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Résumé de l'article

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The elusive "indieness": Measuring the defining characteristics of indie games

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Abstract

This article aims to investigate the internal and external marking traits of indie games. Building up on previous efforts from other scholars, we developed a mix method research approach relying on interviews with Brazilian indie game developers and a quantitative survey. Rather than trying to "re-invent the wheel" by proposing a new definition for the term, we attempt to map out the distinctive factors present in contemporary indie games from the perspectives of developers and non-developers alike, while also discussing the changes of meaning "indie" might have been subject to over time. We found that the determining traits of what allows one to perceive a game as indie change over time, and that, despite the core fact that creative independence remains the central feature of all indie games, the conditions for achieving this independence appear to be rather flexible, especially when it comes to issues of funding and publishing agreements. Additionally, our findings point to the term "indie" as being highly mutable and reliant on temporal and contextual aspects, with the qualities that divide indie from non-indie games being more akin to a continuum than something rigidly binary.

Author Keywords

indie; independence; digital games; survey; terminology; Brazil's game industry

The unsolved quest(ion) of indie games

There was a time in the early days of computer gaming when indie games could be called "niche", but not anymore. Although the current iteration of what we call indie or independent games gained its popularity in the early 2000s, the reality is that they have existed since at least the 80s (Pérez Latorre, 2016). If we were to understand "being indie" as developing a game outside of the corporate games industry, it could even be said that the earliest forms of game development were inherently indie (De Jong, 2013; Pereira & Bernardes, 2018; Wilson, 2005). Over these approximately 40 years, indie game development has not only matured but also expanded globally. We can now find indie developers not only in the more traditional game markets, but in younger ones, such as in Brazil, the location where this study was conducted.

Being or going indie, however, is not a status exclusive to games. The expression encompasses a series of cultures and subcultures sharing a generic opposition to whatever is perceived as mainstream (as well as their respective production and distribution processes) along with a dedication to autonomy and authenticity, present in cultural forms such as music, theatre, clothing, art, and new and old media (Lipkin, 2013; Newman, 2009; Shaw, 2013). Yet, despite its broad adoption, to put into words what

indie exactly means is no simple task. Actually, indie games' two more well-known "older brothers", the indie film and music industry, haven't had much better luck defining the term either (De Jong, 2013; Oakes, 2009), as exemplified by a quote from Newman (2009, p. 1): "In recent years, however, 'indie' has become a buzzword, a term whose meanings - alternative, hip, edgy, uncompromising - far exceed the literal designation of media products that are made independently of major firms."

When it comes to games, the term has been described as "slippery" (Parker & Jenson, 2017), "exceptionally elusive" (Garda & Grabarczyk, 2016), and "a very elastic term, capable of being stretched in many different ways" (van Best, 2011, p. 8). On the one hand, part of this could be attributed to the relative newness of the field, but on the other, almost 20 years have passed since Zimmerman (2002), in a now well acknowledged whitepaper, originally posed the question "do independent games exist?". In this period the academic body of knowledge on the topic has grown, features once central to the discussion –such as digital distribution– have become industry common grounds and, as what happened in the music industry, the term "indie", today, might have "been stripped of much of its original meaning" (Oakes, 2009, p. 207). Over time a significant number of researchers (De Jong, 2013; Garda & Grabarczyk, 2016; Lipkin, 2013; Ruffino, 2013) have tasked themselves with discussing the concepts behind the indie game label and proposing new ways to frame it. Nevertheless, it appears that either because of the multifaceted nature of the topic, the temporal and contextual changes to which the game industry is subject, or even "simple" differences in understanding, the meaning of the term "indie game" still evades consensus. This results in a series of issues. For scholars, an unstable definition results in discrepancies between what different researchers might take out of it. Having different perspectives over the same matter can positively develop its understanding, yet when this reaches the extent of having multiple subjects employing the same word with significantly different meanings, we end up with a confusing research field that is difficult to navigate. For aspiring indie game developers, an unstable definition makes it harder to promote their games without risking backslash in the form of users or festival organizers claiming that their production is not truly indie. And for consumers, it becomes difficult to shop for what they actually want when they are presented with storefronts labeling as indie both the low-key game supporting the local game jam, and the big budget pixel art platformer developed by a major video game company.

Back in 2013, in the introduction to *Loading's…* special edition on indie games, Simon (2013, p. 2) wrote that, to some extent, "There is no point in seeking a formal definition or classification of 'indie games'", and maybe what we have learned since then further strengthens his argument. However, even if finding a universal formal definition for the term might end up being impossible, that does not mean we should not strive to make its general comprehension as clear as possible by mapping its key aspects. This apparent obstacle does not prevent us from seeking the characteristics that make this "indie thing" (Simon, 2013) be perceived as something unique when compared to other games. Neither does it impede us from searching for "indie markers" (Garda & Grabarczyk, 2016), shared common features (Ruffino, 2013), and "impression[s] of what allows people to, practically, recognize an indie game as being indie" (De Jong, 2013).

This research paper seeks to further develop the investigation of such matters. Based on a mixed method approach combining interviews with developers from indie game studios and an online survey, we aim to build a clearer picture of the distinctive traits of indie games from the perspective of both developers and gamers familiar with the term. Any attempt to achieve this goal, though, must

consider the cultural, temporal, and contextual particularities of where and when the question is being posed. Therefore, although we believe our findings can be extrapolated to some degree to other contexts, a more precise way to state our research objective would be: to investigate the distinctive traits of indie games *today* from the perspective of *Brazilian* indie game developers and their audience. Also, while it is expected that the identification of current marking traits of indie games will naturally lead to critical insights into other authors' perspectives on the subject, our main goal is to obtain a new panoramic overview of what is nowadays understood as indie from a Brazilian perspective.

One may ask: Why Brazil? Despite being the 13th largest digital game market in the world and the leading one in Latin America, Brazil's national game industry, albeit showing positive signs of growth in the past few years, is still small (Newzoo, 2018; Sakuda & Fortim, 2018). Historically, the production and legal commercialization of digital games in Brazil had a late start owning to its protectionist economic policies in the 70s and 80s. Issues such as the isolation of the national market, high taxes, and rampant software and hardware piracy stalled the Brazilian game industry up until the early 2000s, when it could be said that it actually started to move forward. Still today, though, significant obstacles remain concerning lack of infrastructure, low international presence, and absence of experienced professionals. All these conditions, however, favored the emergence of a digital game industry with peculiar characteristics, oriented mostly towards solo developers and small companies rather than large corporations (Amélio, 2108; P. S. Zambon, 2017). Backing this proposition, the 2nd Census of the Brazilian Digital Games Industry (Sakuda & Fortim, 2018), a report funded by the Brazilian Ministry of Culture, shows that 65% of the 375 game development studios identified were no more than 5 years old, and 26% not even legally formalized yet. The report also reveals that 37.8% of the formalized studios employed no more than 5 people and that 61.7% of them reported an annual revenue of no more than R$ 81.000,00 (US$ 24.500,00 at the time) in 2017. This more intimate style of development allows for an industry that tends to encourage proximity and communally shared experiences above strictly institutional and economic relationships. Such a scenario proved to be fertile ground for independent game development to flourish, and consequently it was these developers and not big-name companies who launched Brazil into the international digital game development scene (P. S. Zambon, 2017). Brazil's young game industry's connection to independent game development, along with the fact that it was born (or rather, it awakened) in the same period that indie games appear to have been at their peak, makes it an interesting subject for further research on the topic of indie games.

Previous efforts of fellow adventurers towards a characterization

To start to understand what makes a game indie requires the acknowledgement that we cannot limit ourselves to the outward characteristics of games. To be indie speaks first of sharing a set of common ideas, mindset, or ideology. These, in turn, translate into identifiable expressions of "indieness", be they in the form of visible external attributes, internal production and distribution practices, or in personal statements –in different forms and degrees of subtlety– regarding each developer's interpretation of that ideology. The key to this idea that provides the background for everything indie is "opposition": opposition to the mainstream culture, to the corporate game industry, to its work practices, to its focus on profit over innovation, and to its supposed creative blandness and artistic impersonality (De Jong, 2013; Guevara-Villalobos, 2015). Lipkin (2013, p. 11) sums it up by writing that "'indie' is linked both with a generic opposition to the mainstream as well as the production and,

especially, distribution processes that mainstream structure affords", while Ruffino (2013, p. 107) adds to that by declaring that we must also look beyond the business model towards the "political and moral connotations" that the idea of independence holds.

This discourse based on open opposition, however, proves to be problematic and, to certain degree, untrue. Jahn-Sudmann (2008, p. 5), for example, points out that not everything that labels itself indie actually carries a clear "oppositional logic that is explicitly recognizable as negation or challenge of mainstream game forms" visible in either their production processes or expressive capacities. This issue is further illustrated in the fact that De Jong (2013), while analyzing indie games based on the themes of authenticity, innovation and opposition, found contradictions in each of his three proposed themes. Therefore, if something claims an oppositional stance but fails to actually live up to it, would not that make it an empty claim? Following this trend, Keogh (2015, p. 156) argues that there is an "inevitably symbiotic relationship" between indies and the so called "AAA industry" (an informal classification for games/developers produced with high budgets by major publishers), exemplified by the presence of indie games on major corporate controlled digital distribution storefronts. Evidence of this can also be seen in the works of Wright (2015) and Guevara-Villalobos (2015) where, by actively discussing these matters with indie game developers, the researchers found that economic necessities and market pressures give rise to an indie discourse that, although strong in outward appearance, in practice shows itself to be devoid of many of the core ideals that it champions. All these inconsistencies point to the possibility that a significant part of the indie discourse might actually be the product of game developers simply trying to make sense of a changing industry landscape (Martin & Deuze, 2009; Ruffino, 2013), constructing narratives in response to new market conditions (Wright, 2015). This does not mean, though, that the discourse is false or that its claims are of no value, but that we must understand it in the light of this possibility. Issues such as these exemplify why it is so hard to come up with a clear-cut definition of what an indie game is. Still, such hurdles have not prevented researchers, developers, and journalists alike from trying to map the perceptible characteristics of games embedded in this indie ideology.

One way to attempt to draw somewhat the boundaries of indie game characteristics is by establishing it as genre, as proposed by De Jong (2013). The problem with this approach is that, as De Jong himself admits, genres are overlapping, open-ended and susceptible to change over time, thus proving to be quite unstable. Simon (2013) also voices his opposition to the framing of indie as a genre, stating that although the term can be connected to particular design or artistic choices, doing so would end up missing the much more important point of their provenance. Juul (2014) further develops this premise –albeit forfeiting the word genre– by bringing forth the idea of the existence of an Independent Style noticeable in the visual, fictional and gameplay aspects of indie games. Juul's proposition is interesting in that it addresses, to some degree, Simon's (2013) concerns of provenance by posing this style as an expressive reflection of the conditions of where and how a game was created. Nevertheless, both his and De Jong's (2013) approaches are still bound only to the external perceptible characteristics of a game, and that leaves the door open to the problem of co-optation, that is, the appropriation of these characteristics by groups that don't necessarily share the ideologies and/or conditions that originally generated them. If our defined set of indie markers is limited to the outward characteristics of a game, it is easy for them to be copied and, as a matter of fact, this has already been happening (De Jong, 2013; Kiley, 2016; Lipkin, 2013). Lipkin (2013) describes this problem in light of the emergence of an indie style parallel to the indie ideological substance. Something that, in its external appearance, checks all the boxes of an actual indie game but that, at its core, is "soulless" and

lacks the beliefs that first gave birth to those particular set of indie characteristics.

Given this reality, it would be in our best interest to aim to combine these external stylistics markers with internally oriented ones directly related to the context surrounding the creation of the game. Depictions of what these internal characteristics could look like can be seen, for example, in Van Best's (2011) suggestion that the defining characteristic of an indie game is the existence of a level of personal connection (dialogue) between player and designer, especially during the development of a game. Or, for instance, one could view the importance of the community-related aspects of indie game development for skill acquirement, mutual collaboration, and moral support, as described by Guevara-Villalobos (2011), Wright (2015) and Parker & Jenson (2017), as another such marker.

Following in this pattern, the work of Garda & Grabarczyk (2016) proves to be of particular interest. The authors propose the existence of three autonomous types of independence in games –financial, creative and publishing– and then position "indie" as a label for the manifestation of these forms of independence within a set of "contingent properties" tied to a specific time and place (mid-2000s North America). In other words, in their view, games created within this specific phase of the larger phenomenon of independent games that presented these properties (in unspecified combinations) would go on to be called indie. However, what makes their proposition especially appealing to our study is that Garda & Grabarczyk's list of contingent properties represents a mixture of what we have been calling external (e.g. retro style) and internal characteristics (e.g. small team, indie mindset) of indie games. This combination adequately fulfills our search for a set of indie markers that considers both external and internal factors, and therefore was chosen as the starting point for our investigation. It should be pointed out, though, that Garda & Grabarczyk add that the correlations between contingent properties and types of independence change constantly (thus the reason they chose to "freeze" their analysis in the mid-2000s). Therefore, in planning to use their list as an initial guideline, one must consider both the possibility of certain properties being no longer valid, and also the likelihood of new ones to have emerged. We also acknowledge that the aforementioned authors hold the position that the term indie is associated with a set place and time, and that our research moves in a different direction by inquiring into the marking traits of indie games *today* and in other locations. Even so, we believe this divergence does not present a problem in relation to using their list of contingent properties as a starting point for our investigation.

The search for indie traits

Given our objective, the lack of quantitative studies related to the topic, and the desire to inquire not only about developers but also players, a study based on mixed methods was devised according to the following sequence: a) identification of a number developers widely perceived as indie; b) interviews with these developers asking their opinions on the meaning of "indie" regarding games; c) extraction of key-themes (traits) from the collected data followed by comparison to the definitions formulated by Garda & Grabarczyk (2016); d) elaboration of an online survey (questionnaire) aimed at gamers and game developers in order to validate the key-themes with a larger sample; e) analysis of the collected data and discussion of the results.

Identifying developers

The first step of this research already presented a challenge given that our selection of research participants that qualified as indie developers might implicate a degree of bias. In order to mitigate this issue, it was decided that the qualifying participants would be selected from the pool of game development studios nominated to awards in Brazil's Indie Game Festival (BIG) from 2014-2016. The BIG Festival is regarded as the largest indie game festival in Latin America and one of the top three in the world (BIG Festival, 2017). By establishing this criterion, we restricted the research participants to studios that: a) considered themselves indie (based on the act of registering their game at an indie game festival); b) were perceived as valid representatives of the indie scene by the Brazil's Indie Game Festival committee (given that these studios were all nominated for awards). We initially contacted 17 game development studios through "cold call" emails to ask about their willingness to participate in the study, out of which seven replied positively to our request.

"In your opinion, what makes a game indie?"

The seven participating studios were all Brazilian companies with 10 or fewer employees, located in six different states of the country, that produced a mix of PC, mobile, and console games. Audio interviews (using Skype) were then scheduled to interview one of the lead developers from each studio. All interviewees were male and presented themselves with a variety of titles/roles including COO, Lead Game Designer/CEO, Developer, Solo Developer, Producer, Co-owner, and 'Big Boss'. The interview protocol was organized in a semi-structured format based around two main questions: a) "In your opinion, what characterizes a game as indie?"; b) "In your opinion, what characterizes a studio as indie?" This format allowed participants to expand on their answers, going into details rather than just replying with a short sentence. An example can be seen in the excerpt bellow from Developer 4A:

> "An independent game is a game made with creative liberty by their developers and not dependent on a publisher or other big company. That does not mean that an independent game cannot be published by a publisher, but that it doesn't need to, that there is no strong attachment. Like... [let us say that] I made an independent game and I'll release it with Paradox, but then they want to change something in it, or by some reason they decide that they don't want to continue the contract, or they don't want to publish the sequel. If this happens, [if there is no strong attachment] I can simply go and publish the game with any other publisher that accepts it. So, in this case I don't necessarily depend on her [Paradox], it was just an agreement for that particular time."

Interviews were carried out between February and March 2017.

Extracted key-themes (traits)

In order to identify the traits that reflected the interviewees perspective on the subject, we relied on categorial (qualitative) content analysis (Bardin, 2011; Bengtsson, 2016; Gondim & Bendassolli, 2014) based on thematic grouping derived from manifest content (Berg, 2001). Additionally, we chose to use "theme" as our unit of analysis following Bardin's (2011, p. 135) recommendation on its ability to "discover the 'nuclei of meaning' that make up the communication events, and whose presence or frequency of appearance can signify something for the chosen analytical objective". The collected

data was transcribed and then reviewed in order to construct a coding scheme based on the major categories that emerged: an inductive coding approach moving from multiple preliminary codes towards final major ones.

In this initial phase, non-major differences in degrees between a same trait mentioned by multiple developers were not differentiated, therefore the answer from Developer 4A quoted above, for example, was grouped in the "*not be associated with a publisher*" category. Similarly, given the subjective nature of the term "indie game" and the overall aim of this study of mapping traits more and less strongly associated with this term rather than providing a "clear cut" definition, it was decided not to press the developers to be precise about what they meant with expressions such as "lower", "smaller" and "alternative". This process culminated in the identification of 13 traits that developers associated with indie games (Table 1).

The first trait, *"be self-funded"* speaks about developers being able to finance the production of their game without external intervention. While taking a loan might be seen as acceptable, having an investor might not. *"Not be associated with a publisher"* alludes to an unfavorable perception regarding having contractual ties with publishers given the possible restrictions to the development of the game that might come out of such agreements. Publishing companies are common players in the game industry that facilitate the publication, marketing, and distribution of games (besides also possibly providing financial support) in exchange for shares in future revenue. *"Provide developers total creative freedom"* is a trait somewhat connected to the two aforementioned ones, although it goes further by refuting any kind of external influence over the creative decisions made by the developers. When it comes to the trait of *"be developed by a 'small' studio"*, it must be acknowledged that the expression "small studio" can relate to different aspects of a company, such as number of employees, size of the physical structure, market share, etc. The overall meaning, though, is that there is an apparent negative correlation between increasing company size and making indie games. The trait related to *"having a 'lower' budget"* follows a similar logic, by establishing a contrast between the degree of monetary investment allocated to indie games when compared to the high costs of game development in the more traditional game industry.

Trait *("an indie game should…")*	Times mentioned in different interviews
-be self-funded	**4**
-not be associated with a publisher	**4**
-provide developers total creative freedom	**3**
-be developed by a 'small' studio	**3**
-have a 'lower' budget	**3**
-be developed in an environment that is either semi amateur, hobbyist, or non-professionalized / formalized	**3**
-have its concept/main idea conceived in-house (that is, the idea should not come from an external agent)	**2**
-have a non-conventional / 'alternative' style when it comes to graphics, audio and video.	**2**
-be developed by a 'small' team (number of people)	**2**
-be 'short' or have a 'smaller' scope	**1**
-have a retro style (either in the graphics, audio or gameplay)	**1**
-have characteristics that differentiate it from 'AAA games'	**1**
-be 'more about passion than making money'	**1**

Table 1: Initial list of traits

The next trait in Table 1*, "be developed in an environment that is either semi amateur, hobbyist, or non-professionalized / formalized"* is fairly self-explanatory and refers to a perception that indie game development is associated to garage, basement, or bedroom-based software development. To *"have its concept/main idea conceived in-house"* refers to having the origins of the conceptual basis of the game developed in the studio itself and without influence, conditions or requirements imposed by external agents. Therefore, in this view, games that are commissioned with established rules or requirements would not qualify as indie. This particular requirement complements the trait "*provide developers total creative freedom*" by adding an element related to the origins of the idea that kickstarts the whole development process. The traits *"have a retro style"* and *"have a non-conventional / 'alternative' style"*, both relate to the stylistic aspects of a game (although it should be pointed out that one interviewee mentioned that a retro style could also be associated to the game mechanics themselves). The first one associates indie games to aesthetical and mechanical choices grounded on nostalgia and contrast to the average modern contemporary game, while the second one emphasizes a needed differentiation from what can be perceived as commonplace styles or fads. Following a similar reasoning, the trait *"have characteristics that differentiate it from 'AAA games'"* again emphasizes differentiation but now in a wider aspect pertaining not only to the artistic choices of a game, but also to any elements that might contrast with what is seen as an "AAA-type" production. To discuss what exactly "AAA" means would go beyond the scope of this paper, but in a simplistic way it could be described as an informal classification for digital games developed with ample amounts of investment usually by large traditional companies. The traits *"be developed by a 'small' team"* and *"be 'short' or have a 'smaller' scope"* speak, respectively, about the number of people involved in the development of the game and the amplitude/range of the game as whole when it comes to its scope and duration. Both traits intrinsically establish, once again, a contrast with the traditional game industry. The last trait identified, *"be 'more about passion than making money'"* is clearly the most subjective trait of the list, being related to a possible ideology or mentality of indie game

development, touching on the subject of principles and intentions present in the background of the development of digital games. As the next step in the analysis process, the identified traits were then compared to Garda & Grabarczyk's (2016) proposed types of independence and properties of indie games, as seen in Table 2.

The majority of the identified traits were suitable for association with the concepts proposed by Garda & Grabarczyk (2016). Many traits provided direct matches between the two studies, that is, cases where traits described by the interviewees clearly aligned with the descriptions found in the aforementioned study. Notably, the three traits that were mentioned the most in the interviews (Table 1) – *"be self-funded"*, *"not be associated with a publisher"* and *"provide developers total creative freedom"* – directly corresponded to the three types of independence in games proposed by Garda & Grabarczyk (2016).

Trait *("an indie game should…")*	Type of independence / Property *(Garda & Grabarczyk, 2016)*
-be self-funded	-financial independence
-not be associated with a publisher	-publishing independence
-provide developers total creative freedom	-creative independence
-be developed by a 'small' studio	-small team -small budget and low price
-have a 'lower' budget	-small budget and low price
-be developed in an environment that is either semi amateur, hobbyist, or non-professionalized / formalized	---
-have its concept/main idea conceived in house (that is, the idea should not come from an external agent)	-creative independence -financial independence
-have a non-conventional / 'alternative' style when it comes to graphics, audio and video	-experimental nature -indie mindset
-be developed by a 'small' team (number of people)	-small team
-be 'short' or have a 'smaller' scope	-small size
-have a retro style (either in the graphics, audio or gameplay)	-retro style
-have characteristics that differentiate it from 'AAA games'	-experimental nature -indie mindset
-be made 'more about passion than making money'	-indie mindset
---	-digital distribution
---	-indie scene
---	-middleware

Table 2: Identified traits in relation to Garda & Grabarczyk's (2016) propositions

Considering the contingent properties of indie games proposed by the same authors, again we were able to identify connections to the findings in our study, although not for all properties and traits. Out of the nine proposed properties, three – "digital distribution", "indie scene" and "middleware" – were not mentioned by any interviewee. It is possible, though, that sample size limitations, given the

qualitative nature of this phase of the study, might explain their absence. We also believe that there is a possibility that the interviewees might have considered some properties to be implicit, obvious, or even too trivial to be worth mentioning. An example would be "digital distribution", a property that makes sense in the context of Garda & Grabarczyk's (2016) study since they link the expression "indie games" to a set of games form the mid-2000s, but that contemporary developers might perceive as trivial given its ubiquity and widespread practice nowadays. Regarding the only unmatched trait – *"be developed in an environment that is either semi amateur, hobbyist, or non-professionalized / formalized"* –, it is our understating that, although it could be argued that this trait could be associated to the property of "small team", we believe that this connection would not be adequate. A small team does not automatically imply a non-formalized or non-professionalized environment and, therefore, we consider it worth of having an entry of its own.

The similarities between the findings of both studies are significant and support each other. Still, there are some distinctions that must be pointed out. First there is the fact that there was no mention in the interviews of any sort of separation between the terms "independence" and "indie", but this was to some degree expected given the way the interviews were structured. Second, it was not the aim of our study to test the validity of Garda & Grabarczyk's (2016) claims, but to use their propositions as a starting point for our investigation and, in this context, the separation of the types of independence from the perceived properties of indie games was not required. Another relevant distinction has to do with the local and temporal aspects the aforementioned authors associate with the expression "indie game", particularly regarding games from the mid-2000s in North America. There was no mention in the interviews of a connection between "indie games" and a specific place or time period (or characteristics of games of a specific place or time period). At this point, however, this should not be looked at as a direct negation to such assumption since it is also possible, especially given the similarities between both studies, that the traits that we see today are actually modern repetitions of those marking properties of games from the mid-2000s without developers rationally acknowledging it. If that is the case, the actual question becomes whether we should limit ourselves to only labelling the games produced in that specific time period indie, or if we could also include as indie the current modern games that present (either partially or totally) those same characteristics. Regardless of this particular debate, it still appears that the interviewees do not share the understanding that for a game to be called indie it should be connected to a specific time period or location.

Online survey
Following our pre-established research plan, the next step consisted in showcasing our initial findings to a larger audience of gamers and game developers for evaluation. Our objective was to measure quantitatively how strong an impact each of the identified traits would make on the average person interested in indie games, when it came to their relevance as a defining characteristic of an "indie game". In order to do so, an online survey (questionnaire) relying on Likert scaling and voluntary (non-rewarded) participation was devised.

The first question of the survey (following a short introduction and research agreement) asked participants if they were familiar or not with the expression "indie game". This question acted as a gateway only allowing participants who responded positively to proceed to the core research questions. This filter was necessary to avoid registering answers from individuals unfamiliar both with games in general and with the specific research topic. Participants were then asked to evaluate traits on a scale ranging from 1 to 5 (1 representing "lesser importance", and 5 representing "higher

importance") based on the following overarching question: "In your personal opinion, the fact that a game is considered as indie is associated in a lesser or higher degree to: _____". A total of 16 traits were submitted for evaluation: the 13 original traits described in the previous section (with slight alterations due to grammatical requirements), plus 3 extra traits based on the 3 properties of Garda & Grabarczyk's (2016) study that went unmentioned by the interviewees in the qualitative phase of our study. This section was followed by three additional closed-ended questions that emerged from the comparisons of the initial findings of the qualitative phase of our study with the propositions of Garda & Grabarczyk (2016). The first of these questions inquired if labeling a game as indie was better described as something binary or more of a continuum. This question originated from the fact that some interviewees had expressed difficulty in characterizing a game studio as indie or not given that some aspects of it could be perceived as indie but others not. The second question asked if the general understanding of what makes a game indie changes over time, while the third question asked if it changed depending on context. Both of these questions were included given Garda & Grabarczyk's (2016) proposition that the understanding of "indie game" is connected to specific temporal and contextual features. Additionally, the second question is particularly relevant given comments from interviewees associating the term indie to a trend that that has already passed away or that has suffered changes in its meaning, as described by Developer 7A: "the notion of what is indie has been changing in the past 10 years". Finally, the last set of questions of the survey asked for participants' nationality and age, while also asking (in two closed "Yes/No" questions) if they considered themselves to be game developers. We also provided a section for participants to share any additional information or comments they believed would be valuable to our research. Once ready, the survey was disseminated to multiple game-related grad and undergrad university programs in Brazil and in social media, being available publicly online from December 5th 2018 to January 5th 2019.

Data analysis

The survey was run through Google Forms, one of the online survey platforms available, and the data was analyzed with the use of Microsoft Excel and SPSS. Our survey received an initial number of 391 responses. After removing invalid entries and answers from respondents who declared themselves unfamiliar with the expression "indie game", we were left with a total of 328 entries that satisfied all criteria. All respondents were Brazilian. The differences in age were considerable, ranging from fairy young (16) to somewhat old (62), with a mean of 24.2. Of the 328 total respondents 36.9% (121) self-identified as game developers while 63.1% (207) did not.

Regarding the answers related to the 16 identified traits, a preliminary inspection assessed the suitability of the data based on the Kaiser-Meyer-Olkin Measure of Sampling (KMO) and Bartlett's Test of Sphericity, where it was found that KMO= 0.767 and p(Bartlett) < 0.001, numbers within common standards. Reliability of the scale reported a good internal consistency with a Cronbach's alpha coefficient of a= .743 for the 16 elements of the scale. Additionally, it should be noted that Factor Analysis, calculated using Pearson Product Moment Correlation, revealed that two correlations presented r > .5. It was found the existence of significant positive relationships between "*be developed by a 'small' studio*" and "*be developed by a 'small' team*", r(326)= .562, p < .001 and also between "*have a non-conventional / 'alternative' style*" and "*have a retro style*", r(326) = .525, p < .001. Given the similarities in these two respective pairs of traits, this was somewhat expected. Descriptive statistics for the analyzed sample are presented in Tables 3a and 3b. Findings concerning the three additional closed-ended questions of the survey are summarized in Table 4.

Descriptive statistics (part 1)								
						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Min.	Max.
be self-funded	Non-game developer	207	3.30	1.238	.086	3.13	3.47	1	5
	Game developer	121	3.43	1.315	.120	3.19	3.67	1	5
	Total	328	3.35	1.267	.070	3.21	3.49	1	5
not be associated with a publisher	Non-game developer	207	3.07	1.229	.085	2.90	3.24	1	5
	Game developer	121	3.16	1.360	.124	2.91	3.40	1	5
	Total	328	3.10	1.278	.071	2.96	3.24	1	5
provide developers total creative freedom	Non-game developer	207	4.52	.886	.062	4.40	4.64	1	5
	Game developer	121	4.36	1.025	.093	4.18	4.55	1	5
	Total	328	4.46	.941	.052	4.36	4.56	1	5
be developed by a 'small' studio	Non-game developer	207	3.77	1.187	.083	3.61	3.94	1	5
	Game developer	121	3.62	1.220	.111	3.40	3.84	1	5
	Total	328	3.72	1.200	.066	3.59	3.85	1	5
have a 'lower' budget	Non-game developer	207	3.01	1.271	.088	2.84	3.19	1	5
	game developer	121	3.04	1.363	.124	2.80	3.29	1	5
	Total	328	3.02	1.304	.072	2.88	3.17	1	5
be developed in an environment that is either semi amateur, hobbyist, or non-professionalized / formalized	Non-game developer	207	2.79	1.266	.088	2.62	2.97	1	5
	Game developer	121	2.68	1.392	.127	2.43	2.93	1	5
	Total	328	2.75	1.313	.072	2.61	2.89	1	5
have its concept/main idea conceived in house (that is, the idea should not come from an external agent)	Non-game developer	207	4.02	1.159	.081	3.87	4.18	1	5
	Game developer	121	3.67	1.363	.124	3.42	3.91	1	5
	Total	328	3.89	1.248	.069	3.76	4.03	1	5
have a non-conventional / 'alternative' style when it comes to graphics, audio and video	Non-game developer	207	3.09	1.373	.095	2.90	3.28	1	5
	Game developer	121	2.31	1.310	.119	2.08	2.55	1	5
	Total	328	2.80	1.399	.077	2.65	2.95	1	5

Table 3a: Descriptive statistics concerning the evaluation of the 16 traits, comparing answers from game developers with non-game developers

Descriptive statistics (part 2)								
				Std.	Std.	95% Confidence Interval for Mean			
						Lower	Upper		
		N	Mean	Deviation	Error	Bound	Bound	Min.	Max.
be developed by a 'small' team	Non-game developer	207	3.42	1.171	.081	3.26	3.58	1	5
	Game developer	121	3.36	1.232	.112	3.14	3.59	1	5
	Total	328	3.40	1.192	.066	3.27	3.53	1	5
be 'short' or have a 'smaller' scope	Non-game developer	207	2.74	1.198	.083	2.58	2.91	1	5
	Game developer	121	2.56	1.238	.113	2.34	2.78	1	5
	Total	328	2.68	1.214	.067	2.54	2.81	1	5
have a retro style (either in the graphics, audio or gameplay)	Non-game developer	207	2.20	1.279	.089	2.02	2.37	1	5
	Game developer	121	1.42	.824	.075	1.27	1.57	1	4
	Total	328	1.91	1.192	.066	1.78	2.04	1	5
have characteristics that differentiate it from 'AAA games'	Non-game developer	207	3.46	1.280	.089	3.28	3.63	1	5
	Game developer	121	3.03	1.408	.128	2.78	3.29	1	5
	Total	328	3.30	1.342	.074	3.16	3.45	1	5
be made 'more about passion than making money'	Non-game developer	207	3.61	1.287	.089	3.44	3.79	1	5
	Game developer	121	3.02	1.508	.137	2.75	3.30	1	5
	Total	328	3.40	1.400	.077	3.24	3.55	1	5
rely on digital distribution	Non-game developer	207	3.06	1.420	.099	2.86	3.25	1	5
	Game developer	121	2.47	1.461	.133	2.21	2.73	1	5
	Total	328	2.84	1.461	.081	2.68	3.00	1	5
be connected to the indie scene	Non-game developer	207	2.76	1.302	.091	2.58	2.94	1	5
	Game developer	121	2.49	1.355	.123	2.24	2.73	1	5
	Total	328	2.66	1.327	.073	2.52	2.81	1	5
be developed with specifics sets of tools or engines	Non-game developer	207	2.16	1.194	.083	2.00	2.32	1	5
	Game developer	121	1.49	.914	.083	1.32	1.65	1	5
	Total	328	1.91	1.145	.063	1.79	2.04	1	5

Table 3b (continuation): Descriptive statistics concerning the evaluation of the 16 traits, comparing answers from game developers with non-game developers

In your opinion, the label "indie" in games is better described as being something binary (rigid, as in "either it is, or it is not") or as more of a continuum between 0% and 100% indie? *		
	Binary (number of answers)	Continuum (number of answers)
non-game developer	68	139
game developer	40	81
sum total	108	220

In your opinion, does the general understanding of what makes a game indie change over time? *		
	No (number of answers)	Yes (number of answers)
non-game developer	52	155
game developer	36	85
sum total	88	240

In your opinion, does the general understanding of what makes a game indie change depending on context? *		
	No (number of answers)	Yes (number of answers)
non-game developer	42	165
game developer	35	86
sum total	77	251

*considering n=328, where n of 'game developer' = 121, and n of 'non-game developer' = 207.

Table 4: Summary of findings concerning the three additional closed-ended questions comparing the answers from game developers and non-game developers

Treasures, loot, findings, and discussions

The data extracted from our survey allowed us to measure the relative importance participants attributed to each of the selected 16 traits as relevant factors in defining what they perceive to be an actual indie game. The mean scores in our Likert Scale for each item, considering the aggregated sample of 328 participants, ranged from 1.91 to 4.46. The trait "*provide developers total creative freedom*" scored the highest mean score (4.46), while *"have a retro style (either in the graphics, audio or gameplay)"* and "*be developed with specifics sets of tools or engines*" tied for the lowest (1.91). We will go through each of the analyzed traits in a mostly ascendant order, from the lowest scoring ones to the highest, making considerations as we advance.

We begin with the trait *"be developed with specifics sets of tools or engines"*. The fact that both gamers and especially developers graded the trait related to middleware with a low score (1.91), leads us to think that even if indie developers might have a tendency towards specific game engines and tools given production cost limitations (Garda & Grabarczyk, 2016; Juul, 2014), this seems not to be an important requirement for something to be called indie in the opinion of the respondents. It is also possible that the gradual democratization and increased availability of tools

of game development (see for example Epic's new pricing policies on the usage of its Unreal Engine) have contributed to lowering the importance of this trait when compared to the past. The final score obtained in the survey, along with the fact that this trait went unmentioned in the qualitative phase of our study, seems to further validate these general assumptions.

The other lowest (1.91) scoring trait *"have a retro style (either in the graphics, audio or gameplay)"* might come as a surprise given the number of authors that associate the indie phenomena with a propensity towards nostalgia and the early days of the game industry. This finding is particularly interesting when compared to Juul's (2014) analysis of IGF (Independent Game Festival) winners in his 2014 paper, where he clearly identified retro or nostalgic elements in most of the games. It appears that despite an existing general tendency to associate indie with retro, nowadays this might only represent a subset of indie games that tends to be more highlighted than others. It has already been discussed (Kiley, 2016; Parker, Whitson, & Simon, 2018) about how institutions such as the IGF and GDC (Game Developers Conference) shape, to a certain degree, the general perception of what an indie game is, and perhaps that is the case here. Another interesting fact is that the other trait in our study associated to style (*have a non-conventional / 'alternative' style when it comes to graphics, audio and video"*) also scored in the lower half of the scale (2.8), particularly with developers (2.31). These findings point to a perception of stylistic and general aesthetic factors not being critical determinants for whether a game should be considered indie.

Another trait that scored considerably low (2.66) was *"be connected to the indie scene"*. Despite the reported (Guevara-Villalobos, 2011; Wright, 2015) significant role that community networking and active participation in networking events have in independent game development, it again appears that this is not a critically required factor for a game or studio to be considered indie. As it was with the trait regarding middleware, there seems to be certain traits or characteristics that, although central or at least regularly present in indie game development, do not constitute an important requirement for the indie label in the opinion of the participants. That is, the fact that many indie developers do something does not automatically make it a prerequisite to produce an indie game.

The next trait, *"be 'short' or have a 'smaller' scope"*, also scored in the lower half of our scale (2.68), revealing its relatively low importance as a factor associated with indie games. Authors such as Martin & Deuze (2009), Lipkin (2013), and Garda & Grabarczyk (2016) have correlated the short character of many indie games to their stricter budgets and to the constraints of digital distribution. Although the point of having a lower budget when compared to mainstream industry games remains, the advancements in networking technology and its availability has all but eliminated the obstacles of distributing a game of almost any size online. This might also be the reason the trait *"rely on digital distribution"* scored towards the middle of the scale (2.84). Digital distribution is so common nowadays that it would be quite unexpected for any game (whatever type or label it might be given) not to rely on it.

The last trait that scored below the middle of the scale was *"be developed in an environment that is either semi amateur, hobbyist, or non-professionalized / formalized"* (2.75). We found this score to be fairly unexpected given that this trait had been mentioned by multiple interviewees in the qualitative phase of our study. Still, the data shows that the level of internal organization does not

seem to be a strong indicator of a game's indieness for either developers or non-developers. For any nostalgic meaning the word indie might carry, this seems not to translate to a nostalgia towards the organizational context that surrounded the early days of the game industry. As a matter of fact, based on a quote from an interviewee in Guevara-Villalobos'(2015) study, this notion might actually prove to be quite offensive to some developers:

> "I know we are sort of indie as we are trying to self-fund our projects. But we are not this kind of 'Indie' living in his mother's basement, that's fucking awful. We are actually trying to make business here [...]".

<div align="right">Robin as cited in Guevara-Villalobos, p. 10 (2015)</div>

Moving on to the traits that scored in the upper half of our scale, the first one is *"have a 'lower' budget"* (3.02). The fact that this trait scored almost perfectly in the middle of the scale leads us to believe that indie games are expected to rely on a more limited budget when compared to their mainstream counterparts, but that this might be seen more as a natural consequence of developing a game independently than as an actual indie marker. If this is true, however, it raises the possibility that developers that manage to secure huge amounts of funding but are still outside of the mainstream industry (while also possible adhering to the other traits outlined in this research) could still be seen as indie. Following only this criterion the game Star Citizen, for example, with its initially crowdsourced-only investment model that raised up to US$ 65,000,000 (Robert Space Industries, n.d.), would be in the mix of the discussion for inclusion as an indie game.

The next trait in our list, *"not be associated with a publisher"*, scored the value of 3.10. Independence of publishing has historically been seen as one of the pillars of the indie game discourse (Garda & Grabarczyk, 2016; Lipkin, 2013). Nevertheless, changes in the industry with the growing popularization of digital distribution portals and the gradual opening of major publishers (such as EA and Ubisoft) to partnerships with indie developers, has made this requirement "fuzzier". This was hinted in the interviews in the qualitative phase of our study and was further validated by both the scores given to the trait in the survey and by a couple of comments from participants in its open section. A game from a studio that has partnered with a publisher for investment seems to be viewed differently from a game that associated itself with a publisher functioning only as hired service provider (particularly for distribution purposes). This trend has already been discussed in the literature (Crogan, 2018; De Jong, 2013 c. 4; Ferreira, 2014; Garda & Grabarczyk, 2016) and is expressed in the larger discussion of the so called "mindie" games (indie games that share a certain number of traits of mainstream industry ones) proposed by Doulin (2010). Given this context, the debate of whether a game is worth being called indie based on its publishing model appears to be particularly challenging, and not immediately helpful as an indie marker of contemporary games.

The trait *"have characteristics that differentiate it from AAA games"* scored 3.30, positioning it near the middle of our scale. This trait, although very wide scoped, was along with trait of *"have a non-conventional / 'alternative' style when it comes to graphics, audio and video"* one of the two survey entries that most emphasized a contrast with mainstream industry games in the form of external properties. The fact that both of them scored towards the middle of the scale reinforces the idea that, although relevant, the key factors for labeling a game indie have not so much to do

with outward appearance or specific game mechanics. It also drives us to consider if the assumed oppositional logic of the indie discourse remains as important as it once was, and if it still is, how exactly is it manifested nowadays. Additionally, it is worth noting that the most ideological trait on our list, *"be made 'more about passion than making money'"* achieved a similar score of 3.40 (and only 3.02 when looking at developers only). Despite admitting that we cannot treat these considerations as more than small insights, it is intriguing to think that not only the perceived characteristics of indie games might have changed over time, but maybe even the discourses they are based on.

Proceeding with our analysis, *"be self-funded"* scored 3.35. Given that financial independence is another aspect of indie games often considered of high importance in the literature (Garda & Grabarczyk, 2016; Martin & Deuze, 2009), a higher score could have been expected. A possible explanation for this is that the way the question was framed did not consider possibilities of funding that stand in somewhat ambiguous middle ground between self-funding and external investment (e.g. crowdfunding) that are rising in popularity nowadays. One could also have speculated, based on the issues discussed regarding the traits of *"not be associated with a publisher"* (3.10) and "have a *'lower' budget"* (3.02) and their moderate scores, that this trait of *"be self-funded"* would achieve a higher score to compensate for the other two. If that were the case it would allow us to theorize, respectively, that there is no problem with being associated with a publisher as long as you are self-funded and that having a higher budget is not an issue, again as long as you are self-funded, but the close scores between the three traits make that line of thought unlikely. As such, it appears that the subject of self-funding might be not as critical for indie developers as it once was. Still, it did score in the upper half of our scale so even if not as important as we anticipated, it still should be seen as a relatively important marker in defining an indie game.

We then move on to the three highest scoring traits of our survey: *"be developed by a 'small' studio"* (3.72), *"have its concept/main idea conceived in house (that is, the idea should not come from an external agent)"* (3.89) and *"provide developers total creative freedom"* (4.46). It was seen earlier that to be developed in an amateur/non-professionalized environment (2.75) was not given high importance as a defining characteristic of an indie game. To be developed by a small studio, however, does seem to be, hinting that size appears to be more important than organization level in this regard. Also, it is interesting to note that *"be developed by a 'small' team"* (3.40), although presenting a positive statistical correlation with *"be developed by a 'small' studio"* (3.72), achieved a considerably lower score. This leads us to think that what makes a studio be considered as "small" in the opinion of the participants of this study is not only the number of people it employs, but other variables such as how well-known, recognized, or famous the studio is.

Next, we proceed to the trait related to having the concept of the game developed inside the game development studio itself: *"have its concept/main idea conceived in house (that is, the idea should not come from an external agent)"* (3.89). Based on the high score, respondents seem to really value an indie game having its core concepts originating authentically from the developers themselves. This perception has ramifications that touch on both topics of studios acting as work for hire and their connections to publishers, since it implies that being hired by someone else to make a game would most times be a red flag for something labeling itself indie. It is especially interesting to notice that non-developers (4.02) scored this trait quite significantly higher than developers (3.67). We could speculate that this means that developers are more open to accept, for

example, an adware game as indie than non-developers. Even so, it must be considered that there are different conditions under which a studio might be hired to develop a game and that these differences might influence how a game is perceived regarding its indieness. As an example, when it comes to Brazil, it is not uncommon for the federal government to fund games of specific themes through open calls for proposals that are very non-restrictive and open-minded in their requirements (Pedro Santoro Zambon & Pessotto, 2018). Although this scenario implies having the concept of the game developed partially by an external party, it is quite different than, say, a studio being hired by a company to simply execute a pre-established idea.

This leads us to a matter pertaining to the last and by far the highest scored trait of our list, *"provide developers total creative freedom"* (4.46), and the topic of control over the development of a game. It seems that this particular issue is what actually is at the bottom of many of the traits already discussed. For a game to be indie, it might not matter where the money comes from (or its amount) as long as the developers can do their jobs without external interference. It might not matter if there is a publisher involved as long as it does not meddle with how the game should be. And, to some degree, it might not matter if the developers were not the ones who set the initial basic parameters the game should follow, as long as they are given the liberty to grow the game from there as they see fit. As such, it could be said that the most important issue when it comes to a game being called indie or not is if the development team was free to make the game they wanted in the way they wanted. This means they should be free to decide by themselves the major requirements it should follow and have autonomy over any and all decisions that need to be made, even if this means choosing to follow current trends or deciding to make a game mainly for profit. However, the more a game starts to give up this power to external agents, the weaker its association to the term indie becomes.

Finally, we would like to look at the three closed-ended questions of our survey. The first one asked if the label "indie" in games was better described as being something binary or more of a continuum between 0% and 100% indie. Two thirds of the respondents (67%) answered "continuum", with developers and non-developers generally agreeing on the issue. The perceptions of this majority seem to agree with Pedercini's (2012) view of indie as a "gradient" where total independence is unachievable given the quasi-obligatory reliance on corporate controlled distribution channels. In such a view, going indie will always involve different degrees of compromise with the "capital", influenced in part by simple necessities that can vary from developer to developer. The idea of different subtypes of indie games (Ferreira, 2014; Harvey & Shepherd, 2016) or levels of independence (Garda & Grabarczyk, 2016; Lipkin, 2013; Martin & Deuze, 2009) has already been hinted at in the literature and might prove to be a better way to frame contemporary indie companies given their complex relations with publishers, distribution platforms and funding sources.

The second question asked if the general understanding of what makes a game indie changes over time. 73.1% answered that "yes, it does", with non-developers (74.8%) being slightly more inclined to agree than developers (70.2%). The third question asked if the general understanding of what makes a game indie changes depending on context (e.g. place). 76.5% of the participants answered "yes", again with non-developers (79.7%) being more prone to agree to the statement than developers (71%). Both these questions address the issue of mutability and the non-homogeneity of what it means to be indie and, based on the answers we obtained, we can see another reason why defining the term precisely is so difficult. If we look at the established

literature, we find that authors such as De Jong (2013), Lipkin (2013) and Garda & Grabarczyk (2016), each following different perspectives, have already commented on how these changes might occurs. Grace, particularly, (2011, p. 3) states that "the borders that define independent games are not rigid. They are like art, evolving and interpreted", and Parker (2013, p. 1) states that "Indie games is not a fixed or stable idea, and means different things depending on where you are and how it is deployed". The percentages observed in our set of closed-ended questions appear to support these views, pointing to indie games as a phenomenon that is reliant both on the time and the context that surrounds its observation.

final cutscene: Conclusion

Considering all the information that was gathered in this research, what can be said about the current marking characteristics of indie games in Brazil? We believe that some of the more traditional markers of indie games are changing and that nowadays creative independence triumphs over everything else, appearing to be able to overrule almost any other aspects that could otherwise be seen as questionable for a game to be considered indie. If we add that to the fact that most participants in our study seem to perceive the definition of indie games as highly reliant on time and context, we find that attempting to set in stone marking characteristics of indie games overall presents itself as impossible. What can be done, though, is to isolate specific moments in indie game history and then analyze the characteristics of that isolated group. Given this necessity, we agree with Garda & Grabarczyk's (2016) approach of tracing markers of independent games from the mid-2000s in North America and calling them indie. However, the same issue that leads to this necessity, that is, the everchanging nature of indie games, is what makes us disagree with their assertion that we should limit ourselves to only calling indie the games from that specific observation. Our findings point neither to claims of indie being associated with set time periods or places, nor to contemporary developers attempting to simply mimic properties from games of such time and context, but to actual changes in what it means to be indie.

We believe that with our findings we have succeeded in drawing a general picture, an initial overview, of what Brazilian gamers and developers perceive to be indie traits nowadays. Nevertheless, similarly to how Garda & Grabarczyk (2016) position their "contingent properties" of indie games in their study, the list of traits we analyzed should not be seen a series of checkboxes by which one could create a ruler to measure what is indie and what is not. They represent different 'aspects of indieness' that a game can have, each with a different degree of relative importance towards defining something as overall indie. It is the unspecified combination of some (or all) of these traits in a game that will result in a product that can be observed by players, developers and journalists alike and then positioned somewhere in an imaginary scale of "how indie" it actually is. As such, our list of traits should be seen as a guideline for understanding the phenomena rather than a rigid list of requirements.

This does not mean that the work is done, though. While this study fills some gaps in the literature and contributes with significant new data concerning indie game markers, some limitations must be considered. First, the qualitative phase of our study was based on a relatively small sample and, despite our efforts to the contrary, it is still not immune from sample bias. Additionally, given our objectives and overall research viability, we consciously chose to seek only indie game developers for the interviews; however, in order to obtain a clearer picture, further studies should focus on

also collecting the perceptions of non-indie developers. Similar limitations exist concerning the sampling strategy of the quantitative phase. Although we tried to reach out to a wide range of participants, our recruitment methods, relying on voluntary participation from university staff and students along with snowball sampling, probably lead to specific group perceptions (e.g. students) being more prevalent in the data than others. Second, despite the fact that our sample contained participants from diverse age ranges, not all age groups are well represented. Considering our findings related to the mutability in meaning of the term "indie game" over time, a more heterogeneous sample on this regard would have been preferred. Likewise, if meaning does indeed change based on context, it could have been interesting to collect general background information from the participants, and therefore we offer this as a suggestion for further studies. Third, as already acknowledged, our findings are reliant on time, context and even on local cultural factors of where and when the study was conducted and thus, further studies in other locations could positively contribute to ours by providing grounds for comparison and further generalizability. Finally, another possible front for additional investigation would be to try to precisely describe some of the wider traits that were intentionally left open to the respondents' own interpretation: What does it actually mean to be a "small studio"? What does "being different form the 'AAA' games" mean to you? Such studies would be helpful in narrowing down our findings even further.

It is also important to highlight that different methods can be employed in order to search for indie markers. The approach we used in this research places strong emphasis on personal opinions and, even though we sought to restrict our participants to people highly connected to and relatively knowledgeable of the subject matter, opinions do not always reflect the reality of a subject. In this sense, it could be said that the list of traits we identified represents an imagined collective ideal of what should be seen as an indie game from the participants' points of view. The question of what actually is currently being sold and promoted as indie, though, might present different answers that would also be interesting. Take, for example, the trait related to middleware that we analyzed in our study. It scored one of the lowest values of all traits and, consequently, led us to treat it as not having a particularly high importance as a marker. However, if one were to ask these same participants to provide a list of games that they considered indie, and then, by analyzing them, found that 90% used Unity as their engine, would that not mean that, to some extent, being based on Unity is a valid marker of an indie game? Therefore, studies that seek to extract what is the "least common multiple" among given sets of indie games, might provide additional informative insights towards identifying reliable indie markers and, for this reason, we encourage further efforts on that front as well.

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