

The Impact of the Personal Characteristics of Artists on the Price of Their Contemporary Artworks Based on the Hedonic Model

Anqi Wang^{1,a,*}

¹*Xiamen University, Xiamen, 361005, China*

a. wwwaq321@foxmail.com

**corresponding author*

Abstract: As an economic model, the Hedonic model can be used to explain the formation of commodity prices and the factors behind it. In the field of art, researchers can also use the Hedonic model to explore the formation mechanism of art prices and its influencing factors. The practical value of artworks is very limited, so their prices are mainly determined by their non-practical value. The non-practical value includes the personal characteristics of the artist, the characteristics of the artwork itself, the auction characteristics of the artwork, and so on. Through the Hedonic model and regression analysis of various explanatory variables that may potentially affect the price of artworks, this paper obtains a number of factors that significantly affect the price of contemporary paintings in terms of the artist's personal characteristics. According to the results, it is found that the price of an artwork can be affected by the artist's overall reputation, experience, and background, and whether the artist is still alive.

Keywords: Hedonic Model, Regression Analysis, Price, Explanatory Variable

1. Introduction

Over the past decade, the contemporary art market has been increasingly seen as a store of value, as it maintains the purchasing power of investments, and art is seen as a financial asset. According to Artprice's recent art reports, the art market is becoming a high-profile area driven by the growing demand, especially for outstanding private collections [1]. Throughout art history, the status of contemporary painting is uncertain, and there is relatively little research progress in this field, so the focus of this article is on contemporary paintings. The closer to the contemporary, the more uncertain the artist's place in art history, which is why prices cannot be strictly guaranteed. On this basis, this paper applies the Hedonic model and collects data from Artprice, an authoritative art auction database, to study the impact of the artist's personal characteristics on the pricing of their artworks, attempting to analyze how an artist's overall reputation, experience, background, and life and death play a role in the contemporary painting market.

2. Research Methods

2.1. Art Pricing Methodology

At present, the commonly used price model in the field of art pricing is the Hedonic price model. Based on the Hedonic model, the following research ideas are designed in this study. First, data is collected from Artprice, an authoritative art auction database, followed by categorical processing of the collected data and descriptive analysis. According to the analysis results, the parameters of the Hedonic model are constructed and optimized, and finally, the data is analyzed using the optimized model to draw conclusions about the influencing factors of contemporary painting prices.

2.2. Selection of Parameters in the Hedonic Model

According to the Hedonic model, many characteristics can be combined into the price determinants of artworks, including the personal characteristics of the artist. Based on this classification, this paper finally selects the following characteristic factors as explanatory variables (independent variables): the artist's fame, nationality, educational experience, well-known exhibition experience, overseas experience, residence (whether he/she is a home country), and whether he/she is still alive.

2.3. Selection and Descriptive Analysis of Research Data

To this end, the author randomly selects 11 contemporary artists from five countries to analyze the factors affecting the price of their paintings. To exclude the impact of inflation, the auction period is limited from 2013 to the present, and only the paintings that have been successfully auctioned are selected. All data are collected from Artprice, an authoritative website on art prices. The number of a total of 2196 pieces of data per artist is shown in Table 1.

Table 1: Auction data of paintings by 11 contemporary artists in the past decade.

Artist	The number of paintings selected
Georg Baselitz	186
Jean-michel Basquiat	233
Fernando Botero	223
Dice	150
Helen Frankenthaler	207
Anselm Kiefer	209
Jules Olitsky	168
Sigmar Polke	210
Richard Prince	201
Robert Rauschenberg	165
Edward Ruscha	234

An artist's popularity is closely related to the price of a work of art, and an artist's popularity often depends on the artist's personal characteristics. First, the author conducts a descriptive analysis of the artist's personal characteristics based on the artist's personal experience. Of the 11 artists, if an artist appears in the list of Contemporary Art Issue, he/she is recorded as 1 in the reputation column, and if not, recorded as 0; if the artist has died, he/she is recorded as 1 in the alive column, and 0 if he/she is still alive; if the artist has received art education in the class, he/she is recorded as 1 in the art education experience column, and 0 if not; if the artist has had a major exhibition experience (at Documenta, Venice Biennale, or the Museum of Modern Art in New York, whichever of the three), he/she is

recorded as 1 in the exhibition column, and 0 if not; if the artist has settled in a country or region other than his or her place of residence, he/she is recorded as 1 in the overseas experience column, and 0 if not; if the artist's habitual residence is outside the home country, he/she is recorded as 1 in the residence column, and 0 if it is not. The final descriptive analysis results are shown in Table 2.

Table 2: Descriptive analysis of all variables.

variable	N	mean	standard deviation	0	1
Personal characteristic					
Artist fame	2196	0.5505	0.4975	987	1209
Alive or not	2196	0.4121	0.4923	1291	905
USA	2196	0.4758	0.4995	1151	1045
Germany	2196	0.2764	0.4473	1589	607
Other countries	2196	0.2477	0.4317	1652	544
Educational experience	2196	0.7258	0.4461	602	1594
Exhibition experience	2196	0.8292	0.3763	375	1821
Artist's overseas experience	2196	0.8091	0.3930	419	1777
Place of residence of the artist	2196	0.4280	0.4949	1256	940

3. Result and Analysis

This paper aims to use the Hedonic price model to conduct a regression analysis of the artist's personal characteristics that potentially affect the price of art when other conditions remain unchanged, so as to judge the relationship between these characteristics and the price of art. By comparing the degree of fit, it is found that the sample after descriptive analysis is most suitable for fitting by semi-logarithmic equation, while the two-log equation has the highest degree of fitting for the sample with direct numerical value. Therefore, samples after descriptive analysis are analyzed using the model (1):

$$\ln \text{Price} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon \quad (1)$$

For samples with direct values, the model (2) is used for analysis (X_1 refers to samples with direct values):

$$\ln \text{Price} = \beta_0 + \beta_1 \ln X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \varepsilon \quad (2)$$

Finally, the following results are obtained through model analysis (see Table 3):

Table 3: The analysis results based on the optimized Hedonic model.

Explanatory variables	Regression coefficient	Standard deviation	t-value	p-value
The artist's personal character				
Artist fame				
Whether the artist is alive or not	1.20360	0.08039	14.97	<2e-16 ***
Artist Nationality (USA)	-1.58387	0.07830	-20.23	<2e-16 ***
Artist nationality (Germany)	1.04216	0.08106	12.86	<2e-16 ***
Artist nationality (other countries)	0.42478	0.09343	4.546	5.75e-06 ***
The artist's educational experience	-1.85071	0.08886	-20.83	<2e-16 ***
	-1.06976	0.09130	-11.72	<2e-16 ***

The price of a work of art is usually closely related to the personal characteristics of the artist. The quality and innovation of an artist's work are crucial to his/her reputation. In addition, some artists may become famous for the style, genre, or theme of their artworks, attracting more attention from buyers and collectors. Therefore, the personal characteristics of the artist are often considered one of the important factors in determining the price of a work of art.

3.1. The Overall Reputation of the Artist

The overall reputation of an artist is often determined by a variety of factors. To facilitate quantification, the author refers to the Contemporary Art Issue and other institutions of the artist's TOP 100 ranking list. If the artist appears in the list, the overall reputation of the artist is considered to be high, and he/she will be recorded as 1 in descriptive analysis. By bringing in the semi-logarithmic model fitting, the following results are obtained (see Table 4):

Table 4: The results of the analysis of the price of art and the overall reputation of the artist.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
Overall reputation	14.97	<2e-16***	0.09271	0.09229

The above results show that the higher the overall reputation of an artist, the higher the price of his/her artwork. To further refine the analysis of the factors affecting fame, the author conducted further research on the relationship between the artist's experience and background and the price of their artworks. Recent studies have pointed out that the price of works by contemporary artists is closely related to the cultural capital owned by artists, and cultural capital is often related to factors such as the artist's educational level, participation in exhibitions, and awards [2].

3.2. Experience and Background of the Artist

3.2.1. Nationality

There are great differences in the market resources that artists of different nationalities have access to. Artists of some nationalities may enjoy a higher reputation and popularity in the international art market, which can lead to higher prices for their artworks. At the same time, artists with deeper artistic

traditions and historical backgrounds may also affect the popularity and price of their artworks. In conclusion, artists of different nationalities may receive different levels of attention and demand in different markets, which may affect the price of their artworks [3,4].

Table 5: Analysis of art prices and artist nationality.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
United States	12.86	<2e-16***	0.07006	0.06963
Germany	4.546	5.75e-6	0.009333	0.008882
Other countries	-20.83	<2e-16***	0.1651	0.1647

The results in Table 5 show that, in this sample, the prices of artworks created by artists in the United States and Germany are higher than those of artworks created by artists in other countries, and significant differences are shown between them. This is probably because artists in the United States and Germany (especially those from the United States) get more exposure, which makes it easier for artists to accumulate reputations, thus making their artworks more popular and expensive [5,6].

3.2.2. Artist's Art Education Experience

The artist's educational experience is also an integral part of the artist's cultural capital, especially his/her professional artistic educational background [7,8]. The results in Table 6 are obtained by counting the artistic education experiences of the selected 11 artists and comparing the differences in the prices of their artworks.

Table 6: Analysis of art prices and art education experiences.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
Education experience	-11.72	<2e-16***	0.05889	0.05846

Unexpectedly, by analyzing the sample selected in this paper, it is found that educational experience has a negative impact on art prices. However, this conclusion may be influenced by other factors of cultural capital, especially since, in this sample, all the artists without a professional art education are from the United States. But it also reflects that in the era of globalization, many artists from developed countries may not need to undergo a traditional art education to become well-known contemporary artists. At the same time, some studies have pointed out that there is a certain relationship between the artist's educational background and their art style. Because the style of contemporary art has not yet formed a complete evaluation system, some styles may not be recognized by the market at present, which may also lead to a lower price for the artworks of some artists who have art education experience [9,10].

3.2.3. Exhibition Experience

Popular research suggests that more exhibition experiences increase the visibility of an artist's work, thereby increasing its price [11,12]. This study also gives a similar conclusion that the works of artists who have had exhibition experience are more significant than those of artists who have not had exhibition experience (see Table 7).

Table 7: The results of the analysis of art prices and artists' exhibition experiences.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
Exhibition experience	10.73	<2e-16***	0.04991	0.04947

3.2.4. Overseas Experience

Studies of traditional painters suggest that artists with overseas experiences tend to have a higher international profile, which in turn has a positive impact on the price of their paintings [13,14]. In this study, the author also analyzed the overseas experiences of 11 contemporary artists and the prices of their works, and the results are shown in Table 8.

Table 8: The results of the analysis of art prices and the artist's overseas experience.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
Overseas experience	-2.987	0.00284**	0.004051	0.003597

Similar to the artist's art education experience, the artist's overseas experience does not have a positive impact on the price of art as expected. In the sample selected for this study, artists with no overseas experience are from the United States and Germany, and artists from other countries all have overseas experience. Unlike painters of the classical period, contemporary artists from developed countries are now more likely to gain international fame even if they have no overseas experience. In contrast, artists from developing countries may be less well-known than artists from developed countries, even if they have overseas experience.

3.2.5. Place of Residence

Whether an artist resides in his or her home country also has an impact on the price of artworks, and for some national art markets, artworks from artists of their own nationality may be more popular because they may be seen as more local or culturally valuable [15].

Table 9: Analysis of art prices and artists' residences.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
Place of residence	-15.11	<2e-16***	0.09422	0.0938

According to Table 9, the sample selected in this paper supports the above conclusion, and the artworks of artists living in their home countries get higher prices. Moreover, works created by artists from cosmopolitan metropolises tend to be more valuable than works created by artists from other urban or rural areas. Most of the artists living in their home countries in this study are those from developed countries, which further points out that contemporary artists from developed countries are more likely to occupy cultural capital and gain higher international visibility.

3.3. Whether the Artist is Alive or Not

Whether the artist is alive or not is another important factor affecting the price of a work of art. At present, there is still considerable disagreement in the academic community on the specific impact of this factor on prices. On the one side, the death of an artist may lead to a decrease in the number of his works, so the price of the remaining works may rise. On the other side, the death of an artist may also lead to a re-evaluation and increased attention to his/her work, which will affect its price.

Some argue that the price of some artists' works peaks either during their lifetime or after their deaths. At the same time, other views point out that the death of the artist may lead to a drop in the price of his/her artworks. Some studies have shown that in some cases, artists may receive higher prices during their lifetime, while their death may lead to market saturation and price declines [16-18].

Table 10: The results of the analysis of the price of art and whether the artist is alive.

Influencing factors	t-value	Corresponds to p-value	The square of R	Adjusted for the square of R
Whether the artist is alive or not	-20.23	<2e-16***	0.1572	0.1568

The results of the analysis of this sample are shown in Table 10. The results indicate that the death of an artist can have a negative impact on the price of a work of art. As mentioned above, the death of an artist may lead to a reappraisal of the value of his artwork, which is much riskier than classical art since the historical status of contemporary art is not yet clear.

4. Conclusion

This study evaluates a number of explanatory variables that may affect the price of artworks and concludes that the individual characteristics of artists can significantly affect the price of artworks. These characteristics can be divided into the artist's overall reputation, nationality, art education experience, exhibition experience, overseas experience, whether the artist's residence is his/her home country, and whether the artist is alive.

Among them, the higher the overall reputation of the artist, the higher the price of his/her artwork. In terms of the artist's experience and background, the author finds that the price of works by artists from developed countries increases significantly compared with the price of works by artists from other countries; at the same time, if artists have exhibition or overseas experiences, the price of their works will be significantly increased; for contemporary artists, art education experience may be negatively correlated with the price of artworks. In addition, the price of works by artists living in their home countries will be relatively higher; in the sample studied in this paper, the price of works by living artists is higher than that of deceased artists.

Compared with the more mature research of classical paintings, there is less research on contemporary paintings, and because the reputation of contemporary artists has not yet passed the test of time, contemporary paintings have not yet formed a perfect price system. Therefore, this paper aims to analyze some common influencing factors affecting the price of contemporary paintings in real auctions and provide reference for the pricing of contemporary paintings.

References

- [1] Artron Research Academy of Arts (ARAA) and Artprice.com. (2022). *The Art Market in 2022*. Available at <https://imgpublic.artprice.com/pdf/the-art-market-in-2022.pdf>.
- [2] Throsby, D. (1999). *Cultural capital*. *Journal of Cultural Economics*, 23, 3-12.

- [3] Marinelli, N. and Palomba, G. (2011). *A model for pricing Italian Contemporary Art paintings at auction*. *The Quarterly Review of Economics and Finance*, 51(2), 212-224.
- [4] Rengers, M. and Velthuis, O. (2002). *Determinants of prices for contemporary art in Dutch galleries, 1992–1998*. *Journal of Cultural Economics*, 26, 1-28.
- [5] Worthington, A. C. and Higgs, H. (2003). *Art as an investment: short and long-term co-movements in major painting markets*. *Empirical Economics*, 28, 649-668.
- [6] Dimova, D. and Gillen, E. J. (2017). *Globalization and cultural identity: The perspective of contemporary art*. *Trilogue Salzburg*, 2017, 60-71.
- [7] Valsan, C. (2006). *Talking prices: Symbolic meanings of prices on the market for contemporary art*. *J Cult Econ*, 30, 165-168.
- [8] Neperud, R. W. (1997). *Art, ecology and art education: Practices & linkages*. *Art Education*, 50(6), 14-20.
- [9] Janssen, S. (2001). *The empirical study of careers in literature and the arts*. *The Psychology and Sociology of Literature*, 35, 323-357.
- [10] Carey, C. (2018). *The careers of fine artists and the embedded creative*. *Creative graduate pathways within and beyond the creative industries*. Routledge, 85-99.
- [11] Chanel, O., Gerard-Varet, L. A. and Ginsburgh, V. (1994). *Prices and returns on paintings: An exercise on how to price the priceless*. *The Geneva Papers on Risk and Insurance Theory*, 19, 7-21.
- [12] Bishop, C. (2005). *The social turn: Collaboration and its discontents*. *Artforum*, 44(6), 178.
- [13] Tummers, A. and Jonckheere, K. (Eds.). (2008). *Art market and connoisseurship: A closer look at paintings by Rembrandt, Rubens and their contemporaries*. Amsterdam University Press.
- [14] Radermecker, A. S. V. E. (2020). *The market reception of 'new connoisseurship': The impact of recent advances in art scholarship on the selling and buying of early Flemish paintings*. *Netherlands Yearbook for History of Art/Nederlands Kunsthistorisch Jaarboek Online*, 69(1), 338-372.
- [15] Quemén, A. (2013). *International contemporary art fairs in a 'globalized' art market*. *European Societies*, 15(2), 162-177.
- [16] Graddy, K. and Lieberman, C. (2018). *Death, bereavement, and creativity*. *Management Science*, 64(10), 4505-4514.
- [17] Beckert, J. and Rössel, J. (2013). *The price of art: Uncertainty and reputation in the art field*. *European Societies*, 15(2), 178-195.
- [18] Schönfeld, S. and Reinstaller, A. (2007). *The effects of gallery and artist reputation on prices in the primary market for art: A note*. *Journal of Cultural Economics*, 31, 143-153.