Affective and Pleasurable Design, Vol. 204, 2026, 13–22
https://doi.org/10.54941/ahfe1007327

Beyond Function: An Analysis of Affective Design Factors in Japanese Mechanical Watches With High Auction Prices

Keisuke Okahara and Shin'ya Nagasawa

Graduate School of Commerce, Waseda University, Shinjuku, Tokyo 169-8050, Japan

ABSTRACT

The product price serves as a measurable indicator of brand value, in research on the brand value of luxury products. Watches that command high prices at auctions, are generally considered to be of high value. This study aims to clarify the factors that lead to the high auction prices of Japanese mechanical wristwatches, by focusing on brand value factors. Auction data from Phillips, one of the world's leading auction houses, were used. The analysis sample comprised 57 Japanese mechanical wristwatches sold at Phillips since 2018. Watches sold at hammer prices exceeding their estimates fell into three configuratens: (1) iconic products with low production numbers, (2) iconic products with cases consistent with the brand's identity, and (3) watches with low production numbers and cases consistent with the brand's identity. In other words, no single factor alone determines hammer prices. Even when a specific factor is present, some hammer prices exceed the estimates while others do not. In addition, hammer prices exceeding the estimates result from multiple combinations of these factors. The academic implication of this study is that, using price as a metric makes explicit how brand value factors—being an iconic product consistent with the brand's identity and possessing rarity—interact to generate value in the secondary market. From a practical perspective, identifying the factors related to high prices is useful not only for luxury products but also for manufacturing industries more broadly, contributing to enhanced profitability and brand value.

Keywords: Brand management, Luxury branding, Brand identity

INTRODUCTION

The product price serves as a measurable indicator of brand value, in research on the brand value of luxury products. Watches that command high prices at auctions, are generally considered to be of high value. This study aims to clarify the factors that lead to the high auction prices of Japanese mechanical wristwatches, by focusing on brand value factors. Although the 'price signaling theory' is well-known in studies on luxury product pricing (Alpert et al., 1993), it primarily explains perceived product quality rather than the factors constituting product prices. Since luxury products possess value beyond function (Kapferer & Bastien, 2009, pp. 53–56), it is reasonable to assume that affective design factors—such as

Received March 7, 2026; Revised April 3, 2026; Accepted April 23, 2026; Available online July 20, 2026

iconicity and rarity—are embedded in brand value and reflected in auction prices. This study investigated the relationship between auction prices and brand value factors. Given its limited theoretical foundation, this study is exploratory.

Among the luxury products from companies listed on the Tokyo Stock Exchange, only Japanese whisky and wristwatches consistently command high prices at global auctions. In addition, almost all Japanese wristwatches sold at these auctions are mechanical watches, making them suitable subjects for this study.

Auction data from Phillips, one of the world's leading auction houses, were used. Phillips' watch-related sales in the fiscal year 2024 were approximately $210 million in total, accounting for 41% of the global watch auction market. The analysis sample comprised 57 Japanese mechanical wristwatches sold at Phillips since 2018. In the Phillips, expert estimates serve as the pricing benchmarks. When hammer prices exceed these estimates, the results are reported globally and influence brand reputation. Furthermore, previous studies have shown that high secondary market prices have a positive impact on primary markets. Dion et al. (2024), through ethnographic research on the luxury watch industry, concluded that high secondary market prices invigorate the primary market for the corresponding brand. Also, luxury watches are durable goods. In a study on durable goods using jeans and tablets as subjects, Yamamoto (2020) conducted a conjoint analysis and found that secondary market prices increase purchase intention for products in the primary market. In other words, the factors contributing to high auction prices enhance brand value. The results of this study contribute to the understanding of brand value enhancement.

LITERATURE REVIEW: Auctions and Brand Value

Hammer prices reflect the consumers' willingness to pay (WTP). WTP represents the maximum amount that a consumer is prepared to pay for a product and serves as a robust metric for measuring brand value. Previous studies have employed auction formats to elicit WTP (Wakamatsu & Miyata, 2015; Nakajima & Minobe, 2021). According to Moriguchi and Sato (2014), the WTP captures the price premium attributable specifically to the brand, independent of the product's inherent attributes. In their study on notebook computers, Moriguchi and Sato (2014) concluded that brands not only add value to overall product evaluations, but also generate a premium effect on the evaluation of specific attributes. Similarly, Matsushita (2002) found that brand personality evaluations exert a halo effect on the processing of attribute information. In other words, brand value influences WTP, implying that brand value is correlated with hammer price. Nishimoto and Katsumata (2018), while citing auction formats as one method for measuring WTP, point out that auctions with multiple bidders can elicit bids that exceed the true value of products. This phenomenon is attributed to rarity, which is

a brand value factor. Rarity has been discussed as a brand value factor in numerous luxury studies, including Okahara and Nagasawa (2025), Wang et al. (2024), and Catry (2003). Thus, it is reasonable to assume that rarity is relevant to hammer price.

LITERATURE REVIEW: Iconic Products and Brand Identity

The formation of brand value of luxury watches involves the presence of iconic products. According to Carcano and Ceppi (2010, translated by Nagasawa and Koyama, 2015, pp. 74–75), iconic products are defined as those that stand out as exceptionally unique and innovative, contributing to the formation of brand identity. Sugimoto and Nagasawa (2017) concluded, based on consumer surveys, that iconic products in the luxury industry possess consistent, intangible brand elements (such as superior craftsmanship, luxury appeal, and heritage) that are effectively manifested. According to Carcano and Ceppi (2010, translated by Nagasawa and Koyama, 2015, pp. 74–75), the brand identity of luxury watches is linked to enduring values, which are expressed through product characteristics such as color, material, and shape. Beyond the watch industry, Beverland (2006) identified six attributes constituting the authenticity of premium wines: heritage and pedigree, stylistic consistency, quality commitments, relationship to place, method of production, and the downplaying of commercial motives. Beverland (2006) emphasizes the importance of consistency. Thus, iconic products and consistency with the brand identity are brand value factors.

RESEARCH QUESTION

This study hypothesizes that the hammer prices of Japanese mechanical wristwatches that exceed auction estimates, are related to brand value factors. Based on previous studies, the brand value factors considered relevant are iconic products, consistency with brand identity, and rarity. The research question is as follows:

RQ: Are high auction prices for Japanese mechanical watches related to brand value factors such as iconic products, consistency with brand identity, and rarity?

RESEARCH METHOD

The participants in this study were brands operated by TSE-listed companies that manufactured their in-house movements in Japan. Movements are the core components of mechanical wristwatches. The brands that met these criteria were Grand Seiko, Credor, Seiko, Citizen, Orient Star, and Orient Star.

This study examined all mechanical wristwatches from these six brands sold at Phillips Auctions from 2018 to 2025, to analyze auction prices. Limited editions produced in collaboraten with other companies and watches offered

as sets of multiple pieces, were excluded from the study. All watches that met the selection criteria were either men's or unisex models.

Qualitative comparative analysis (QCA) (Ragin, 1987) was applied to the watches, to identify multiple combinations of brand value factors. QCA is a qualitative analytical method based on Boolean algebra (Mori, 2016). By converting outcomes and causal conditions into binary values (0 or 1), QCA enables the identification of diverse and complex causal relationships (Fujita, 2023). This analysis assessed whether the hammer price exceeded the estimate. The causal conditions consisted of alternative characteristics of iconic products, consistency with brand identity, and rarity. Although these characteristics do not fully capture brand value, they are objectively measurable. The analysis was conducted using fsQCA software, and a crisp-set QCA (csQCA) based on binary data was implemented.

Y = Hammer Price Exceeding the Estimate

A value of 1 was assigned if the hammer price exceeded the upper bound of the estimate.

X1 = Iconic Product

According to Carcano and Ceppi (2010; translated by Nagasawa and Koyama, 2015, pp. 74–75), an iconic product stands out as highly unique and innovative, and contributes to the formation of brand identity. Based on this concept, the introduction of technological innovation in watches, was used as an alternative characteristic of iconic products. A value of 1 was assigned to watches that introduced technological innovation and a value of 0 was assigned to watches that did not. Regarding technological innovation, the analysis focused on attributes related to accuracy, water resistance, and shock resistance, which are common standards in the ISO and JIS specifications for wristwatches. For accuracy, this included not only watches that achieved technological innovation through high accuracy itself, but also watches that incorporated new additional functions into high-accuracy watches.

X2 = Watches With Case Materials Consistent With Brand Identity

To measure consistency with brand identity, brands were classified based on their precious metal rate, and whether the case material of the target watch matched the brand classification was used as an alternative characteristic. Based on the precious metal rate, brands can be classified as precious metal brands or non-precious metal brands. Precious metal rate represents the rate of models with 18k gold or platinum cases relative to the total models. These figures were calculated based on data from each brand's official website. Using 0.5, as the benchmark, brands with rates exceeding 0.5, were classified as precious metal brands. Brands with rates of 0.5 or below were classified as

non-precious metal brands (Table 1). For precious metal brands, a value of 1 was assigned if the target model had a precious metal case, and a value of 0 if it had a non-precious metal case. For non-precious metal brands, a value of 1 was assigned if the target model had a non-precious metal case, and a value of 0 if it had a precious metal case.

Table 1: Brand identity.

	Credor	Grand Seiko	Seiko	Citizen	Orient	Orient Star
Precious Metal Rate	0.681	0.160	0	0	0	0
Brand Identity	Precious metal brand	Non-precious metal brand	Non-precious metal brand	Non-precious metal brand	Non-precious metal brand	Non-precious metal brand

X3 = Watches With Low Production Numbers

This serves as an alternative characteristic to rarity. For watches with unknown production numbers, production volumes were estimated as follows: V.F.A-standard watches were calculated as 100 pieces multiplied by the number of production years; watches from the Micro Artist Studio as 20 pieces multiplied by the number of production years; and all other watches as 1,000 pieces multiplied by the number of production years. V.F.A-standard watches were produced by Seiko from the 1960s to the 1970s and guaranteed exceptionally high accuracy of ±1 minute per month, exceeding even modern mechanical watches, with limited production volumes. The Micro Artist Studio was established in 2000 at the Seiko Epson Corporaten's Shiojiri facility, and primarily manufactures the highest-end models of Grand Seiko and Credor. In this study, watches with production numbers of 1,000 pieces or fewer were considered rare and assigned a value of 1, whereas watches with production numbers exceeding 1,000 pieces were assigned a value of 0. A threshold of 1,000 pieces was chosen because limited-edition models typically have production runs of approximately this size. For example, the Grand Seiko limited-edition model (SBGW033) examined in this study was produced in a limited run of 1,300 pieces.

RESULTS

From 2018 to 2025, a total of 57 watches were auctioned by Phillips, as shown in Table 2. None of the causal conditions exceeded the threshold of 0.9 and therefore constituted the necessary conditions (Schneider et al., 2010, p. 254). In other words, the outcome was not a subset of any individual causal condition. After confirming this, QCA was conducted.

Table 2: List of watches sold at Phillips.

Brand	Model	Upper bound of the Estimate	Hammer Price	numbers	Y	X1	X2	X3
Grand Seiko	6186-8000-G	HK$130,000	HK$228,600	200	1	0	1	1
	SBGW039	HK$250,000	HK$139,700	130	0	0	0	1
	SBGZ009	HK$470,000	HK$444,500	50	0	0	0	1
	SBGW277	HK$40,000	HK$40,640	140	1	0	1	1
	SLGH007	$50,000	$57,150	140	1	0	0	1
	6185-8021	HK$78,000	HK$69,850	400	0	0	1	1
	SBGY007	HK$40,000	HK$40,640	5000	1	0	1	0
	SBGE201G	HK$25,000	HK$19,050	5000	0	0	1	0
	SBGH297	$6,000	$19,050	260	1	0	1	1
	SBGR091	HK$120,000	HK$95,250	100	0	0	0	1
	6186-8000-G	CHF20,000	CHF27,940	100	1	0	1	1
	SBGD201	CHF60,000	CHF38,100	200	0	0	0	1
	SBGW033	HK$80,000	HK$48,260	1300	0	0	1	0
	SBGW277G	CHF6,000	CHF5,334	1000	0	0	1	1
	SLGT001	$350,000	$478,800	1	1	1	1	1
	SBGK015	$8,000	$21,420	300	1	0	1	1
	45GS	$8,000	$12,600	5000	1	1	1	0
	57GS	$16,000	$13,860	6000	0	0	1	0
	6186-8000-G	$20,000	$30,240	200	1	0	1	1
	SBGW251	$30,000	$23,940	136	0	0	0	1
	SBGH266	$30,000	$20,160	150	0	0	0	1
	SBGA384	$30,000	$25,200	50	0	0	0	1
	SBGZ001	$80,000	$81,900	30	1	0	0	1
	SBGZ001	HK$400,000	HK$504,000	30	1	0	0	1
	SBGD202	HK$310,000	HK$277,200	180	0	0	0	1
	J14070GS	CHF10,000	CHF20,160	1000	1	1	1	1
	SBGW277	$4,000	$16,380	140	1	0	1	1
	SBGR091	$10,000	$40,320	100	1	0	0	1
	6186-8000-G	HK$80,000	HK$81,900	200	1	0	1	1
	SBGW033	$4,000	$20,160	1300	1	0	1	0
	SBGD202	CHF40,000	CHF60,480	180	1	0	0	1
	4420-9000	CHF12,000	CHF59,220	2000	1	1	1	0
	SBGD001	CHF50,000	CHF88,200	200	1	0	0	1
	6186-8000-G	CHF10,000	CHF44,100	200	1	0	1	1
	SBGJ021	HK$39,000	HK$62,500	500	1	0	1	1
	SBGW039	CHF8,000	CHF18,750	130	1	0	0	1

(Continued)

Table 2: Continued.

Brand	Model	Upper bound of the Estimate	Hammer Price	numbers	Y	X1	X2	X3
Credor	GBBH998	HK$48,000	HK$50,800	1000	1	0	1	1
	GBLR999	HK$430,000	HK$1,778,000	30	1	0	1	1
	GBLQ998	HK$470,000	HK$635,000	100	1	1	1	1
	GBBH998	HK$48,000	HK$95,250	1000	1	0	1	1
	GBLT997	HK$250,000	HK$330,200	240	1	0	1	1
	GBBH999	HK$48,000	HK$69,850	200	1	0	1	1
	GZLT999	HK$430,000	HK$406,400	60	0	0	1	1
	GBLT999	$50,000	$40,320	240	0	0	1	1
	GBLT999	$40,000	$69,300	240	1	0	1	1
	GBLT997	HK$320,000	HK$403,200	240	1	0	1	1
	GBLT999	CHF40,000	CHF44,100	240	1	0	1	1
	GBBD965	HK$80,000	HK$100,000	40	1	0	1	1
	GBBD965	HK$80,000	HK$162,500	40	1	0	1	1
	GZAQ988	HK$150,000	HK$162,500	8	1	0	1	1
Seiko	4520-8020	HK$310,000	HK$444,500	73	1	1	0	1
	6215-7000	HK$40,000	HK$63,500	2000	1	1	1	0
	SBEN003 (SJE093)	HK$30,000	HK$17,780	1965	0	0	1	0
	SDAA003/5R85-0AB0	CHF8,000	CHF12,065	1000	1	1	1	1
	SLA037	HK$40,000	HK$40,320	1100	1	0	1	0
	6159-7001	HK$48,000	HK$56,250	2000	1	0	1	0
	6215-7000	HK$80,000	HK$137,500	2000	1	1	1	0

Table 3. Configuratens.

Configuratens	Raw Coverage	Unique Coverage	Consistency
X1×X2	0.195	0.098	1
X1×X3	0.122	0.024	1
X2×X3	0.610	0.512	0.862

QCA yields three types of solutions: complex, intermediate, and parsimonious solutions. In this study, a commonly used intermediate solution was selected. The resulting configuratens are presented in Table 3. The solution coverage was 0.732, and the solution consistency was 0.882. These values indicate that the configuratens explain the outcomes sufficiently. According to Table 3, the following three types of watches were sold at hammer prices exceeding the estimates:

(1) Iconic products with low production numbers
(2) Iconic products with cases consistent with the brand's identity
(3) Watches with low production numbers and cases consistent with the brand's identity

In other words, no single factor alone determines hammer prices. Even when a watch possesses the same factor, some hammer prices exceed the estimates, while others do not. Furthermore, hammer prices exceeding the estimates result from multiple combinations of these factors.

DISUCUSSIONS

All brands appearing in the Phillips results were originally developed under the Seiko brand. Grand Seiko and Credor were originally part of the Seiko brand but became independent brands in the 2010s and 2020s, respectively. While both trace their origins to Seiko's luxury lines, they now possess distinct brand identities: Grand Seiko primarily features non-precious metal cases, whereas Credor primarily features precious metal cases. From this perspective, the strategy of positioning them as separate brands appears to have been appropriate. In other words, corporate strategy may require reconsidering not only product design but also brand identity.

The findings of this study indicate that no single factor is sufficient. Specifically, achieving a hammer price that exceeds the estimate requires not only being an iconic product but also a combination of factors, such as rarity and consistency with brand identity. This suggests that, unlike list prices set by the producer brand, hammer prices in auctions are shaped by multiple factors involving multiple market participants.

High-accuracy innovation is a key factor behind iconic products in the Japanese watch industry. Japanese watches gained global recognition by achieving technological innovation through high accuracy starting in the 1960s. Consequently, Japanese brands continue to regard high-accuracy watches as valuable and produce them as luxury products. The notion that "high accuracy equals luxury" is unique to Japan. In fact, for mechanical wristwatches, 2.4 million mechanical watch movements passed the chronometer certification in Switzerland in 2023 alone (Contrôle Officiel Suisse des Chronomètres, 2024). In other words, for Swiss mechanical wristwatches, high accuracy is no longer exceptional.

The inclusion of high accuracy in iconic products can be considered as a regional identity of Japan, but it is reasonable to assume that being an iconic product is a common factor for high auction prices in the watch industries of other countries as well. The configuratens identified in this study could potentially be applied both within and outside the watch industry.

(1) Iconic products with low production numbers
(2) Iconic products with cases consistent with the brand's identity
(3) Watches with low production numbers and cases consistent with the brand's identity

The configuratens are generalized as follows:

(1) Iconic products with low production numbers
(2) Iconic products consistent with the brand's identity
(3) Products with low production numbers and consistent with the brand's identity

For example, in the luxury industry, Sugimoto and Nagasawa (2017) examine iconic products for multiple brands, including bags, coats, and scarves. Since these brands actively manage rarity, verifiability is likely to be high, provided that an appropriate database can be found.

CONCLUSION

This study examined Japanese mechanical wristwatches. Watches sold at hammer prices exceeding their estimates fell into three configuratens: (1) iconic products with low production numbers, (2) iconic products with cases consistent with the brand's identity, and (3) watches with low production numbers and cases consistent with the brand's identity.

The academic implication of this study is that, using price as a metric makes explicit how brand value factors—being an iconic product consistent with the brand's identity and possessing rarity—interact to generate value in the secondary market.

From a practical perspective, identifying the factors related to high prices is useful not only for luxury products but also for manufacturing industries more broadly, contributing to enhanced profitability and brand value. High secondary market prices positively impact brand value, and this study found that being an iconic product is one of the factors influencing high secondary market prices. It also highlighted the importance of developing products that align with the brand's identity. These insights can inform product design and sales promotion in manufacturing practice.

This study has several limitations. First, the number of brands examined was limited. Brands that do not produce mechanical watches, such as Casio, as well as smaller watch brands, were excluded. Second, converting QCA outcomes into binary values resulted in the loss of information regarding how much the hammer price exceeded the estimate. The same limitation applies to the causal conditions. Third, auction outcomes themselves are influenced by external factors such as the economic climate, which could not be reflected in this study. Furthermore, alternative characteristics had inherent limitations. Finally, there may be other factors, such as the aesthetic appeal of the product, that are relevant to the prices.

FUNDING

This paper is financially supported by Grant-in-Aid (C) No. 24K05040 of Japan Society for the Promotion of Science (JSPS).

REFERENCES

Alpert, F., Wilson, B., Elliott, M.T.: Price signalling: does it ever work? Journal of Consumer Marketing 10(3), 4–14 (1993).

Beverland, M.: The 'real thing': Branding authenticity in the luxury wine trade. Journal of Business Research 59(2), 251–258 (2006).

Carcano, L., Ceppi, C.: Time to Change: Contemporary Challenges for Haute Horlogerie. EGEA S.p.A., Milan (2010). Translated by Nagasawa, S., Koyama, T., Luxury Watch Brand Management – Times of Change. Kadokawa Gakugei Publishing, Tokyo (2015).

Catry, B.: The Great Pretenders: The Magic of Luxury goods. Business Strategy Review 14(3), 10–17 (2003).
Contrôle Officiel Suisse des Chronomètres: 2023 Annual Report. https://www.datocms-assets.com/149024/1739900253-rapport_annuels_cosc_2023.pdf, accessed 18 May 2025.
Dion, D., Pavlyuchenko, R., Prokopec, A.S.: The Enrichment Economy: Market Dynamics, Brand Strategy, and Ethics. Journal of Marketing 89(2), 1–23 (2024).
Fujita, T.: Methods to grasp multiple conjunctural causations: What has the methodological development of QCA brought about? Japanese Journal of Administrative Science 34(3), 75–93 (2023).
Kapferer, J.N., Bastien, V.: The Luxury Strategy: Break the Rules of Marketing to Build Luxury Brands, 2nd edn. Kogan Page, London (2009).
Matsushita, M.: Effects of brand personality evaluation on attribute information processing [Brand Personality Hyoka ga Zokusei Joho Shori ni Ataeru Eikyo]. Marketing Journal 22(1), 19–29 (2022).
Mori, D.: Applying Qualitative Comparative Analysis (QCA) to Legal Case Studies : Analysis of Right to Counsel Cases in the United States Supreme Court. Kumamoto Law Review 136, 262–318 (2016).
Moriguchi, T., Sato, E.: Brand Evaluation Methods: A Marketing Perspective [Burand Hyoka Shuho: Marketing Shiten ni yoru Approach. Asakura Publishing, Tokyo (2014).
Nakajima, T., Minobe, K.: Consumer Demand Estimation for Atemoya Using an Experimental Auction. Journal of Rural Economics 93(3), 301–306 (2021).
Nishimoto, A., Katsumata, S.: A Comparison of Measuring Willingness to Pay by the Conjoint Measurement. International Journal of Marketing & Distribution 21(3), 15–25 (2018).
Okahara, K., Nagasawa, S.: Analyses of the Impact of Brand Value on Prices in the Luxury Watch Industry. Transactions of Japanese Society of Kansei Engineering 24(2), 219–227 (2025).
Ragin, C.C.: The Comparative Method. University of California Press, Berkeley (1987).
Sugimoto, K., Nagasawa, S.: Cause and Effect of Design Features and Brand Value: Consumer Interpretation of Design and Value of Long- and Short-Term Products. The Design Journal 20(sup1), S4213-S4226 (2017).
Wakamatsu, H., Miyata, T.: Purchasing factors of wakame consumers: using an auction experiment. Nippon Suisan Gakkaishi 81(2), 283–289 (2015).
Wang, X., Sung, B., Phau, I.: How rarity and exclusivity influence types of perceived value for luxury. Journal of Brand Management, https://link.springer.com/article/10.1057/s41262-024-00359-8, accessed 18 May 2025.
Yamamoto, H.: The Effect of Secondary Market Options on Shopping Behavior in the Primary Market. Quarterly Journal of Marketing 40(2), 29–41 (2020).