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Does sex sell? Gender representation, sexualization, and violence on video game covers and their impact on sales

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Abstract

This study examines the cover design of 1,113 video games. Based on cue utilization theory, it is argued that video game covers represent important product cues that should affect sales as consumers evaluate them before purchasing. Analysis of the data shows that the depiction of male and female characters along with the illustration of violence on the covers has no statistical impact on sales. However, sexualized depictions are associated with a negative sales impact in key genres and market segments when controlling for publication year, publisher and platform type. But there is evidence that the use of sexualized images as a sales strategy works in less significant market segments such as puzzles, miscellaneous, simulation, and strategy games. The results of the study therefore indicate that the advertising strategy with sexualized covers is not effective in all segments of the video game market. The implications of this result are discussed in detail.

Keywords

Video Games, Sales, Cue Utilization Theory, Cover Design, Sexualization, Violence.

1. Introduction

Video games are generally developed for a male target market (Williams et al., 2009). In order to increase sales figures, marketers therefore tend to rely on oversexualized depictions of female characters on promotional posters and covers. This is done, for instance, by emphasizing female features or depicting women in sexually provocative poses (Paul Stermer & Burkley, 2012; Burgess et al., 2007; Ivory, 2006). However, whether the sex sells logic really works on the games market has not yet been investigated.

This question is particularly interesting for two reasons. First, recent studies show that game consumption between male and female consumers has almost converged in the past few years, which means that men and women now play video games in roughly equal proportions (Lopez-Fernandez et al., 2019; Lynch et al., 2016). Second, some empirical research has cast fundamental doubt on the effectiveness of the sex sells strategy (Gramazio et al., 2021; Lawrence et al., 2021). For example, Bongiorno et al., 2013 report that the use of sexualized advertising can lead to negative

reactions among consumers. Female consumers in particular appear to be less receptive to sexualized advertising content (Dahl et al., 2009). Therefore, the reduction to their appearance and signaling of sexual availability and submissiveness in advertising can lead to female consumers experiencing devaluation based on their gender, which can negatively impact sales (Norris, 2004).

Given the inconclusive empirical findings of advertising research in general and the lack of systematic considerations of the sex-sells hypothesis specifically in the context of the video game industry, this article aims to examine the influence of sexualized covers on video game sales. In doing so, the study extends the existing literature in several ways.

First, the study uses cue utilization theory to examine how cover design affects video game sales. Following previous research, it is argued that video game covers are used by game producers to indicate the content of their products (Choi et al., 2018; Langan et al., 2017). The cover can therefore be interpreted as a product-specific cue that helps to reduce information asymmetries between buyers and sellers.

Second, the study categorizes over 1,000 video game covers spanning a period of more than four decades and uses regression analysis to determine how cover design has influenced sales. The analysis allows important insights into the video game market, which has been little studied from an economic perspective.

Third, the study comes to surprising conclusions. Although the excessive use of sexualized content in the video game industry is obvious, a sales-promoting effect for the most important game genres cannot be empirically proven. On the contrary, the results even indicate a negative sales effect in the most important market segments when sexualized material is used on covers. This shows that the prevailing marketing logic in the video game industry needs to be questioned.

The rest of the article is structured as follows. In the next section, the cue utilization theory is presented. Cue utilization strategy states that consumers want to reduce information deficits before making a purchase by evaluating product cues

such as cover images. Section 3 briefly reviews the existing literature related to violent and sexualized depictions on video game covers. Section 4 presents the measurement and coding of the variables and explains the structure of the regression analysis. Finally, the results of the empirical analysis are presented and discussed in Section 5. This study shows that sexualized cover images are associated with lower sales figures in the sample. The implications of these findings along with the limitations of the study and a research outlook are presented in conclusion.

2. Cue Utilization Theory

Cue utilization theory deals with the question of how people use various cues to make their decisions. According to the theory, a product consists of a variety of quality cues. These cues may include, for example, the price, packaging, or product description, which indicate the potential quality of the product to the consumer.

The literature commonly distinguishes between intrinsic and extrinsic cues (Olson & Jacoby, 1972). Intrinsic cues are derived directly from a product and therefore cannot be changed or manipulated without altering the product itself. Extrinsic cues, on the other hand, can be easily manipulated and are not inherent to the product. The cue typology has been used in numerous studies to understand how cues influence the perceived quality and purchase intentions of consumers (Veale & Quester, 2009). The results of these studies generally suggest that both intrinsic and extrinsic cues are closely related to perceived quality and purchase intention (Choi et al., 2018).

In the context of video games, the design of the cover has proven to be an important extrinsic cue for consumer evaluation (Phan et al., 2015). Video game covers provide a whole range of visual information, such as the genre, setting, game mechanics, or playable characters, which give potential customers an indication of quality (Bergvall & Dymek, 2005). In this regard, cue utility theory states that consumers can understand the embedded information to draw their own conclusions about the content of video games (Langan et al., 2017). Following this logic, the design of the cover

must have an influence on the perception of quality and thus on sales of video games.

3. Gender Representation in Video Games

The representation of men and women in video games has long been a topic of research. Studies have shown that male characters have been over-represented since the early days of the video game industry (Nguyen et al., 2020; Gestos et al., 2018). They appear around four times more frequently than female characters (Downs & Smith, 2010). This inequality is also reflected in the type of roles female characters take on. They often only play supporting roles and are frequently over-sexualized (Williams et al., 2009). For example, female characters are often shown with their legs spread, in provocative clothing or partially or completely naked (Ivory, 2006).

Sexualized fantasies of violence against women are a common element in popular video games. Despite some progress, the systematic marginalization, over-sexualization, and objectification of women in video games has changed little over the years. Current analyses continue to show strongly stereotypical and masculinized gender representations in video games (Sarda et al., 2022; Cunningham et al., 2016).

Research also shows that men and women consume video games differently. Men often prefer violent genres, while women tend to like role-playing and interactive games (Greenberg et al., 2010). However, there is also a growing popularity of so-called "pink games" or genres that are traditionally considered feminine (Dickey, 2006). Nevertheless, stereotypical gender images are also widespread here. For example, female characters are often portrayed as cooking mothers, pretty princesses, or sporty fitness trainers (Jansz & Vosmeer, 2009).

One possible explanation for the one-sided content in video games could lie in the structure of the industry itself. This is because the video game industry is extremely unbalanced in terms of gender diversity (Chess et al., 2017). Only a small proportion of employees in the industry are female

designers, programmers, or producers (Nyugen et al., 2008). Video games are therefore predominantly developed by men for men. However, it can also be argued that women are marginalized and harassed when consuming video games because of their gender (Fox & Tang, 2014). This could explain why female consumers use video games significantly less than their male counterparts.

While many studies have focused on the content of video games, cover design has been largely ignored in scientific literature. However, covers represent an interesting area of research as they provide a visual condensation of video game features (Phan et al., 2015). They also serve important marketing functions by attracting the attention of potential customers and providing immediate information about what players can expect during the long-lasting gaming experience (Bergvall & Dymek, 2005). This is especially important for casual gamers, as they are less engaged with the game and therefore rely more heavily on the informative function of the cover (Burgess et al., 2007). So far, there are only a handful of studies that have taken a closer look at video game covers (Nguyen et al., 2020; Choi et al., 2018). However, the few studies that do exist provide a consistent picture. According to the findings, women are underrepresented on video game covers and are often hyper-sexualized and portrayed in violent contexts (Near, 2013).

4. Data and Methodology

To empirically test how cover design affects video game sales, a unique data set was constructed. Most of the data were obtained from the website vgchartz.com. This website provides the most comprehensive sales data for the video game industry and is therefore an important reference point in academic research interested in economic outcomes (Cunningham et al., 2016; Sherrick & Schmierbach, 2016; Near, 2013; Marchand & Hennig-Thurau, 2013). Data collection on vgchartz.com included average user ratings, publisher and genre information, game release year, as well as detailed sales statistics.

At the time of data collection, about 40 thousand games were listed on vgchartz.com. Sales data

for North America was available for about two-thirds of the video game listings. This reduced the number of relevant data listings to about 26 thousand. In order to exclude small niche games and insignificant game projects, the focus was placed on those titles with total sales of more than 100 thousand units. This restriction further reduced the total sample to about 9 thousand observations. Of these remaining games, about 15 percent had user rating information. Given that user ratings are generally considered to have a decisive influence on sales figures (Brunt et al., 2020; Near, 2013) and given that this information was particularly important for the analysis, the sample size was further reduced to 1,350 game entries. After further adjustment for missing values on publisher and platform information, as well as cover images, a final sample of 1,113 video games was obtained for analysis.

Of particular interest for the analysis were the images of video game covers. Much of the visual data material was again retrieved from vgchartz.com. In the case of missing entries or images that were scaled too small for analysis, additional searches were made in the online databases of igdb.com and mobygames.com. Both websites offer extensive visual material on video games and were therefore a good starting point for the study.

The focus was placed on the cover images designed for the North American sales territory. Note that the back cover design was not considered in this study. This is a limiting aspect because the front and back cover images can be designed differently. However, the emphasis on the front cover has a pragmatic reason. While the game in traditional retail has both a front and back cover, in digital stores it is often limited to the front cover only.

To categorize the imagery on the covers, a coding scheme based on the Entertainment Software Rating Board (ESRB) criteria was used. Of particular interest were violent and sexualized depictions. According to the ESRB, intense violence includes graphic and realistic depictions of physical conflict, extreme and realistic blood, bloody bodies, weapons, and depictions of human injury, mutilation, and death (Entertainment Software Rating

Board (ESRB), 2022). In addition, all symbols suggestive of war and combat, military vehicles, images of soldiers, military special forces, or police, aggressive poses, facial expressions of pain, and martial arts were also considered as violence depictions in this study.

Graphic sexual content is defined as all depictions of sexual behavior, including nudity (Entertainment Software Rating Board (ESRB), 2022). This definition specifically includes depictions of nude body parts, provocative and skimpy outfits, sexual poses and gestures, as well as the overemphasis of physical features such as lips, breasts, and hips, or well-defined muscle areas. Outlines of human bodies are also considered sexualized depictions if one or more of the previously mentioned points apply.

The screening of the video game covers was conducted by three independent persons. Disagreements in the classifications were discussed extensively and decided by majority vote. Controversial valuations, however, accounted for less than one percent and were thus the exception.

In addition to sexualized and violent depictions, it was also measured whether male or female characters were featured on the covers. Fantasy characters were also classified as male or female if a clear categorization seemed plausible and meaningful. For instance, the Super Mario Bros. were considered male characters because a clear classification was possible. Pokemon Pikachu, on the other hand, although the character was supposed to be a male, was not classified in the male/female pattern because clear categorization attributes that would point to a specific gender were missing. Again, an important note. Since only the front cover was considered, some characters may not have been included in the analysis if they were only shown on the back cover.

To estimate how cover design affects sales, the following regression model was used:

$$\begin{aligned}
 SALES_i = & \beta_0 + \beta_1 User\ Rating_i \\
 & + \beta_2 Male\ Character_i \\
 & + \beta_3 Female\ Character_i \\
 & + \beta_4 Violence_i \\
 & + \beta_5 Sexualization_i \\
 & + \beta_6 Time_i \\
 & + \beta_7 Time_i^2 \\
 & + \beta_j Platform\ dummies_i \\
 & + \beta_l Genre\ dummies_i \\
 & + \beta_k Publisher\ dummies_i \\
 & + \varepsilon_i
 \end{aligned} \tag{1}$$

The dependent variable sales refers to the sales in North America and was measured in millions of copies sold. Since the distribution of sales has a strong skewness, a log transformation was performed as suggested by other authors (Brunt et al., 2020). Thus, the model is given in a semi-log specification. All regressors in the model, with the exception of user rating, are dummy variables. Note that because of the semi-log specification, the percentage effect of a dummy variable on sales is equal to $100 \cdot \{e^{\beta} - 1\}$.

As the study analyzes data over a period of several decades, the time variable was also integrated into the regression estimates as a control. This procedure is common in empirical research on the analysis of time series (Hanssens et al., 2003). In order to ensure the best possible data fit and to capture both linear and non-linear developments over time, a second-order polynomial was estimated. The polynomial is designed to account for the various dynamic changes that the video game industry has experienced over time (Mattioli, 2021; Nicholas David, 2018).

In order to reflect the various developments, several sub-samples were also formed. The first sub-sample covers the 1980s and 1990s. During this period, many iconic games and characters were developed that are still popular today. Examples include Donkey Kong, Legend of Zelda, and Mario Bros. This period also marked a technological boom in the industry. For instance, the rise of

the PC, the emergence of 3D graphics and console classics such as the Super Nintendo were important innovations that revolutionized game development.

The second sub-sample covers the 2000s. This period was characterized by a major transformation in which the video game industry developed into a billion-dollar blockbuster producer. This development was driven by rapid technological progress in both consoles and PCs. At the same time, the internet became a mass phenomenon. Among other things, this has boosted the popularity of on-line games and contributed to the professionalization of eSports.

Finally, the third sub-sample focuses on modern developments from the 2010s onward. This phase is primarily characterized by the emergence of mobile games on smartphones. Today, mobile games represent the fastest growing segment in the overall market. Growth is driven on the one hand by innovative marketing concepts such as in-game purchases, and on the other by the increasing importance of future technologies such as virtual reality. So, in summary, the three sub-samples represent different periods of the video game industry, characterized by different technical innovations, commercial importance, and popularity.

5. Empirical Results

The empirical analysis begins with a descriptive evaluation. In the sample, human characters are featured on about 83 percent of video game covers. Male characters are depicted more frequently (63 percent) than female characters. These results are largely consistent with previous studies that have found an imbalance between the representation of male and female characters on covers. However, as shown in Table 1, the overall ratio of male to female depictions has leveled off over time. While in the 1980s the ratio of male to female characters on covers was about 1 to 8, over the past decade this imbalance has decreased to only 1 to 3. Similar to previous research, it was found that depictions of violence and sexualized imagery are prevalent on game covers. However, violent images, at around 36 percent, are significantly more prevalent than sexualized images,

Table 1: Changes in Cover Design over Time

Period	1981-1990	1991-2000	2001-2010	2011-2021	Full Sample
Male Character	49%	44%	66%	73%	63%
Female Character	6%	15%	21%	30%	22%
Violent Depiction	17%	25%	37%	46%	36%
Sexualized Depiction	6%	15%	12%	13%	13%

which only account for around 13 percent. In addition, covers with sexualized depictions correlate negatively with sales figures (see Table 2). In contrast, violent images correlate positive with sales. The results of the regression estimates are shown in Table 3. The proportion of variance explained varies among the estimates between 22 and 34 percent, which can be accepted as a satisfactory value. User rating is estimated as the main control variable with a positive sign and high statistical significance, which is consistent with previous research (Brunt et al., 2020; Cox, 2014). In contrast, the representation of male and female characters on covers is not statistically related to sales. Similarly, no statistically significant relationship with sales can be found for violent cover imagery.

However, the situation is different for sexualized depictions. For sexualized cover images, a regression coefficient of -0.190 is estimated to be statistically significant (5 percent level) in the entire sample, implying a decrease in sales of about 17 percent. It is also interesting to note that the coefficient for sexualized cover images is also estimated to be significant (1 percent level) in the sub-sample estimate for the years 2010 to 2021. The sign is negative in this estimate as well. Since the variable is not significant in any of the other sub-sample estimates, these results suggest that there might have been a structural change in demand behavior or preferences over the past decade.

Prior to the analysis, it was suspected that the covers of older game titles in the sample might be more sexualized than the covers of newer ones. This conjecture is supported by the general increase in sexualization of media advertising beginning in the 1980s and 1990s (Graff et al., 2013;

Stankiewicz & Rosselli, 2008; Merskin, 2004). Descriptive analysis of the game covers examined in this study also shows an increase in sexualized depictions during this period (Figure 1). In this context, it is interesting to note that the trend of using sexual imagery does not decrease over time. Thus, newly released games continue to be heavily advertised with sexualized portrayals on the covers. Against this background, the results of the regression estimates appear in a different light. This is because the sexualization variable was estimated to be negative and statistically significant only in the sub-sample from 2010 to 2021. The results of the analysis thus possibly indicate that sexualized advertising is no longer perceived as contemporary today, which leads to a negative sales effect in the estimates.

To further explore alternative mechanisms and contexts, Table 4 shows the interactions of the sexualization variable with different game genres (see also Figure 2). Among the interactions with action, sports, role-playing and other games (consisting of less popular titles such as puzzle, miscellaneous, simulation, and strategy), only the latter two genres show significant interactions (both at the 5 percent level). However, the sexualization variable loses its significance in both cases, which indicates that the main effect of sexualized covers on sales is not relevant. Rather, the impact on sales is evident through interaction in the genres of the games.

For role-playing games, the sign of the estimated interaction is negative. From a theoretical point of view, these results are plausible, as games in this category require a strong identification with the game character. So excessive sexualization can

Table 2: Correlations and Descriptive Statistics

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<i>Panel A: Correlations</i>											
(1) Ln(North America Sales)		1.00									
(2) User Rating		0.25***	1.00								
(3) Male Character		0.06	0.09**	1.00							
(4) Female Character		-0.01	0.01	0.19***	1.00						
(5) Violence		0.08**	0.15***	0.36***	0.11***	1.00					
(6) Sexualization		-0.07*	0.02	0.16***	0.42***	0.29***	1.00				
(7) Action Games		0.10**	0.10**	0.22***	-0.04	0.55***	0.03	1.00			
(8) Role-Playing Games		-0.06	0.07*	-0.06*	0.18***	0.00	0.07*	1.00			
(9) Sports Games		-0.13***	-0.02	0.06*	-0.09**	-0.22***	0.04	-0.30***	1.00		
(10) Other Games		-0.01	-0.25***	-0.10**	0.14***	-0.25***	-0.05	-0.44***	-0.24***	1.00	
											1.00
<i>Panel B: Summary Statistics</i>											
	Mean	Median	SD	VIF							
(1) Ln(North America Sales)	0.08	0.05	0.95								
(2) User Rating	8.07	8.3	1.08	1.23							
(3) Male Character	0.63	1	0.48	1.35							
(4) Female Character	0.20	0	0.40	1.56							
(5) Violence	0.36	0	0.48	2.12							
(6) Sexualization	0.12	0	0.32	1.57							
(7) Action Games	0.36	0	0.48	4.01							
(8) Role-Playing Games	0.14	0	0.35	2.41							
(9) Sports Games	0.26	0	0.44	3.04							
(10) Other Games	0.12	0	0.33	2.24							

Significance levels: (*) p < 0.05, (**) p < 0.01, (***) p < 0.001.

Table 3: Estimation Results (North America Sales)

	Full sample		Sub-sample		
	1981-2021	1981-2021	2010-2021	2000-2009	1981-1999
Intercept	-2.146*** (0.271)	-1.525*** (0.444)	-0.586 (13.413)	3.384 (2.865)	-2.107 (1.151)
Time		-0.004 (0.035)	-0.027 (0.910)	-0.455 (0.262)	0.048 (0.092)
Time × Time		-0.001 (0.001)	-0.001 (0.015)	0.010 (0.006)	-0.004 (0.004)
User Rating	0.209*** (0.027)	0.203*** (0.027)	0.187*** (0.049)	0.206*** (0.039)	0.240*** (0.075)
Male Character	0.109 (0.065)	0.123 (0.064)	0.070 (0.116)	0.088 (0.092)	0.212 (0.164)
Female Character	-0.004 (0.079)	0.002 (0.064)	0.183 (0.133)	-0.092 (0.103)	-0.120 (0.305)
Violence	-0.03 (0.078)	-0.034 (0.078)	-0.200 (0.130)	-0.072 (0.117)	0.176 (0.221)
Sexualization	-0.196* (0.097)	-0.190* (0.096)	-0.443** (0.168)	-0.125 (0.131)	0.009 (0.297)
Genre Dummies	included	included	included	included	included
Publisher Dummies	included	included	included	included	included
Platform Dummies	included	included	included	included	included
N	1,013	1,013	363	496	254
R-squared	0.286	0.293	0.344	0.330	0.221
F-Statistic	10.21***	10.13***	5.34***	6.93***	2.83***

All models include genre dummies (action and shooter, role-playing and adventure, sports and racing, other games such as misc, puzzle, simulation, and strategy), publisher dummies (Activision, Atari, Bethesda, Capcom, Electronic Arts, Konami, Microsoft, Nintendo, Sega, Sony, Take Two, THQ, Ubisoft) and platform dummies (A2600, DS, X3DS, GB, GBA, GC, N64, NES, PS1, PS2, PS3, PS4, PS5, PC, PSP, SNES, Wii, WiiU, X360, XOne). Significance levels: (*) $p < 0.05$, (**) $p < 0.01$, (***) $p < 0.001$.

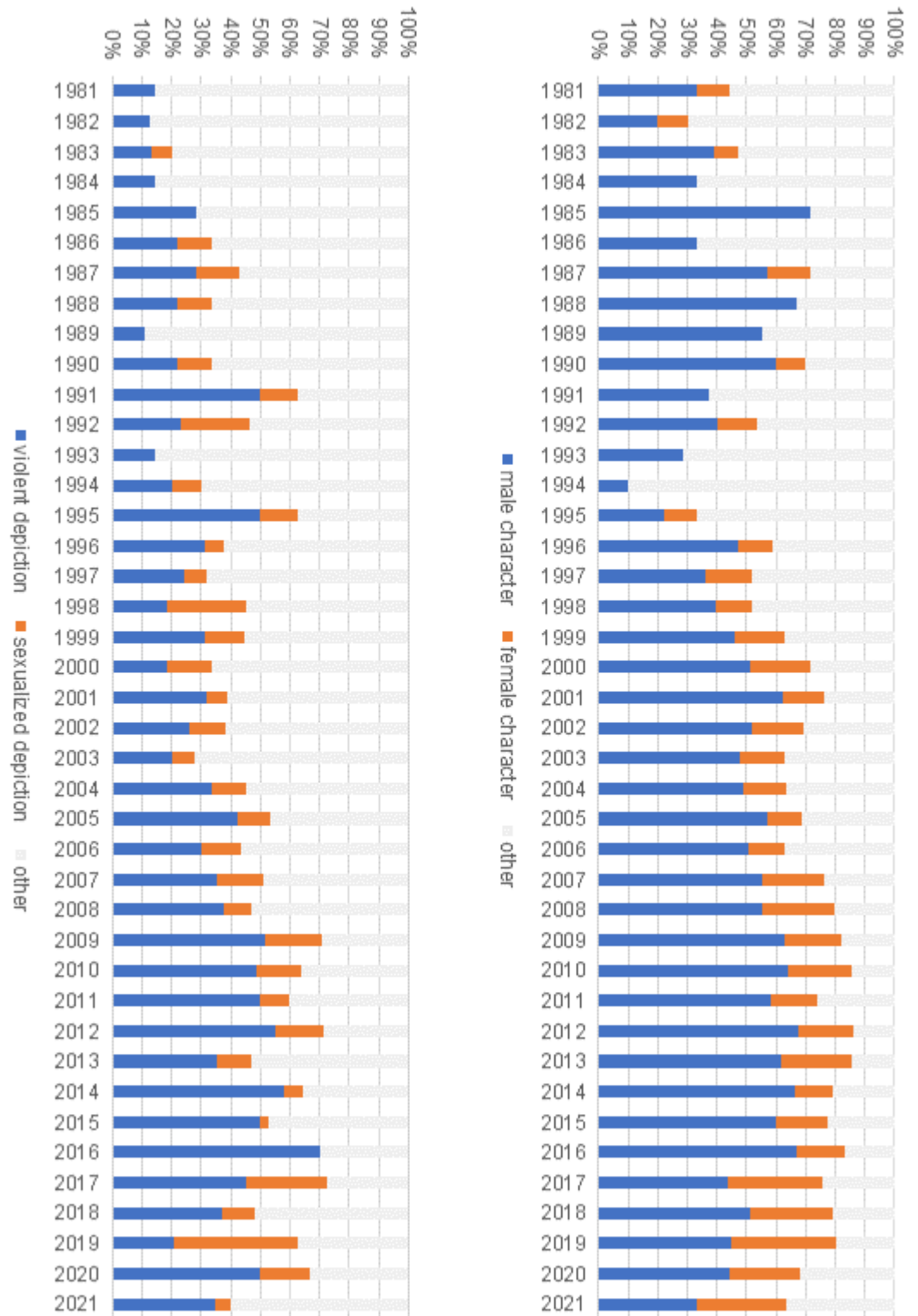
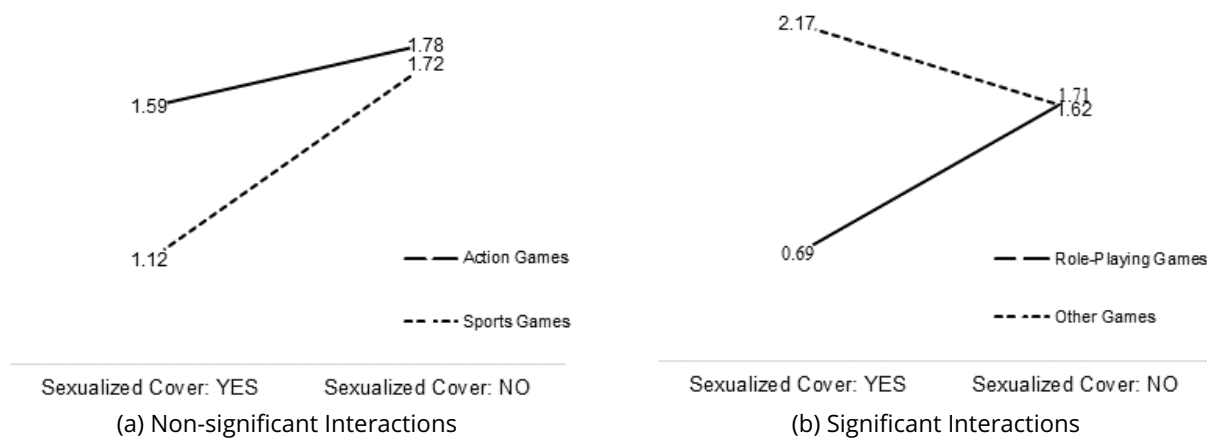


Figure 1: Elements of cover design in the sample over time

Table 4: Estimation Results (North American Sales, with Genre Interactions)

	Full sample			
	1981-2021	1981-2021	1981-2021	1981-2021
Intercept	−1.497*** (0.450)	−1.454** (0.448)	−1.487*** (0.449)	−1.445** (0.448)
Time	0.009 (0.035)	0.005 (0.035)	0.007 (0.035)	−0.010 (0.035)
Time × Time	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
User Rating	0.201*** (0.028)	0.203*** (0.028)	0.203*** (0.028)	0.195*** (0.028)
Male Character	0.074 (0.060)	0.077 (0.060)	0.075 (0.060)	0.077 (0.060)
Female Character	0.033 (0.079)	0.043 (0.079)	0.029 (0.079)	0.027 (0.079)
Violence	0.048 (0.075)	0.048 (0.074)	0.054 (0.075)	0.079 (0.075)
Sexualization	−0.081 (0.111)	−0.026 (0.103)	−0.125 (0.097)	−0.188 (0.100)
Action Games	−0.024 (0.105)	−0.048 (0.103)	−0.037 (0.103)	−0.029 (0.103)
Sexualization × Action	−0.106 (0.168)			
Role-Playing Games	−0.222* (0.111)	−0.161 (0.113)	−0.217 (0.111)	−0.212 (0.111)
Sexualization × Role-Playing		−0.464* (0.200)		
Sports Games	−0.314** (0.098)	−0.326*** (0.098)	−0.316** (0.099)	−0.297** (0.098)
Sexualization × Sports			0.0262 (0.472)	
Other Games	−0.224* (0.113)	−0.239* (0.112)	−0.219 (0.113)	−0.276* (0.115)
Sexualization × Other				0.661* (0.286)
Publisher Dummies	included	included	included	included
Platform Dummies	included	included	included	included
N	1,013	1,013	1,013	1,013
R-squared	0.274	0.277	0.274	0.277
F-Statistic	10.30***	10.48***	10.30***	10.47***

All models include genre dummies (action and shooter, role-playing and adventure, sports and racing, other games such as misc, puzzle, simulation, and strategy), publisher dummies (Activision, Atari, Bethesda, Capcom, Electronic Arts, Konami, Microsoft, Nintendo, Sega, Sony, Take Two, THQ, Ubisoft) and platform dummies (A2600, DS, X3DS, GB, GBA, GC, N64, NES, PS1, PS2, PS3, PS4, PS5, PC, PSP, SNES, Wii, WiiU, X360, XOne). Significance levels: (*) $p < 0.05$, (**) $p < 0.01$, (***) $p < 0.001$.

Figure 2: Interaction Plots of Cover Design \times Game Genre

have a negative effect on purchasing demand for these games. For other games, however, a positive sign is estimated for the interaction, with the main effects being negative. This finding shows that sexualized images can potentially have a positive effect on sales if the games they advertise are generally in low demand on the market or stem from low-selling niches. The subsequent implications of this are discussed in detail below.

6. Discussion

This study was the first to investigate on a large scale how the cover design of video games affects their sales. The results of the empirical analysis are consistent with previous studies that have identified a negative sales effect of sexualized advertising for various consumer products (Gramazio et al., 2021; Lawrence et al., 2021; Lull & Bushman, 2015; Bongiorno et al., 2013). At the same time, the results of the study also extend the previous understanding of how different elements of video game covers affect consumers. In particular, it was shown that the depiction of both male and female characters on video game covers does not promote sales. The study also found no evidence of a positive sales effect of violent depictions on game covers.

In contrast, sexualized depictions have been found to negatively impact video game sales. This result is somewhat surprising, as the use of sexu-

alized images is a widespread sales strategy in the video games industry (Gestos et al., 2018; Breuer et al., 2015; Paul Stermer & Burkley, 2012). However, the empirical findings of this study show that the sex sells strategy is not effective in the video game industry. Overall, this finding suggests that the target audience, which includes many women, has not yet been properly addressed in the video game industry.

This is especially important because the cover can give a strong first impression about the content of a game. If female characters are consistently portrayed negatively on the cover, female gamers may not bother to look beyond the cover (Burgess et al., 2007). There is also a psychological explanation for the negative sales effect. Cognitive psychology has long assumed that viewing sexualized covers requires a high level of cognitive resources, leaving little cognitive space for processing product-related information in purchase situations (Furnham, 2019; Bushman & Bonacci, 2002). Video games with sexualized covers may therefore have a sales disadvantage compared to games with more neutral cover designs. So customers may be cognitively blinded to some degree by the sexualized depictions on the covers (Lawrence et al., 2021).

Cue utilization theory served as the frame of reference for this study. In light of this theory, the results show that the use of sexualized cues has a

negative effect on video game sales. Furthermore, the study enriches the growing body of empirical research on product cues by examining different elements of cover design. In this regard, the results provide a more differentiated picture than in previous research. For example, the findings show that it is not the depiction of female characters on the covers that has a negative impact on sales, but the use of sexualized images. Furthermore, by analyzing interaction effects with genre categories of video games, the study found that sales are particularly negative for games that require strong identification with the main character. Sexualized cover images have especially negative sales effects for role-playing games. One possible explanation for this could be that women feel devalued by sexualized depictions or simply cannot identify with such images. The industry therefore needs to focus more on the target consumer, who is often female.

Conversely, the analysis of the study also identified genres in which the sex sells strategy is effective. In particular, low-selling genres such as puzzle, miscellaneous, simulation, and strategy show a positive interaction effect with sexualized covers. Therefore, sexualized depictions can help to attract attention and catch the eye of consumers in low-selling market segments. However, it is also possible that the consumers of these games are simply better able to recognize that the sexualized cover images do not show the actual game content, but are only placed for sales purposes. Accordingly, the effect is then different because the cues are interpreted differently. Further research is therefore required to understand the specific interconnections. However, this study has taken an important first step towards identifying the relevant mechanisms.

As with all empirical studies, the reported results are subject to certain limitations. One important shortcoming of the current research is that it relies exclusively on data from the VGChartz website. Although the VGChartz data are widely used in academic research, the website has also attracted criticism in the past. In particular, it has been criticized for not indicating the origin of the data and, in some cases, for publishing extrapolations

instead of actual data (Sherrick & Schmierbach, 2016). Nevertheless, VGChartz is by far one of the best data providers for the video game industry in terms of data scope and granularity (Cunningham et al., 2016; Marchand & Hennig-Thurau, 2013). However, to eliminate potential bias, it is important for future studies to replicate the results with other data sources.

Future studies could also attempt to use other metrics for market performance. In this analysis, sales was determined as the number of copies of the game sold. However, other performance indicators such as sales in US dollars or market share would also be conceivable. Another important limitation in this study arises from the manual coding of the cover images. Although manual coding is not uncommon in media research (Flynn & Harris, 2022; Shah et al., 2019), there is a risk of incorrect categorization on a subjective basis. To minimize potential bias, this study sought to ensure coding by independent researchers.

7. Managerial Implications

The bias of the video game industry towards male consumers has been studied extensively and is well documented in research (Kuss et al., 2022; Rogstad, 2022; Naidoo et al., 2019; Fox & Tang, 2014). The findings of the present study demonstrate that the one-sided orientation of the marketing strategy towards male customers, which manifests itself primarily in the preference for violent and sexualized content and depictions, continues to be dominant. However, recent studies show that although women consume video games less intensively than men, they still represent a customer group of almost equal size (Lopez-Fernandez et al., 2019; Lynch et al., 2016). Neglecting this target group in marketing can therefore have a negative impact on sales.

In fact, the results of this study suggest that the use of sexualized covers for marketing purposes is not effective. Given the dimension of the estimated negative sales effect, the video game industry would be well advised to avoid sexualized depictions and prefer neutral covers. The empirical results of this study therefore call into question the marketing logic that has long prevailed

in the video game industry. The clear implication for business practice is that game manufacturers and publishers must pay more attention to the diversity of their players and that both content and advertising communication must appeal more to male and female players.

Furthermore, analysis of four decades of data shows that gendered portrayals have recently met with greater consumer disapproval, reflecting both the growing proportion of female gamers and a potentially increasing consumer awareness of gender representation issues. It is important for the video game industry to take account of these structural changes in player preferences and expectations in order to avoid excluding key

customer groups and being seen as backward in the face of rapid societal change.

However, the results also show that sexualized covers have positive sales effects in some less relevant genres. It is therefore important to differentiate between customer groups and market segments when using sexualized images as a sales strategy. At the same time, the results of the analysis reveal that not enough is known about the specific segments in which the sex sells strategy can be used effectively in the video games industry. Therefore, further research is needed in this field. This study can, however, provide important insights that can be used as a starting point for follow-up research.

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