

# **Gender Diversity in the Game Industry: an Analysis**

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## **Abstract**

The game industry (GI), a subset of STEM, is notorious for its hyper-masculine culture. This comes with significant risks of harassment for women. This paper investigates the current state of gender diversity within the GI, combining qualitative and quantitative research from works published between 2014 and 2023, including surveys from the International *Game Developers Association* (IGDA) and reports from *Dienst Uitvoering Onderwijs* (DUO). Results show a noticeable increase in the percentage of females among gaming graduates, which correlates with trends in the IGDA data. However, the GI still fits the description of a male-dominated field, necessitating continued cultural changes to improve the work environment for women. Additionally, the presence of transgender identities is higher in the GI than in the general population, highlighting the importance of accounting for this demographic in diversity analyses.

## **Author Keywords**

Diversity; Gender; Game Industry; Workplace Harassment; STEM fields

Job description	% female
HR	47%
Writing	30%
Sales	25%
Production	21%
QA	13%
Executive	12%
<b>Visual Arts</b>	<b>11%</b>
<b>Design</b>	<b>10%</b>
<b>Audio</b>	<b>10%</b>
<b>Programming</b>	<b>5%</b>

Table 1 - Percentage of females in each job description in the Games Industry (Prescott & Bogg, 2011)

## Introduction

STEM (Science, Technology, Engineering, and Mathematics) fields grapple with a lack of workplace gender diversity (Botella et al., 2019; Wang & Degol, 2017). The game industry, (GI) a subset of STEM, is particularly notorious for being hyper-masculine. This manifests in the GI workplace as workplace harassment (Foust, 2023) and the sexualization of female character designs (Dill & Thill, 2007). Characteristics of a hyper-masculinity are common in general gaming culture as well. Here it manifests as toxicity targeted at women in online game chats (Tang & Fox, 2016). These unique circumstances make the GI an interesting case for analyzing gender diversity.

To map the current state of the gender diversity within the GI this paper employs a combination of qualitative and quantitative research. The data will be gathered from works published between 2014 and 2023, including surveys from the *International Game Developers Association* (IGDA) and reports from *Dienst Uitvoering Onderwijs* (DUO). This approach has been chosen to discover any potential trends in previous years and the current conditions of gender diversity within the industry.

This paper is structured into three main sections. The first section provides additional context about the gender diversity problem in the GI by analyzing academic works and hypotheses about the causes and effects of gender disparities. The second section examines the current state of gender diversity within the GI workplace using secondary data sources to assess diversity metrics, employment practices, and cultural dynamics. The third section interprets the research findings and draws conclusions on the current state of gender diversity within the GI.

## Background Information

A male-dominant workplace is categorized as having 0%-39% female-identifying workers (Raj et al., 2020). Women working in such work environments are at greater risk of harassment (Raj et al., 2020), (Folke & Rickne, 2022) The GI fits this categorization. Gender parity in addition to cultural changes are necessary to improve these working conditions (Raj et al., 2020). For a perspective on the workplace culture in the GI, one can consider the analysis by Foust (2023), who used a 2021 sexual harassment lawsuit against Activision Blizzard as a case study. Foust's study indicate that sexism is not just present but is considered a core value in the industry.

The GI consists out of multiple disciplines each with their own responsibilities. The distribution of gender among these disciplines is presented in *table 1* and has been taken from Prescott & Bogg (2011). The job descriptions marked in **bold** are considered 'core content creation roles'. The average percentage of females in those roles is  $((11+10+10+5) \div 4 =) 9\%$ . This paper hypothesizes based on these statistics that the absence of female representation in these roles specifically contribute to a masculine gaming culture, both in the workplace and in gaming communities, as these are the roles that determine the appearance of the game and the way it is played.

Prescott & Bogg extracted this data from an unarchived International Game Developers Association (IGDA) report published in 2005. Thus, this data may not be representative of the current day situation and needs reevaluation.

## Methodology

The selected works are published by the International Game Developers Association (IGDA) and *Dienst Uitvoering Onderwijs* (DUO). IGDA is an independent nonprofit professional association that aims to support and empower game developers around the

world in achieving fulfilling and sustainable careers (IGDA – *International Game Developers Association*, n.d.). IGDA conducts a biannual survey called the Developer Satisfaction Survey (DSS). DUO is a Dutch agency that provides student financing, recognizes diplomas and organizes exams for students and pupils (*Ministerie van Algemene Zaken*, 2011).

The IGDA survey is used as a representation of the current GI workforce whereas the DUO graduates represent the gender diversity of the current day influx of new employees. This is done to make predictions on the future of the diversity within the GI workforce. It is worth noting that the selected data is not completely free of inconsistencies. Most notable inconsistencies are:

- DUO's data is exclusively Dutch whereas IGDA's is international.
- Graduates might still decide against working in the GI. So not every graduate will affect gender diversity within the GI.

Even with these inconsistencies, this selection of data can still provide new insights into gender diversity in the GI over multiple years.

IGDA differentiates gender into 'male', 'female', 'male-to-female-transgender', 'female-to-male-transgender' and 'other' from 2014 through 2017. Surveys from 2019 and onward specify gender as 'male', 'female', 'non-binary' and 'prefer to self-describe'. The % **non-male** in *table 2* is the sum of all categories excluding 'male' and 'female-to-male-transgender'.

DUO's published data consists out of a table in .csv format with the number of graduates with either an associate's, bachelor's or master's degree per education, per gender. Gender is determined

by official documents as either male or female. The data is from study years 2018 until 2022. If the number of graduates is below 5, the table reports '<5'. For these cases, this analysis uses the number '3' to streamline results.

The selected studies are:

- Creative Media & Game Technologies
- HBO-ICT\*
- Game Technology
- Serious Gaming

These studies are selected because graduates from these are qualified to enter the GI.

\*HBO-ICT is a special case. The GI falls under the same umbrella as ICT; computer sciences. However, just like game development, ICT is a broad term for multiple disciplines. Saxion (n.d.) divides these disciplines into: 'Business & IT', 'Infrastructure' and 'Software Engineering'. Only graduates from the latter are qualified to work in the GI but are expected to do so less likely compared to any of the gaming studies. Even so, the skillset gained from this discipline is the lowest represented by women; programming (*table 1*). Given this and the increase in sample size by 11351 up from 1964 makes HBO-ICT at the least a worthwhile consideration in this analysis.

Year	% non-male
2014	23,8
2015	27,7
2017	25
2019	29
2021	39
2023	37

Table 2 – Summary of percentage of non-male employees in the games industry from 2014-2023. Data from Developer Satisfaction Survey (DSS) retrieved from <https://igda.org/dss/>

## Results and Discussion

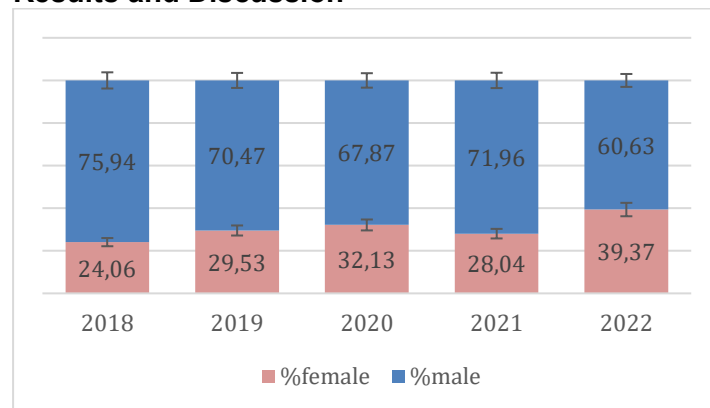


Figure 1 – Gender Distribution of Gaming Graduates per Year, 2018 until 2022. Data from *Dienst Uitvoering Onderwijs* at [https://duo.nl/open\\_onderwijsdata/hoger-onderwijs/aantal-studenten/afgestudeerden-hbo.jsp](https://duo.nl/open_onderwijsdata/hoger-onderwijs/aantal-studenten/afgestudeerden-hbo.jsp).

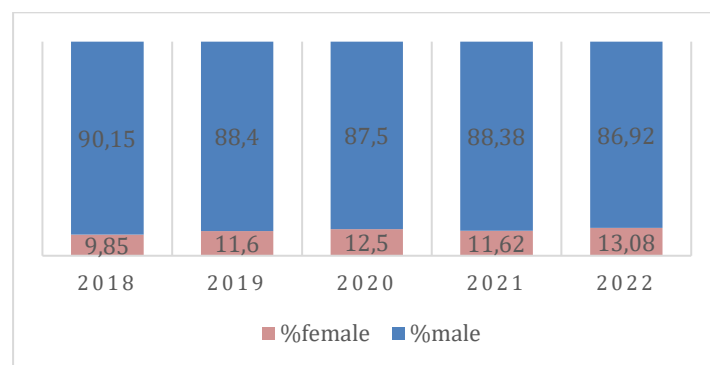


Figure 1 - Gender Distribution of Gaming + ICT graduates per Year, 2018 until 2022. Data from *Dienst Uitvoering Onderwijs* at [https://duo.nl/open\\_onderwijsdata/hoger-onderwijs/aantal-studenten/afgestudeerden-hbo.jsp](https://duo.nl/open_onderwijsdata/hoger-onderwijs/aantal-studenten/afgestudeerden-hbo.jsp).

Figure 1 shows the gender distribution among gaming graduates between 2018 and 2022. There is a noticeable trend of the percentage of females increasing, with an average of 30% females. Figure 2 shows the gender distribution among gaming + ICT graduates. The same trend cannot be noticed here, as the shifts in percentages are less significant. Given this and the unknown distribution of graduates across genders and the different ICT disciplines it can be safely assumed that figure 1 is more representative of the GI gender diversity and will be used for further comparisons to the IGDA data.

When comparing figure 1 to table 2, a similar trend can be noticed; the percentage of females has been increasing over the past years.

The level of presence of one group comes up in the IGDA survey: trans identities. Official documents of transgender individuals, which includes non-binary identities, might state a different sex which does not align with their gender identity. Thus, it is highly likely that this group is not properly accounted for in the DUO report. This can be addressed by using a margin of error. In the Netherlands it is presumed that 0.6% of the population is transgender. (Kuyper, 2017)

However, according to the IGDA's LGBTQIA+ diversity report, the percentage of non-binary identifying people is 8%, and the percentage of transgender identifying people is 5% (*Developer Satisfaction Survey (DSS) – IGDA*, n.d.). Considering that the gender distribution and trends are similar between the gaming graduates and IGDA data, it can be assumed that the overrepresentation of transgender identities applies to gaming graduates as well. This is how an error margin of 8% is justified and represented in figure 1.

## **Conclusion**

In conclusion, the level of gender diversity within the GI shows significant improvements compared to previous years and seems to be on an upwards trend. It is likely the GI workplace will come to gender parity soon if this remains the case. However, at this moment the GI still fits the description of a male-dominated work field. This is why it is likely that the qualitative background research that reported the presence of a hyper-masculine work culture with all the noted consequences are still applicable today. Even if the GI continues this trend and eventually achieves gender parity, cultural changes are still needed in addition to truly improve the work environment of women, as suggested by Raj et al. (2020).

Furthermore, it is worth noting that transgender identities can significantly skew results when not accounted for properly. This paper suggests properly accounting for transgender identities is important when analyzing the GI especially, as this category of people seems to be more present in the GI than what is considered average for the overall population.

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