

Female participation in game jams: a case study on gender issues in game development marathons

Cláudia Ferraz
 Centro de Informática
 Universidade Federal de Pernambuco (UFPE)
 Recife, Brasil
 claudia@cin.ufpe.br

Kiev Gama
 Centro de Informática
 Universidade Federal de Pernambuco (UFPE)
 Recife, Brasil
 kiev@cin.ufpe.br

Abstract—Game jams are games enthusiasts’ encounters for one obvious goal in common: creating games. But more than that, these meetings work as an important networking environment for building social and professional relationships among individuals in the area, in addition to generating an ecosystem of support favorable to the game development market, benefiting all those involved: aspirants, professionals and the market as a whole. For these reasons, participating in game jams has become a relevant factor for the insertion and consolidation of game professionals in the area. However, it is noticeable that women still represent a very small percentage in these events. This work aims to understand the aspects that inhibit female participation in game development marathons, in order to clarify what are the aspects, behaviors and environments that either promote or discourage female motivation to participate in game jams. For this purpose, we conducted a case study where we used a mixed method approach to analyze the influence of gender in different perspectives of a game jam. The case study was held in the city of Recife, Pernambuco, in August 2018. We found interesting results, such as the motivational aspects for both genders were very similar; the self-confidence of female participants were lower than male participants; and the significant increase of female registrations after an advertisement campaign targeting women.

Index Terms—Gender, Game Jam, Participation, Motivation

I. INTRODUCTION

After analyzing 20 articles and drawing on personal experiences - which were gained in several events, Kultima [1] defined a game jam (GJ) as “an accelerated opportunistic game creation event where a game is created in a relatively short timeframe exploring given design constraint(s) and end results are shared publically”. Usually, game jams are seen as a tool for innovation, creativity, new game ideas, and learning for different kinds of subject matters and skills [2]. For some participants, the most critical thing in a game jam is the possibility of building creative and innovative games. For others, the main experience in this type of event is the learning and the possibility of social exchange [1]. However, according to Fisher and Harvey [3] “indie culture can also serve to reify dominant narratives of the mainstream industry, including discourses that hinder female participation therein”. To this work, we requested data from all nine game jams that occurred between 2017 and 2018 in the city of Recife, Brazil, intending to analyze the participation of women in these events. After comparing the number of male and female

participants in these GJs, the results showed that females are indeed a minority. The number of women who enrolled in each game jam during the mentioned period did not exceed 19% (an average of 13.1% of women per GJ). Female participation in game jams is still limited and studies around that particular topic are still scarce. This work aims to identify motivational and discouraging points which lead to that, analyzing historical, social, psychological and environmental aspects. For this analysis, a game jam held at Federal University of Pernambuco (UFPE), Brazil, was organized with the secret purpose of being a case study about gender. It was idealized to be a faithful version of common GJs, with standard characteristics to those that typically occur in Recife. Through surveys and interviews, it was possible to identify characteristics and behaviors that favor low female engagement in games development marathon events.

We could see the disparity in the collective perception about male and female in the technology and games market. In game jams, however, this difference between gender causes more controversies and discussions.

II. OBJECTIVES

Knowing that female participation in game jams is still very limited, this work aims to identify the motivational and discouraging aspects that lead women to participate or not have interest in participating in game jams, analyzing historical, social, psychological and cultural aspects. This work aims to understand why women are still so underrepresented in these game development marathon events, once they are so significant as a consumer audience. It seeks to explore and identify problems related to gender in a game jam experience, and then, propose solutions to these problems and contribute to the gender balance in these events. It is hoped that this study contribute to a more heterogeneous and inclusive game development market, with more diversity and representativeness, generating more consumer identification and creativity in the games products developed.

III. MOTIVATIONS AND RELEVANCE

A. Women: gamers x game creators

A survey conducted by Newzoo in 13 countries in 2017 showed that 46% of the gamers are women (research among

the online population aged 10-65). However, only 21% of game developers are women (population aged 18-67 worldwide in 2017), according to IGDA (International Game Developers Association) Statista 2018. In Brazil, the Game Brasil survey of 2018 showed that women represent a share of 58.9% of the gamers in the country. However, despite being the majority of gamers, according to the II Brazilian Census of Digital Games (2018), women represent only 20.7% of the employees of all national game developer companies consulted by the survey. In other words, there is a great disparity between women gamers and women game developers in Brazil and worldwide. This homogeneity is negative because it contributes to the lack of innovation and diversity in the representation of games, mechanics and interfaces. For Fron et al [8], if the industry expects to keep its market satisfied and attract new potential players to the culture of digital games, the diversification of the workforce will be crucial in the future.

B. Gender stereotypes and biases

“The video game has been part of the apparatus of becoming a man and not of becoming a woman, and the context of its production plays a central role in this relationship” [4]. As technological and computing specialization in general remains largely associated with the male figure, it is not surprising that there is a shortage of women working in the digital games industry [5]. This type of cultural bias is evident when we see campaigns such as ‘MyGameMyName’, an initiative by the American association Wonder Women Tech, launched in 2018, which had a lot of Brazilian participation. The organization challenged some male youtubers to join games with female nicknames, to experience the oppression and abuse suffered by women when playing online. The campaign aimed to raise awareness about the moral and sexual harassment in this field. A study by Fox and Tang [6] showed that 100% of women who play online at least 22 hours a week reported having experienced harassment. Major attacks include threats, rape jokes, physical and sexist insults, requests for sexual favors and stalking. Aggressions always tended to convey this message: you don’t belong here.

IV. THE CASE STUDY

The UFPE Game Jam was performed to be the case study of this research, so that it was idealized to fit the parameters of typical GJs commonly held in Recife, the city of this study. The purpose was to create an authentic game jam, with the aim of avoiding any biases. For this, the production team of the event had a professional member of IGDA (International Game Developers Association), expert in game jams organization, responsible for several events of this nature that occurred in Recife. The selection of the participants counted with the expertise of these invited mentors and the production team, who took into consideration the gender, level of experience, institution, area of activity, portfolio and motivation. For this selection, the priority was to pick varied and complementary profiles, to allow the creation of multidisciplinary teams capable of building an MVP (Minimum Viable Product) of a digital

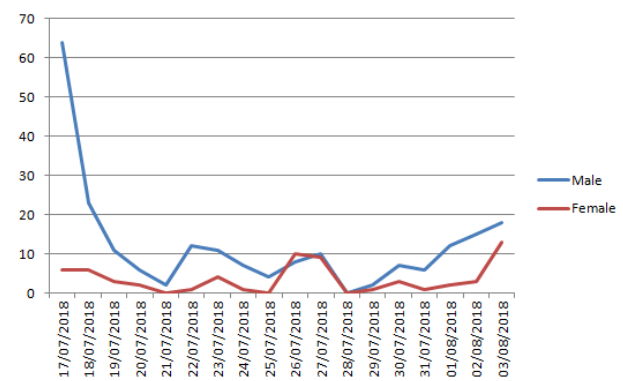


Fig. 1. Evolution of male and female registration during the campaign

game. The Game Jam was held in an auditorium of UFPE’s Center of Informatics, with all necessary infrastructure. It was organized to host 50 people, who formed 7 multidisciplinary teams. The organization offered pizzas for dinner, and an open bar of snacks and coffee. The event started on Friday night going without interruption until Sunday night, in August 2018. On the first Thursday after the event, a Recap of the UFPE Game Jam was held with the purpose of gathering the participants so they could show a more robust versions of the created games and discuss with other guests about the games and the game jam. The guests were digital game teachers from UFPE as well as a game producer from Manifesto, an important local game company.

V. MAIN RESULTS ¹

A. Campaign and female registrations results

The event had a total of 283 registrations (216 male, 65 female and 2 that preferred not to identify the gender). There were 18 days of publicity campaign which was divided into two moments: in the first 9 days, the campaign addressed the general public, with no segmentations. On the 10th day (7-26-18), there was a special announcement inviting female audience to participate. After that, there was a significant change in the amount of female registrations (Fig. 1). It is important to notice that the advertisement was made in the same media as the one aiming at a general audience. Before this date, the number of participants was 142 males (84.5%) and 25 females (15.5%). After the female-oriented announcement, the number of females enrolled rose to 39 in less than 24 hours: a 56% increase versus a male increase of 9%. That is, from day 17 to day 25 (9 days), we had only 25 registrations of females. From the 26th (special call for females) to the 3rd of August (9 days), there were 40 registrations of females. This increase is equivalent to 60% more female registrations in the second half of the time of the registration period, after the special announcement aimed at the female audience.

¹All the results can be obtained from the full dissertation.

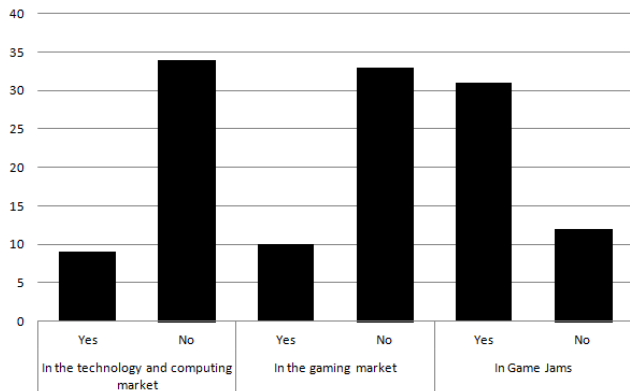


Fig. 2. Answers about the question: Do you believe that male and female are treated equally in their work teams?

B. Survey results

1) *Motivation*: When asked about the main motivation to participate in a game jam, the majority (47.6%) highlighted *learning* as the main motivational factor. The remaining 52.4% were divided between *developing portfolio, networking, meeting people, fun, personal challenge, and finding job opportunities*, in descending order. The first two motivations were the same for both genders.

2) *Gender issues*: The first three questions of the survey on gender issues were made without splitting female and male respondents, that is, they were made for the large, mixed group. The first question asked whether respondents believed that men and women are treated equally in their work teams (1) in the technology and computing market, (2) in the gaming market, and (3) in game jams. According to the participants responses observed in Fig. 2, unlike the technology, computing, and gaming markets, where participants believe there is no equal treatment of male and female in the market, perceptions seem to be different in game jams. Most of them believe that in game development marathons there is fairness of gender treatment within teams.

It is important to notice that this was the result of the mixed responses of male and female and, if the question had been asked only for women, the result would be 50% for *yes* and 50% for *no* in the question if they believe in equal treatment of male and female in game jams. While for male, this figure stood at 81.25% for *yes* and only 18.75% for *no*. That is, among males, there is much more the belief in gender equality in game jams than in females.

The next gender issue encompassed the perception of each participant about the self-esteem of their male and female peers: *Do you know potential participants who are discouraged from attending game jams because of insecurity about their performance?* We noticed that the issue of insecurity is an important point in understanding the low female participation in game jams, since it is noticeable the greater amount of women who are discouraged to participate in game jams because of the lack of confidence they have in their own

work. While only 5 respondents reported knowing many men who were discouraged by insecurity, 17 respondents reported knowing many women in this situation.

The third gender issue addressed was a question that asked on a Likert Scale response format (Table I) ranging from 1 (Totally Disagree) to 5 (Totally Agree), how much they agreed with the following statement: *The game development market is essentially sexist*. Female responses tended to an agreement (4.2) while the male responses were slightly lower (3.59) and closer to neutrality. From this question on, we divide the questionnaire into two sections: one to be answered by female and another one by male.

Female: In the question *“Women are seen and / or treated differently from men in game jams”*, the result was well-balanced, with an average of 3.1 on the Likert scale, showing that women neither agree nor disagree with this statement. In the question *“Women are often victims of some kind of gender bias in game jams”*, the neutral female position on these issues strengthens, with an average of 3.1 on the Likert scale. In the question *“How do you feel about your performance in game jams?”* (responses ranging from 1 = Still feel very insecure 5 = I feel very confident), the average of 3.1 among women remained. When questioned about examples of what this differential treatment and gender bias would be, some responses were: *“Our opinion is not heard, it is underestimated, we’re treated in a special way, as if we’re not serious, as if we’re still learning how it works.”*

Male: In the question *“Women are seen and / or treated differently from men in game jams”*, the result was below the female result, with a mean of 2.37 on a Likert scale, showing that men have a different perception than women on the subject. For them, this difference is less significant. In the question *“Women are often victims of some kind of gender bias in game jams”*, we have an even smaller result in relation to female responses, with an average of 2.28. Finally, in the question *“How do you feel about your performance in game jams?”*, the average of 3.65 shows that overall they feel more confident than women about their own ability to play jams. Some examples admitted of what would be this differential treatment and gender bias were: *“At least, mansplaining and mantenrupting.”* or *“Jokes about their professional qualification.”*

C. Interviews results

We interviewed a total of 6 males and 8 females. We categorized some *In Vivo Codes* in Game Jam Experience Issues. *In Vivo Codes* refer to a code based on the actual language used by the participant [7]. We notice that negative codes appear more frequently in female’s interviews, as seen in Table II. Some quotes with the *In Vivo Codes* “fear”, “afraid or scare” cited by women: *“The girls reported that they avoided participating in it precisely because they were afraid the environment was not so welcoming.”* and *“In our culture, women are afraid of making mistakes, because they*

TABLE I
LIKERT SCALE RESPONSES - MEAN AND STD. DEVIATION

Questions	Male (N=32)		Female (N=10)	
	Mean	SD	Mean	SD
The gaming market is essentially sexist	3.59	0.99	4.2	0.4
Women are seen and / or treated differently than men in game jams	2.37	0.96	3.1	1.22
Women are often victims of some kind of gender bias in game jams	2.28	1	3.1	1.04
How do you feel about your performance in game jams?	3.65	0.95	3.1	1.3

have to be perfect.” Some quotes with the “(not being) listen or hear” cited by women: “I’ll get there and find a bunch of men; I’ll try to speak and will not be able to; will they listen to me? Will I be able to do my job? Or do they know better than I do?” Some quotes with the “insecure” cited by women: “I didn’t even sign up because I was feeling insecure. I thought: they will not even select me to participate.”

TABLE II
IN VIVO CODES

In Vivo Code	NOM	NOF
Fear, afraid or scare and derivations	1	17
(Not being) Listen or hear and derivations	2	13
Insecure and derivations	3	7

NOM = Number of occurrences among male
NOF = Number of occurrences among female

Interviewees also reported interesting points of view about gender disparity in game jams, reporting prejudice situations and sexist perceptions, as reported by women: “I, as a woman, I think that by having so many men, I will not be approached by my knowledge, I will be approached by who I am, by who I appear to be. So, like, ‘Oh, that girl is cute, we’ll take her to the group to see what’s up.’ And I already heard it.”

Men also recognize the problems of gender issues in GJs, but they seem less worried about it. On the other hand, respondents (both males and females) also reported positive experiences in game jams: “It’s interesting that they (women) had a lot of this insecurity, but as soon as they got in there, the blockade went away.”

When asked if they believed that the universe of games is sexist, 4 male respondents agreed (66.6%) and 7 female respondents agreed (87.5%).

VI. CONCLUSIONS

As we could see, the main motivations of the participants is learning, networking and portfolio development. Everyone agreed that the participation in game jams effectively helps to improve the technical quality of those who participate, generating new knowledge, improving skills and giving the opportunity to work outside the comfort zone or professional routine. Regardless of gender, the experience of those who

participated in the UFPE Game Jam was quite positive. There seems to be a general agreement about the differences in opportunities, credibility and stereotypes between genders in the technology and game market. However, in regards to female participation in game jams, the understanding seems to be more diffuse, with some reports of unequal treatment mixed with positive affirmations about female participants who felt welcome, heard and respected. Perhaps due to the trend of discrimination of the minority gender in the related areas, the fear and expectation of nonacceptance become more evident than the experience in the event by its own. We also found that communication aimed at women was an effective way to stimulate them to enroll in the event. They tend to feel included and more willing to participate when called directly. There are occasional cases of gender discrimination in game jams reported by women. It may help to explain their small participation in events of this nature, besides other demographic factors, such as the low female participation in the game and technology as a whole.

VII. CONTRIBUTIONS AND SOCIAL IMPACT

This work culminated in several conclusions about female participation in GJ’s, punctuating the feeling of women in relation to them. Thus, it is possible to make based decisions on the game jams organization process, in an effort to make these events more inclusive, giving space to gender diversity. As game jams are important gateways to the job market in this area, this concern has the potential to make the game creation industry more diverse, creative and better for everyone.

PUBLICATIONS AND AWARDS

Dutra, C., Gama, K. (2018). Participação feminina em game jams: um estudo sobre igualdade de gêneros em maratonas de desenvolvimento de jogos. XII Women in Inf. Technology.
Dutra, C., Gama, K. (2019). A Case Study About Gender Issues in a Game Jam. In Proceedings of the International Conference on Game Jams, Hackathons and Game Creation Events 2019 (pp. 1-8). **(Best paper award at ICGJ 2019 which is the main conference covering game jams)**

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