers could be contacted by filling a form on their official websites, some possessed an

official social media page where it was possible to send them private messages, and some could only be found through their personal social media pages. While contacting developers via their official or personal social media pages only allowed to receive one answer, contacting them via the forms on their official websites proved more efficient. Indeed, three of the developers who were contacted this way agreed to take part in the questionnaire.

Both the initial invitation to the questionnaire and the reminder were written in English, in a way that aimed to keep the message short and professional while still conveying all of the necessary information, such as the topic of this study and the contact information of the author. The same messages were sent out to all developers, except for the ones which could only be contacted via their personal social media pages: in order not to appear too invasive, these developers were first sent a short, personal message introducing the author, stating the aim and context of this study, and offering to send them the link to the questionnaire if they wished to take part in it. As a result, these developers only received the questionnaire when they explicitly confirmed that they were interested in participating. The initial invitation and the reminder are included in Appendix B.

#### *3.3.4.3 Questionnaire design*

The questionnaire used in this thesis was created following the principles laid out by Saldanha and O'Brien (2015) and Cornford and Smithson (2015, chap.7) and taking inspiration from the surveys used by Gutwein (2016) and Hernandez (2017). It was designed and made available using LimeSurvey, a platform offering a number of advantages, such as the possibility of sending automated invitations and reminders and of offering respondents a way to indicate that they wished to opt out of answering the questionnaire. The LimeSurvey server used is also located at the premises of the University of Geneva, which ensured the confidentiality and the security of the data collected.

The questionnaire was divided into six groups of questions, preceded by an introduction page. The first and last groups contain questions aiming to identify the respondent and the game being discussed, as well as give respondents an area for further remarks. Then, the main four groups of questions could have been designed to collect each the information associated with one of the four categories of factors described in subsection 3.3.2. As some of the information listed under these factors could be classified in various manners, however, it was decided to slightly diverge from the categories imagined in subsection 3.3.2, in order to make the order

of the questions as logical as possible for the respondent (i.e. ask all questions about the localizations of the game in the same group of questions, for instance). The full questionnaire can be consulted in Appendix C.

As a general rule, short questions that required little thinking about were preferred, in order to keep the answering time of the questionnaire as short as possible, as recommended by Peterson (2000, pp.50–59) (cited in Gutwein 2016, p.71). In most cases, closed-ended questions and multiple-choice questions were preferred, as these would only require the respondent to click a few times; in cases where open-ended questions with no set of suggested answers were inevitable, every effort was made to ensure that the respondent would not be required to write out more than one sentence. This is due to the fear that respondents would lose motivation to complete the questionnaire, were the questionnaire to take too much time or require too much effort. While such concerns are relevant to any type of questionnaire, they were deemed particularly relevant in the case of indie games due to indie game developers usually not being corporations (see subsection 2.2) and therefore rarely possessing a public relations department, or even a full-time public relations expert.

The introduction page and these six groups are described more precisely below. In the cases where more than one of the selected games had been developed by the same person or the same team, it should be noted that a specific questionnaire was created and sent to this person or team only; however, each of the specific questionnaires included the same introduction page and the same groups of questions as the general questionnaire.

- *Introduction page*

The introductory message was inspired from various questionnaire introduction examples, such as the ones made available by survey platforms SurveyMonkey and Survey Anyplace (Deckers 2017; SurveyMonkey Help Center 2019). The main objective was for it to remain short and to the point, as recommended by Cornford and Smithson (2015, chap.7), while still conveying the necessary information.

- *Group 1: Respondent's background*

This first group included two questions about the respondent, with the aims of both being able to identify the selected game that they had developed and making sure that the respondent had played a significant role in the development. In order to do so, the respondent was asked to

select all roles that they had fulfilled during development, in a list adapted from roles described by Doulin (2010) and using the same role titles as Toftedahl *et al.* (2018, p.9). It was made sure, however, not to request any personal information such as the name of the respondent, as this seemed unnecessary and could have been perceived as intrusive.

- *Group 2: Questions on game characteristics and development*

The second group of questions was designed to collect all of the necessary information about the content of the game, including questions required to gather the data described in subsection 3.3.2.1 as well as some questions related to the languages and voiceover available, as described in subsection 3.3.1. On top of that, the opportunity was seized to ask one question with a qualitative aim: developers who stated that their game did not include any voiceover were asked why they made this decision. They had the possibility to either choose one or more answers among five suggestions or write their own explanation. Although the suggested answers were mostly prompted by the author's impressions and have therefore not been used to comment on any of the hypotheses formulated in this thesis, the results of this question are discussed more extensively in chapter 4.

- *Group 3: Questions on the game localization process*

This group of questions was designed to collect all of the necessary information about the localizations of the game, including questions required to gather the data described in subsection 3.3.2.2 as well as some questions related to the languages and the voiceover available, as described in subsection 3.3.1. On top of that, the opportunity was seized to ask a few questions with a qualitative aim. First of all, all developers were asked whether they were planning to add more localized versions to their game. If yes or unsure, they were then asked which languages they were planning to add; if unsure, they were asked which factors they thought could influence their decisions; and if no, they were asked why. In the last two cases, they had the possibility to either choose one or more answers among five suggestions or write their own explanation. Although the suggested answers were mostly prompted by the author's impressions and have therefore not been used to comment on any of the hypotheses formulated in this thesis, the results of these questions are discussed more extensively in chapter 4.

- *Group 4: Questions on the game publication process*

This group of questions aimed to collect all the information that was related to the game release process, and thus covered both the data described in subsection 3.3.2.3 and some of the information mentioned in subsection 3.3.3.3.

- *Group 5: Questions on game funding*

This group of questions aimed to collect the remaining information related to game pricing and funding. The last question asked developers to mention the other source(s) of funding that they might have received, if any; however, it was feared that this question might be perceived as intrusive or asking for sensitive information to developers, therefore an option was offered to opt out of answering this question.

- *Group 6: Conclusion*

Finally, the last group of questions simply aimed to give developers an area to make additional remarks about any part of the questionnaire, as well as collect the contact information of developers who wished to be informed of the results of this study.

#### *3.3.4.4 Pilot phase*

Once designed, the questionnaire was tested through the conducting of a pilot study, a step judged necessary by Saldanha and O'Brien (2015) as well as Cornford and Smithson (2015, p.118). According to these sources, a pilot study should always be conducted on a small part of the sample population of the overall study; in this thesis, however, this would have meant that two or three developers of the selected games should have been contacted ahead of time and asked to take part in the pilot study, which was judged inappropriate due to the initial sample population being rather small (only 108 games were included in this study) and the response ratio being feared to be rather low. As a result, the pilot study was conducted on five volunteer acquaintances who were not indie game developers themselves, but still allowed for the collection of valuable feedback on the questionnaire design. They were given the link to the questionnaire and asked to play pretend as they answered the questions as if they were game developers themselves, while measuring the time it took them to answer and making sure to write down any question that they felt was difficult to understand.

Out of the five pilot respondents, one was a software development professional and could easily identify inappropriately asked questions, whereas the other four did not have any

experience in game development or localization. However, pilot respondents had very different levels of understanding of the English language, which was deemed valuable due to developers of the selected games not always being based in English-speaking countries. The possibility that the targeted sample population was made up of a considerable number of non-native speakers of English made the clarity and understandability of the questions a particularly important factor, and the feedback received from pilot respondents with lower proficiency in English especially helped identify questions that were not phrased simply enough. Following the pilot study, one question was slightly rephrased in order to be more easily understood by game developers, and one question was completely rewritten in order to avoid misunderstandings. Indeed, the question aiming to collect the completion time of each game was initially phrased in a way that led some of the respondents to believe that they were asked how much time they had spent developing the game.

The pilot study also helped define how much time was needed to complete the questionnaire on average. As explained in subsection 3.3.4.3, one of the main concerns behind the elaboration of the questionnaire was that it should not take too much time to complete, due to indie game developers being very likely to lose motivation to participate otherwise. None of the pilot respondents spent more than 10 minutes answering the questions: the quickest one had finished after 3 minutes and 10 seconds, and it took the slowest one 9 minutes and 3 seconds to complete the questionnaire. This allowed for estimating that answering the questionnaire should take developers about 10 minutes. In the end, it was judged that although the pilot respondents were not part of the sample population selected for this study, this estimation was mostly reliable due to the questionnaire including almost exclusively closed-ended and multiple-choice questions.

### **3.3.5 Adjustments made following the questionnaire**

Subsections 3.3.1 and 3.3.2 already highlighted that certain types of information were both collected via the product page analysis and verified using the questionnaire. This resulted in the appearance of a certain number of inconsistencies: in the cases of 6 selected games, the list of available languages collected from the platforms did not match the list of available languages given by the developers in the questionnaire. In these cases, the most complete information always prevailed, and cases of conflicting data were solved by prioritizing answers given by the developers. These inconsistencies are most likely due to the platforms not supporting certain languages such as Latvian.

The present chapter highlighted that, using the product page analysis and the questionnaire introduced above, certain types of data were collected about the 108 selected indie games, whereas other types were only collected about games whose developers answered the questionnaire. Chapter 4 analyzes this data on several levels and discusses elements of answers to the research questions.

## 4. Data overview, analysis and discussion

Using the data presented in chapter 3, this chapter aims to describe the investigation of the two main research areas of this study: 1) the factors influencing the number of localized versions released for indie games and 2) the factors influencing the levels of localization that indie games receive, in terms of the percentages of localized versions which contain either subtitles of the source language voiceover or fully localized, target-language voiceover. Prior to this, however, section 4.1 provides an overview of the collected data, already highlighting certain observations that can be made about several characteristics of the selected games. Then, section 4.2 examines the correlation coefficients that exist between the various factors introduced in chapter 3 and the number of localized versions available for each selected game. Finally, correlation coefficients between the same factors and the amount of subtitled and dubbed localized versions are discussed in section 4.3.

In order to make collected data easier to comment and analyze, selected games are classified in four datasets. The first two sets, set A and set B, include all games, regardless of whether they contain voiceover or not; set A includes all 108 games investigated in this study, and set B is a subset of set A which includes only the 35 games whose developers answered the questionnaire described in subsection 3.3.4. The last two sets, set C and set D, include only games that contain voiceover; set C is a subset of set A which includes only the 39 games that contain voiceover, and set D is a subset of set C which include only the 9 games that contain voiceover and whose developers answered the questionnaire described in subsection 3.3.4.

Figure 5 below illustrates the distribution of the datasets, while Table 6 summarizes the data that could be collected for each of these four datasets,

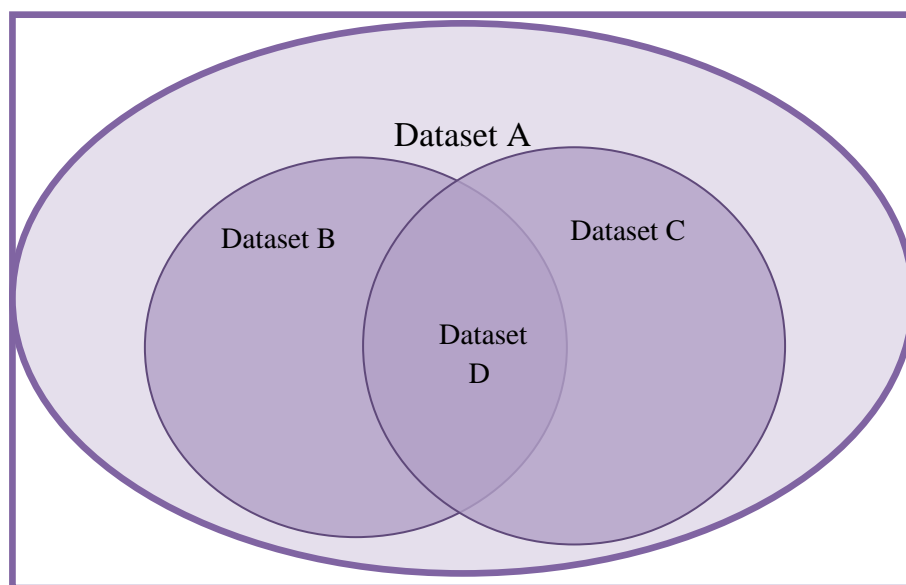


Figure 5. Distribution of the datasets examined in this study.

Variable	Full Set All games		Subset Games including voiceover	
	A 108 games	B 35 games	C 39 games	D 9 games
Languages available	✓	✓	✓	✓
Languages subtitled	✓	✓	✓	✓
Languages dubbed	✓	✓	✓	✓
Source language	35	✓	9	✓
Words in game text	26	26	7	7
Source language (VO)	9	9	9	✓
Words in script (VO)	4	4	4	4
Actors (VO)	9	9	9	✓
Age rating	70	✓	24	8
Completion time	35	✓	8	8
Genres	✓	✓	✓	✓
Timing of localization	35	✓	9	✓
Agent of localization	35	✓	9	✓
Sim-ship	35	✓	9	✓
Early access	35	✓	9	✓
Feedback from players	35	✓	9	✓
Feedback from publisher	35	✓	9	✓
Business model	✓	✓	✓	✓
Price	✓	✓	✓	✓

Variable	Full Set		Subset	
	All games		Games including voiceover	
<b>Publisher</b>	✓	✓	✓	✓
<b>Crowdfunding campaign</b>	35	✓	9	✓
<b>Grant/Fund</b>	35	✓	9	✓
<b>Sources of funding</b>	35	✓	9	✓

*Table 6. Overview of the data collected for games in each of the four datasets. Checkmarks indicate that the category of data was collected for all games in the set; otherwise, the number of games for which the category of data was collected is indicated.*

## 4.1 Data overview

Before comparing identified factors to assess the hypotheses formulated in section 3.1, this section provides and discusses descriptive statistical data extracted from sets A, B, C and D of the selected indie games. Observations made in this section regard the information gathered about the selected games, i.e. the languages in which the selected games are available and their levels of localization (subsections 4.1.1 and 4.1.2), the characteristics of the selected games (subsection 4.1.3), the game development and localization processes undergone by the selected games (subsection 4.1.4), the feedback received by the interviewed developers (subsection 4.1.5) and the funding and pricing of the selected games (subsection 4.1.6).

### 4.1.1 Available languages

As explained in subsection 3.2.1, all selected indie games (dataset A) are available in at least one language on top of English, to ensure that they have been localized at least once. In this study, the games with the smallest number of localized versions are available in one language on top of English, whereas the most localized game can be played in 26 languages on top of English. Taking into account all games in set A, a total of 37 locales (besides English) are available, the most popular of which are French (83 games out of 108 (76.9%)), German (80 games out of 108 (74.1%)), Russian (80 games out of 108 (74.1%)), Spanish (79 games out of 108 (73.1%)) and Italian (62 games out of 108 (57.4%)). Figure 6 illustrates the number of games in set A available in each of the 37 locales.

Interestingly, the most widely available locales among set A include not only the “standard localization target languages” (O’Hagan and Mangiron 2013, p.16) (often referred to as FIGS,

as in French, Italian, German and Spanish) but also Russian, which supports O'Hagan and Mangiron's claim that there is "an increasing trend for the localization of games into the languages of emerging markets such as Russian and Polish as well as Asian languages" (O'Hagan and Mangiron 2013, pp.16–17). While O'Hagan and Mangiron examine strictly AAA games, it could be argued that a similar trend can be observed in indie games, especially since other very popular languages among the selected games are simplified Chinese (52 games out of 108 (48.1%)), Japanese (51 games out of 108 (47.2%)), Korean (51 games out of 108 (47.2%)) and Polish (46 games out of 108 (42.6%)) (see Figure 6). Only Brazilian Portuguese (52 games out of 108 (48.1%)) is not mentioned by O'Hagan and Mangiron (2013), but could be considered one of the "emerging markets" that they describe. These findings can be compared to those of Sánchez Espinoza (2015), who finds that open-source video games are also most commonly localized into FIGS languages, Russian and Polish. However, Sánchez Espinoza highlights that a number of co-official languages (such as Catalan and Galician) and even certain fictional languages can be found in open-source video games, whereas only one game is available in Catalan (and none are in the other aforementioned languages) in dataset A of this study. Still, it could hardly be assumed that the localized languages are chosen similarly in indie games and in AAA games, as a great number of languages rarely localized into in the case of AAA games (such as Hungarian, Turkish or Vietnamese) are also found in a certain number of the games in dataset A. Similar observations could be made about the games in data set B (see Figure 7), although Korean is slightly more localized into (19 games out of 35 (54.3%)) and Italian is less localized into (11 games out of 35 (31.4%)) among the games of dataset B.

While the reasons for choosing to localize games in specific languages are not investigated in this thesis, a question asked in the questionnaire allowed for the collection of relevant data. When asked why they were unsure or did not plan to add more languages to their games, the largest share of the 16 developers who answered this question (6 out of 16 developers (37.5%)) stated that they did not see the appeal of having more languages available, for instance because they felt that their games already offered the necessary languages, or because they rather wanted to invest their resources in creating new games. Others mentioned fearing that localization would take too much time (3 developers out of 16 (18.8%)), or not knowing who could localize their games in new languages (3 developers out of 16 (18.8%)). Similarly, one developer out of 16 (6.3%) explained that the languages that their games would

be localized into were chosen by fans who carried out the localizations, a point further discussed in subsection 4.1.3. Figure 8 illustrates these numbers.

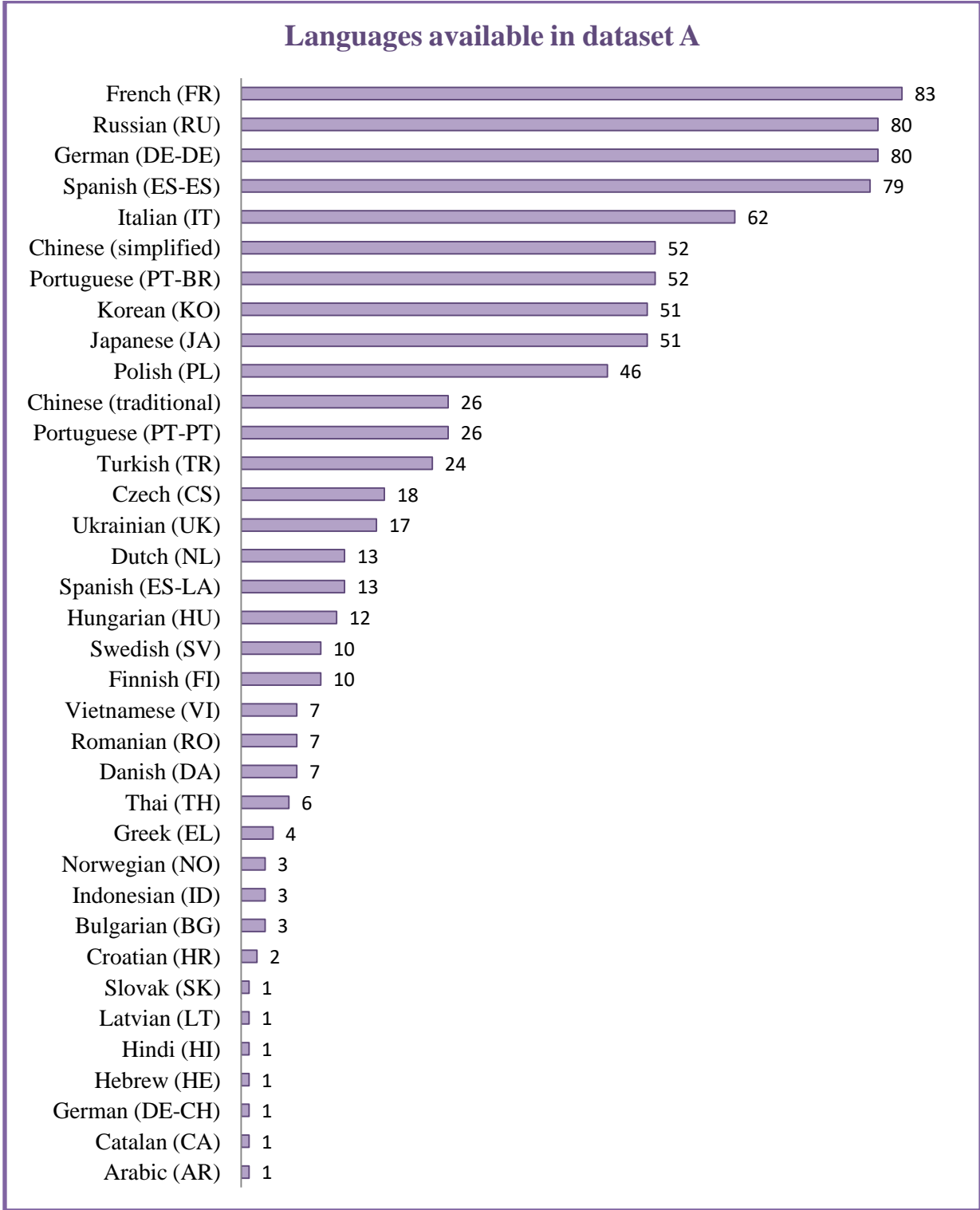


Figure 6. Graph of the languages available among the 108 games of dataset A.

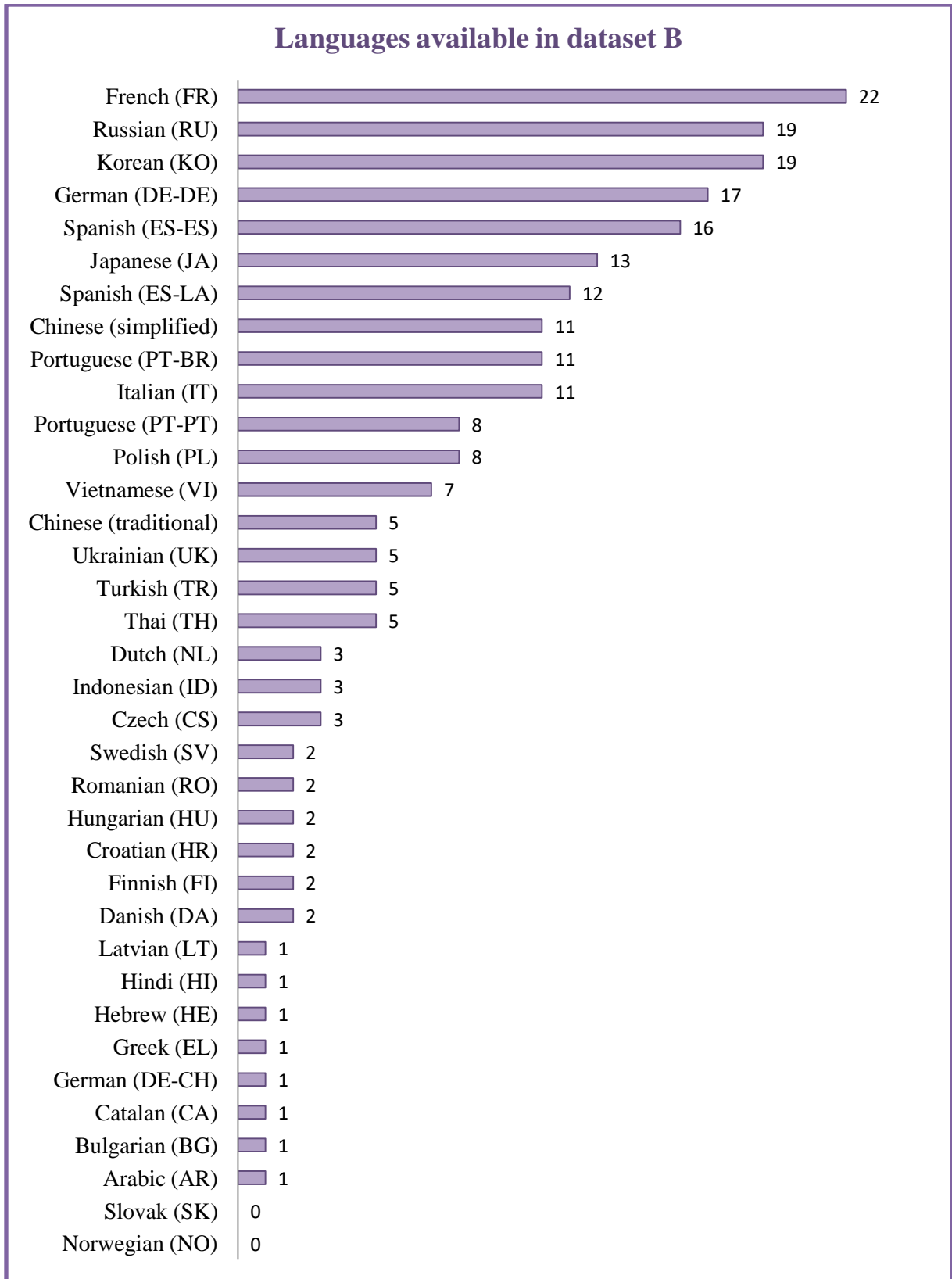


Figure 7. Graph of the languages available among the 35 games of dataset B.

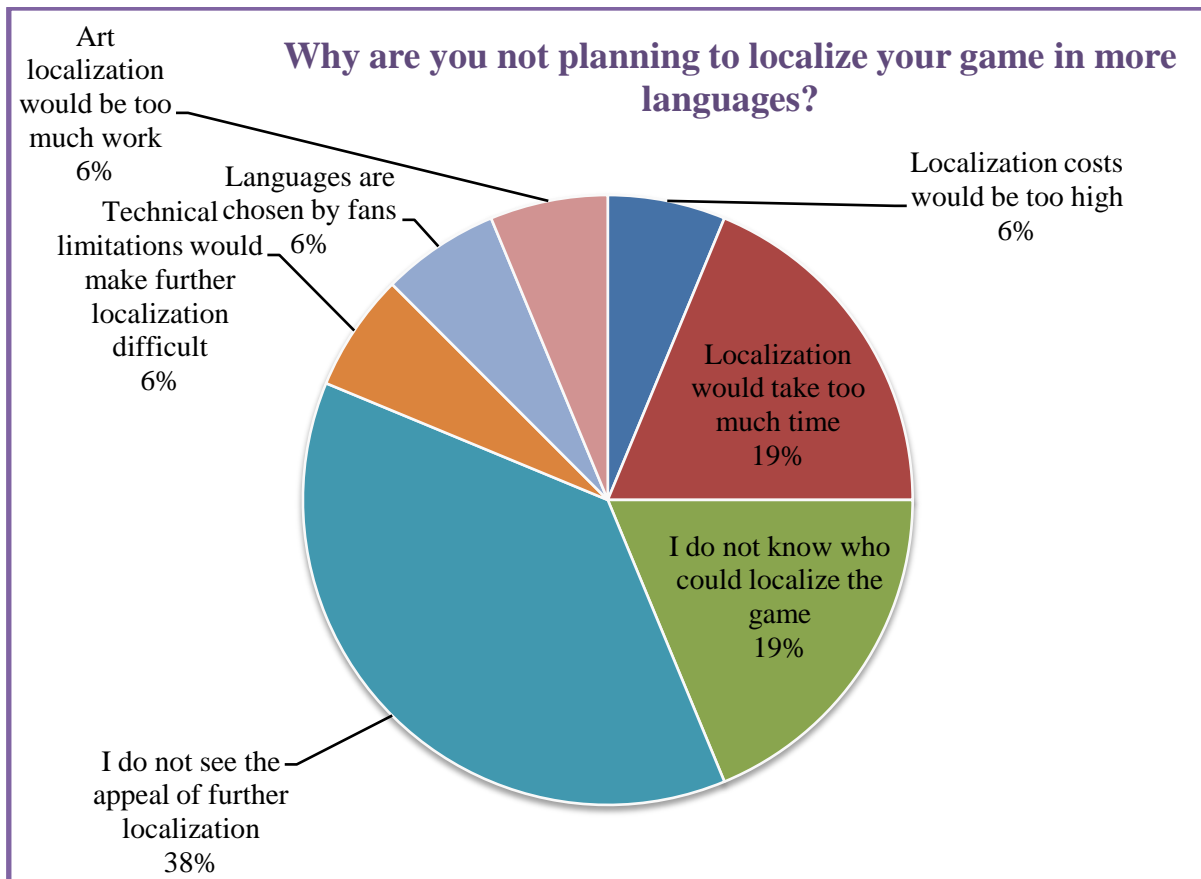
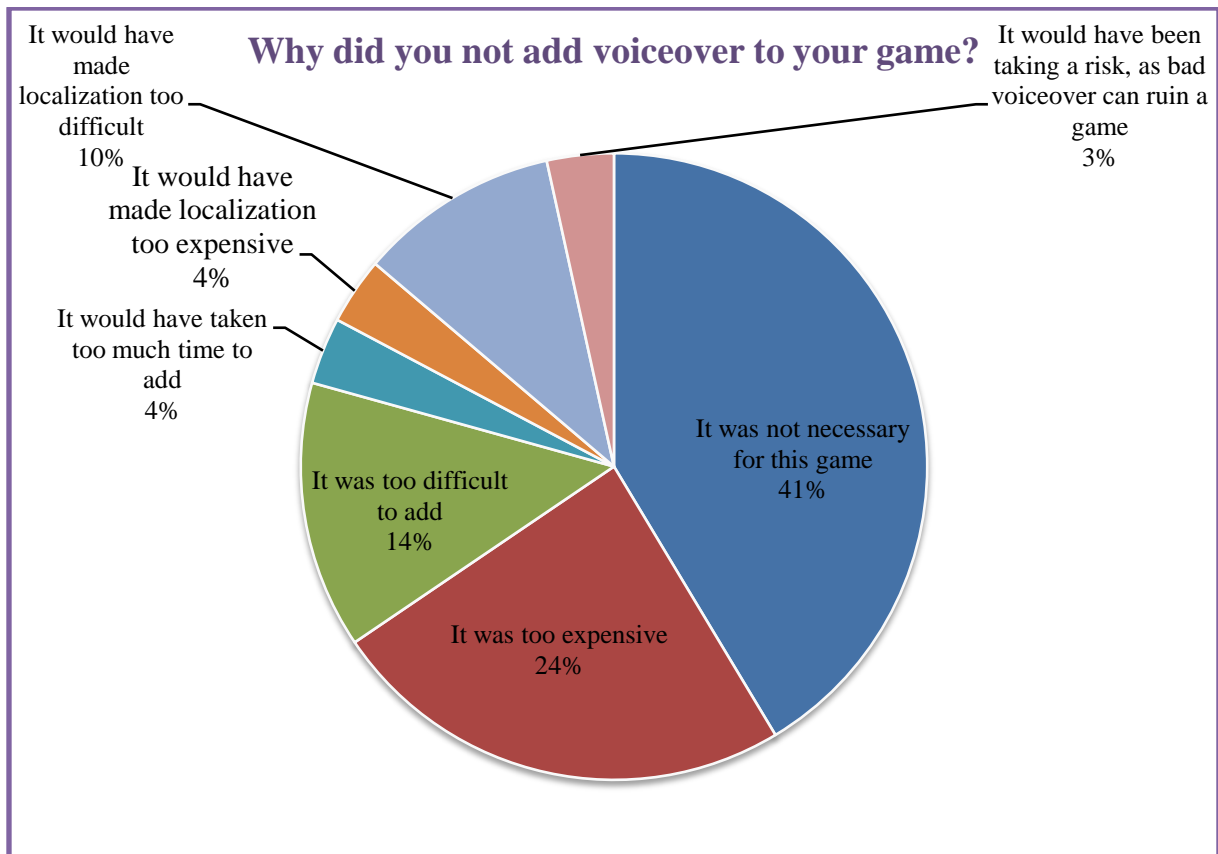


Figure 8. Answers given by developers asked why they did not wish or were still unsure whether to add more localized versions to their games.

#### 4.1.2 Levels of localization

Due to the fact that a game without voiceover cannot be partially localized according to the definition of partial localization used in this thesis (see subsection 2.1.2), levels of localization are only observed in datasets C and D, i.e. the two sets including only games with voiceover. As a result, a first interesting observation is that only 39 (set C) out of the 108 games in set A (36.1%) contain voiceover. The reasons for this might be, too, hinted to by answers to a specific question in the questionnaire. When asked why they had not included voiceover in their games, the largest share of the 29 answering developers stated that voiceover was not needed for their games (12 developers out of 29 (41.3%)), or would have been too expensive to include (7 developers out of 29 (24.1%)). Other, less cited answers include voiceover being too difficult to include or to localize, and the fear that bad voiceover could ruin the game. Figure 9 below summarizes answers received and their proportions of overall answers.



*Figure 9. Answers given by developers asked why they chose not to include any voiceover in their games.*

Among the games that constitute set C, only 9 out of 39 (23.1%) include no subtitles at all, whereas 30 out of 39 (76.9%) are subtitled in all localized languages. The percentages of localized versions with localized voiceover vary considerably more. 6 out of 39 (15.4%) include target-language voiceover in all their localized versions, and 23 out of 39 (59%) include no target-language voiceover at all; otherwise, the percentage of dubbed localized versions ranges from 5.56% (i.e. one language other than English out of 18 available localized versions) to 92.3% (i.e. 12 languages out of 13). These observations should however be considered carefully, as the data that they are based on was not obtained from game developers directly, but from digital distribution platforms and game footage videos, and the information available on digital distributions platforms is not always complete nor correct, as mentioned in chapter 3. Furthermore, these numbers seem difficult to examine without knowing the categories of voiceover (as described by Le Dour 2007, p.2) included in each game. Le Dour indeed mentions that certain categories do not need to be subtitled or recorded in the target language, which could explain why several of the games in dataset C were said to

include voiceover, yet included neither subtitles nor dubbed voiceover in any of their localized versions.

### 4.1.3 Game characteristics

First of all, it should be noted that most of the factors described below could only be observed in games whose developers answered the questionnaire, i.e. games included in sets B and D. Only data regarding the age rating of selected games was collected for certain games outside sets B and D, and data regarding the genres of selected games was collected for all 108 games included in set A.

- *Source language*

O'Hagan and Mangiron (2013, p.259) state that the predominant source languages of game localization are English and Japanese, meaning that the in-game text of most AAA games is usually written in English or in Japanese first. While this is also the case of the indie games examined in this study, it should be noted that only 23 games out of 35 (65.7%) included in set B had their in-game first written in English, and only 1 out of 35 (2.9%) in Japanese. The other source languages of the games included in set B German (5 out of 35 (14.3%)), French (2 out of 35 (5.7%)), Russian (2 out of 35 (5.7%)), Italian (1 out of 35 (2.9%)) and Spanish (1 out of 35 (2.9%)). This highlights that writing the in-game text in English first is not a norm among the selected games, and that Japanese is not the only other option. Especially, German seems to be a popular source language among indie game developers, which indicates that investigating specifically indie games whose source language is German might bring forth interesting elements.

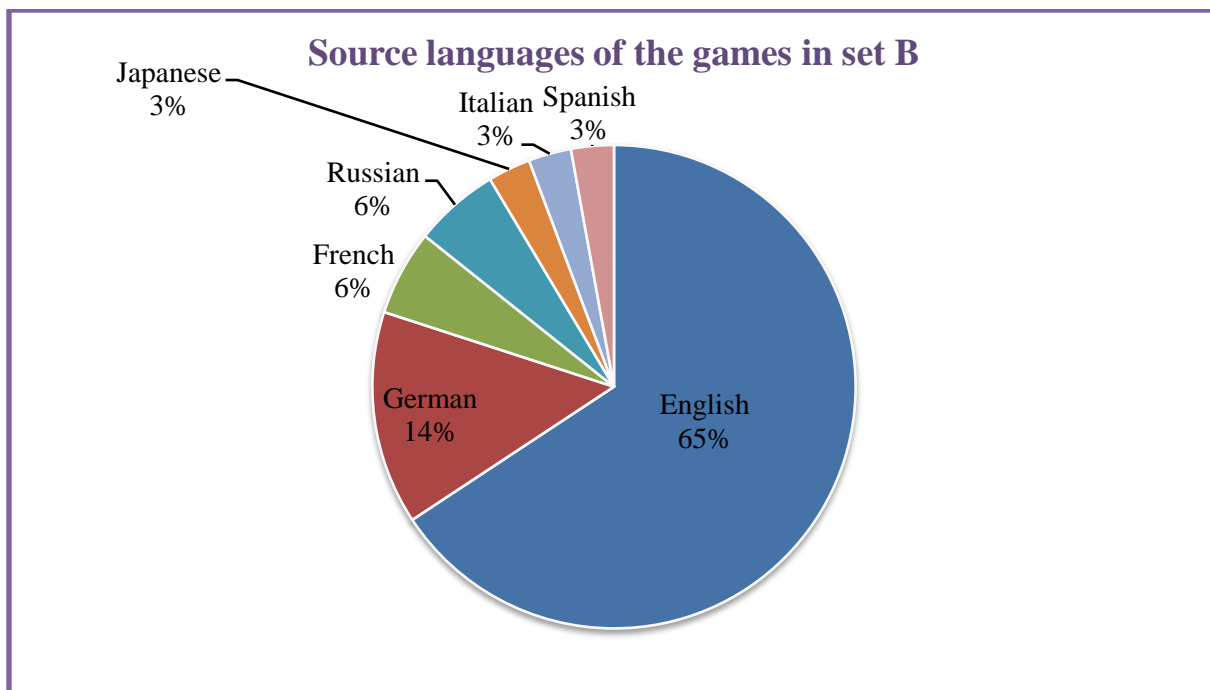


Figure 10. Summary of the source languages of the 35 games included in set B.

- *Number of words in game text*

The numbers of words in the in-game texts of games in set B give a valuable indication of the variety of games examined in this study. The 26 games for which this information was collected (see Table 6) indeed contain from 800 to 650'000 words. However, most of these games (13 games out of 26 (50%)) contain 10'000 words of in-game text or less, indicating that a large share of the indie games investigated in set B still tend to include fewer words, and thus possibly to be shorter.

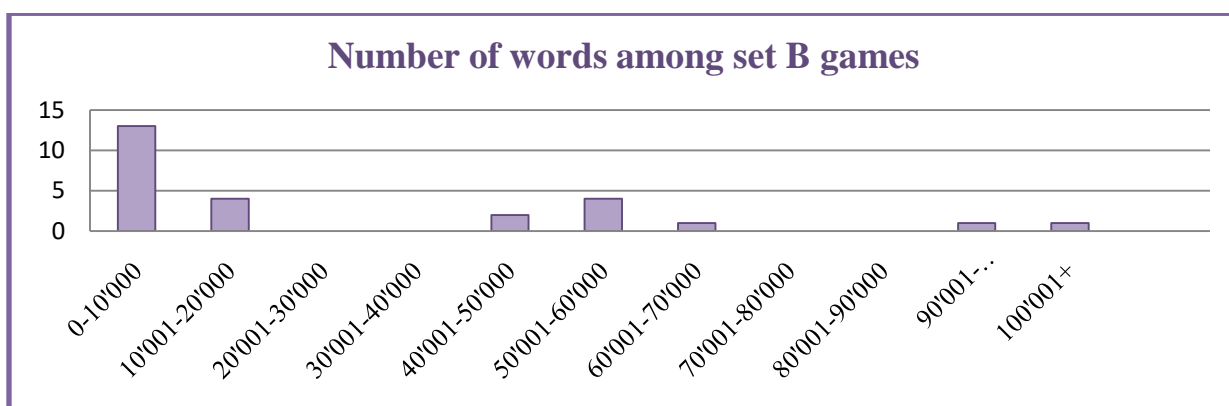


Figure 11. Number of words in the in-game texts of the 26 games of set B for which this information was collected.

- *Age rating*

In terms of age rating, most of the indie games included in set A for which this information was collected (70 out of 108 (64.8%)) seem to be intended for teenage and older players. Indeed, 33 out of 70 (47.1%) have received a rating comparable to PEGI 12, and 21 out of 70 (30%) are classified in categories similar to PEGI 16. Comparatively, few of the indie games in set A seem to be suitable for children (only 5 out of 70 (7.1%) are classified as PEGI 3, and 7 out of 70 (10%) as PEGI 7), and few seem to be intended for adults only (only 4 out of 70 (5.7%) are classified as PEGI 18). While these numbers could be used to discuss the most common age ratings and the reasons behind developing games for specific age categories, this question does not fall within the scope of this study.

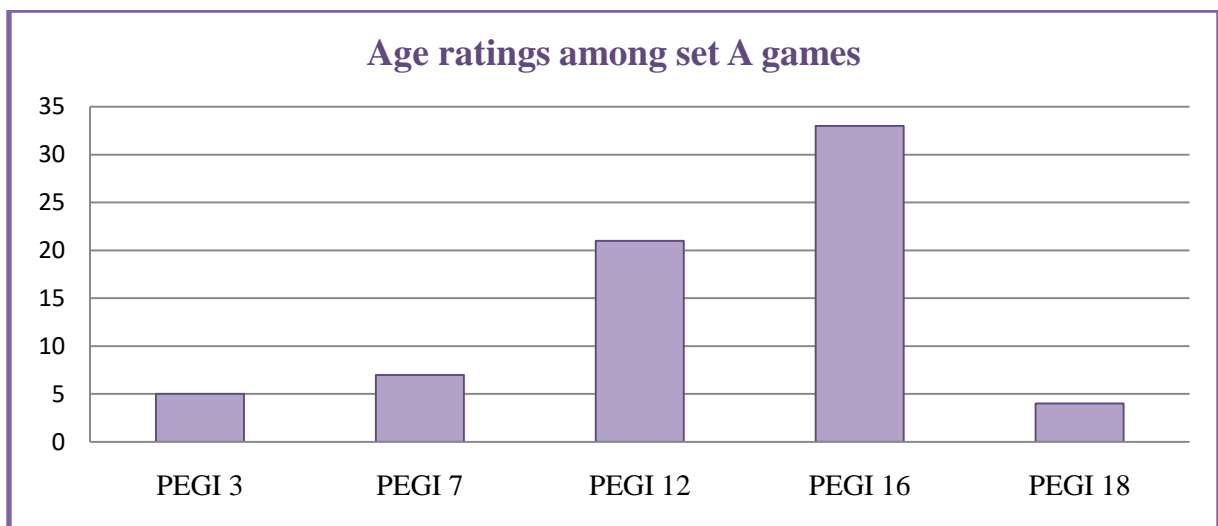
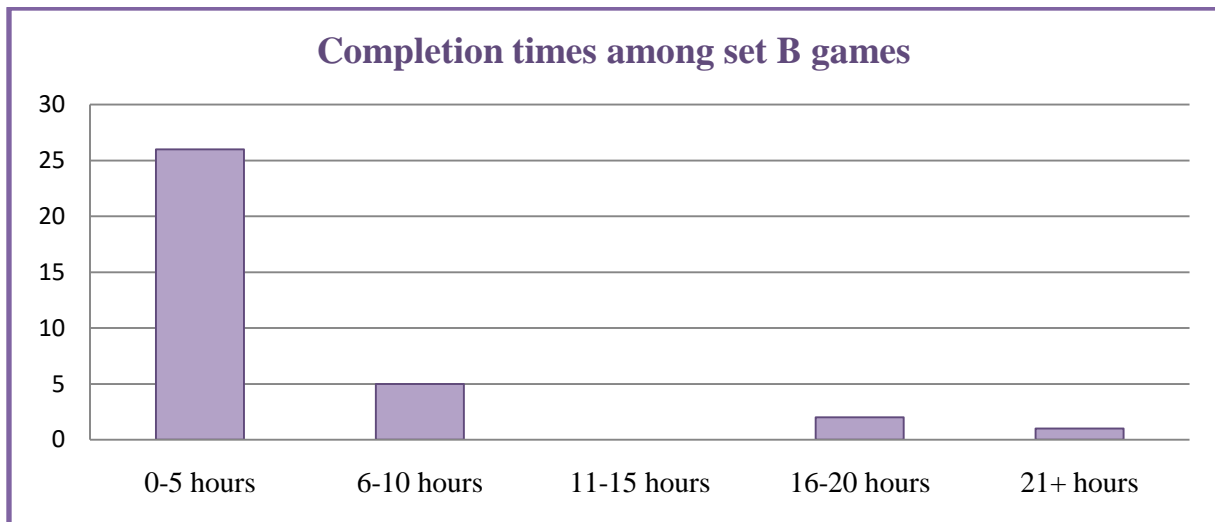


Figure 12. Age ratings of the 70 games of set A for which this information was collected.

- *Completion time*

Among the games included in set B for which this information was collected (34 out of 35 (97.1%)), completion times range from short, 10 to 15 minute games, to 80 hour long adventures. Still, similarly to the numbers of words in the in-game text, the majority of these games (26 out of 34 (76.5%)) have a completion time of under five hours. Figure 13 below described the completion times of these 35 games in more detail.



*Figure 13. Completion times of the 34 games of set B for which this information was collected.*

This point however highlights what might be considered a problem when using completion time as a factor, like in this thesis: several answers to the questionnaire seem to suggest that certain games are not fully “finishable”, in that they do not offer a linear story with a programmed ending, but can rather be replayed endlessly. This is the case of games that are played in short sessions: in this study, for instance, the completion time of one game of set B could not be taken into consideration due to the game consisting in short multiplayer online matches. Since it is possible to spend hours playing these games without ever “completing” them, it seems that completion time is not a useful factor in analyzing these games.

- **Genres**

Among the games of dataset A, the genre most commonly found is Adventure, with 44 out of 108 (40.1%) games being classified as such. Interestingly, only 30 out of 108 (27.8%) have the genre “indie”. While this is most likely due to this genre only appearing in games distributed on Steam, the fact that not all selected games are classified as indie supports the claims that the “indie-ness” of games is always debatable, as explained in chapter 2. Otherwise, games of set A included a great number of Action (29 out of 108 (26.7%)) and RPG (29 out of 108 (26.7%)) games, and very few Casual (2 out of 108 (1.9%)), Educational (1 out of 108 (0.9%)), Fighting (1 out of 108 (0.9%)), Shooter (1 out of 108 (0.9%)) and Survival (1 out of 108 (0.9%)) games. Several genres included in the final list used in this thesis (see Table 4) also did not appear in any of the selected games and were thus not taken

into consideration in the following subsections: these genres are Card Games, Racing games, Rhythm games and Sports games. What appears to be the main limitation to this factor is that the game genres displayed vary between platforms, making for difficult comparison between games selected on different platforms.

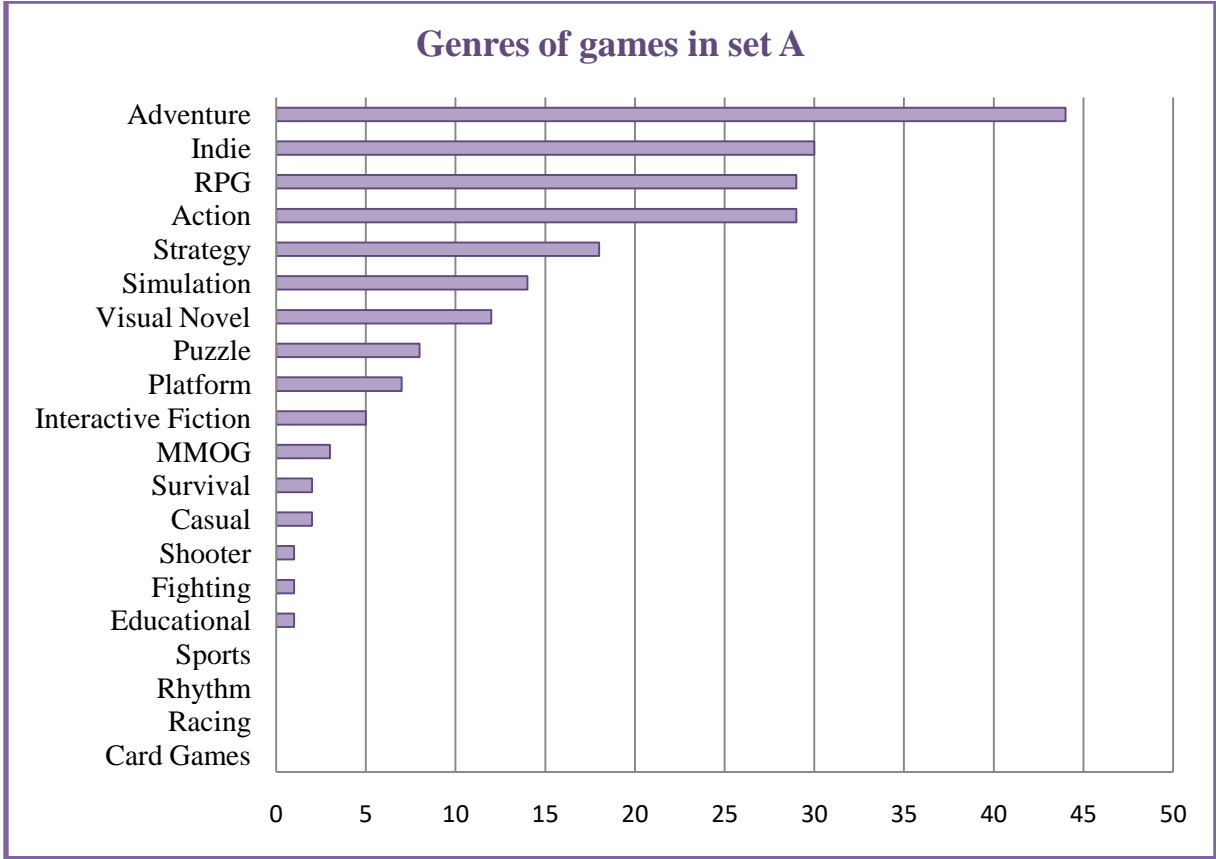


Figure 14. Summary of genres found in the 108 games included in set A.

- *Voiceover characteristics*

Finally, voiceover characteristics can only be examined in the 9 games of set D, which are the only ones to include voiceover among the games whose developers answered the questionnaire.

Among these games, the number of words in the voiceover script was collected for 4 out of 9 (44.4%) and the numbers collected were 500, 1000, 4000 and 20'000 words. However, this data should not be considered significant, as it was only available for a low number of games due to the remaining 5 out of 9 (55.6%) developers indicating in the questionnaire that they did not know the number of words included in the voiceover script of their games.

The number of actors hired to record the voiceover is yet known in 9 out of 9 (100%) games of set D, and ranged from 1 to 33, with a mean value of 9 actors hired. An interesting observation to be made is that the three games with the higher number of voice actors hired (respectively 33, 16 and 15) were create by the same developer, which could indicate that this information should be considered carefully as well.

Similarly, the source language of the voiceover is known in 9 out of 9 (100%) games of set D: in the cases of 4 out of 9 (44.4%) games, the source language of the voiceover is English, whereas 4 out of 9 (44.4%) have German as their source language, and the source language of the remaining 1 out of 9 (11.1%) is Russian. These last findings could prompt similar observations to those made about the source languages of the in-game texts made in subsection 4.1.1.

#### **4.1.4 Game development and localization processes**

Due to relevant information being only collected through the questionnaire, the factors described in this category are only examined in set B.

- *Timing of localization*

The findings of Toftedahl *et al.* (2018, p.11) suggest that indie games are usually only localized after the initial, source-language release. Data collected in this study seems to support this observation: indeed, the majority of developers of games included in set B (21 out of 35 (60%)) indicated that their games were first localized only after the initial release of the game. The localization of 1 out of 35 (2.9%) game occurred near the end of the development process, whereas 7 out of 35 (20%) were localized at an early stage of development, and the localization of 6 out of 35 (17.1%) had been planned before the beginning of the development phase. Interestingly, out of the 13 games whose localization was taken into consideration before or at an early stage of development, only two had their in-game text first written in English; otherwise, five have German as a first language, two French, two Russian, one Spanish and one Italian. This also means that 11 out of the 12 games of set B whose source language is not English (see subsection 4.1.2) first had their localization process begin before or at an early stage of development. This could strongly suggest that developers whose first language is not English take localization into consideration earlier than English-speaking developers in the game development process,

possibly because localizing games with another source language than English is seen as mandatory, or because games whose source language is English are often thought to not require localization. Indeed, one of the developers interviewed by Toftedahl *et al.* (2018, p.11) explains: “[...] we thought naïvely enough that most people know English and that our target audience is probably mostly in America and Northern Europe anyway”. This means that indie developers might believe that games only truly need to be available in English, and that as a result, games with English as their source language must always be localized into English, whereas localizing games with other sources languages is not as important. These questions deserve further research, notably in assessing the status of English as a lingua franca in indie game development.

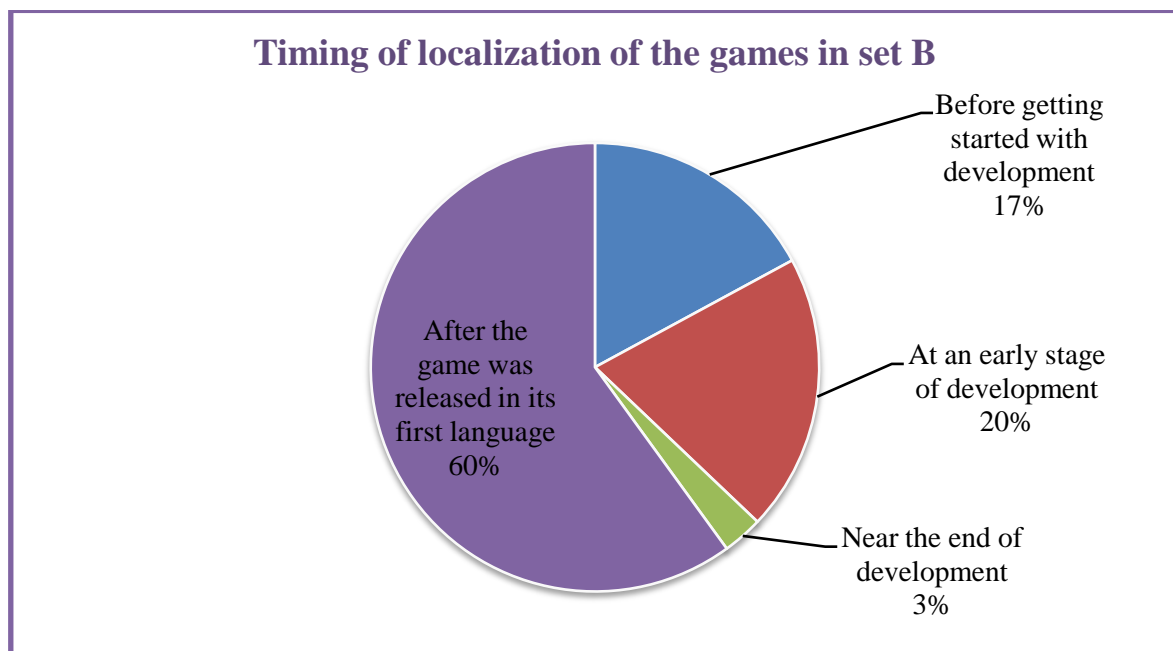


Figure 15. Summary of the moments when developers of the games in set B chose to localize their games.

- *Agents of localization*

In regards to the agents creating the localized versions of the games investigated in this study, a considerable amount of games in set B (26 out of 35 (74.3%)) were translated by fans according to their developers, and a considerable number (18 out of 35 (51.4%)) were translated by acquaintances of the developers. On top of that, several games were translated by the developers themselves (7 out of 35 (20%)) or by freelance translators (8 out of 35 (22.9%)), with only 1 out of 35 (2.9%) developer indicating that they had used crowdsourcing

methods, 1 out of 35 (2.9%) developer mentioning a translation agency, and 2 out of 35 (5.7%) games having been localized by an in-house localization department. Figure 16 below summarizes these numbers. It should however be noted that the certain of the developers who answered the questionnaire chose more than one of the aforementioned options, indicating that different localized versions of their games had been created by different categories of translators.

The predominance of the first two categories (fan translation and translation by acquaintances) is interesting in that these categories of translation, along with translation by the developers themselves, can be produced at presumably little to no cost for the developers. For instance, Toftedahl *et al.* (2018, p.15) find that, in one case, fan translators declined even in-game perks offered by the developers in exchange for translating the game, indicating that they did not want to receive payment for their translations. This once again highlights the need for further research not only on the motivations of fan translators in the case of indie games, but also on the very practice of fan translation in indie games. The “quality” of such translations might also be an interesting area for further research.

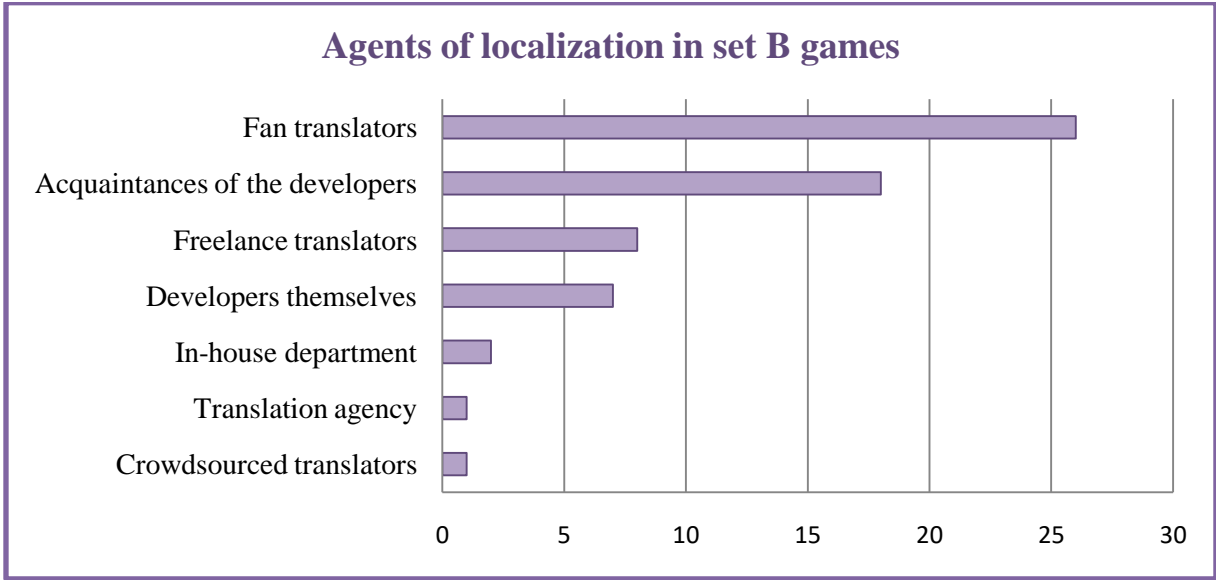


Figure 16. Agents who carried out localization in the 35 games of set B.

- *Sim-ship localization*

Developers who answered the questionnaire used in this study also largely favor post-gold over sim-ship localization: among the games of set B, in the cases of 23 out of 35 (65.7%), all

localized versions were released after the initial, source-language release of the game. In 7 out of 35 (20%) cases, several localized versions were released simultaneously and the others were released post-gold. Finally, simultaneous shipment for all languages was carried out in only 5 out of 35 (14.3%) cases. Similarly to the agents of localization, these numbers might highlight a preference for less costly alternatives among indie game developers who answered the questionnaire; yet it is also possible that this factor is linked to the moment when developers decided to localize their games. Indeed, localized versions that are only planned for after the source-language release can obviously not be shipped simultaneously with the source-language version.

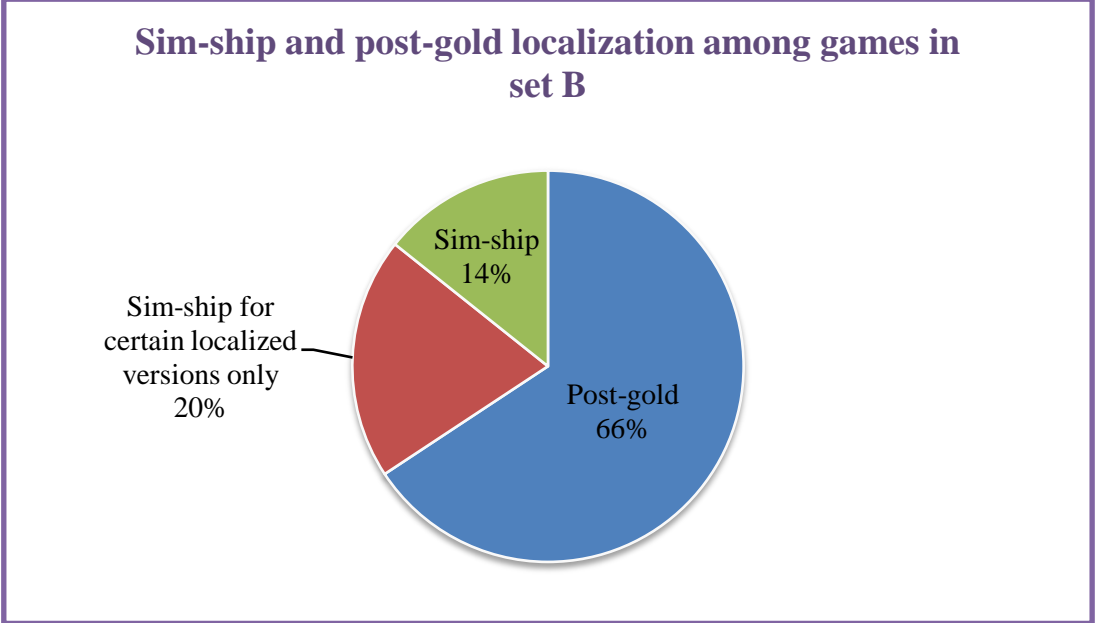


Figure 17. Shares of sim-ship and post-gold localization carried out in the 35 games of set B.

**4.1.5 Feedback received by developers**

Due to relevant information being only collected through the questionnaire, the factors described in this category are only examined in set B.

Among games included in set B, 11 out of 35 (31.4%) have been available as an early access or demo version before their official release. Yet, only 4 out of 35 (11.4%) of these games received feedback about their localized versions from early-access or demo players, none of which included requests for specific languages to be added to the game; furthermore, none of the respondent developers who indicated that they had worked with a publisher (this was the

case of 6 out of 35 (17.1%) games) received requests regarding localization from their publishers. As a result, while developers interviewed by Toftedahl *et al.* (2018) had received requests from players and publishers to localize their games in specific languages, this is not the case of the developers who answered the questionnaire used in this study. Still, it is possible that, due to the fear of influencing the developers' answers, the questions asked in this study were not phrased in a way that prompted developers to mention these specific types of requests.

Regarding the kind of feedback received by developers who answered the questionnaire, 1 out of 4 (25%) respondent developers explained that players expressed their happiness at the game being localized into many languages, while 3 out of 4 (75%) indicated that they had received feedback highlighting typos or errors made in localized versions already available in the early-access/demo version. In these cases, feedback from players helped fix the translations, in a manner that could be considered a sort of crowd-sourced translation or revision. This could be investigated as part of a study on collaborative translation or revision.

#### **4.1.6 Game pricing and funding**

While certain of the factors described in this category can be examined in set A, most are only examined in set B, due to relevant information being only collected through the questionnaire.

- *Business model*

Among the games included in set A, an overwhelming number (74 of 108 (68.5%)) are priced games, whereas only 8 out of 108 (7.4%) are entirely free and only 3 out of 108 (2.8%) are free-to-play. Finally, 23 out of 108 (21.3%) are distributed as “Name your own price” games. Figure 18 below summarizes these numbers.

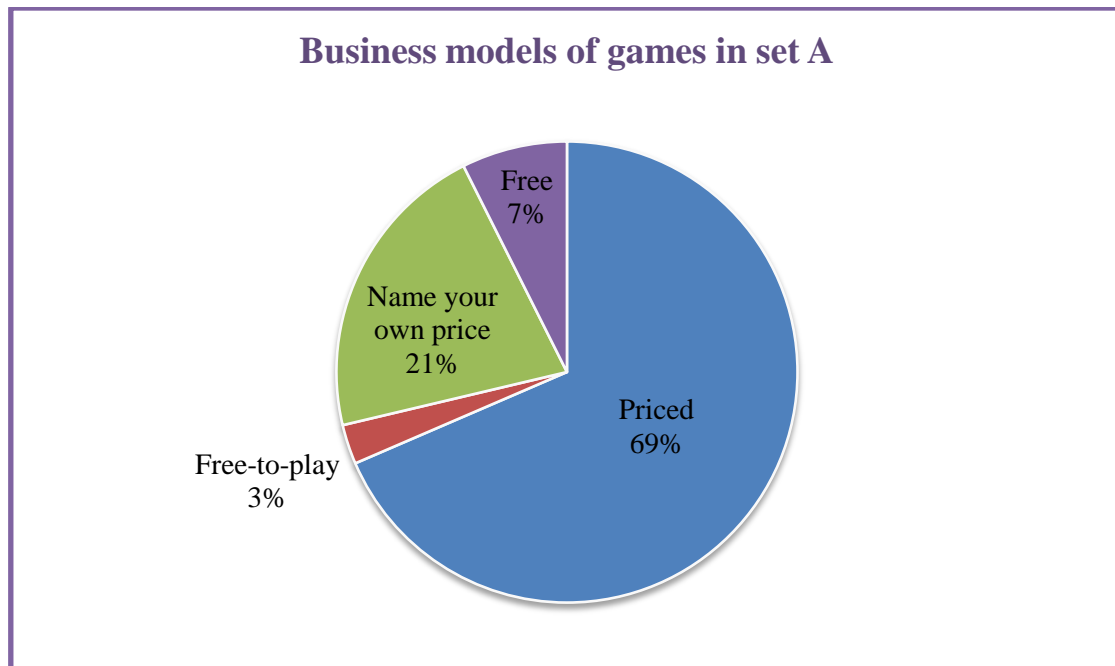


Figure 18. Shares of business models encountered among the 108 games of dataset A.

It should be noted that, interestingly, “Name your own price” games constitute the majority of games selected on itch.io (23 out of 39 (59%)), the only platform where this business model is available. Overall, this seems to indicate that games distributed on Steam and GOG.com tend to be mostly priced, while developers distributing their games on itch.io prefer the “Name your own price” option. The fact that this option is not available on the other two platforms makes for difficult comparison between games distributed on different platforms, yet it seems possible that the “Name your own price” business model is an interesting alternative for certain developers. While the advantages and disadvantages of each option could be investigated as part of games studies, they do not fall within the scope of this thesis.

- *Game price*

Among the 78 priced games, prices range from 2.99 to 59.99 USD. However, the average price is of around 18.70 USD, due to a majority of games being sold at prices less than 25 USD, with only two of the selected games being priced higher than 50 USD. This observation supports claims (Kogel 2012, see chapter 2) that indie games are usually expected to be cheap, or at least cheaper than AAA games. Figure 19 below further illustrates the repartition of prices among the games in set A, further highlighting that the majority of the investigated games are sold at prices lower than those of AAA games.

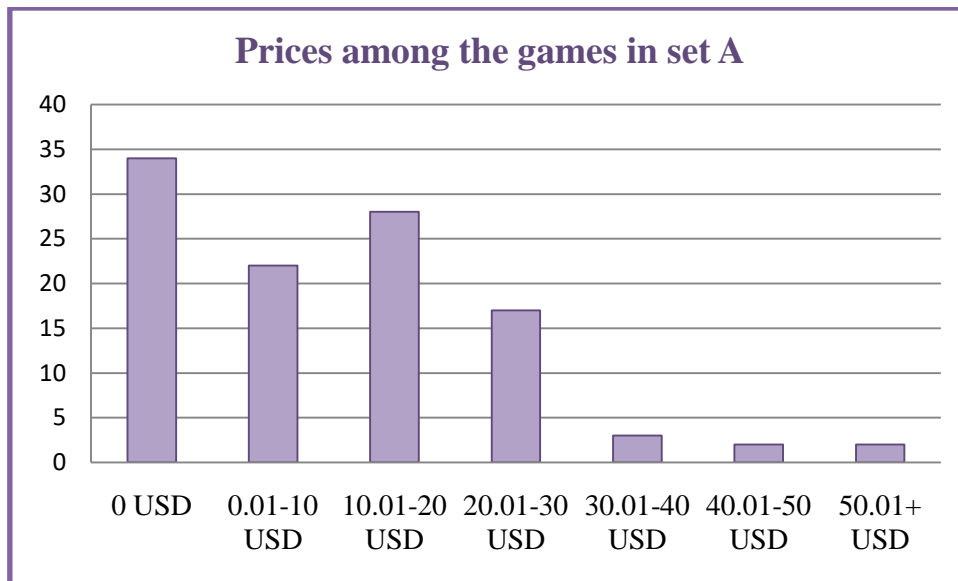


Figure 19. Summary of the prices of the 108 games in set B.

- *Funding sources*

Finally, among the games in set A, 21 out of 108 (19.4%) seem to have been released with the help of a publisher, according to the data gathered in the manner described in subsection 3.3.2.4. Among the games in set B, 2 out of 35 (5.7%) were funded or partially funded via crowdfunding according to their developers, 1 out of 35 (2.9%) received a grant, 1 out of 35 (2.9%) was funded or partially funded by funds that the company had earned from previous games 1 out of 35 (2.9%) was funded or partially funded via a priced early access version, and 1 out of 35 (2.9%) was funded or partially funded by the personal savings of the developer(s). Furthermore, two of the respondent developers stated that they had received donations from fans (11 out of 35 (31.4%) games), for instance via the subscription-based crowdfunding platform Patreon<sup>18</sup>.

<sup>18</sup> A platform launched in 2013, Patreon (<https://www.patreon.com/>) allows creators of all kinds, i.e. including indie game developers, to receive recurring donations (either monthly or per creation) from fans who wish to support their creations. Similarly to other, already mentioned crowdfunding platforms, such as Kickstarter and Indiegogo (see subsection 2.2.2), fans who choose to donate to an indie game developer via Patreon are offered rewards in exchange for their support; however, these rewards rarely include having a direct influence on the game content, and Patreon donations go to the developer as a person or company, rather than to the funding of one specific games. This is why Patreon was not considered to be a platform for crowdfunding campaigns in this study.

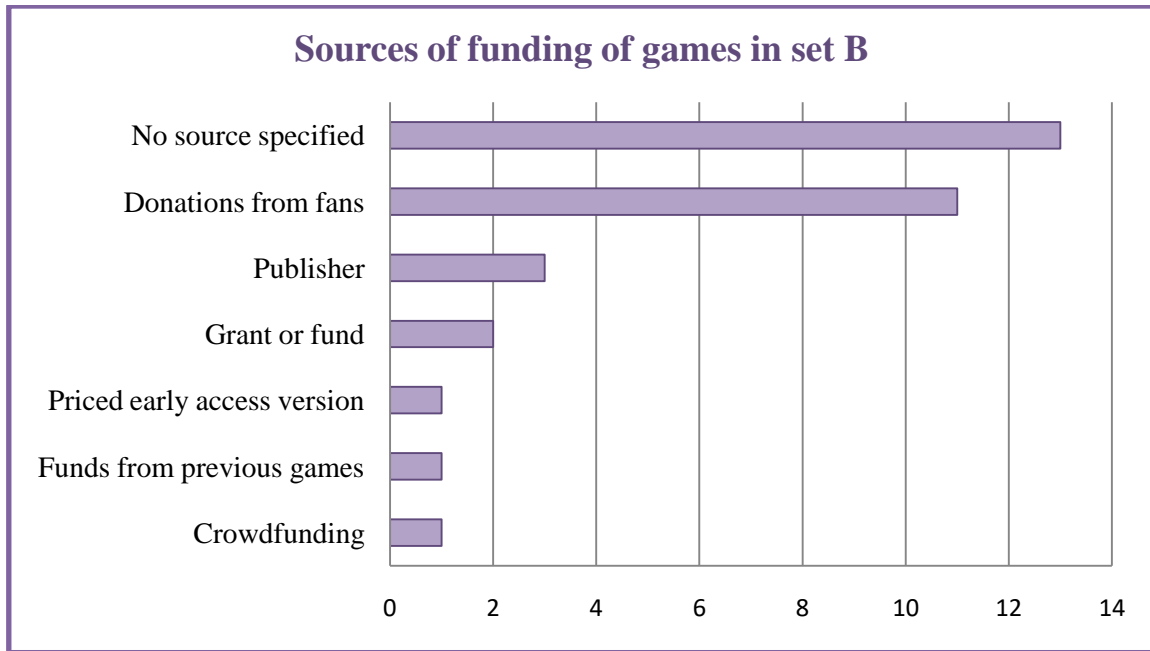


Figure 20. Overview of the sources of funding mentioned by the developers of the 35 games in set B.

In the end, most games had either no or only one specified source of funding, with only 2 out of 35 (5.7%) games having two sources. However, it should be noted that this factor does not make for very significant comparisons between games, as the amounts allocated to the games by each source are unknown, and were considered an intrusive question to ask developers.

## 4.2 Factors influencing the number of localized versions

In this section, Pearson correlation coefficients are computed in order to compare the values collected for the factors described in subsection 3.3.2 with the number of localized versions available among the selected games. As this number was gathered for all selected games, this first analysis is based on datasets A and B, depending on the variable investigated (see list of all investigated variable in Table 5). It should however be noted that this approach has several limitations: not only might certain of the gathered numbers of available localizations be incorrect, for instance due to digital distribution platforms not supporting all available locales, but not all categories of data could be collected for every game included in set A. As a result, coefficients computed on the basis of set B are less representative and harder to generalize than coefficients computed on the basis of set A.

This subsection uses the scale established by Cohen (1988) to measure the effect indicated by correlation coefficients. As a result, this study considers that a correlation coefficient of 0.50 or higher indicates a strong correlation, whereas a correlation coefficient between 0.30 and 0.50 indicates a moderate correlation. Finally, coefficients between 0.10 and 0.30 represent a weak correlation, and coefficients under 0.10 are deemed to mean that there exists no correlation between the variables. One last introductory remark should be that Pearson correlation coefficients do not indicate a cause-effect relationship between the investigated variables in any case; they are merely an indication that the values of certain variables might evolve similarly. Therefore, while a certain number of possible reasons for the computed correlation coefficients are brought forth in this section, it should be kept in mind that these reasons are only hypotheses and cannot be confirmed until more research is conducted on the subject.

#### 4.2.1 Game characteristics

In terms of game characteristics, it should first and foremost be noted that no strong correlation between the variables and the number of localized versions available can be observed. The number of words of the in-game text and most genres (Action, Adventure, Educational, Fighting, Interactive Fiction, Platform, Puzzle and Shooter) seem mostly unrelated to the number of languages that indie games are localized in.

Weak correlations are observed between the numbers of localized versions available and the following factors:

- **Source language of the in-game text:** Games whose source language is English might tend to receive smaller numbers of localized versions ( $r = -0.197$ ). This observation could be related to the comment made in subsection 4.1.3 that games with English as their source languages might be thought not to require localization.
- **Source language of the voiceover:** Games whose voiceover source language is English might tend to receive higher numbers of localized versions ( $r = 0.249$ ). This observation seems somehow incoherent with the one made right above, although it might also highlight a need for further research on comparing localizing processes used and decisions made in the cases of in-game text versus voiceover.

- **Number of words in the voiceover script and number of actors hired to record voiceover:** Games which have a longer voiceover script ( $r = -0.275$ ) and which require the hiring of more actors ( $r = -0.151$ ) seem to be available in fewer languages. This seems coherent with the fact that localizing voiceover with longer scripts and hiring higher numbers of actors cost more (Le Dour 2007, p.2).
- **Age rating:** Games intended for an older audience seem to receive fewer localized versions ( $r = -0.294$ ). A reason for this may be that late teenage and adult audiences might be more fluent in several non-native languages, and thus need that games be translated in their own native language less, especially in the cases of English source-language games.
- **Completion time:** Longer games seem to be related with a smaller number of localized versions ( $r = -0.1$ ). This could be due to longer games requiring higher development (and thus localization) efforts and costs, thus making them harder and more difficult to localize.
- **Genres:** Several genres (Casual ( $r = 0.264$ ), Massively Multiplayer ( $r = 0.185$ ), Simulation ( $r = 0.232$ ) and Strategy ( $r = 0.282$ )) seem to be weakly correlated with a higher number of localized versions, while others (RPG ( $r = -0.184$ ), Survival ( $r = -0.128$ ) and Visual Novel ( $r = -0.229$ )) seem to imply fewer localized versions. The reasons for this might be linked to specific genre characteristics, which would make for an interesting topic for further research not only in indie game localization, but in the general field of game localization as well.

In the end, only one game characteristics factor is found to generate a correlation coefficient higher than 0.30, which usually indicates a moderate correlation: the genre Indie, which seems to be correlated with a higher number of localized versions among the selected games ( $r = 0.382$ ). However, the limitations to the use of “indie” as a genre in the present study have already been examined in subsection 4.1.1; as a result, this observation is considered irrelevant to this analysis.

#### 4.2.2 Game development and localization process

Among the development and localization process variables investigated in the games of set B, only the fact that a game was localized by fan translators seems to have no considerable correlation with the number of languages available for this game.

Otherwise, selected games in which localization was planned for later in the development process appear to have received a lower number of localized versions (with a weak correlation coefficient,  $r = -0.196$ ). The correlations between the numbers of localized versions and the fact that games were translated by freelance translators ( $r = 0.115$ ), via crowd-sourcing methods ( $r = 0.116$ ), by acquaintances of the developers ( $r = -0.253$ ) or by the developers themselves ( $r = -0.155$ ) are also weak. In the first two cases, they seem to indicate that using these methods is linked with releasing more localized versions for the game; whereas the latter two suggest that games localized using these methods tend to be available in a lower number of languages. This could be surprising, given that the latter methods – translation by acquaintances of the developers and the developers themselves – are likely to be less costly than the first two, and one may expect that using cheaper localization methods could allow for the creation of more localized versions. Yet, it could be hypothesized that freelance and crowd-sourced translation are in fact more efficient methods, due to depending neither on the availability nor on the knowledge of developers and their acquaintances. For instance, developers choosing to localize their games themselves or have it localized by acquaintances might only be able to localize them in a restricted amount of languages, i.e. the languages that they and their acquaintances are fluent in. Furthermore, the localization process might be slowed down by their unavailability at certain times. On the other hand, developers choosing to localize their games using crowd-sourcing methods or freelance translators might be able to find translators fluent in a higher number of languages more easily. These translators are also likely to be able to work on localization more regularly, and thus finish localizing the game in a short period of time. Sim-ship localization is another factor weakly correlated to the number of languages available among selected games: this analysis suggests that games in which localized versions (or several of these localized versions) were released simultaneously with the initial, source-language release tend to be localized into more languages ( $r = 0.113$ ). This seems surprising, given the fact that planning for a high number of localized versions to be released simultaneously with the source-language version would obviously require a lot of time and effort and be rather expensive.

Finally, games localized by in-house localization departments ( $r = 0.328$ ) or translation agencies ( $r = 0.341$ ) seem moderately correlated with a higher number of languages. The reasons for this might be that these methods are more efficient and reliable, similarly to freelance and crowd-sourced translation examined above. It could also be attributed, however,

to in-house localization departments and translation agencies only being affordable by larger indie game development companies with a bigger budget, for instance. As a result, such companies could also afford to create more localized versions for their games. These observations should however be considered carefully, as few of the games in dataset B have been translated by in-house localization departments or by translation agencies: in fact, only 2 out of 35 (5.7%) fall within the former category, whereas only 1 out of 35 (2.9%) falls within the latter.

### 4.2.3 Feedback received on the game

As mentioned in subsection 4.1.1, specific requests that developers may have received from their publishers cannot be examined in this study, as none of the developers who answered the questionnaire indicated having received requests from their publishers.

The release of an early access/demo version prior to the official release of the game, however, seems correlated to a higher number of localized versions being available for the games in set B, although only weakly ( $r = 0.172$ ). This could mean that, as one of the developers interviewed by Toftedahl *et al.* (2018, p.10) explains, releasing an early access/demo version helped developers realize that their games were being played by a considerable number of fans from specific regions, and consequently decide that the game should be localized into the language spoken in these regions.

Furthermore, a moderate correlation indicates that games in set B that received feedback on localization from early access and/or demo version players are also available in a higher number of languages ( $r = 0.361$ ). Since subsection 4.1.1 highlighted that nearly all of these games received feedback regarding translation errors made in already existing localized versions, and that no feedback-giving fan requested new localized versions for the games, it cannot be argued, as is the case in Toftedahl *et al.* (2018, p.11), that receiving requests for specific languages by the players drove developers to create more localized versions of their games in the games of set B. It seems possible, however, that including a higher number of languages in the early-access/demo version could attract more international players, and thus trigger more feedback on already existing localized versions. Once again, these comments still should be considered carefully: as only 4 out of 35 (11.4%) games in set B received localization feedback from early-access/demo version players, the coefficients computed in this case are likely to have low significance.

#### 4.2.4 Game pricing and funding

It should be noted that no strong or moderate correlation is found among the investigated pricing and funding factors in this study. The fact that games were funded or partially funded by a crowdfunding campaign, by funds that the developers earned from previous games, or received a grant or a fund seems to have only a negligible influence on the number of localized versions available.

All the other factors show a weak correlation to the number of available languages:

- **Business model:** In this case, due to both the difficulty to compare various business models using a Pearson correlation coefficient and the fact that priced games are already assessed in terms of game price, a difference is made between business models that allow the player to make one or more payments, despite payments not being mandatory (i.e. free-to-play and “Name your own price” games), and entirely free games. As a result, the correlation coefficient computed suggests that entirely free games might tend to be available in more languages ( $r = 0.145$ ). This is surprising, given that localizing games requires time, effort and costs. However, it could be understood as a measure supporting Toftedahl *et al.* (2018)’s findings that expected profit is not the main motivation behind localizing indie games.
- **Game price:** Games sold at higher prices seem to be available in more languages ( $r = 0.283$ ), which is both unsurprising when considering that higher prices allow developers to earn more profit, and thus have bigger localization budgets, and somehow contradictory with the observations made about business models above.
- **Publisher:** Among the games of dataset A, those which were released with the help of publishers tend to be available in more languages ( $r = 0.183$ ). However, the computed correlation coefficient does not confirm whether publishers might help making indie games available in more languages by participating financially in game development and/or localization, or whether they might influence the number of localized versions in another manner.
- **Priced early access:** The computed correlation coefficient indicates that games of set B which were funded or partially funded by the sales of a priced early access may be available in a higher number of languages ( $r = 0.116$ ). However, this observation is deemed particularly insignificant, as only one of the selected games was funded in such a way.

- **Fan donations:** Games being funded or partially funded by fan donations seem to be correlated with fewer localized versions in set B ( $r = -0.174$ ). However, this observation is deemed particularly insignificant, as only two of the developers who answered the questionnaire indicated that they had received fan donations which helped fund the development of their games.
- **Personal savings:** According to the computed correlation coefficient, a higher number of localized versions seem to be available in games of set B that were funded or partially funded by developers' personal savings ( $r = 0.113$ ). However, this observation is deemed particularly insignificant, as only one of the developers who answered the questionnaire mentioned having funded or partially funded games in this manner. Furthermore, it seems likely that indie game developers often fund or partially fund their games in this manner, yet did not think to mention it (or choose not to) when answering the questionnaire.
- **Number of sources:** Finally, a higher number of funding sources seems to be correlated to a higher number of localized versions among the games of set B ( $r = 0.254$ ), possibly due to more sources indicating higher funding, and thus a bigger budget to create more localized versions. Limitations of this factor mentioned in subsection 4.1.1 should however be kept in mind.

### 4.3 Factors influencing the levels of localization

In this section, Pearson correlation coefficients are computed in order to compare the values collected for the factors described in subsection 3.3.2 with 1) the percentage of subtitled localized versions and 2) the percentage of dubbed localized versions among the selected games. As these numbers were obviously gathered for games containing voiceover only, this second analysis is based solely on set C, which includes a total of 39 out of 108 (36.1%) games investigated in this study, and set D, which includes 9 out of 39 (23.1%) games of set C. It should however be noted that not only is this number considerably smaller than the number of games analyzed in section 4.2, but certain of the computed percentages might also be incorrect, for instance due to the information on digital distribution platforms not always being up to date. Furthermore, once again, certain categories of data could only be collected for the games or part of the games included in set D (see Table 6), which obviously makes correlation coefficients computed in this subsection even less representative and harder to generalize than in subsection 4.2.

As in subsection 4.2, the scale established by Cohen (1988) is used to measure the effect indicated by correlation coefficients. It should once again be reminded that any reason given for an observed correlation coefficient is a mere hypothesis, as correlation coefficients do not show relationships between variables.

### 4.3.1 Game characteristics

A first observation to be made about the comparison of game characteristics factors to the percentages of subtitled and dubbed languages is that not all the intended correlation coefficients can be computed on the basis of the data collected in sets C and D of this study. This seems to be due to a lack of games having both a value other than 0 as the variable in question, and a percentage of subtitled/dubbed localized versions other than 0. Otherwise, a greater number of moderate correlations are observed than in subsection 4.2, and there even seems to exist several strong correlations, although both of these facts could be due to the fact that a lower number of games are taken into consideration in this section. Relevant factors are examined below:

- **Source language of the in-game text:** Games having English as the source language of their in-game text seem to be moderately correlated to a lower percentage of subtitled localized versions ( $r = -0.395$ ), and strongly correlated to a lower percentage of localized versions including localized target-language voiceover ( $r = -0.641$ ). This could support previously phrased claims that localization might be considered more necessary, and thus carried out more often, in indie games whose source language is not English. Similarly, a higher level of localization might be considered more necessary, especially into English, in indie games whose source language is not English.
- **Number of words in the in-game text:** While it cannot be compared to the percentage of subtitled languages due to a lack of data available, a higher number of words in the in-game text seems correlated with a lower percentage of dubbed localized versions ( $-0.264$ ) among games in set D. As voiceover localization is more likely to depend on the voiceover length, for instance, rather than the in-game text length, the relevance of this observation is however debatable.

- **First language of the voiceover:** Among games in set D, games whose voiceover source language is English tend to have a smaller percentage of subtitled localized versions (moderate correlation,  $r = -0.333$ ), and a smaller percentage of dubbed localized version (weak correlation,  $r = -0.291$ ). The reasons for this might be similar to those examined regarding the source language of the in-game text.
- **Number of words in the voiceover script and number of actors hired to record voiceover:** The correlation between the number of words in the voiceover script and the percentage of target-language voiceover cannot be computed. Still, among the games in set D, a higher number of words in the voiceover script seems strongly correlated to a lower percentage of subtitled versions ( $r = -0.986$ ), indicating that games with longer voiceover tend to be less widely subtitled. As for the number of actors hired to record the voiceover, a higher number seems related to a higher percentage of subtitled versions (weak correlation,  $r = 0.278$ ) and a higher percentage of dubbed versions (strong correlation,  $r = 0.940$ ). Two main hypotheses could be formulated: firstly, it is possible that game developers who are able to hire more actors have a bigger budget from the start, and thus a bigger budget allocated to carrying out higher levels of localization, and secondly, the developers who answered the questionnaire may have included the target-language actors hired in the numbers that they provided. In the latter case, it is obvious that games fully localized into more languages would have required the hiring of more actors.
- **Age rating:** Among the 24 games of set C for which this information was collected, a higher age rating seems to imply a higher percentage of subtitled versions ( $r = 0.126$ ), yet a lower percentage of dubbed versions ( $r = -0.219$ ). This could be linked to the hypothesis phrased in subsection 4.2.1: as older audiences tend to be more familiar with foreign languages, they might be satisfied with subtitles only, whereas younger audiences, who are usually not fluent in languages other than their own, might need full localization into their native language to be able to enjoy games. This correlation could also support O'Hagan and Mangiron (2013, p.165)'s observations that certain target audiences prefer partial localization over full localization: in this case, older audiences might prefer partial localization, whereas younger audiences might prefer full localization.
- **Completion time:** Completion time cannot be compared to the percentage of subtitled versions due to a lack of data among the games of set D. However, longer games seem moderately correlated ( $r = -0.392$ ) to a lower percentage of dubbed localized versions.

- **Genres:** Correlations regarding the Puzzle genre cannot be computed due to a lack of data among the games in set C. Otherwise, certain genres (Action ( $r = -0.286$ ), Casual ( $r = -0.296$ ), Indie ( $r = -0.121$ ), Shooter ( $r = -0.296$ ), Simulation ( $r = -0.154$ )) seem to imply a lower number of subtitled localized versions, whereas others (Adventure ( $r = 0.255$ ), Massively Multiplayer ( $r = 0.127$ ), Platform ( $r = 0.127$ ), RPG ( $r = 0.208$ )) are weakly correlated to a higher number of subtitled languages. Similarly, Action ( $r = 0.209$ ), Indie ( $r = 0.114$ ), Massively Multiplayer ( $r = 0.219$ ) and Simulation ( $r = 0.245$ ) games tend to be available in more dubbed versions, whereas Platform games tend to have a lower number of fully localized versions ( $r = -0.108$ ). As the genres in each case do not seem coherent with the observations made in subsection 4.2.1, this may either be a further indication that differences between game genres require more investigation, or mean that the correlations computed are mostly due to chance and therefore do not make a basis for valuable analysis.

### 4.3.2 Game development and localization process

Similarly to the observations made in subsection 4.2.2, games of set D whose localization was planned for later in the development process seem (in this case moderately) correlated with lower percentages of both subtitled ( $r = -0.472$ ) and dubbed ( $r = -0.302$ ) localized versions.

In regards to the agents carrying out localization, only games localized by freelance translators seem moderately correlated to a higher percentage of subtitled versions ( $r = 0.395$ ), and strongly correlated to a higher percentage of dubbed versions ( $r = 0.575$ ). Localization via crowd-sourcing is strongly correlated with a lower number of subtitled versions, yet the correlation coefficient computed is of  $-1$ , a coefficient that is usually not obtained in real life situations; as a result, it is considered that this coefficient is irrelevant to this analysis. This is probably due to the fact that only 2 out of 9 (22.2%) games in set D were localized using this method. Other methods of localizing the selected games (fan localization, localization by acquaintances of the developers, localization by the developers themselves and localization by translation agencies) are weakly correlated with a higher percentage of subtitled versions ( $r = 0.250$ ,  $r = 0.189$ ,  $r = 0.189$  and  $r = 0.125$  respectively), and weakly or moderately correlated to a lower percentage of dubbed versions ( $r = -0.121$ ,  $r = -0.025$ ,  $r = -0.304$  and  $r = -0.254$  respectively). Similarly with subsection 4.2.2, it could be hypothesized that it is easier to find freelance translators trained in audiovisual translation, therefore using freelance translators allows for an easier subtitling of the voiceover; yet the availability of native voice actors (see

section 2.3; Toftedahl *et al.* 2018, p.13) should also be taken into account, and cannot be measured using the data collected in this study.

Finally, sim-ship localization is moderately correlated with a higher percentage of subtitled localized versions among the games in set D ( $r = 0.427$ ), and strongly correlated with a higher percentage of target-language voiceover ( $r = 0.834$ ). This is surprising, given that fully localizing games to be released in a sim-ship manner would imply higher costs and efforts, in order for the full localized versions to be finished soon enough for sim-ship release to be possible; yet it is possible that indie game developers aiming for sim-ship release do not plan to add more languages after the initial release, and would therefore rather have their games fully localized from the beginning.

### 4.3.3 Feedback received on the game

In terms of feedback, once again, requests from the publishers cannot be analyzed in this thesis due to a lack of data.

However, correlation coefficients computed show that the existence of an early access or demo version prior to the official release of the games is moderately correlated with a lower percentage of localized versions including subtitles ( $r = -0.395$ ), and strongly correlated with a lower percentage of localized versions including target-language voiceover ( $-0.641$ ). Similarly, games which received localization feedback tend to show a lower percentage of subtitled localized versions (strong correlation,  $r = -0.661$ ), and a lower percentage of dubbed localized versions (moderate correlation,  $r = -0.383$ ).

### 4.3.4 Game pricing and funding

Among game pricing and funding factors investigated in this study, none seem to be negligibly related to the investigated percentages. Only games of set D funded or partially funded by fan donations and personal savings of the developers cannot be examined, as the set D does not contain any games funded in this manner.

- **Business model:** Similarly to the method used in subsection 4.2.4, entirely free games are compared with games that allow the players to make any kind of payment to the developers, as long as payment is not mandatory. In this case, entirely free games

seem to imply both higher percentages of subtitles among localized versions ( $r = 0.333$ ), and higher percentages of target-language voiceover ( $r = 0.703$ ). The observations that these findings prompt are similar to those made regarding business models in subsection 4.2.4.

- **Game price:** Here again, a higher price is weakly correlated to a higher number of localized versions including subtitles in the games of set C ( $r = 0.146$ ), and moderately correlated to a higher number of localized versions including target-language voiceover ( $r = 0.419$ ). As in subsection 4.2.4, it is both unsurprising and contradictory with the correlations computed regarding business models, which might indicate that the way these factors are investigated in this study is not appropriate.
- **Publisher:** Games of set C released with the help of a publisher tend to receive a higher percentage of target-language subtitles ( $r = 0.128$ ), and a higher percentage of target-language voiceover ( $r = 0.124$ ). Still, these correlations are only moderate and, as mentioned in subsection 4.2.4, do not account for the ways in which the publisher might have an influence on the investigated measures.
- **Crowdfunding campaign:** Among the games of set D, games which were funded or partially funded by a crowdfunding campaign seem to have lower percentage of subtitled localized versions (strong correlation,  $r = -0.661$ ) and a lower percentage of dubbed localized versions (moderate correlation,  $r = -0.383$ ) These observations should however be considered carefully, as only 2 out of 9 (22.2%) games in set D were funded using a crowdfunding campaign.
- **Grant or fund:** Games of set D that were funded or partially funded by a grant or a fund seem weakly correlated with a higher percentage of localized versions including subtitles ( $r = 0.125$ ), and strongly correlation with a higher percentage of localized versions including target-language voiceover ( $r = 0.693$ ). This factor is however deemed particularly negligible, as only 1 out of 9 (11.1%) games in set D was funded in such a way.
- **Priced early access:** The correlation coefficient computed when comparing games of set D funded or partially funded through a priced early access and the percentages of localized versions including subtitles is -1, which is why it is discarded (see subsection 4.3.2). As a matter of fact, despite the other coefficient indicating that games of set D funded or partially funded by a priced early access may received fewer dubbed localized versions ( $r = -0.254$ ), this factor is deemed particularly negligible, as only 1 out of 9 (11.1%) games in set D was funded in such a way.

- **Company funds:** Games in set D that were funded or partially funded by company funds earned from previous games are weakly correlated with a higher percentage of subtitled localized versions ( $r = 0.125$ ), and a lower percentage of dubbed localized versions ( $r = -0.254$ ). While this might indicate that developers relying on funds from previous games tend to favor partial localization over full localization, this factor is deemed particularly negligible, as only one of the developers who answered the questionnaire mentioned having funded games in this manner.
- **Number of sources:** Finally, among the games of set D, a higher number of funding sources seems to be strongly correlated to a lower percentage of localized versions including subtitles ( $r = -0.555$ ), and moderately correlated to a higher percentage of localized versions including target-language voiceover ( $r = 0.326$ ). Assuming that more sources indicate higher funding and thus a bigger budget, this might suggest that game developers tend to favor full localization over partial localization when granted a budget that allows it; still, this factor presents many limitations (see subsection 4.1.1), and should therefore be considered carefully.

## 4.4 Limitations of the present study

While discussing general observations and the computed Pearson correlation coefficients, sections 4.1, 4.2 and 4.3 already highlighted a considerable number of limitations encountered in the analyses presented in this thesis. On top of the number of games taken into consideration varying from a variable to another, due to certain types of data being collected only for a smaller number of games (i.e. games whose developers answered the questionnaire, see Table 6), most of the variables investigated in this study present their own limitations. For instance, the data collection methods used may have caused certain values to be incorrectly assessed, certain questions asked in the questionnaire may not have allowed for the collection of all the relevant information, and game funding factors especially are considered hardly reliable, as the exact amounts implied by sources of funding are unknown. Subsections 3.3.3.1 and 3.3.5 also already highlighted the limitations of using game genres as a factor as was done in this study, and the questions raised by the existence of a certain number of inconsistencies between data collection methods.

Besides these already-mentioned limitations, however, the computing of p-values for all the correlations investigated in the present chapter indicates that any hypothesis formulated on the

basis of these correlations should be considered extremely carefully. Indeed, most of the computed p-values are extremely small, yet are deemed to fail to indicate any strong evidence; it is rather believed that their extremely low value is the result of nominal data being rendered binomial in order to be computed. In the case of factors influencing the number of localized versions available, the only exploitable p-values concern the number of words of the in-game text, the number of words in the voiceover script and the number of actors hired to record the voiceover. However, none of these values is under 0.05. In the case of factors influencing the percentages of subtitled localized versions, the only computed p-value which is not extremely small regards the number of words in the voiceover script, and is not under 0.05 either. Finally, in the case of factors influencing the percentages of dubbed localized versions, most p-values computed are not extremely small; yet it is unknown whether they are exploitable. In particular, p-values regarding the numbers of words included in the in-game text, the numbers of actors hired to record the voiceover, the completion times and the prices of the games are over 0.05. Tables including both the Pearson correlation coefficients computed and the corresponding p-values are available in Appendix D.

Finally, another important limitation to the methodology used in this thesis is the interdependence of various factors tested. Computing Pearson correlation coefficients among investigated factors, rather than between factors and numbers of localized version or percentages of subtitled/dubbed localized versions, highlights correlations sometimes stronger and more significant than the correlations analyzed in this section. For instance, the correlation coefficient between the numbers of words included in the in-game texts of the games in set B and the completion times of the games in set B is over 0.9, indicating that games with longer in-game texts tend to be completed in more hours. Similarly, and coherently with observations made in subsection 4.1.3, games in which localization was planned for later in the development process are found to be mostly released post-gold ( $r = -0.704$ ), and localization of games whose source-language is English tends to be planned for later in the development process ( $r = 0.775$ ). While most of these strong correlations should also be considered carefully due to certain values being found in a very limited number of games only, they suggest that the influence exerted on 1) the number of localized versions available for indie games and 2) the levels of localization that indie games receive is first and foremost multifactorial in this study. As a result, it is likely that most factors investigated in this thesis will need to be explored again, separately and more thoroughly, before it is possible to confirm any hypothesis regarding their influence.

## 5. Conclusion

This thesis aimed to answer the following research questions: a) “Which are the factors influencing the number of languages that an indie game is localized into?” and b) “Which are the factors influencing the choice of the level of localization that an indie game receives?”. Section 5.1 summarizes the methodology used and the results obtained. Then, section 5.2 once again highlights the limitations encountered, as well as the numerous areas for future work prompted by the investigation carried out in this study.

### 5.1 Summary of the results

In order to find answers to the research questions, a number of possibly influencing variables were first identified, and the corresponding values collected using two data collection methods. The first method, product page analysis, allowed for the collection of certain types of data regarding a selection of 108 indie games, whereas the second method, questionnaire, allowed for the collection of other types of data regarding 35 out of these 108 games. Then, the correlations of the collected values to a) the number of localized versions available for each game (datasets A and B) and b) the percentages of these versions that were subtitled and dubbed in games including voiceover (datasets C and D) were computed and discussed. In the end, while most of the computed coefficients need to be considered carefully due to a lack of data and unsatisfying p-values, the following observations can be made:

- (1) Following the claims described in chapter 2 that indie games were mainly opposed to AAA games, both categories differ indeed widely in this study: whereas games including voiceover and receiving full localization seem to be the norm among AAA games, a majority of the indie games investigated in this thesis do not include voiceover. Similarly, while most AAA games aim for sim-ship localization, indie games investigated in this thesis mostly received post-gold localization, and tended to be cheaper than AAA games.
- (2) Contrary to AAA games (see O’Hagan and Mangiron 2013, pp.16–17), indie games examined in this study also do not always have English or Japanese as their source language. This seems to suggest that indie games might be used as an interesting basis to investigate games localized from other languages into English, Japanese or other languages, and to examine the position of English (and, to a lesser extent, Japanese) as

a lingua franca in the game development field. Especially, subsection 4.1.3 highlighted that the localization of English-language examined games seemed to be included in the development process later than the localization of non-English-language examined games, suggesting that English might be considered as the only necessary language to localize into in indie games.

- (3) Similarly to open-source games (Sánchez Espinoza 2015, pp.103–105), indie games investigated in this study are localized into a wide variety of target languages, despite FIGS, Russian, Polish, certain Asian languages and Brazilian Portuguese being more largely localized into than other locales. Further research on the motivations behind localizing indie games into non-FIGS languages is needed, perhaps on the basis of the motivations highlighted by Toftedahl *et al.* (2018). An answer received to the questionnaire also allows for hypothesizing that this could be due to the fact that, in some cases, localized languages are chosen by fan translators who carry out the localization into their native languages, rather than the developers themselves.
- (4) Indeed, the localization of indie games examined in this study was mostly carried out by fans or by acquaintances of the developers, presumably for free or at little cost. As a result, it is possible that indie games might constitute an interesting basis for examining the domains of fan translation, community translation, and other types of translation by presumably non-professionals.
- (5) Despite the lack of significant correlation coefficients, the results of this study seem to suggest that most factors taken into consideration could have had an influence on the localization of the investigated games. Especially, age ratings and genres are deemed interesting in that they might give out indications regarding the intended audience of the game, and could therefore be the basis of studies on game localization for a specific audience and the reception of game localization. Subsection 4.2.1 particularly highlighted that games suitable for older audiences tended to receive fewer localized versions in this study, prompting questions about the needs and preferences of different audience categories.
- (6) As a result of point 5, the profit that the game is expected to earn does not seem to have had more influence than other factors on the localization of the investigated games, despite game prices being correlated to both higher numbers of localized versions and higher levels of localization in the examined games.
- (7) It should be kept in mind, however, that the influence exerted on the localization of the indie games examined in this study seems to be multifactorial, and that it is thus

extremely difficult to assess the influence of a specific factor only, especially since relevant and consistent data is still often hard to obtain, even in the indie game field.

## 5.2 Limitations and areas for future work

All of the hypotheses phrased in section 5.1 obviously need to be investigated further before they can be confirmed or discarded. This could be achieved, for instance, by conducting a similar study on one given factor, i.e. the source language of the game, with a higher number of indie games and taking into account the fact that this factor is likely to be influenced by a considerable number of other factors. Furthermore, it is very likely that the list of factors investigated in this study does not include all possible factors: for instance, factors mentioned as “Other” by developers who answered the questionnaire, such as games being funded or partially funded by fan donations, might deserve further research as well.

On top of that, the variety of websites and articles suggesting indie game developers ways to localize their games “for free” could also be investigated. In particular, Yoccoz (2017) mentions and rates several open-source initiatives aiming to allow indie games developers to localize their games (or at least the user interfaces of their games) themselves. These initiatives usually consist in spreadsheets containing text strings commonly found in the user interfaces of video games, along with their translations in a number of languages. However, Yoccoz (2017) warns that the quality of the translations provided is not always satisfying, since anyone can modify the proposed translations at any time, and reminds that quality translation requires context rather than separate text strings. Still, it might be interesting to compare localized versions created with the help of such initiatives and localized versions created without, either in terms of quantity like in this study, or in terms of quality. Similarly, tools used to carry out localization were not investigated in this study. Stöckel and Pettersson (2016) however highlight a recent evolution in tools used for the development of indie games, therefore it seems likely that tools used in indie game localization may have changed as well over the past decades, or at least that indie game localization practices may vary depending on the game development tools used. As a result, both development and localization tools could also be investigated as a factor that might influence localization choices in indie games.

In the end, however, it should be kept in mind that, as highlighted in chapter 2 of this thesis, indie games are a wide category of games that does not yet have a precise, agreed upon

definition. As a result, no two indie games have the same characteristics, and it may be deemed artificial to study “indie game localization” as a whole without taking into account the differences between all the properties that a game being “indie” can entail. In this regard, a methodical classification of indie games, perhaps similar to the classification of independent games proposed by Garda and Grabarczyk (2016), would probably be a very useful tool in investigating indie games, including from a localization perspective; however, proposals have yet to be made, to the best of our knowledge. Another option would be to use Garda and Grabarczyk (2016)’s classification in order to differentiate between categories of independent games, and thus investigate independent rather than indie games. In this case, studies similar to this thesis might be conducted on one specific category of independent games, which would perhaps allow for more consistency and significance in the results.

As briefly mentioned in section 4.1, characteristics of indie game localization could also be compared with those of open-source game localization, for instance using the findings of Sánchez Espinoza (2015). While indie and open-source games are considered two different categories of video games in this thesis due to open-source games usually not being labeled as “indie”, most open-source games examined by Sánchez Espinoza (2015) show the types of independence described by Garda and Grabarczyk (2016) and seem likely to fit at least the production and distribution criteria of “indie-ness” described in subsection 2.2.4. Besides, one of the developers who answered the questionnaire mentioned that their game was also open-source. As a result, investigating differences between games labeled as “indie” and open-source games might allow for a deeper level of analysis of both categories, and for better comparison between their localization processes. In particular, it is possible that comparison between indie and open-source games might benefit the discussion about fan translation, which Sánchez Espinoza (2015) finds is the norm among open-source games (where translators are always members of the open-source community), and which this thesis finds is frequent in the investigated indie games. Another similar area is the variety of localized versions available in both cases, despite a predominance of FIGS languages (plus several languages such as Russian, Polish and Asian languages, as described by O’Hagan and Mangiron (2013, pp.16–17)); whereas a difference could be the moment when localization is planned for in the development process, with about half the projects investigated by Sánchez Espinoza (2015) taking it into account since the early stages of development, while most indie developers who answered the questionnaire of this study took it into account after the initial release of their games.

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## Appendix A: List of all selected games

Game title	GOG.com	itch.io	Steam
A Hat in Time	✓		
A New Beginning: Final Cut			✓
Absolver			✓
Age of Civilizations II	✓		
Aria's Story		✓	
ATOM RPG: Post-apocalyptic indie game	✓		
Banner Saga			✓
BLACK		✓	
Bomb Squad Academy		✓	
Business Tour: Board Game With Online Multiplayer	✓		
Castle Crashers	✓		
Celeste	✓	✓	
Clever Fox Moxie		✓	
Darkest Dungeon	✓		✓
DATE TREAT		✓	
Dead Cells	✓		
Deep Rock Galactic	✓		
Defender's Quest			✓
Deponia			✓
Dicey Dungeons		✓	
Disaster Log C		✓	
Don't Bite Me, Bro!		✓	
Dr. Langeskov, The Tiger, and The Terribly Cursed Emerald: A Whirlwind Heist		✓	
Dreaming Treat		✓	
Dust: An Elysian Tail			✓
Eador. Masters of the Broken World			✓
Eador: Genesis			✓
Enter the Gungeon	✓		
Euro Truck Simulator 2	✓		
Expeditions: Conquistador			✓
FEZ		✓	
First Kiss at a Spooky Soirée		✓	
Forgotten		✓	

Friendly Bunny Mochi		✓	
FTL: Advanced Edition			✓
Getting Over It With Bennett Foddy	✓		
Ghost of a Tale			✓
Gone Home			✓
GRIS			✓
Heartbound		✓	
Hello Charlotte EP1: Junk Food, Gods and Teddy Bears		✓	
Her tears were my light		✓	
Hollow Knight	✓		✓
Hotline Miami	✓		✓
Hotline Miami 2: Wrong Number			✓
House Flipper	✓		
Human: Fall Flat	✓		
Hyper Light Drifter			✓
Inquisitor			✓
INSIDE			✓
Insurgency	✓		
Jotun: Valhalla Edition			✓
KAIMA		✓	
Kenshi	✓		
Kerbal Space Program			✓
Life is Strange, Episode 1	✓		
LIMBO			✓
LOCALHOST		✓	
Lonely Wolf Treat		✓	
Machinarium Collector's Edition			✓
Magic Technology		✓	
Mewnbase		✓	
Midnight Scenes Ep.2: The Goodbye Note		✓	
Minion Masters	✓		
Murder at the Residence Gudul		✓	
No Man's Sky	✓		✓
Northgard	✓		
Numina		✓	
One Hand Clapping		✓	
One Night Stand		✓	
One night, hot springs		✓	

Oxygen Not Included	✓		
Papers, Please			✓
Path of Exile	✓		
Return of the Obra Dinn	✓		
Return of the Tentacle		✓	
RimWorld	✓		
Romance Detective		✓	
Rust	✓		
Sally Face		✓	
SCP: Secret Laboratory	✓		
Shadow Tactics: Blades of the Shogun			✓
Shadowrun Returns			✓
Slay the Spire	✓		
Spelunky			✓
Stardew Valley	✓		
Subnautica	✓		
Syrup and the Ultimate Sweet		✓	
Terraria	✓		✓
The Cat Lady			✓
The Doll Shop		✓	
The Forest	✓		
The Long Dark	✓		
The Vanishing of Ethan Carter			✓
The Whispered World: Special Edition			✓
Thimbleweed Park			✓
To The Moon			✓
Torment: Tides of Numenera			✓
Tube Tycoon		✓	
Tunnel Vision		✓	
Two Interviewees		✓	
Undertale	✓		
Unepic			✓
Wandering Wolf Trick		✓	
Wasteland 2 Director's Cut Digital Classic Edition			✓
World War 3	✓		
Yûrei Station		✓	
Ziggurat			✓

# Appendix B: Invitation to the questionnaire and reminder

## 1. Invitation

### Research survey on the localization of indie games

Dear [Developer's name],

I am writing to you to request your participation in a brief survey on the localization (linguistic and cultural adaptation) of your game [Game title].

This survey is being conducted as part of a Master's thesis examining the factors influencing the localization of indie games and will require you to provide factual, non-sensitive information about your game and the localized version(s) of your game. It will not ask for identifying information such as your name and the research report will not include any reference to individuals.

Please note that your participation in this survey is completely voluntary. This survey can be completed until Wednesday 10th April 2019, 11:59 PM (GMT+1).

This survey will not take more than 10 minutes to complete.

To participate, please click on the following link: [Questionnaire link]

Should you have any questions or concerns about this survey, please feel free to contact me at [marie.berthouzoz@etu.unige.ch](mailto:marie.berthouzoz@etu.unige.ch), or simply answer this email.

Sincerely,

Marie Berthouzoz

Master's degree student – Faculty of Translation and Interpreting

University of Geneva

[marie.berthouzoz@etu.unige.ch](mailto:marie.berthouzoz@etu.unige.ch)

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If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: [Opt out link]

If you are blacklisted but want to participate in this survey and want to receive invitations please click the following link: [Opt back in link]

## 2. Reminder

### **Reminder: Research survey on the localization of indie games**

Dear [Developer's name],

Recently, I contacted you to request your participation in a 10-minute survey on the localization (linguistic and cultural adaptation) of your game [Game title].

You are receiving this message because you have not yet completed the survey, and I wish to remind you that the survey is still available should you wish to take part. The survey can be completed until Wednesday 10th April 2019, 11:59 PM (GMT+1).

To participate, please click on the following link: [Questionnaire link]

Sincerely,

Marie Berthouzoz

Master's degree student – Faculty of Translation and Interpreting

University of Geneva

[marie.berthouzoz@etu.unige.ch](mailto:marie.berthouzoz@etu.unige.ch)

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If you do not want to participate in this survey and don't want to receive any more invitations please click the following link: [Opt out link]

## Appendix C: Questionnaire template

### Indie Game Localization Questionnaire

This survey is being conducted by Marie Berthouzoz from the Faculty of Translation and Interpreting of the University of Geneva, Switzerland, as part of her Master's thesis.

The purpose of this survey is to investigate the localization (linguistic and cultural adaptation) of indie games. This survey is intended for indie game developers.

Your participation in this survey is voluntary. You may withdraw at any time. You may also choose to save your answers and come back to the survey later. This questionnaire will remain open until Wednesday 10th April 2019, 11:59 PM (GMT+1).

This questionnaire will take you around 10 minutes.

Please note that the responses you provide will be stored on a server owned by the University of Geneva.

By answering this questionnaire, you indicate that you agree with the information above and grant the researcher permission to use and publish data collected, including material such as statistics regarding the data, for academic purposes only. This questionnaire will not ask for identifying information such as your name and the research report will not include any reference to individuals. However, due to the nature of the data, it is possible that some data might be recognizable.

#### **(1/6) Preliminary questions**

1A. Please provide the name of your game:

1B. Please select the role(s) that you fulfilled during development:

- Programmer
- Game designer
- Graphic artist
- Sound designer/Composer

- Narrative designer/Writer
- Project Manager
- QA Manager/Tester
- Localization Manager
- Other (please specify)

**(2/6) Game characteristics and development**

2A. In which on-screen language was your game first written?

- English
- Other (please specify)

2B. What is the total word count of your on screen game text? (please provide an estimation if exact numbers are unknown)

2C. Does your game contain any voiceover?

- Yes
- No
- Other (please specify)

2D. In which language was the voiceover first recorded?

- English
- Other (please specify)

2E. How many words does the voiceover script contain? (Please provide an estimation if exact numbers are unknown)

2F. How many actors participated in the recording of the voiceover?

2G. Why did you choose not to add voiceover?

- I did not think it was necessary for this game
- It would have been too expensive It would have been too expensive
- It would have been too difficult It would have been too difficult
- It would have made localizing the game too expensive
- It would have made localizing the game too difficult
- No reason in particular
- Other (please specify)

2H. If you selected "Other" and your game contains some voiceover, in which language was it first recorded?

- English

- Other (please specify)

2I. If you selected "Other" and your game contains some voiceover, how many words does the script contain? (Please provide an estimation if exact numbers are unknown)

2J. If you selected "Other" and your game contains some voiceover, how many actors participated in the recording?

2K. If you selected "Other" and your game does not contain any voiceover, why did you choose not to add any?

- I did not think it was necessary for this game
- It would have been too expensive It would have been too expensive
- It would have been too difficult It would have been too difficult
- It would have made localizing the game too expensive
- It would have made localizing the game too difficult
- No reason in particular
- Other (please specify)

2L. What is the age rating of your game?

- 3 and older
- 7 and older
- 12 and older
- 16 and older
- 18 and older
- Other (please specify)

2M. How long, on average, does it take to play through your game?

### **(3/6) Game localization**

3A. In which languages is your game available? (Please specify regions if any)

3B. When did you decide to localize your game?

- Before getting started with development
- At an early stage of development
- Near the end of development
- After the game was released in its first language
- Other (please specify)

3C. Who translated your game?

- In-house translator(s)

- Freelance translator(s)
- Translator(s) recruited via crowdsourcing methods
- Fan translator(s)
- Acquaintances
- Yourself
- Other (please specify)

3D. Were the localized versions released at the same time as the original version (simship)?

- Yes, all localized versions were released simultaneously
- Only some localized versions were released simultaneously
- No, all localized versions were released at a later date

3E. Are you currently planning to add more languages in the future?

- Yes
- I would like to, but am not sure yet
- No

3F. Which languages are you planning to add, or would you like to add in the future?

3G. If you are not sure, what could be the determining factors?

- Localization costs
- Time it would take to localize the game
- I do not know who could localize the game
- I do not see the appeal of having a new language available
- Other (please specify)

3H. If no, why?

- The localization costs would be too high
- Localizing the game would take too much time
- I do not know who could localize the game
- I do not see the appeal of having a new language available
- Other (please specify)

#### **(4/6) Game publication**

4A. Did you work with a publisher to release your game?

- Yes
- No
- Other (please specify)

4B. Did the publisher ask for the game to be localized in specific languages?

4C. If you selected "Other" and you worked with a publisher, did the publisher ask for the game to be localized in specific languages?

4D. Which languages did the publisher request?

4E. Was an “early access” or “demo” version of the game released before the finalized game became available?

- Yes
- No
- Other (please specify)

4F. Did you receive feedback from early access/demo players regarding the localization of your game?

- Yes
- No
- Other (please specify)

4G. If you selected "Other" and released an early access/demo version of your game, did you receive feedback from early access/demo players regarding the localization of your game?

- Yes
- No
- Other (please specify)

4H. Can you please summarize the feedback that you received?

### **(5/6) Game funding**

5A. Was your game funded, or partially funded, using a crowdfunding platform (e.g. Kickstarter, Indiegogo)?

- Yes
- No
- Other (please specify)

5B. Did you receive a grant for your game?

- Yes
- No
- Other (please specify)

5C. Was your game funded, or partially funded, by any other funding source?

- Yes

- No
- Other (please specify in comments)
- I prefer not to answer this question

**(6/6) Conclusion**

6A. Should you wish to make any additional comments, please write them below:

6B. Do you wish to be informed of the results of this study?

6C. If yes, please state your email address below:

Thank you very much for answering this questionnaire.

## Appendix D: Pearson correlation coefficients and p-values

### 1. Section 4.2: Number of localized versions

Investigated factor	Pearson's correlation coefficient	p-value
Source language	-0.197	$1.65 \cdot 10^{-26}$
Number of words in game text	-0.067	0.060
Source language of the voiceover (if any)	0.249	$3.56 \cdot 10^{-26}$
Number of words in the voiceover script (if any)	-0.275	0.261
Number of actors which recorded the voiceover (if any)	-0.151	0.752
Age rating	-0.294	$2.89 \cdot 10^{-15}$
Completion time (in hours)	-0.100	0.296
Genre: Action	0.070	$3.17 \cdot 10^{-28}$
Genre: Adventure	-0.003	$1.29 \cdot 10^{-27}$
Genre: Casual	0.264	$3.69 \cdot 10^{-29}$
Genre: Educational	-0.053	$3.34 \cdot 10^{-29}$
Genre: Fighting	-0.035	$3.34 \cdot 10^{-29}$
Genre: Indie	0.382	$3.58 \cdot 10^{-28}$
Genre: Interactive Fiction	-0.088	$4.96 \cdot 10^{-29}$
Genre: Massively Multiplayer	0.185	$4.07 \cdot 10^{-29}$
Genre: Platform	0.012	$6.04 \cdot 10^{-29}$
Genre: Puzzle	-0.049	$5.23 \cdot 10^{-29}$
Genre: RPG	-0.184	$3.17 \cdot 10^{-28}$
Genre: Shooter	0.020	$3.34 \cdot 10^{-29}$
Genre: Simulation	0.232	$9.42 \cdot 10^{-29}$
Genre: Strategy	0.282	$1.39 \cdot 10^{-28}$
Genre: Survival	-0.128	$3.69 \cdot 10^{-29}$
Genre: Visual Novel	-0.229	$7.75 \cdot 10^{-29}$
When was it decided to localize the game?	-0.196	$5.08 \cdot 10^{-15}$

Investigated factor	Pearson's correlation coefficient	p-value
Who made the translations? In-house translators	0.328	$5.10 \cdot 10^{-29}$
Who made the translations? Freelance translators	0.115	$2.21 \cdot 10^{-28}$
Who made the translations? Crowd-sourced translators	0.116	$3.48 \cdot 10^{-29}$
Who made the translations? Fan translators	0.077	$3.02 \cdot 10^{-26}$
Who made the translations? Acquaintances of the developers	-0.253	$3.25 \cdot 10^{-27}$
Who made the translations? Game developers themselves	-0.155	$1.57 \cdot 10^{-28}$
Who made the translations? Translation agencies	0.341	$3.48 \cdot 10^{-29}$
Sim-ship or post-gold	0.113	$3.90 \cdot 10^{-23}$
Early access/demo version	0.172	$4.83 \cdot 10^{-28}$
Feedback from players	0.361	$8.47 \cdot 10^{-29}$
Is the game entirely free?	0.145	$2.20 \cdot 10^{-28}$
Game price (in USD)	0.283	0.0003
Publisher	0.183	$1.38 \cdot 10^{-28}$
Crowdfunding campaign	-0.040	$5.10 \cdot 10^{-29}$
Grant/Fund	-0.012	$3.48 \cdot 10^{-29}$
Priced early access	0.116	$3.48 \cdot 10^{-29}$
Fan donations	-0.174	$5.51 \cdot 10^{-28}$
Company funds	0.048	$3.54 \cdot 10^{-29}$
Personal savings	0.113	$3.54 \cdot 10^{-29}$
Number of sources	0.254	$1.65 \cdot 10^{-26}$

## 2. Section 4.3: Number of localized versions including subtitles

Investigated factor	Pearson correlation coefficient	p-value
Source language	-0.395	$1.39 * 10^{-13}$
Number of words in game text	(couldn't be computed)	
Source language of the voiceover (if any)	-0.333	$1.41 * 10^{-13}$
Number of words in the voiceover script (if any)	-0.986	0.265
Number of actors which recorded the voiceover (if any)	0.278	$2.81 * 10^{-11}$
Age rating	0.126	$4.41 * 10^{-13}$
Completion time (in hours)	(couldn't be computed)	
Genre: Action	-0.286	$1.36 * 10^{-13}$
Genre: Adventure	0.255	$1.44 * 10^{-13}$
Genre: Casual	-0.296	$1.17 * 10^{-13}$
Genre: Indie	-0.121	$1.38 * 10^{-13}$
Genre: Massively Multiplayer	0.127	$1.18 * 10^{-13}$
Genre: Platform	0.127	$1.18 * 10^{-13}$
Genre: Puzzle	(couldn't be computed)	
Genre: RPG	0.208	$1.29 * 10^{-13}$
Genre: Shooter	-0.296	$1.17 * 10^{-13}$
Genre: Simulation	-0.154	$1.22 * 10^{-13}$
Genre: Strategy	-0.023	$1.25 * 10^{-13}$
When was it decided to localize the game?	-0.472	$3.13 * 10^{-13}$
Who made the translations? Freelance translators	0.395	$1.45 * 10^{-13}$
Who made the translations? Crowd-sourced translators	-1	$1.21 * 10^{-13}$
Who made the translations? Fan translators	0.25	$1.33 * 10^{-13}$
Who made the translations? Acquaintances of the developers	0.189	$1.27 * 10^{-13}$
Who made the translations? Game developers themselves	0.189	$1.27 * 10^{-13}$
Who made the translations? Translation agencies	0.125	$1.21 * 10^{-13}$
Sim-ship or post-gold	0.426	$2.45 * 10^{-13}$
Early access/demo version	-0.395	$1.39 * 10^{-13}$

<b>Investigated factor</b>	<b>Pearson correlation coefficient</b>	<b>p-value</b>
Feedback from players	-0.661	$1.27 * 10^{-13}$
Is the game entirely free?	0.333	$1.42 * 10^{-13}$
Game price (in USD)	0.146	$3.65 * 10^{-10}$
Publisher	0.128	$1.25 * 10^{-13}$
Crowdfunding campaign	-0.661	$1.27 * 10^{-13}$
Grant/Fund	0.125	$1.21 * 10^{-13}$
Priced early access	-1	$1.21 * 10^{-13}$
Company funds	0.125	$1.21 * 10^{-13}$
Number of sources	-0.555	$1.80 * 10^{-13}$

### 3. Section 4.3: Number of localized versions including target-language voiceover

Investigated factor	Pearson correlation coefficient	p-value
Source language	-0.641	0.002
Number of words in game text	-0.264	0.188
Source language of the voiceover (if any)	-0.291	0.002
Number of words in the voiceover script (if any)	(couldn't be computed)	
Number of actors which recorded the voiceover (if any)	0.940	0.145
Age rating	-0.219	0.007
Completion time (in hours)	-0.329	0.814
Genre: Action	0.209	0.002
Genre: Adventure	-0.099	0.002
Genre: Casual	-0.092	0.001
Genre: Indie	0.114	0.002
Genre: Massively Multiplayer	0.219	0.001
Genre: Platform	-0.108	0.001
Genre: Puzzle	(couldn't be computed)	
Genre: RPG	0.054	0.001
Genre: Shooter	-0.092	0.001
Genre: Simulation	0.245	0.001
Genre: Strategy	0.016	0.001
When was it decided to localize the game?	-0.302	0.004
Who made the translations? Freelance translators	0.575	0.002
Who made the translations? Crowd-sourced translators	-0.254	0.001
Who made the translations? Fan translators	-0.121	0.001
Who made the translations? Acquaintances of the developers	-0.026	0.001
Who made the translations? Game developers themselves	-0.304	0.001
Who made the translations? Translation agencies	-0.254	0.001
Sim-ship or post-gold	0.834	0.003
Early access/demo version	-0.641	0.002
Feedback from players	-0.383	0.001
Is the game entirely free?	0.703	0.002
Game price (in USD)	0.419	0.862
Publisher	0.124	0.001

<b>Investigated factor</b>	<b>Pearson correlation coefficient</b>	<b>p-value</b>
Crowdfunding campaign	-0.383	0.001
Grant/Fund	0.693	0.001
Priced early access	-0.254	0.001
Company funds	-0.254	0.001
Number of sources	0.326	0.002