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The endowment effect: bibliometric analysis and systematic literature review of over 40 years

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Abstract

Purpose

This paper synthesizes four decades of research on the endowment effect to clarify its theoretical foundations, empirical developments, and relevance across domains, while identifying key gaps for future behavioral economics research.

Design/methodology/approach

A structured literature review and bibliometric analysis are conducted on 680 peer-reviewed publications from the past 40 years. Citation networks, thematic clusters, and temporal trends are analyzed to map the evolution of the field.

Findings

Results show steady growth in endowment effect research, with loss aversion and psychological ownership as dominant explanations. Applications extend beyond consumer choice to finance, policy, and law. Recent studies increasingly address boundary conditions, cultural differences, and methodological rigor, reflecting a more mature and diversified literature.

Originality

This study offers the first large-scale bibliometric overview of endowment effect research, combining quantitative mapping with qualitative synthesis to provide a concise, integrative perspective and highlight promising directions for future work.

Keywords: Endowment effect; behavioral economics; bibliometric analysis; systematic literature review

1. Introduction

Over the past four decades, the endowment effect has become a cornerstone of behavioral economics, describing the robust disparity between individuals' willingness to accept (WTA) for relinquishing an object and their willingness to pay (WTP) to acquire it. First formalized by Thaler (1980) and empirically substantiated by Kahneman, Knetsch, and Thaler (1990), the phenomenon directly challenges classical assumptions—most notably the Coase Theorem (Coase 1960)—by demonstrating that mere ownership inflates subjective valuation.

The scholarly influence of the endowment effect is underscored by the citation record of its foundational contributions: Kahneman et al. (1990) with 6,967 citations, Kahneman et al. (1991) with 7,043, Thaler (1990) with 1,077, and Coase (1960)) with 46,488[1]. Collectively amounting to 61,575 citations, these figures highlight the enduring and widespread academic interest in the phenomenon. Yet, despite this remarkable attention, no bibliometric analysis combined with a systematic literature review has, to our knowledge, been undertaken. The present study seeks to address this gap by providing a comprehensive bibliometric mapping and structured synthesis of the literature, thereby establishing a robust foundation for ongoing and future research on one of the most prominent biases in behavioral economics.

Initially interpreted as a cognitive bias driven by loss aversion, the endowment effect is now understood to reflect a broader set of mechanisms, including psychological ownership, self-identity, cultural and demographic factors, and contextual framing. This expansion has brought the phenomenon into adjacent fields such as marketing, psychology, consumer research, and public policy.

This paper presents the first comprehensive bibliometric review of 680 publications on the endowment effect (1979–2021). Bibliometric methods enable the systematic mapping of research landscapes by revealing thematic clusters, collaboration networks, disciplinary boundaries, and intellectual trajectories (Block and Fisch 2020). Although comparable studies exist for related biases—for example, Ingale and Paluri (2022) on financial literacy and financial behavior, Pleßner (2017) on the disposition effect, Godefroid et al. (2023) on the status quo bias, and Bühren et al. (2023) on ambiguity aversion—no such analysis has yet been conducted for the endowment effect.

By analyzing publication trends, geographic dispersion, methodological approaches, and thematic clusters, this study provides a comprehensive overview of the field's development. It

[1] Citation counts were retrieved from Google Scholar on September 1, 2025.

also examines moderating variables and conceptual extensions, such as the IKEA effect and the quasi-endowment effect, thereby illustrating the theoretical richness and interdisciplinary scope of the literature.

The remainder of the paper is structured as follows. Section 2 presents the bibliometric analysis of 680 peer-reviewed publications. Section 3 provides a theoretical overview of the endowment effect and its foundations in behavioral economics. Section 4 reviews key experimental studies replicating or extending the WTA–WTP paradigm. Section 5 examines moderating factors such as age, gender, and culture, and discusses conceptual extensions including the IKEA and trophy effects. Section 6 concludes with methodological reflections and directions for future research.

2. Bibliometric analysis

The flowchart in Figure I illustrates the systematic process of identifying and selecting academic articles for inclusion in the bibliometric analysis on the endowment effect.

The identification phase began with a literature search conducted through EBSCOhost, which yielded a total of 680 records (31st of december 2021). This search covered six databases: eBook Collection, APA PsycInfo, APA PsycArticles, APA PsycBooks, Regional Business News, and Business Source Premier. The keyword "endowment effect" was used consistently across all databases.

In the screening phase, duplicate records were removed. Duplicates were defined as publications with identical or highly similar titles, even if published in different years or first released as working papers before appearing as journal articles. After removing duplicates, 589 records remained.

Next, non-English language publications were excluded, reducing the dataset to 572 records. This was followed by the removal of publication types that did not meet the inclusion criteria, such as non-peer-reviewed sources, literature reviews, and dissertations. After this step, 460 full-text articles remained for further evaluation.

In the eligibility assessment, articles were examined based on their presence in the JOURQUAL3 (VHB) journal ranking system. Out of the 460 included records, 129 articles were published in journals with a VHB rating. An additional 20 articles were published in journals that were listed in the VHB database with the designation "no rating". The remaining 311 articles appeared in journals not covered by the VHB ranking at the time of assessment. The 460 scholarly articles were included regardless of their ratings to ensure a comprehensive overview of the research landscape on the endowment effect. This multi-stage selection process ensured that the final dataset consisted exclusively of peer-reviewed, high-quality, and thematically relevant articles suitable for the study.

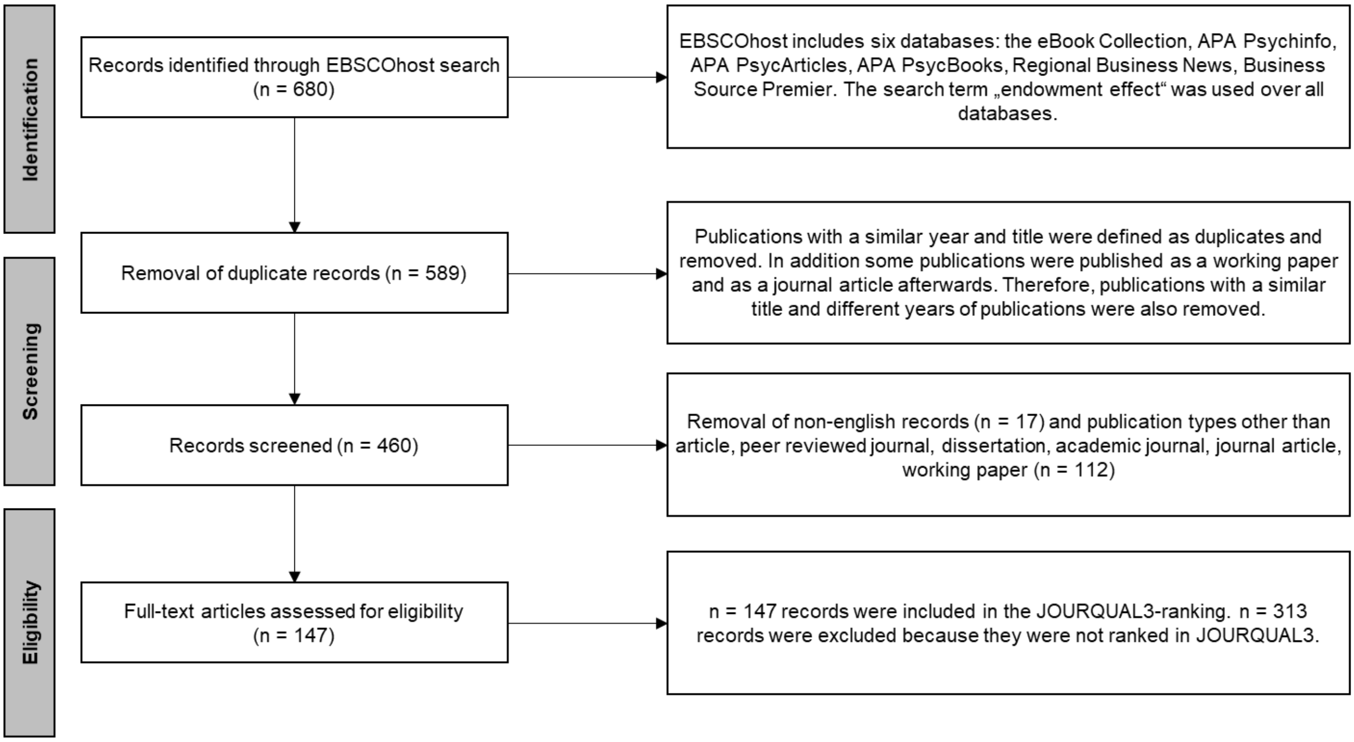

Figure I: Search strategy

Figure II presents a world map showing the geographical distribution of academic publications on the endowment effect. Each red circle represents the number of publications from a specific country or region, with the size of the circle indicating the volume of research output.

North America, particularly the United States, has the largest circle, suggesting it is the leading contributor to the literature on the Endowment Effect, with 227 publications. Europe and Asia follow, each represented by sizable circles, indicating significant research activity as well. Australia also shows a moderate number of publications, while South America, Africa, and other regions display only small circles, reflecting relatively low research output on this topic.

The legend on the left of the map categorizes publication numbers into six size ranges—from 4 to 227—making it easier to compare contributions across continents. Overall, the map illustrates that the majority of scholarly work on the endowment effect originates from Western and industrialized nations, particularly the United States and parts of Europe and Asia.

Figure II: Publications per continent

Figure III illustrates the development of academic publications on the endowment effect over time, covering the years from 1979 to 2021. It differentiates between the total number of publications per year (shown in grey) and those published in ranked journals (shown in light blue).

In the early years, particularly from 1979 through the late 1980s, the number of publications was very low. Beginning in the 1990s, there was a gradual increase in research activity on the topic. This growth became more pronounced from the early 2000s onward.

From around 2007, the number of publications rose sharply, with both overall publications and those in ranked journals increasing significantly. Several peaks can be observed between 2009 and 2021, with some years reaching or exceeding 30 publications.

Overall, the graph shows a clear trend of growing academic interest in the endowment effect, accompanied by a rising number of publications in peer-reviewed and ranked journals, particularly in the last decade of the period shown.

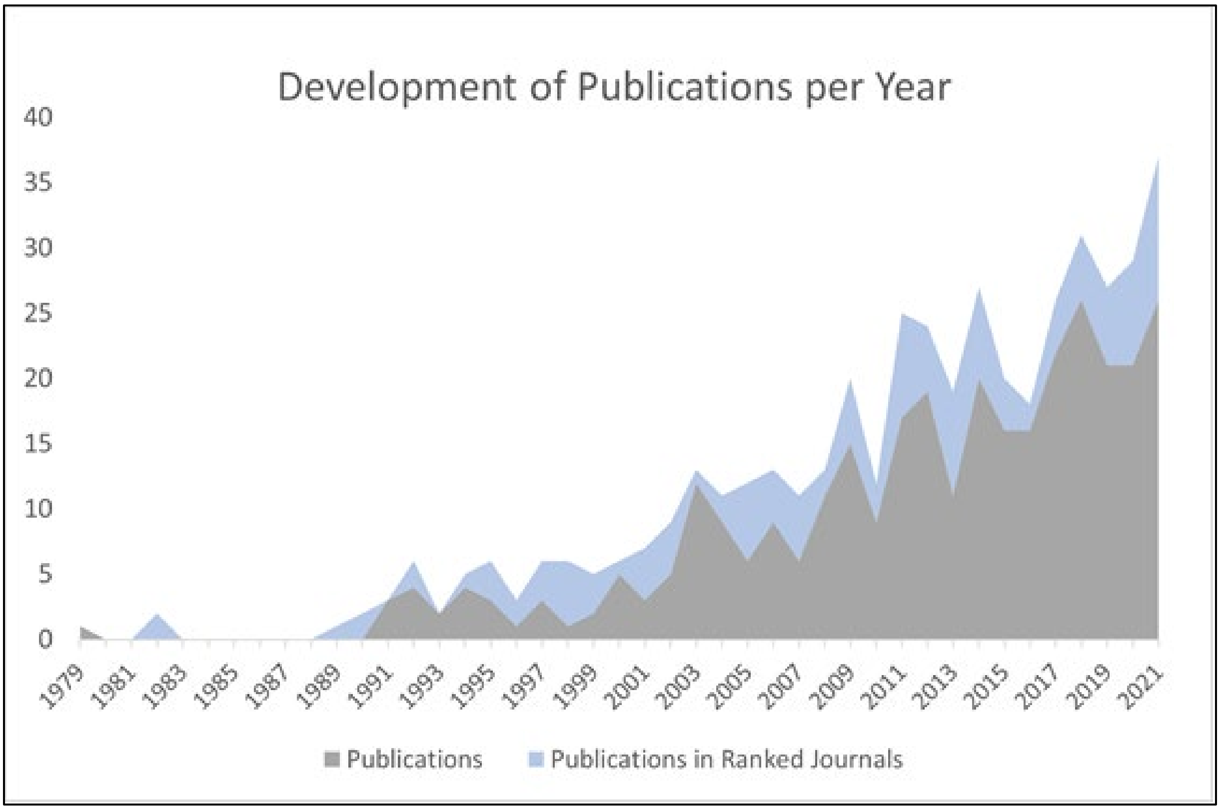

Figure III: Development of publications per year

Figure IV presents the distribution of 460 publications on the endowment effect across different research subcategories, visualized through a flow diagram. The largest share consists of experimental studies, comprising 210 publications (45.7%). This is followed by model-based studies with 66 publications (14.3%) and review articles with 65 (14.1%). In addition, empirical studies account for 63 publications (13.7%), commentaries for 42 (9.1%), and survey-based studies for 14 (3.0%).

Taken together, the figure underscores that experimental research has been the dominant approach in the study of the endowment effect, while conceptual, model-based, and review-oriented contributions also play a significant role in shaping the field.

Figure IV: Publications by subcategory

Figure V illustrates which items have been used in experiments investigating the endowment effect, along with their relative frequency in percentage terms.

The most commonly used item is the mug, appearing in nearly 22 percent of the studies. This is followed by lottery tickets, used in about 19 percent of the experiments. The "other" category, which includes various miscellaneous objects, accounts for approximately 17 percent. Pens were used in around 15 percent of the cases, while virtual ownership items such as digital assets make up about 13 percent. Sweets are the least commonly used, appearing in roughly 10 percent of the studies.

The data highlights a clear preference for tangible, everyday items like mugs and lottery tickets in experimental designs. These objects are familiar, easy to assign ownership to, and effective in eliciting valuation changes, which are central to measuring the endowment effect. The inclusion of virtual items reflects a growing interest in examining ownership effects beyond physical goods.

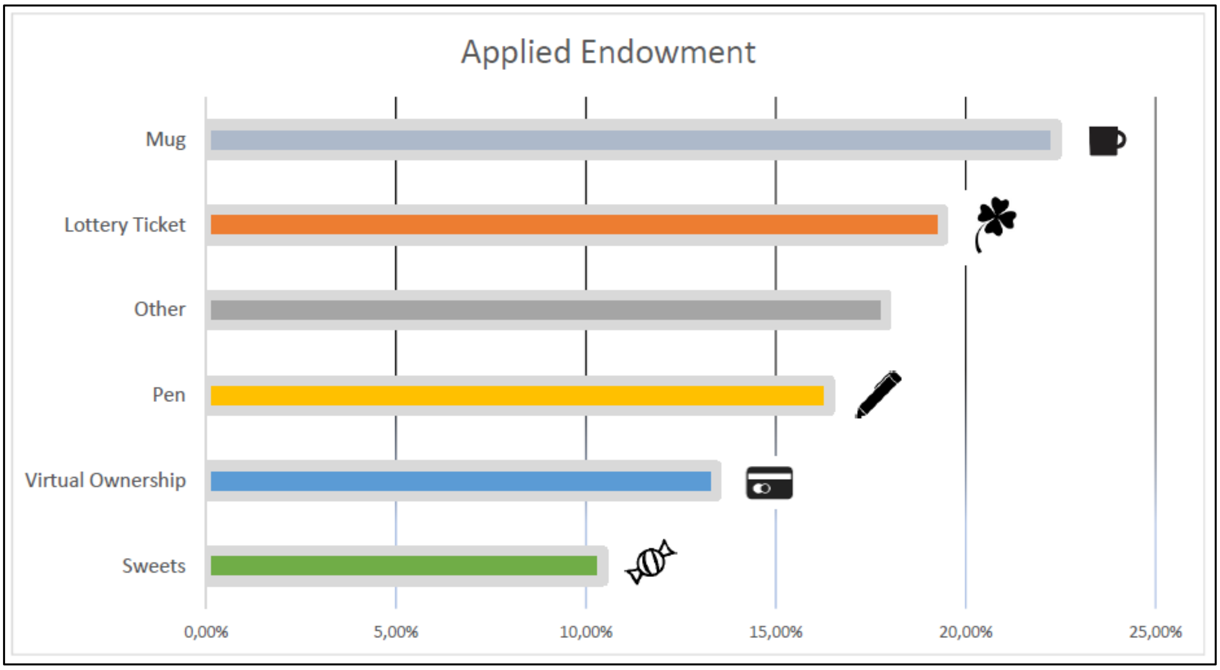

Figure V: Applied endowment

All 680 identified publications were included in the following VOSviewer analyses. This ensures a comprehensive co-occurrence analysis of the endowment effect literature, capturing both frequent and less common but relevant terms for a more complete understanding of the field.

Figure VI presents a co-occurrence network visualization of keywords from publications related to the endowment effect between 1979 and 2021, created using VOSviewer. The map displays numerous keywords as nodes, with their size corresponding to the frequency of occurrence in the analyzed literature. Lines between the nodes represent co-occurrence relationships, showing how often two keywords appear together in the same documents. The closer two nodes are positioned, the stronger their co-occurrence relationship. The network is divided into several color-coded clusters, each representing thematically related keywords that form distinct areas of research.

The red cluster is centered around terms such as endowment effect, consumer behavior, and loss aversion, reflecting a core focus on behavioral economics, decision-making, and consumer psychology. The blue cluster includes terms like prospect theory, economics, and financial management, connecting the endowment effect to foundational economic theories and their application in financial contexts. The green cluster includes keywords such as inequality, income distribution, and economic development, indicating how the endowment effect intersects with broader socio-economic themes. The yellow cluster contains demographic and psychological terms including humans, young adult, gender, and cognitive bias, suggesting a research interest in individual differences and susceptibility to the effect. Finally, the purple cluster focuses on methodological and experimental aspects, with terms like design of experiments, communication, and learning, highlighting the way the endowment effect is investigated in controlled research settings.

Overall, the visualization illustrates the interdisciplinary nature of research on the endowment effect. It shows how the concept has been explored across various domains including psychology, economics, public policy, and experimental methodology, revealing the wide relevance and complexity of the topic in academic discourse over more than four decades.

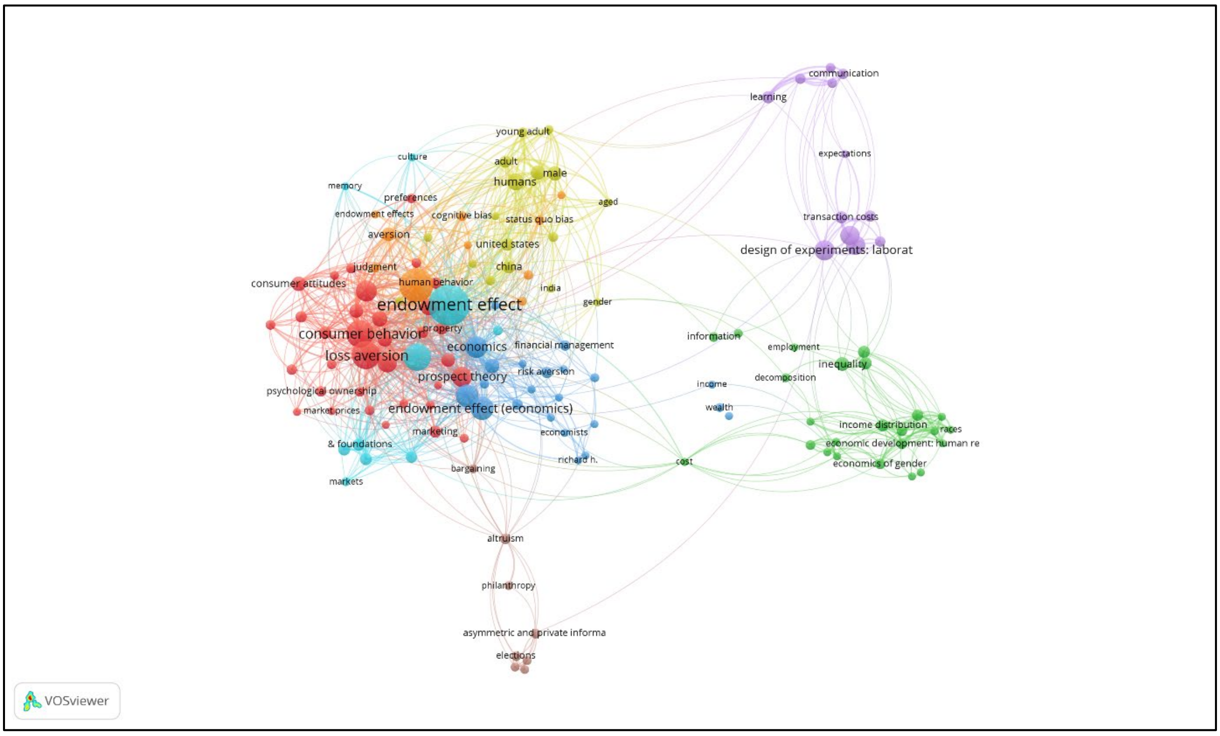

Figure VI: Co-occurrence of keywords (created using VOS Viewer)

Figure VII builds on the thematic landscape outlined in Figure VI by narrowing the focus to the actual language used in titles and abstracts of scholarly publications on the endowment effect. While Figure VI maps the broader conceptual terrain through keyword co-occurrence across entire publications, Figure VII offers a closer view of how researchers articulate their work at the textual level, particularly in the framing and positioning of their studies.

This visualization, also generated with VOSviewer, consists of a dense network of keywords extracted from titles and abstracts published between 1979 and 2021. One cluster centers around transactional roles and valuation terminology, with frequent use of terms such as buyer, seller, overvaluation, and object, indicating a strong focus on the mechanisms of perceived value in exchange situations. Another prominent area is shaped by empirical vocabulary, including keywords like difference, data, factor, and analysis, pointing to the field's increasing reliance on quantitative methods and comparative approaches. Conceptual and theoretical developments are visible in a cluster that includes terms such as policy, behavioral economic, and status quo bias, reflecting how the endowment effect is linked to broader debates within behavioral and economic theory. A further dimension appears in the form of demographic and social terms like gender gap, income, country, and wage, suggesting a growing concern with inequality and structural variables in endowment-related behavior.

Compared to Figure VI, which captured the wider thematic structure through indexed keywords, Figure VII reveals how research on the endowment effect is actually presented and contextualized in scholarly writing. It emphasizes the precision, diversity, and evolution of the academic discourse, and shows how linguistic framing supports the analytical depth and interdisciplinary relevance of the topic.

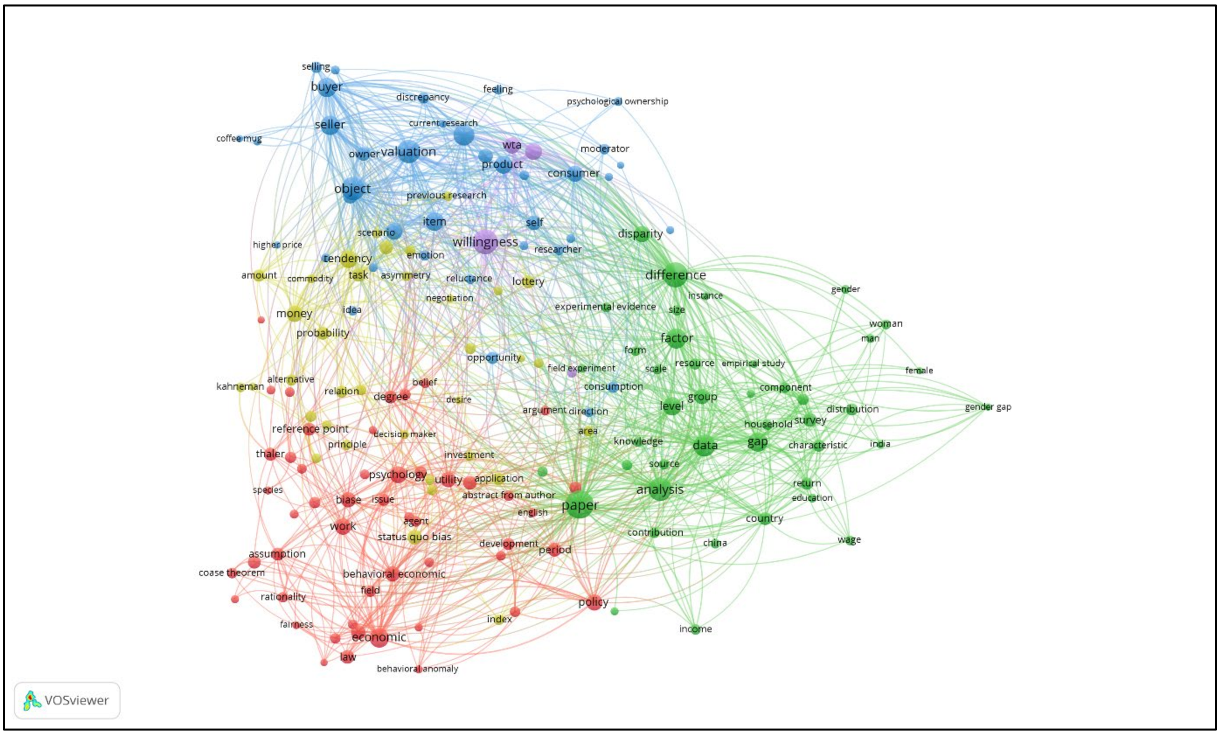

Figure VII: Co-occurrence of keywords in Abstracts + Titles

The following Figures VIII, IX, and X build upon the broader thematic and linguistic mappings presented in Figures VI and VII by introducing a temporal dimension to the co-occurrence of keywords in research on the endowment effect. While Figure VI provided an overall network of conceptual relationships and Figure VII focused on the language used in titles and abstracts, Figures VIII through X trace how these conceptual structures have evolved across three distinct time periods.

Figure VIII presents the co-occurrence network of keywords from publications between 1979 and 1999. This early phase is characterized by a relatively concentrated set of terms, with clusters centered on foundational concepts such as utility theory, consumer preferences, and the endowment effect itself. The network reflects the initial theoretical development of the field, primarily rooted in behavioral economics and cognitive psychology. The limited number of terms and connections indicates a nascent research area, still consolidating its conceptual core.

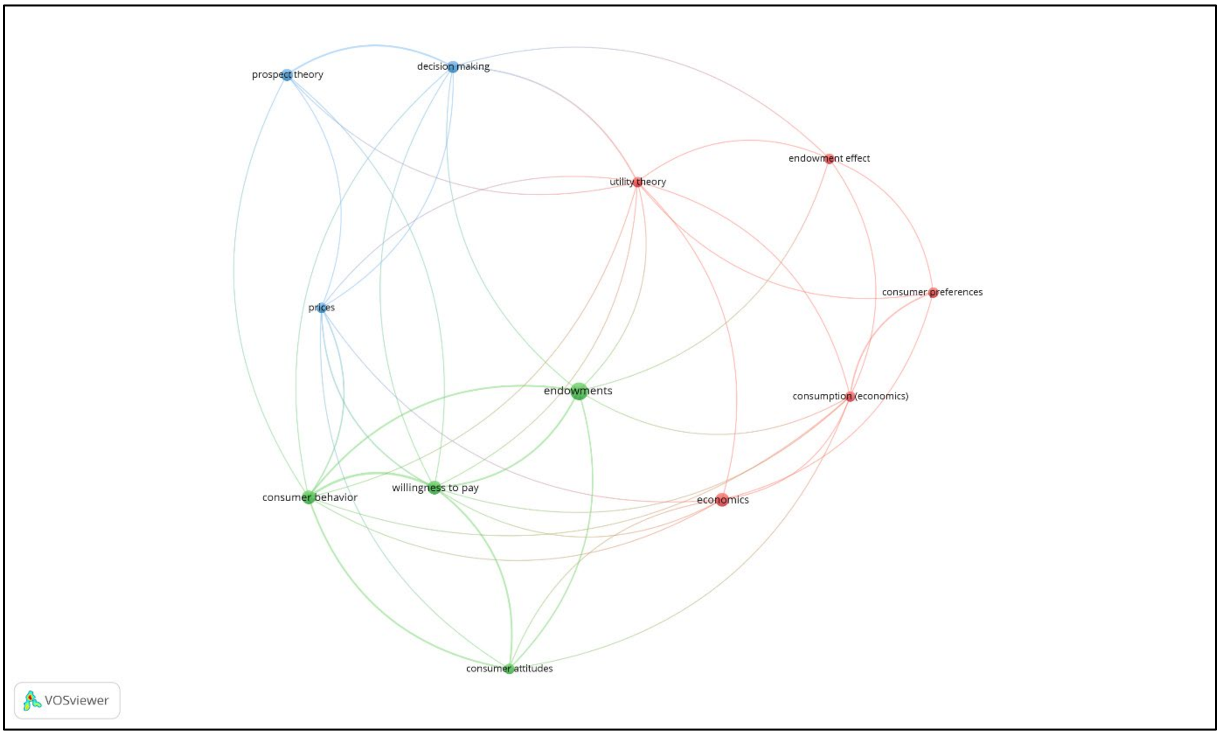

Figure VIII: Co-occurrence of keywords (1979-1999)

Figure IX illustrates the period from 2000 to 2009, during which the field expanded both empirically and methodologically. The keyword network becomes more complex and interconnected, revealing the emergence of new clusters focused on experimental design, behavioral finance, and applied decision-making. Compared to the earlier period, this phase shows a growing diversification of research interests, aligning with the linguistic shifts described in Figure VII. It marks the beginning of the field's integration into adjacent domains such as organizational behavior and public policy.

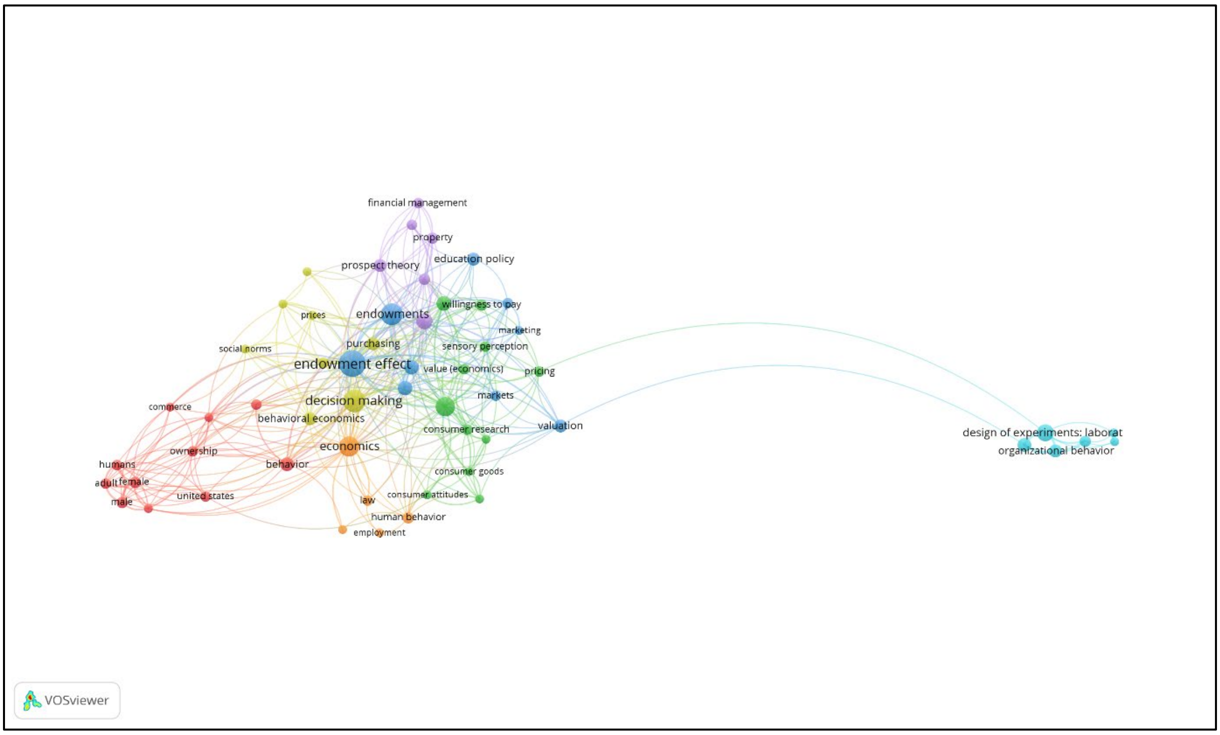

Figure IX: Co-occurrence of keywords (2000-2009)

Figure X covers the most recent period, from 2010 to 2021, and displays a dense and highly interdisciplinary network. Clusters related to economic development, income distribution, gender, and policy suggest a broader application of the endowment effect beyond individual decision-making. This evolution reflects a shift from micro-level behavioral experiments to macro-level social and economic contexts. The increased complexity and thematic spread reinforce the findings from Figures VI and VII, illustrating not only the growth of the field but also its integration into a wide array of disciplines and societal debates.

Taken together, Figures VIII through X show how the endowment effect has developed from a narrowly defined psychological concept into a multidisciplinary research topic with broad theoretical and practical relevance. They complement the static conceptual view of Figure VI and the textual-linguistic analysis in Figure VII by revealing the dynamic progression of scholarly attention over time.

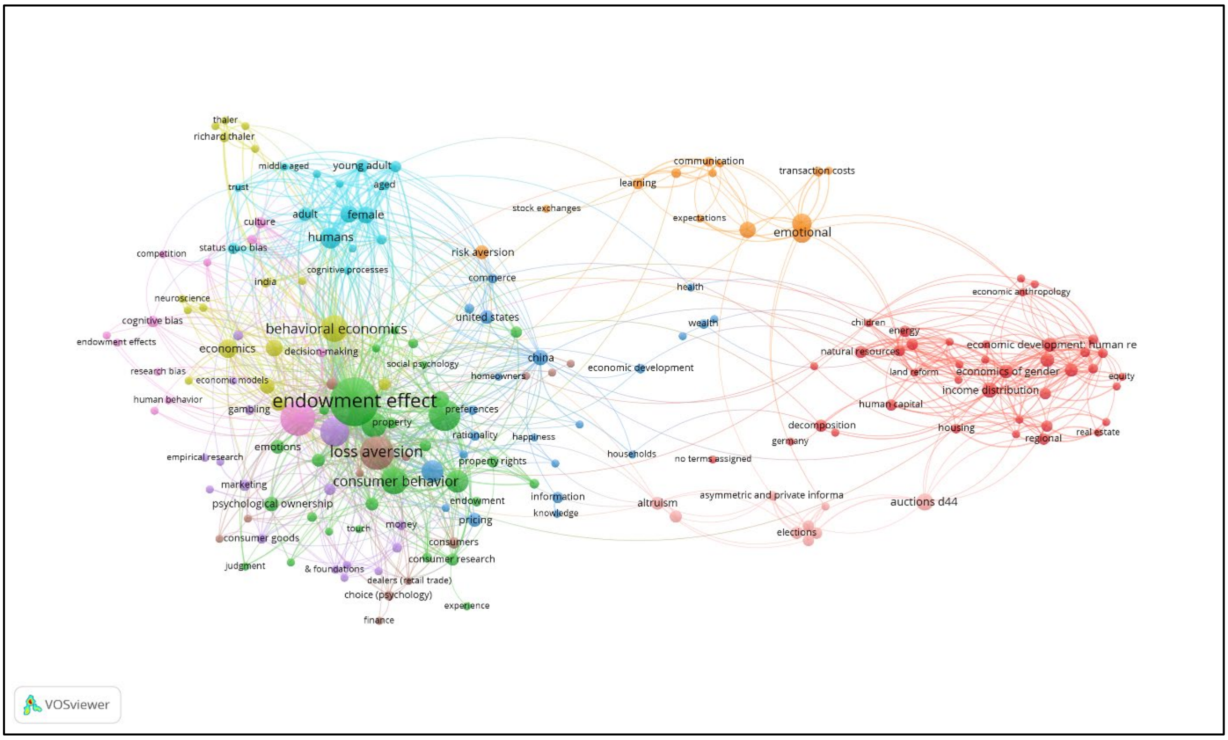

Figure X: Co-occurrence of keywords (2010-2021)

The graph in Figure XI illustrates the development of academic publications related to the endowment effect from 1979 to 2021, categorized by research cluster. Over the decades, there has been a steady increase in the number of publications, with a noticeable rise from the early 2000s onward. Experimental studies (in yellow) make up the largest share, again highlighting the importance of experimental methods in this research field as Figure VI. Empirical and review-based publications have also grown over time, suggesting increasing methodological diversity. Other categories such as model-based, comments, surveys, and combinations thereof appear less frequently but contribute to the overall scope of the literature.

Of the 460 papers included in the dataset, 313 are not ranked in JOURQUAL, which indicates that a considerable portion of the research is published in journals outside this ranking system.

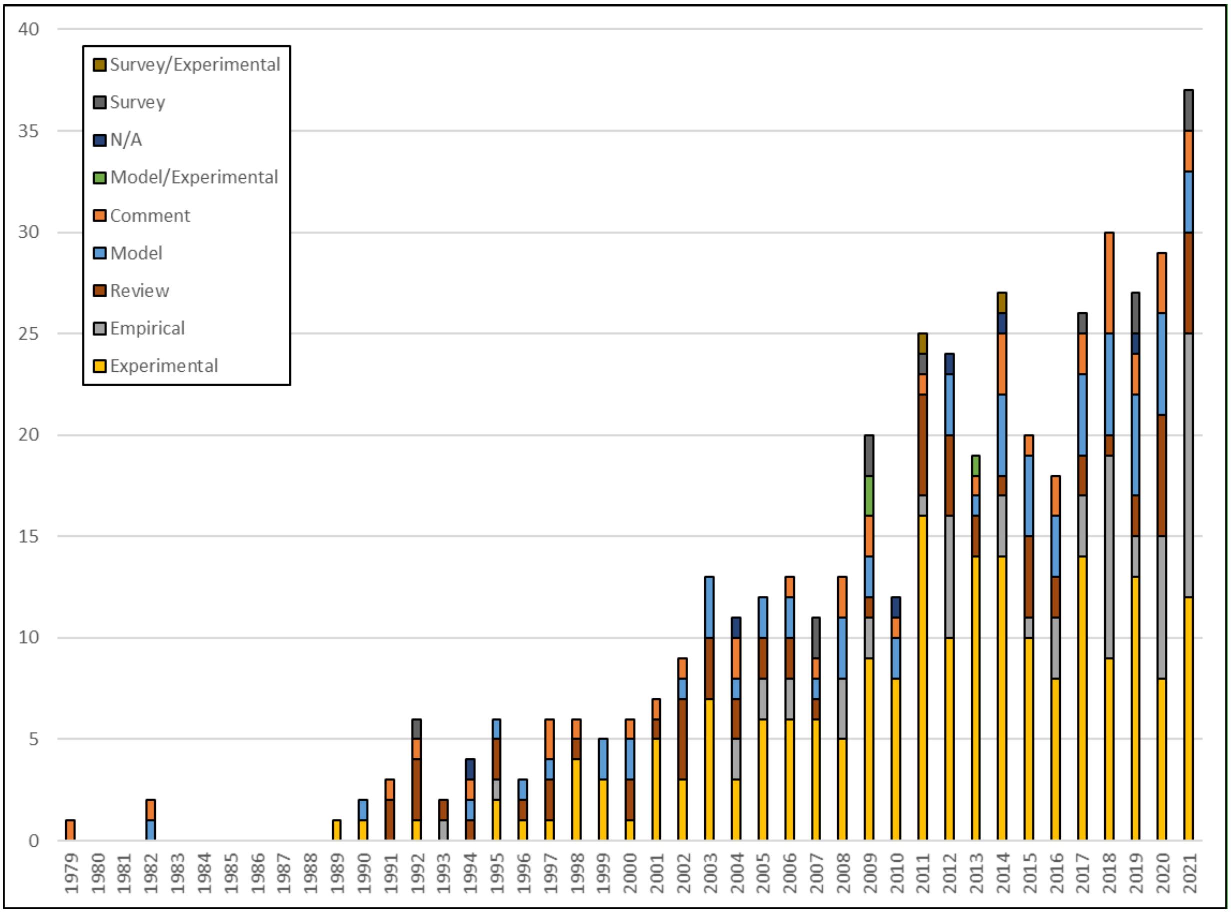

Figure XI: Publications over time by cluster

The graph illustrated in Figure XII provides an overview of 147 publications related to the endowment effect that are ranked according to the JOURQUAL3 system, classified by year and rating category. The ratings range from A+ (highest) to D (lowest), including unrated (k.R.) journals. Additionally, the red dotted line represents the annual share of A+ publications relative to the total number of ranked publications each year.

From the late 1970s to the mid-1990s, only a small number of papers were published, mostly in B- or C-ranked journals. Starting in the early 2000s, there is a clear increase in publication activity, peaking around 2021. The diversity of journal rankings also expands during this period, with a notable rise in A and A+ publications.

Figure XIII illustrates that while the absolute number of A+ publications fluctuates over time, their relative share varies significantly year by year. In some years (e.g., 2000 or 1992), A+ publications represent a very high percentage of total publications, although the overall number is low. In other years, despite more total publications, the A+ share is considerably lower. This suggests that high-ranking journal outputs are not evenly distributed over time.

In total, the graph includes 147 ranked publications. It highlights both the growing academic interest in the endowment effect and the increasing quality of publication outlets over time, while also showing variability in the concentration of top-tier journal articles.

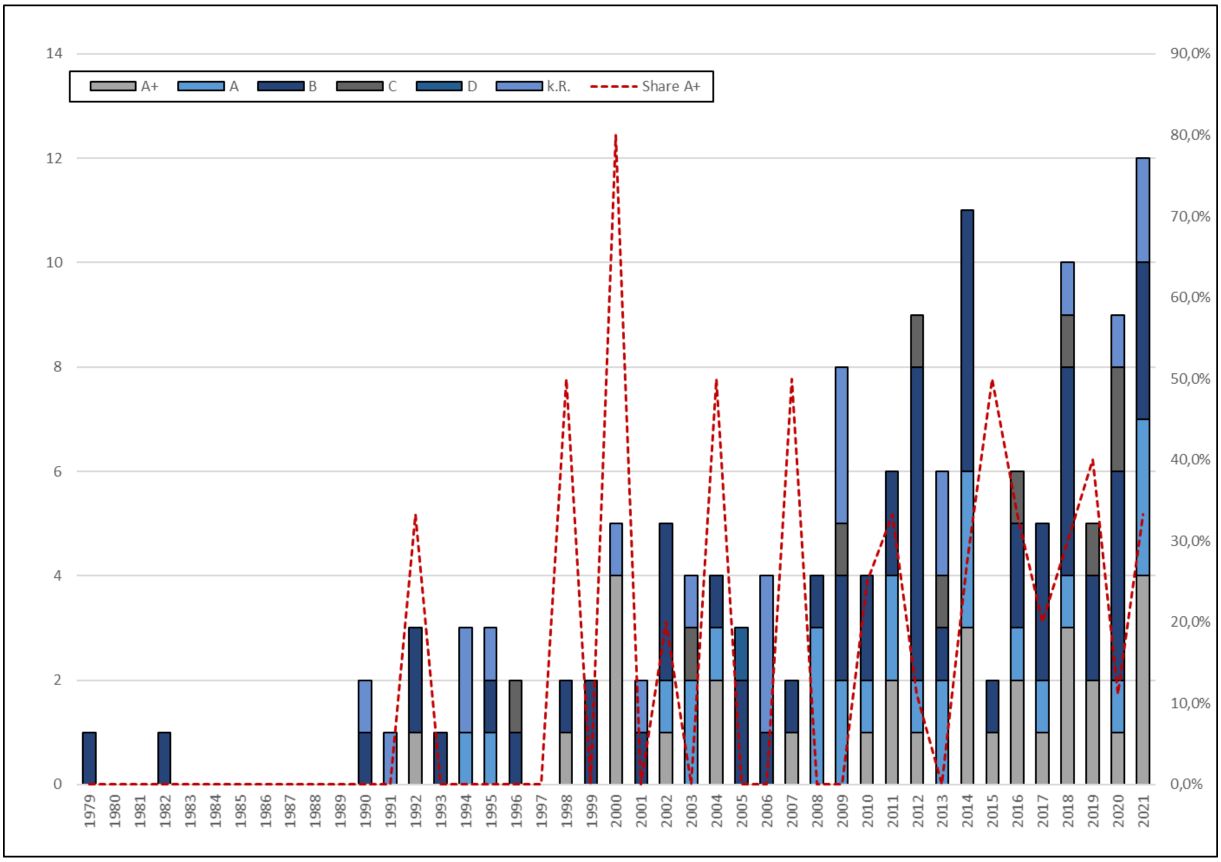

Figure XII: JOURQUAL3-rankings by cluster

3. The endowment effect and prospect theory

3.1. The endowment effect

For more than 40 years, the divergence between willingness to accept (WTA) and willingness to pay (WTP), known as the endowment effect, has been one of the most frequently cited phenomena in (behavioral) economics. Early experiments by Thaler (1980)demonstrated that an individual's subjective valuation of a good depends on whether they own it or not, with owners tending to overestimate the value of the object they possess. This ownership-related bias leads to a consistent divergence between WTA and WTP, a robust phenomenon that has since been widely recognized and coined the endowment effect. In contrast, the Coase theorem (Coase 1960).suggests that such discrepancies should not arise in an ideal market, as clear property rights and the absence of transaction costs should lead to an efficient allocation of goods through voluntary trade. However, the endowment effect challenges this prediction by inducing fewer transactions than would be necessary for market efficiency. Kahneman et al. 1990 therefore argue that the endowment effect results in undertrading, highlighting a significant deviation from the theoretical ideal described by the Coase theorem.

Knetsch's (1989) experiment confirms undertrading between two goods. Three groups of students chose between a coffee mug and Swiss chocolate: one group received the mug first and could trade it for chocolate; the second received chocolate first and could trade for the mug; the third chose between the two from the start. Results showed 89% of the first group kept the mug, only 10% of the second traded chocolate for the mug, and 56% of the third chose the mug. This demonstrates that most subjects valued the good they initially owned more, illustrating the endowment effect and resulting in fewer transactions (Knetsch 1989; Kahneman et al. 1990).

In their meta-analysis of 45 studies comprising 201 experiments, Horowitz and McConnell (2002)provide strong evidence of a robust disparity between willingness to accept (WTA) and willingness to pay (WTP). On average, WTA is more than seven times higher than WTP, with the median WTA about five times the median WTP. Their analysis focuses on these divergences rather than the endowment effect itself. Notably, only 66 of the 201 experiments reported median values. The goods studied range from everyday items like mugs and sweets to public goods, lotteries, and health-related aspects. The WTA-WTP ratio serves as a standardized measure of the endowment effect's intensity, which tends to increase with the unfamiliarity or non-fungibility of the good. The smallest discrepancies were found for goods nearly as fungible as money. The authors also conclude that real versus hypothetical settings do not significantly affect the proportional disparity, and that study design features do not account for the observed differences.

However, the latter statement is critically opposed by Plott and Zeiler (2005). They argue that the way an experimental study is conducted can substantially influence and even prevent the discrepancy between WTA and WTP. Plott and Zeiler (2005, p. 542) explain that by implementing different procedures, the phenomenon can be turned on and off. They note that the gap is clearly observed when procedures used in studies reporting the gap are applied, but the gap is not observed when a full set of controls is implemented.

Plott and Zeiler (2005) replicated Kahneman et al.'s (1990) experiment and confirmed the WTA-WTP disparity. However, when they introduced measures to eliminate "subject misconceptions"—including incentive compatibility, training, paid practice rounds, and anonymity—they found no significant difference between WTA and WTP. This suggests that the disparity may result from methodological biases. Nonetheless, such ideal conditions are rare in real-world settings, and most studies continue to observe robust WTA-WTP divergences regardless of experimental design.

3.2. The value function of prospect theory and loss aversion

The endowment effect can be explained with the aid of prospect theory. Kahneman and Tversky (1979) showed that individuals often deviate from expected utility theory. According to prospect theory, people are risk-averse when dealing with gains and risk-seeking when facing losses, due to a value function that is concave for gains, convex for losses, and steeper for losses than for gains.

Based on their findings, Kahneman and Tversky developed a value function and proposed that decisions under risk occur in two phases. In the first, the editing phase, options are framed relative to a reference point and may be reformulated through coding, combination, segregation, or cancellation. In the second, the evaluation phase, individuals assess these prospects using the value function, which assigns subjective values: gains are seen as positive, losses as negative. The reference point lies at the origin of the S-shaped curve, which is concave for gains, convex for losses, and steeper in the loss domain (Kahneman and Tversky 1979, 1984; Abdellaoui et al. 2007). Kahneman and Tversky (1979, p. 279) argue that the psychological impact of losing a sum of money tends to outweigh the satisfaction gained from an equivalent monetary gain.

Loss aversion, reflected in the curvature of the value function, describes the tendency to weigh losses more heavily than gains. This principle helps explain the endowment effect: when selling a good, individuals perceive giving it up as a loss and therefore demand higher compensation, resulting in a high WTA. In contrast, buyers perceive the acquisition as a gain, leading to a lower WTP, since the perceived gain is smaller than the perceived loss of the seller. Thus, the discrepancy between WTA and WTP—central to the endowment effect—can be seen as a direct consequence of loss aversion (Kahneman et al. 1990).However, the strength of this effect varies depending on individual traits (Novemsky and Kahneman 2005). Later studies also highlight the role of psychological ownership and personal attachment to a good, which further increases the compensation expected by the seller (Morewedge et al. 2009).

3.3. The explanatory approach of neoclassics

In addition to the previously listed behavioral economic explanations, there are other interpretations which explain the divergence between WTA and WTP as a manifestation of the endowment effect. As a neoclassical approach, Hanemann 1991 cites the degree of substitutability of goods. He emphasizes that the more demanding the substitution of an object is, the more pronounced is the gap between WTA and WTP. Hanemann (1991) points out that, in contrast to WTP, WTA turns out to be larger when a public good is not substitutable by a private good. Hanemann (1991, p. 635 f) postulates that there is no reason why WTP and WTA could not differ significantly; in extreme cases, WTP might equal an individual's entire income, while WTA could approach infinity.

In an experimental study, Shogren et al. (1994)) tested Hanemann's (1991) hypothesis on substitutability. In the first experiment, participants received either a candy or a chocolate bar—easily substitutable goods—plus three dollars to control for income effects. Over five rounds, participants indicated their WTA or WTP to exchange one item for the other. No significant difference between WTA and WTP was found. In the second experiment, using the same participants, subjects were given $15 and asked to value food items differing in health risk: one locally sourced with average contamination risk, the other tested and safer. They indicated WTA for increased risk versus WTP for reduced risk across 20 rounds, with additional information provided after round ten. A significant WTA-WTP gap emerged, which Shogren et al. (1994)attribute to the non-substitutability of health-related goods.

4. Empirical evidence

4.1. Early prominent studies of the endowment effect

Kahneman et al. (1990) conducted a series of experiments demonstrating the endowment effect, including a well-known study using coffee mugs. Seventy-seven students at Simon Fraser University were randomly assigned to three groups: buyers, sellers, and "choosers." Sellers received a mug and stated the minimum price ($0–$9.25) they would accept to sell it. Buyers indicated how much they would pay, while choosers—who did not receive a mug—chose between receiving the mug or varying amounts of cash. Although choosers and sellers were in objectively identical situations, choosers behaved more like buyers. The average WTA among sellers was $7.12, while buyers' WTP averaged $2.87, and choosers' value was $3.12. The significant gap between WTA and WTP confirms the endowment effect, as mere ownership raised the subjective value of the mug. Additionally, fewer than half of the possible transactions occurred.

In the following, we present an overview of different studies that are based on the explanations of Kahneman et al. (1990) replicate them, or have conducted experiments in a comparable form. Moreover, the studies use a variety of objects, e.g., coffee mugs, pens, or chocolate bars. It should be noted, however, that the occurrence of the endowment effect could not only be demonstrated with the goods listed in the Table I. There are also other studies with different backgrounds that have confirmed the endowment effect. The effect could be demonstrated, for example, for Christmas presents (Bauer and Schmidt 2012), water quality (Booth et al. 2016), tickets for a basketball game (Carmon and Ariely 2000), ingredients of a pizza (Levin et al. 2002), money (Weatherly et al. 2010), and hunting licenses (Heberlein, T., Bishop, R. 1986).

Table I: Overview of studies with comparable experiments to Kahneman, Knetsch and Thaler (1990)[2]

Author(s) (year)	Kind of Study	Traded Object	Subjects	Country	WTA	WTP	WTA/WTP	Median vs. Average
(Aggarwal and Zhang 2006)	Experimental	Mug	Students	Canada	5,32	1,88	2,83	Average
(Alexopoulos et al. 2015)	Experimental	Ballpoint pen	Students	France	2,30	1,25	1,84	Average
(Ashworth et al. 2019)	Experimental	Chocolate Bar	Students	Canada	2,52	1,94	1,30	Average
(Azar 2011)	Experimental	Lottery	Students	Israel	26,40	12,90	2,05	Average
(Borges and Knetsch 1998)	Experimental	Lottery	/	Canada	1,87	1,14	1,64	Average
(Brasel and Gips 2014)	Experimental	Touchscreen	Students	USA	72,80	43,40	1,68	/
(Brown 2005)	Experimental	Mug	Individuals were recruited individually by the student union	USA	3,69	2,05	1,80	Average
(Bühren and Pleßner 2014)	Experimental	Ballpoint pen	Students	Germany	2,86	1,26	2,27	Average
(Burson et al. 2013)	Experimental	Chocolate Bar	Students	USA	1,06	0,58	1,83	Average
(Chan 2015)	Experimental	Pullover	Students	Australia	46,53	38,23	1,22	/
(Ashworth et al. 2019)	Experimental	Key chain	Students	Australia	6,40	4,60	1,39	Average
(Chatterjee et al. 2013)	Model/ Experimental	Liquid pencil	Students	USA	4,67	2,73	1,71	Average
(Dommer and Swaminathan 2013)	Experimental	Ballpoint pen	Students	USA	1,59	0,90	1,77	Average
(Fritze et al. 2019)	Experimental	Digital service/Online service	Students	Germany	7,32	3,87	1,89	Average
(Gehrig et al. 2007)	Experimental	Lottery	Students	Germany	2,48	0,35	7,09	Average

[2] WTA and WTP are measured in the currencies of the respective countries. If a field in the table shown is not filled, the corresponding information is not available or could not be drawn from the respective study.

(Grutters et al. 2008)	Experimental	Hearing aid	Individuals with Ø age of 71 years	Netherlands	50,00	15,00	3,33	/
(Hoorens et al. 1999)	Experimental	Hourly household wage	Individuals between the ages of 20 and 54 (Ø age: 33.8)	Belgium	17,10	9,30	1,84	/
(Isoni et al. 2011)	Experimental	Mug	Students	United Kingdom	2,21	1,86	1,19	Average
(Knetsch et al. 2001)	Experimental	Mug	Students	Canada	9,03	2,35	3,84	Average
(Kogut and Kogut 2011)	Experimental	Mug	Students	Israel	9,77	2,78	3,50	Average
(Lin et al. 2006)	Experimental	Mug	Students	Taiwan	3,35	2,54	1,32	/
(Martinez et al. 2011)	Experimental	Mug	Students	Portugal	3,34	1,44	2,32	Average
(Masters et al. 2017)	Experimental	Mug	Individuals with Ø age of 23.5 years	USA	3,52	2,03	1,73	/
(Mellers and Ritov 2009)	Experimental	Mug	Students	USA	6,19	1,57	3,94	Average
(Nash and Rosenthal 2014)	Experimental	Lottery	Students	USA	339,00	42,00	8,07	/
(Nataf and Wallsten 2013)	Experimental	Contact information (dating)	Students	USA	/	/	9,37/ 2,90[3]	Average
(Nayakankuppam and Mishra 2005)	Experimental	Pen	/	USA	3,09	1,90	1,63	/
(Plott and Zeiler 2005)	Experimental	Mug	Students	USA	4,72	1,74	2,71	Average
(Purohit 1995)	Experimental	Pen	Students	USA	2,49	1,50	1,66	Median
(Saqib et al. 2010)	Experimental	Highlighter set	Students	Canada	4,70	2,42	1,94	Average
(Schurr and Ritov 2014)	Experimental	Ballpoint pen	Students	Israel	4,79	1,72	2,78	Average

[3] The ratio of WTA to WTP was determined separately for male and female subjects in this study. The value 9.37 represents the ratio of WTA to WTP for the female subjects and 2.90 represents the ratio of WTA to WTP for the male participants in the study.

(Sevdalis et al. 2009)	Experimental	Pen	Students	United Kingdom	3,17	2,50	1,27	Average
(Shogren et al. 2001)	Experimental	Mug	Students	USA	3,68	2,40	1,53	Average
(Thomas et al. 2015)	Experimental	Shot glass	Students	USA	4,00	1,13	3,54	Average
(van Boven et al. 2003)	Experimental	Mug, Pen, Poster, Shot glass	Students	USA	6,00	5,50	1,09	Average
(van de Ven et al. 2005)	Experimental	Lottery	Students	Netherlands	5,58	1,91	2,92	Average
(van Dijk and van Knippenberg 1996)	Experimental	Bargaining chip	Students	Netherlands	3,27	3,34	0,98	Average
(Yechiam et al. 2017)	Experimental	Lottery	/	Israel	3,73	2,80	1,33	Average

4.2. Factors influencing the endowment effect

In the following, the focus is placed on the factors gender differences, cultural and country-specific influences, age-specific differences, and individual vs. group decisions, as these dimensions have been repeatedly identified in the literature as relevant moderators of the endowment effect. They reflect key aspects of human diversity that shape decision-making and valuation processes, and allow for a differentiated understanding of how the endowment effect may vary across different social, cultural, and demographic contexts.

4.2.1. Gender differences

Dommer and Swaminathan (2013) argue that direct ownership creates a personal connection between an object and the self, leading to higher subjective valuation. Based on social identity theory, they distinguish between in-group goods (e.g., a mug with the logo of one's university) and out-group goods (e.g., a mug with the logo of a rival university). In-group-goods strengthen the possession-self link, whereas out-group goods weaken it. This tendency is stronger for men, whose more agentic self-concept refers to a self-view that emphasizes independence, self-assertion, and separation from others. Women's more communal orientation makes them less sensitive to such distinctions. In their study, they examined how factors like gender affect the endowment effect. For out-group goods, men with a negative self-image showed no endowment effect (WTA: $1.15; WTP: $1.69), while women did (WTA: $3.85; WTP: $1.79). For in-group goods, both genders with negative self-perceptions exhibited the effect. Men reported a WTA of $4.12 and a WTP of $1.20; women showed values of $5.10 and $2.10 respectively. These findings suggest that both social identity and gender influence willingness to buy or sell.

Wieland et al. (2014) also investigated gender differences in the endowment effect in the context of gambling. They found that men were more willing to pay for risky options than women (WTP: $24.22 vs. $10.67 for a 50% chance to win $100), indicating lower risk aversion. However, no gender differences emerged for WTA values (men: $41.09; women: $40.15), suggesting that risk preferences may influence WTP more than WTA.

Nataf and Wallsten (2013) showed that women would pay significantly more than men for dating partner contact information, with an average WTA/WTP ratio of 9.37 for women and 2.90 for men. Similarly, Bauer and Schmidt (2012)found that women reported higher WTA values for Christmas gifts than men, suggesting that the endowment effect might generally be stronger among female subjects.

4.2.2. Cultural and country-specific influences

Maddux et al. (2010) conducted three studies to examine whether culture influences the endowment effect. In Studies 1a and 1b, they compared European-American and Asian, as well as European-Canadian and Asian participants. Subjects were randomly assigned as buyers or sellers and asked to value goods such as coffee mugs or chocolates. While both groups showed an endowment effect, it was significantly stronger among Western participants. The authors explained this with differences in self-construal: individuals with an independent self-concept (common in Western cultures) displayed a stronger endowment effect than those with an interdependent self-concept (more typical in Eastern cultures). A self-construal reflects how individuals define themselves—either independently or in relation to others (Kühnen and Hannover 2003; Sharkey and Singelis 1995).

Apicella et al. (2014) supported this view in a study with the Hadza in Tanzania. Participants living in isolation and with little contact to outsiders showed no endowment effect—about half were willing to trade their item for one of equal value. In contrast, Hadza who regularly interacted with tourists or traders showed a significantly stronger endowment effect, with only about a quarter agreeing to trade. This indicates that both culture and integration into market activities shape ownership-related preferences.

Collard et al. (2020) also examined cultural influences on the endowment effect in a study with students from the United Kingdom and Japan. Subjects were shown items of equal value and asked about their WTA and WTP. The endowment effect was weaker among Japanese participants (WTA: 719.25 yen; WTP: 694.48 yen) compared to UK participants (WTA: £6.59; WTP: £5.02). The authors concluded that cultural identity influences the expression of the endowment effect.

Manzur et al. (2017) investigated the endowment effect in Chile using everyday items like coffee mugs and pens. They confirmed its presence and concluded that the effect may be a cross-national phenomenon, though shaped by cultural and contextual factors.

4.2.3. Age-specific differences

Harbaugh et al. (2001) showed that the endowment effect occurs independently of age. In their study with kindergarteners, school children, and college students, participants were given an item and could choose to keep it or exchange it for an equivalent good (e.g., a ball for a keychain). Across all age groups, most preferred to keep the item they received, indicating reference-dependent preferences and confirming the endowment effect. Notably, the effect did not diminish with greater market experience.

Gelman et al. (2012) also found that ownership leads to special valuation in both preschoolers and students, suggesting the endowment effect is present across age groups. Similarly, Da Silva et al. (2014) demonstrated that preschool children consistently preferred to keep owned or expected possessions, with 70–78% choosing not to trade their toys or gifts across three scenarios.

Hood et al. (2016) examined whether self-focus increases the endowment effect in preschoolers. Children first rated various objects, then received one of them and were assigned to construct either a picture of themselves (self-focus), someone else (other-focus), or a neutral scene. Afterward, children in the self-focus condition rated their own object significantly higher. The study confirmed that directing attention to the self-enhances the value placed on owned items, reinforcing the endowment effect in early childhood.

4.2.4. Individual vs. group decisions

Galin (2013) studied whether the endowment effect differs between group and individual decisions, focusing on intangible assets like leisure time. In her experiment, 138 graduate students were divided into groups of three or acted individually. They simulated negotiations trading electives for seminars, answering hypothetical questions involving gains and losses of free time. Results showed a clear difference between losing and gaining seminars: as sellers of free time, subjects demanded more electives removed than they were willing to give up as buyers. The endowment effect appeared twice as strong in groups compared to individuals. The study demonstrates that the endowment effect applies to intangible assets and varies with group size.

4.3. Quasi-endowment effect

The quasi-endowment effect, a variant of the endowment effect, leads to a specific type of overbidding in auctions. Studies show that bidders experience this effect during English auctions, increasing the value they place on objects they bid for, even without ownership (Ariely and Simonson 2003; Heyman et al. 2004; Groening et al. 2020). Ariely and Simonson (2003) found that losing an auction feels like a loss, causing bidders to raise their bids to regain the item. In online auctions for CDs, books, and movies, 98.8% of buyers paid significantly more—on average 15.3% above the lowest retail prices. Heyman et al. (2004) showed that bidders develop attachment to auctioned items despite no ownership. The longer someone is the highest bidder, the stronger the effect. In one experiment, bidders who led early bid higher amounts ($72.77) than those who waited until the last day ($68.31) to bid on a $75 watch, illustrating that longer holding of the highest bid increases overbidding due to the quasi-endowment effect.

4.4. Extensions of the endowment effect

The IKEA and Trophy effects are related to the endowment effect, as they also involve an increased valuation of owned goods. However, they extend it by emphasizing personal effort or achievement: the IKEA effect arises from self-created value, while the Trophy effect reflects the added value of goods linked to personal success.

4.4.1. IKEA effect

The IKEA effect describes how people value objects they have assembled themselves more highly. This increase in value occurs only after completing the assembly, making it a retrospective effect (Norton 2009; Norton et al. 2012; Mochon et al. 2012). Named after the Swedish furniture store IKEA, known for its DIY assembly and low prices, the effect has been demonstrated in several experiments.

Norton et al. (2012) divided students into "builder" and "non-builder" groups. Builders assembled an IKEA storage box, while non-builders examined a preassembled one. Builders' willingness to accept (WTA) was $0.78, compared to $0.48 for non-builders, showing higher valuation from self-assembly. They also tested disassembly by giving subjects LEGO kits: one group inspected preassembled kits, two groups assembled kits, but one had to disassemble after assembly. Self-assembled kits were valued more ($0.84) than others' ($0.42), but if disassembled, WTA dropped ($0.43 vs. $0.29). The authors conclude that successful completion is key for the IKEA effect to arise.

Like the endowment effect, the IKEA effect leads to overvaluation, but while the endowment effect requires mere possession, the IKEA effect needs personal effort in assembly. Franke et al. (2010)found that self-designed products are also valued more, calling this the "I designed it myself" effect, closely related to the IKEA effect.

4.4.2. Trophy effect

The Trophy Effect (Bühren and Pleßner 2014) describes the increased valuation of goods received as competition prizes or for outstanding performance. In an experiment with 250 students, four groups were formed: a trophy group, a work group, a lottery group, and a control group (endowment effect). The trophy group completed a math test where only the top 50%

received a pen. The work group received a pen regardless of their results, and the lottery group had a 50% chance to win a pen.

Winners in the trophy group were willing to sell their pen for an average of €4.40, compared to €2.86 in the control group. Trophy group buyers offered only €0.57 on average, while the control group buyers offered €1.26. This shows winners greatly overvalue the prize, whereas losers are less willing to pay.

Compared to the IKEA Effect, the Trophy Effect does not require effort related to the object, but both effects do not occur if there is failure or incomplete achievement. Additionally, the Trophy Effect largely fades after about one week.

4.5. Research strands

In addition to the studies that conducted experiments comparable with Kahneman et al.'s (1990) approach, there are a number of other studies on the endowment effect that can be divided into four different research areas: demographic and socioeconomic influence, explanation, practical/managerial implications, and reference point (see Table II). In addition, the three most cited studies are succinctly described.

Table II: Most frequently cited papers per research strand

	Author(s) and Year	**Google Scholar Citiations[4]**
Demographic and socioeconomic influences	Loewenstein et al. (2003)	1798
Demographic and socioeconomic influences	List (2004)	952
Demographic and socioeconomic influences	Hoppe and Kusterer (2011)	328
Explanation	Knetsch (1989)	1649
Explanation	Plott and Zeiler (2007)	415
Explanation	Brenner et al. (2007)	260
Practical/Managerial Implications	Levin et al. (2002)	169
Practical/Managerial Implications	Chapman (1998)	104
Practical/Managerial Implications	Sen und Block (2009)	63
Reference Point	Peck und Shu (2009)	766
Reference Point	Strahilevitz and Loewenstein (1998)	628
Reference Point	Loewenstein and Issacharoff (1994)	255

[4] Retrieved on September 8 2025.

4.5.1. Demographic and Socioeconomic Influence

The first research category, "demographic and socioeconomic influence", includes studies examining emotions, behavior, experience, knowledge, age, and preferences in relation to the endowment effect. Loewenstein et al. (2003) explore the role of projection bias and argue that the endowment effect may partly result from individuals' failure to predict their own reactions due to this bias. List (2004) reconciles neoclassical and behavioral views, showing that inexperienced consumers act according to prospect theory, while experienced ones follow neoclassical patterns. He concludes that market experience influences how individuals value their possessions. Hoppe and Kusterer (2011) examine cognitive abilities and find that the endowment effect occurs independently of cognitive reflection test scores.

4.5.2. Explanation

The "explanation" strand includes studies aiming to clarify the origins and mechanisms of the endowment effect through various theories. Knetsch (1989) used a simple exchange experiment to show that the endowment effect contradicts classical utility theory, as preferences change depending on ownership, altering the shape of indifference curves. Plott and Zeiler (2007) argue that exchange asymmetries arise from experimental design, not from inherent preferences, and find no endowment effect when procedures are adjusted. Brenner et al. (2007) explain the effect through two forms of loss aversion: one linked to negative change (valence) and the other to ownership. While both can cause an endowment effect for attractive items, only ownership-based loss aversion can reverse the effect for less attractive ones.

4.5.3. Practical and managerial implications

The third research category covers studies with practical and entrepreneurial implications, focusing on how findings about the endowment effect translate into action. Levin et al. (2002) examined how product configuration affects pricing by allowing participants to either add to or remove from a base product (pizza or salad). They found that starting with a full product led to higher prices due to loss aversion and status quo bias. Chapman (1998) explored whether exchange aversion decreases with reduced perceived loss. He showed that people were more willing to trade identical items than similar or dissimilar ones, and that aversion only occurs when a real loss is perceived.

The paper by Sen and Block (2009) examines how perceptions of product freshness influence consumer consumption and disposal behavior. The authors find that products perceived as fresh are more likely to be consumed promptly, while older, yet still usable, products tend to be retained and underutilized. This behavior can lead to unnecessary accumulation of goods.

The practical implications of the study suggest that marketers can encourage faster consumption and repurchasing by emphasizing product freshness through packaging or labeling. For consumers, the findings highlight a tendency to hold on to aging items, which may contribute to clutter and inefficiency in consumption habits.

4.5.4. Reference point

The final strand of research centers on the reference point, a key concept in understanding the endowment effect and closely linked to loss aversion. It determines whether an outcome is perceived as a gain or loss. Peck and Shu (2009) show that even the mere possibility of touching an object increases perceived ownership and, consequently, its valuation—especially when the tactile experience is neutral or positive. Strahilevitz and Loewenstein (1998) demonstrate that both current and past ownership raise an object's value. Notably, even former ownership can have a lasting impact, particularly when the good was owned for a longer period. This suggests that psychological ownership can persist beyond physical possession. Loewenstein and Issacharoff (1994) add that the source of a good also influences valuation: items earned through personal achievement are valued more than those received randomly. Positive sources strengthen, and negative ones weaken, the endowment effect. Their findings underline that perceived value is shaped not just by ownership itself, but also by how, when, and why an object was acquired which is in line with the IKEA effect as well as the trophy effect.

5. Limitations and future Research

While bibliometric methods offer valuable insights into the structure and evolution of academic research, this study is subject to several methodological limitations that warrant consideration. The analysis is based solely on literature retrieved through EBSCOhost, which—despite its wide coverage—may omit relevant contributions indexed in other databases such as Scopus, Web of Science, or Google Scholar. As a result, the dataset may not fully represent the breadth of global research on the endowment effect. The restriction to English-language publications further introduces a linguistic and cultural bias that favors Western scholarship while potentially overlooking important perspectives from non-English-speaking regions.

Additionally, the use of the JOURQUAL3 ranking system for assessing journal quality, while helpful for evaluating the academic credibility of publications, reflects a nationally focused classification scheme that may not align with international or interdisciplinary standards.

Bibliometric clustering is also dependent on author-defined keywords and indexing conventions, which can lead to thematic inconsistencies and obscure nuanced connections across research domains.

Bibliometric methods do not assess the theoretical or empirical quality of research, focusing instead on patterns of publication and citation. Consequently, they offer a structural map of the literature rather than a critical appraisal of its conceptual contributions.

Beyond these methodological considerations, it is also important to recognize a substantive limitation reflected in the content of the literature itself. The endowment effect does not appear to be a universal phenomenon; rather, it is shaped by cultural context and environmental factors, as highlighted by studies such as (Apicella et al. 2014). To date, the question of how the endowment effect operates among older populations remains largely unexplored. Understanding whether age and long-term market experience influence the willingness-to-accept versus willingness-to-pay disparity represents a significant research gap with implications for behavioral economics, aging studies, and consumer policy.

Building on the findings of this review, future research should prioritize exploring demographic and contextual moderators of the endowment effect, particularly the role of age and life experience in shaping valuation behavior. Given the current lack of studies focusing on senior populations, this line of inquiry could reveal whether age-related factors such as cognitive change, market familiarity, or risk perception alter the strength or expression of the effect.

Moreover, future studies should aim to disentangle cultural and environmental influences by conducting cross-cultural experiments with diverse populations, including those with minimal market exposure. Research might also focus on the psychological mechanisms behind such variation—for instance, differences in self-construal, ownership norms, or socio-economic systems.

From an applied perspective, further efforts are needed to develop practical tools or behavioral interventions that could help protect consumers from the unconscious biases exploited in marketing strategies. Identifying ways to mitigate or "debias" the endowment effect—especially in digital marketplaces, auctions, or persuasive product design—could offer valuable consumer protection. In sum, the field stands to benefit from expanding both its empirical reach and its societal relevance, particularly by linking theoretical insights to real-world applications across age groups, cultures, and market settings.

6. Conclusion

This systematic review and bibliometric analysis sheds light on the development, structure, and diversity of the academic discourse surrounding the endowment effect. Our findings confirm that the endowment effect is a robust and multifaceted phenomenon, deeply embedded in behavioral economics but extended and enriched by contributions from adjacent fields such as psychology, marketing, and decision theory. The dominance of experimental research underscores the empirical interest in testing and replicating the effect, while the growing diversity in methodological and thematic approaches reflects the field's increasing complexity and interdisciplinary integration.

The analysis also reveals important moderating variables—including gender, culture, and age—as well as conceptual expansions such as the quasi-endowment and IKEA effects, which underline the broad applicability of ownership-related biases. Despite some methodological criticisms, especially concerning replicability and experimental design, the endowment effect remains a theoretically and practically significant construct.

Future research should continue to explore underrepresented populations, refine measurement tools, and examine the intersection of ownership psychology with digital and intangible goods. Moreover, the application of insights from endowment effect research to policy design, consumer protection, and behavioral interventions offers a promising avenue for translating academic findings into societal value.

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