



Keeping Up or Giving Up? Income Inequality and Materialism in Europe and the United States

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Abstract

We examine the extent to which income inequality is associated with materialistic values and behavior in Europe and the United States (US). In the US, existing research on materialistic behavior is largely focused on the study of shopping behavior and shows that, when income inequality is higher, individuals search for and buy products that are more luxury. In Europe, the evidence for this phenomenon is mainly based on survey questions on people's values, and results are mixed. To determine whether these conflicting findings are rooted in methodology or reflect structural differences between the situation of Americans and Europeans, we measure materialistic behavior and values in both the US and Europe. Different types of data are used to test our arguments. In study 1, we use information on materialistic values from the European Social Survey (ESS) and the World Values Survey (WVS) to study the relationship between income inequality and materialistic values, examining the same research question in the contexts of Europe and the United States. In study 2, we use information from Google Trends to examine the relationship between income inequality and internet searching behavior both in Europe and in the United States. Hybrid multilevel models analyzing the variation in these relationships both over time and across regions show that in Europe as well as in the US, income inequality is not associated with materialistic values. However, in the US, materialistic behavior is greatly enhanced when income inequality is high. In contrast, in Europe, increasing income inequality is associated with decreasing materialistic behavior.

Keywords Materialism · Income inequality · Google trends data

1 Introduction

Materialism is typically defined as the belief that it is important to pursue financial success, to have expensive and luxury possessions, and to have a high income and social status (Kasser et al., 2004). Materialism and the accompanying behaviors can be supportive for

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the economy. Additionally, possessions can provide short-term increases of an individual's self-esteem (Weiss & Fershtman, 1998). However, materialism is also associated with competition, egocentrism and with the prioritization of the acquisition of goods over caring for others. Consequently, materialism is said to correspond with social conflicts, the erosion of cohesion, and decreased individual well-being (Kasser, 2016; Vohs et al., 2006).

The extent to which people are materialistic varies greatly over time and across countries (Twenge & Kasser, 2013); usually, economic factors such as free market capitalism and economic uncertainty (Kasser et al., 2004) are said to explain these differences. In this study, we focus on another less studied cause of materialism: income inequality. Income inequality has been said to fuel materialism because it increases uncertainty and therefore makes people anxious about their social status. People might exhibit increased materialistic behavior to demonstrate the rung of the social ladder on which they are positioned. Or, as Wilkinson and Pickett (2017, p. 15) put it, "*Inequality and the accompanying increase in status competition seem to have created a culture where 'greed is good'*".

Empirical evidence showing a relationship between income inequality and materialism is scarce; moreover, the few existing studies that examine this relationship rely on differing measurements of materialism. Consequently, the findings of these studies are inconsistent. In the US, the existing research largely focuses on the study of shopping behavior. In states with higher inequality, people show more interest in luxury brands and search for these brands more frequently on the Internet (Walasek & Brown 2015; Walasek, Bhatia, & Brown 2018). In Europe, however, there is some survey-based evidence for the aforementioned relationship that places more emphasis on people's attitudes and values. Consistent with the evidence from the US, Layte and Whelan (2014) and Delhey et al. (2017) find that in European societies with higher inequality, people feel more uncertain about their social status. However, in contrast to this, Paskov, Gerxhani & Van de Werfhorst (2017) find that the goal of achieving a high status is less important in European societies with high inequality.

We examine two possible explanations for the variation in these findings. First, this variation might be the consequence of measurement differences. Some studies measure (shopping) *behavior*, while others use consumerist *values* as a proxy for materialist attitudes; however, these measurements might not be the same. Therefore, we compare the measurements of materialistic values as well as those of behavior and examine their relationship with income inequality in Europe and the United States. More specifically, we employ the frequency of internet searches for luxury goods as a measurement for materialistic behavior, and we also measure the importance that individuals place on having money and other possessions, which we assume indicates these individuals' orientations towards materialistic value.

Our second possible explanation is notable. It might be that American and European citizens react differently to income inequality. Because of the American dream and the widespread expectation that hard work is the key to success, Americans may try to 'keep up' and compete with their fellow citizens when the income differences between them widen, hence becoming more materialistic. In contrast, Europeans may not share this concept of 'keeping up' and might think that social mobility is not possible (e.g., Alesina, DiTella, & MacCulloch 2004; Bjørnskov et al., 2013, Paskov, Gerxhani, & Van de Werfhorst 2017). Because of this way of thinking, Europeans may not become more materialistic when the income differences among them widen, which would explain the weaker and mixed effects of the previously mentioned relationship among this population.

In short, our contribution to the literature is twofold. First, we use and compare two different measures of materialism, namely, (i) the importance that individuals place on

being rich and having expensive things and (ii) the frequency with which people search for luxury brands on the Internet. The first measure can be used to describe people's values and includes a cognitive component, while the second measure describes people's actual behavior and includes a conative element. We treat citizens' scores on both of these measures as a proxy for the level of materialism in a society. Second, we compare the scores of respondents in Europe and in United States corresponding to both measurements and explore the possible cultural differences that might explain variation in the findings.

Our empirical analyses comprise two studies. In study 1, we use information on materialistic values from the European Social Survey (ESS) and the World Values Survey (WVS) to study the relationship between income inequality and materialistic *values* using the same research question both in Europe and in the United States. In study 2, we use information from Google Trends to examine the relationship between income inequality and internet searching *behavior* both in Europe and in the United States. Hybrid multilevel models are used to identify the between- and within-country effects (e.g., Allison, 2009; Schröder, 2016).

2 The Association Between Income Inequality and Materialism

2.1 Trying to Keep Up

People react differently to the income inequality in their environments. One response might be an increased desire for material possessions. Phrased differently, these people may try 'to keep up' (cf. Paskov et al., 2017).

Two related mechanisms may explain this response. First, according to classical economic theories and functionalist theories of social stratification, higher inequality in the distribution of earnings implies greater 'marginal changes' when moving up the social ladder. Thus, in countries with financial inequality, there is more to gain through upward mobility, both in absolute and relative terms. This concept is said to represent a powerful motive that induces individuals to pursue money and possessions (Bell & Freeman, 2001; Davis & Moore, 1945; Jin et al., 2011; Parsons, 1970). As a consequence of this phenomenon, the level of materialism in such societies increases. For example, people try to keep up with those that they compare themselves to – 'the Jones' (Frank 1999) – through conspicuous consumption, which demonstrates the goods and services that they can afford and the social status that they have in society (Veblen, 1931 [1994], Bourdieu, 1984). This approach, however, may subsequently result in a 'rat race' in which an individual has to run faster and faster to keep up (Frank 1999; Van de Ven, Zeelenberg, and Pieters 2010; Diener et al., 2009; Linsen et al., 2011). Hence, according to this perspective, income inequality creates an incentive to work hard and, above all, to spend the money that is earned (Krueger, 2004; Lea & Webley, 2006; Weiss & Fershtman, 1998).

Second, consistent with postmaterialistic ideas (Inglehart, 1990) and the psychosocial consequences of income inequality (Wilkinson & Pickett, 2010), materialism can be understood as a typical response to uncertainty regarding income and social status in societies with considerable variation in income. Status disparities are greater in countries with considerable income variation (Kasser et al., 2004; Wilkinson & Pickett 2010; Layte & Whelan, 2014; Delhey et al., 2017; Walasek, Brown, and Bhatia 2018; Sommet et al., 2018); moreover, status differences are more visible through the consumption and possession of luxury goods. This greater visibility of these disparities is likely to result

in increased status comparison and competition, which may lead to anxiety and a fear of exclusion. This phenomenon is commonly referred to as the “status anxiety mechanism” (Wilkinson and Pickett 2010; Layte & Whelan, 2014; Kragten & Rözer, 2017). Materialistic values and behavior can offer a way for individuals to compensate for the uncertainty and worries about their social standing (Crockett, 2018; Kasser et al., 2004; Mandel et al., 2017). Furthermore, possessions can be used to signal social status and membership in high-status groups, which enhances self-esteem (Crockett, 2018; Khare, 2014; Veblen, 1931) and is an element of impression management. Thus, by attempting to obtain luxury products, materialists make an effort to raise their social status and self-confidence and to diminish feelings of anxiety and uncertainty. In other words, materialism may function as a ‘self-enhancement strategy’ (Dittmar et al., 2014; Kasser, 2016) that provides (in the short run) protection against inequality (Wilkinson & Pickett 2017).

In summary, regarding individuals’ reactions to inequality, the first mechanism relates to the gains that are possible in the context of inequality, and the second mechanism relates to the possible losses in this context. Both mechanisms lead to the same outcome, namely, increased materialism, and both are an expression of the concept of ‘keeping up’.

2.2 Giving Up on Keeping Up

A very different response to income inequality is that, in the case of considerable income differences, people eventually may ‘give up’ (c.f. Paskov et al., 2017). More accurately, these individuals may ‘give up on keeping up’. This reaction may result in a decrease in materialistic behavior. Three claims may explain the reasons for this reaction.

First, income inequality has been said to limit the opportunities for social mobility — this phenomenon is known as the Gatsby curve (Kreuger 2012; Corak, 2013) — among individuals because the higher social positions are defended (e.g., by setting up status boundaries through conspicuous consumption or even through corruption)¹ (Atkinson, 2015; Merton, 1968; Piketty, 2014). The limits on social mobility discourage people from the lower strata of society from striving to move upward because higher strata seem to be closed to them. As a consequence, individuals’ motivation to enhance their status may become weaker over time (Corneo and Jeane 2001). Subsequently, people become less eager to express their status and refined taste through the consumption of luxury goods. In other words, the materialistic behaviors of status enhancement and demonstration will decline.

Second, and consistent with the first claim, it is said that income inequality weakens status competition, thus it becomes less necessary for individuals to pursue money and expensive things (Paskov et al., 2017). Income inequality may establish social boundaries that limit social interactions through increased segregation (Kawachi et al., 1997; Lancee and Van de Werfhorst 2012). For example, different social groups may live in different places, go to separate schools, and recreate at different clubs. Because of this segregation, the opportunities for individuals to meet people from other classes are reduced; thus, these individuals do not observe lifestyles or possessions other than their own (Veblen,

¹ Income inequality might promote corruption because high-status individuals can use their financial resources to harness political and legal processes, while poor people might be more vulnerable to bribes, as they have a greater need for financial resources.

1931[1994], p. 64). Therefore, the importance of possessions and money for the demonstration of status is – at least to some extent – lost.

Third, income inequality may create the impression that upward social mobility may be reserved only for a select group of privileged individuals; as a result, those who do not belong to this specific group give up. As Merton explained, they may “retreat” from society, being “*in* the society but not *of* it” (Merton, 1938, p. 677). These individuals feel “alienated” and reject society altogether, also rejecting the materialistic values that keep the social fabric “functioning” (Merton, 1938). Poor people may be the first to exhibit these attitudes, but they may spread to the wider society as income differences continue to grow.

2.3 Do Americans Keep Up, While Europeans Give Up On Keeping Up?

One of the most striking differences between the United States and Europe is the ways in which Americans and Europeans perceive income inequality (Hirschmann & Rothschild, 1973; Kasser & Ryan, 1993, 1996; Alesina et al., 2004; Alesina et al., 2018; Bjørnskov 2013; Corak, 2013; Bellezza et al., 2017). The idea of the American dream and that of American exceptionalism is widespread in the United States. For many years, financial success has been a component of the American dream, and Americans tend to believe that individual effort is the most important factor in moving up or down the income ladder. Hence, Americans tend to believe in what (Bénabou & Ok, 2001) call ‘the prospect of upward mobility’ (POUM). In contrast, Europeans believe that their mobility is limited within their societies, as is shown by a wide range of studies (Alesina et al., 2018; Bjørnskov 2013; Corak, 2013; Bellezza et al., 2017). This phenomenon is exemplified by the questions of the World Values Survey. For example, the latest wave of this survey (2010–2014) showed that 83 percent of Americans tend to lean towards agreeing with the statement that “in the long run, hard work usually brings success”, while only 68% of Europeans lean towards agreement with this statement. In addition, the previous waves of this survey (between 1995 and 1998) showed that approximately 60% of Americans and only 20% of Europeans believed that poor people are poor because of laziness and a lack of willpower.²

Because of their belief in the possibility of upward mobility through hard work, Americans might perceive income inequality to be less of a social problem than do Europeans; on the contrary, many Americans consider inequality to be just (Alesina et al., 2004). Consequently, Americans can be expected to be less likely to withdraw from society and its materialistic values when inequality is increasing. Instead, these income differences might be viewed as an incentive by Americans. In contrast, when income differences increase, Europeans may believe that it is hard to ascend the social ladder and that it makes no sense to strive for material status and possessions. Consequently, we expect Europeans to be less materialistic than Americans in the context of increasing income inequality. In other words, while Americans will likely try to keep up with their neighbors, Europeans may give up on keeping up.

In summary, our central hypothesis is as follows:

In Europe, high and rising income inequality is associated with decreased materialism, while the opposite is true in the United States.

Figure 1 summarizes this hypothesis.

² Note that this is about beliefs, not about facts, as social mobility is probably (at least) as difficult in Europe as it is in the United States (Corak 2013; Gregg et al., 2017).

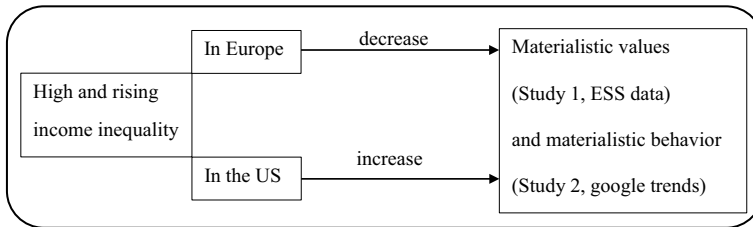


Fig. 1 Conceptual scheme of general hypothesis

Previous research seems to support this hypothesis, however, as mentioned above, different measurements for materialistic orientation have been used in the US and in Europe. In the US, the existing studies mostly focus on shopping behavior, and these studies show that when income inequality is higher, individuals search for and buy products that are more luxury (Walasek & Brown 2015; Walasek et al., 2018; Bricker et al., 2014). In Europe, the evidence on this subject is usually based on survey questions that measure materialistic values and attitudes and shows mixed results (Delhey et al., 2017; Layte & Whelan, 2014; Paskov et al., 2017). To determine whether these differences reflect actual disparities between these countries or can be attributed to the different measurements used, we apply both types of measurements in the US and Europe. In the following section, we describe our two studies in Europe and the US; study 1 compares materialistic values, and study 2 examines materialistic behavior.

3 Study 1: Income Inequality and Materialistic Values

3.1 Data

European data regarding individuals' values are available from the European Social Study (ESS).³ The ESS is a repeated cross-sectional survey. Biannually, individuals are interviewed face-to-face. We use the information spanning from 2002 (round 1) to 2016 (round 8). In general, the ESS is considered to be a high-quality survey, which is reflected in its comparatively high response rates and reliable and valid measurements. The samples from this survey are representative of the populations of the respective countries from which they were drawn (ESS, 2016). For the collection of data from the United States, we rely on the World Values Survey (WVS). The WVS is one of the largest and most well-known international surveys. For our analyses, we use data from 2006 and 2011 because the survey contained questions about materialism during these years. State-level information was provided by the US team that collected the data.⁴

³ We include the following European countries: Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech-Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, and the United Kingdom.

⁴ In the official data, state level information is not included in wave 5 because the number of respondents was low during this wave. Because of the smaller sample size of wave 5 (2000–2009), the number of observations for several states is relatively low (less than 10 persons); hence, we must exercise caution when examining the results based on this wave.

Materialistic values are measured by the ESS and the WVS with the same item: “Now I will briefly describe some people. Please listen to each description and tell me how much each person is or is not like you. Use this card for your answer (...).”

- It is important to him to be rich. He wants to have a lot of money and expensive things.⁵

Answers were ranked on a scale ranging from 0 “not like me at all” to 5 “very much like me”. This question closely corresponds to other questions that measure materialistic values, which also ask about the importance of money and material possessions (Kasser, 2011) and have also been used in previous studies to measure materialism (Dittmar et al., 2014).

Income inequality is measured using the Gini coefficient of household disposable (net) income inequality. For the United States, these data are derived from the US Census Bureau, and they are based on the American Community Survey. For Europe, we use information from Eurostat, which is generally considered one of the best-established databases. Missing values are replaced with data from version 3.4 of the Standardized World Income Inequality Database (SWIID) (Solt, 2016) and subsequently with data from the World Bank. The selection criteria for the SWIID stipulates that the entire country and all people of all ages should be included and that the quality as recorded by the SWIID should be at least average or high. In case there is still more than one option (i.e., dataset source), we use the option that is most common in that country, or else among our whole selection. Given the 0.99 correlation between the SWIID and Eurostat (after we applied our selection criteria), we believe that the quality of this data is high. In total, we use information from 299 country-years (56.9% from Eurostat, 40.5% from the SWIID, and 2.7% from the World Bank).

Control variables. For Europe, we control for GDP per capita in purchasing power parities as derived from the Worldbank, population size and density as derived from Eurostat and the Worldbank, and the percentage of international migrants as derived from World-Bank. In addition, we include several demographic control variables: age, gender, years of education (with the missing values imputed by the answers from the category regarding education), income level (standardized), marital status (recoded to married/civil partnership, separated, divorced, widowed, and never married/civil partnership), church attendance (on a scale ranging from (0) never to (7) daily), unemployment, and minority status (ref=respondent was born in the host society, as well as both of his/her parents) and generalized level of social trust (on a scale ranging from 0 to 10).

The control variables for the US are almost identical. On the national level, we control for GDP per capita, which is derived from the Bureau of Economic Analysis. Furthermore, we control for population size and density and the percentage of the population that is foreign born, as derived from the US Census Bureau. Furthermore, we include the same demographic control variables, except for that of minority status, which we could not include because it was measured using different questions in waves 5 and 6 of the WVS.

⁵ The item about the importance of being rich was the second item out of a total of twenty-one items. Other items inquired, e.g., about creativity, norm conformity, a sense of equality or the need for safety.

3.2 Analytical Strategy

To test the differences between Europe and the United States, we pooled all the data. This resulted in a data set that included information across countries and across time. Hybrid multilevel models are the most suited for this type of data because they exploit both of these types of variation (cf. Allison, 2009; Schröder, 2016; Schunck, 2013). In these models, observations are nested within countries and states, which are cross classified. Hybrid models estimate the variation between countries or states as well as variation within countries or states over time. We calculated the group mean and standard deviation for each national-level variable. The estimated parameters indicated whether higher inequality is associated with more materialism in a certain area (state, country) (between effect) and whether people are on average more or less materialistic when the inequality in the country or state in which they live is higher or lower than it is on average (within effect). Thus, these models explicitly estimate and clarify the between- and within-country variation. To test the differences between the US and Europe, we included an interaction term between region (i.e., Europe or the United States) and each variable.

The US Census Bureau does not provide synchronized data on population size, population density or the foreign-born population from before 2005. This resulted in missing values for the within effects of study 2. To align our other results with those of study 2, we only included the between effects for these variables.⁶

3.3 Results

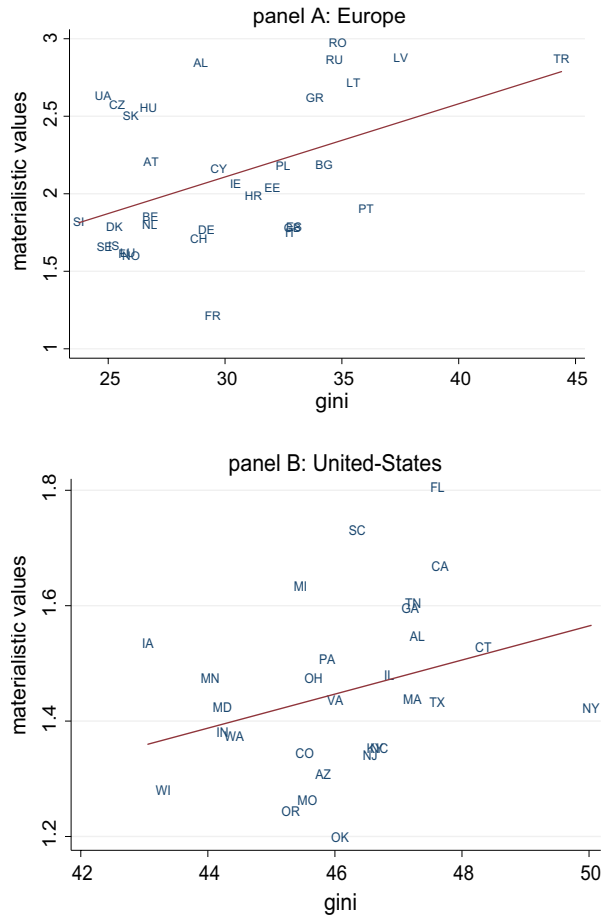
Before we present the results of our multilevel analysis, we describe the association between income inequality and materialistic values. Figure 2 presents the bivariate relationship between income inequality and materialistic values in Europe and the United States. Interestingly, Americans report, on average, a weaker materialistic value orientation than Europeans (US average = 1.39, Europe average = 2.08 on a scale from 0 to 5). Furthermore, there is more variation within the materialistic values of Europe than within those of the United States, probably because European countries are culturally more diverse than US states. However, in both continents, we find a positive association between inequality and materialism: the higher the level of income inequality is, the higher the level of materialistic values is as well. Unexpectedly, this correlation is even higher in Europe ($r=0.427$) than it is in the United States ($r=0.286$).

Table 1 presents the multivariate hybrid models for Europe and the US. Panel A shows the results for Europe, and Panel B shows the results for the US. Consistent with the bivariate results presented in Fig. 2, there is a positive relation between income inequality (Gini) and materialistic values both in Europe and in the US. On average, a one-point increase in income inequality in a European country is associated with a 0.046 increase (on a scale from 1 to 6) in materialistic values and with a 0.027 increase in these values in the US. The within estimates are not significant.

Model 2 adds GDP, population size and density, and the percentage of international migrants to the model. After controlling for these variables, the between-country association between income inequality and materialistic values is no longer significant in Europe or in the US. GDP is negatively associated with materialistic values between countries,

⁶ The results are similar when the within effects are included in study 1.

Fig. 2 Bivariate relationship between income inequality and materialistic values



but this association is positive within countries; this indicates that materialism increases with an increase in the GDP of a given country, but for all countries, on average, GDP is negatively associated with materialism. Population size and density and the percentage of international migrants are not significantly associated with materialistic values.

Model 3 adds the individual-level variables. The between- and within-country effects of income inequality remain insignificant. The individual control variables — not presented here — show that people with a high level of income are more materialistic, while those with a high level of education are less materialistic. Women, native peoples, and elderly people are less materialistic. Furthermore, the more often people go to a religious service, the less materialistic they are. Interestingly, in Europe, unemployed individuals are not (significantly) more materialistic than people who are employed, while the opposite is found in the context of the US.

To establish the robustness of our results, we also control for the level of globalization in a European country using the KOF globalization index (Gygli, Haelg, and Sturm 2018) and for whether these countries had communistic legacies (Tables are not presented but are available upon request). The results remain substantially the same. Both the between

Table 1 Hybrid model predicting materialistic values

	M1			M2			M3	
	b	se		b	se		b	se
<i>Panel A: in Europe</i>								
Between								
Gini	.046	(.015)	**	.019	(.014)		.018	(.014)
Gdp pc (in 10 k)				-.235	(.062)	**	-.237	(.061)
Population size (in millions)				-.001	(.002)		-.001	(.002)
Population density (in millions)				-.000	(.001)		-.000	(.001)
Foreign born (%)				.001	(.011)		.001	(.011)
Within								
Gini	-.003	(.002)		-.002	(.002)		-.002	(.002)
Gdp pc (in 10 k)				.079	(.013)	**	.064	(.012)
Individual control variables	No			No			Yes	
Year fixed effects	Yes			Yes			Yes	
<i>Panel B: in the United States</i>								
Between								
Gini	.027	(.016)	+	-.009	(.012)		.005	(.018)
Gdp pc (in 10 k)				-.046	(.045)		-.057	(.044)
Population size (in millions)				.006	(.004)		.006	(.004)
Population density (in millions)				.000	(.000)		.000	(.000)
Foreign born (%)				.003	(.006)		.000	(.006)
Within								
Gini	-.064	(.091)		-.025	(.096)		-.622	(.093)
Gdp pc (in 10 k)				.156	(.190)		.096	(.185)
Individual control variables	No			No			Yes	
Year fixed effects	Yes			Yes			Yes	

Source: ESS; Analyses consists of 35 countries, 15 years, 293 country-years. + $p < .10$, $p^* < .05$, $p^{**} < .01$; **bold** coefficient differences significantly at $p < .05$ from the United States; **bold and in italics** coefficient differences significantly at $p < .10$ from the United States, Source: WVS. Analyses consists of 51 states, 2 years, 101 state-years. + $p < .10$, $p^* < .05$, $p^{**} < .01$; **bold** coefficient differences significantly at $p < .05$ from Europe; **bold and in italics** coefficient differences significantly at $p < .10$ from Europe.

and within effects of income inequality remain insignificant. As there is no variation in the KOF globalization scale or the existence of a communistic legacy in the US, no robustness check is performed for these variables.

4 Study 2. Income Inequality and Materialistic Behavior: Online Searches for Luxury Goods

4.1 Data

In study 2, we examine the relationship between income inequality and internet search behavior related to luxury brands. For this purpose, we create an aggregated dataset on the country-year level comprising information on internet searching behavior, income inequality, and national-level control variables spanning from 2004 to 2016.⁷

Online searching behavior is measured via ‘Google Trends’. With a market share of approximately 90 percent in both the US and Europe, Google is the most widely used search engine (according to statcounter.com). Google Trends shows the frequency of Google searches using a particular search term relative to the total search volume. We record the extent to which people use Google to search for luxury brands. To select these brands, we use the Forbes 2017 list of the 100 most valuable brands. We examine three types of brands. First, we examine brands that focus on the ‘luxury market’ according to Forbes. These include the following fashion brands: Louis Vuitton, Hermés, Gucci, Cartier, Rolex, Chanel and Coach. Second, we examine the brands of luxury cars, including those of Audi, BMW, Mercedes, Lexus, and Porsche. Third, we examine the brands of other luxury consumer goods, namely, those of other fashion brands, other car brands, and electronics brands. These include Nike, Adidas, Chevrolet, Ford, Honda, Hyundai, Nissan, Toyota, Apple, Huawei, Panasonic, Philips, Samsung, and Sony.

We analyze luxury consumer brands for two reasons. First, this approach allows for the exclusion of nonconsumer brands such as Orizon, Oracle and General Electric. Second, we focused on luxury brands rather than other consumer brands because internet searches for these products should be more strongly related to materialism than searches for nonluxury brands such as Marlboro, Pepsi and HP (Belk, 1985; Eastman et al., 1997; Han, Nunez, and Dreze 2010; Fitzmaurice, Comegys 2006; Podoshen & Andrzejewski, 2012; Vigneron and Johnson 1999; Goldsmith & Clark, 2012). Luxury goods fulfill materialistic individuals’ need to acquire nice possessions and to be seen as successful because these products offer a feeling of luxury and quality and represent symbolic markers of prestige and affluence (Berry, 1994; Kapferer & Bastien, 2009; Goldsmith & Clark, 2012; Seo and Buchanen-Oliver 2017; Batra & Goshal, 2017). Through the purchase of luxury goods, materialists can show their pecuniary position, refined taste, and social status. Thus, it is plausible that materialistically oriented individuals show a greater interest in luxury goods than those without this orientation (Podoshen 2012; Walashek & Brown 2015; Hudders & Pandelaere 2012). Obviously, this does not imply a causal relationship between materialism and consumption (Richens 2017, p.2), but it does indicate an association between these two factors on the aggregate level, which is used here as a proxy for the level of materialism in a country or state.

Brands have the same name across countries; in every country, people use the same term when they search for “Louis Vuitton”. However, there are country-specific biases for

⁷ For the US, we use information from all states. For Europe, we include the following countries: Albania, Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kosovo, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, the Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, and the United Kingdom.

specific brands. For example, in France, people are more likely to search for Hermés; in Italy, they are more likely to search for Gucci, because these companies are established in these respective countries. We reduce these biases by examining a variety of brand names and types of brands. In addition, we analyze the between- and within-country changes. Within-country changes rule out the country-specific biases that may bias the between-country comparisons, which are most likely to be affected by the biases of specific countries.

As they were in study 1, the *Gini coefficients* for the US are derived from the US Census Bureau, while for Europe, they are derived from the SWIID. For the US, the Gini coefficients are based on the Community Household Survey that started in 2006. Therefore, information from 2004 and 2005 is excluded.

For the *national-level control variables*, we again use GDP per capita in purchasing power parities, population size and density and the percentage of the population that consists of migrants (for Europe) and the percentage of the population that is foreign born (for the US). We are aware that materialism might be affected by other variables. For example, internet searches for luxury goods might be driven by commercials or events such as major sporting events or news surrounding a particular brand. However, we find it to be unlikely that these factors are systematically associated with income inequality; thus, it is unlikely that they affect the association between income inequality and materialism (that is, internet searches for luxury consumer brands).

4.2 Analytical Strategy

First, we described the correlation between materialistic values and internet searches for luxury fashion, luxury cars, and other luxury goods on the country/state level. Next, we applied a similar strategy as was applied in study 1; namely, we described the bivariate relationship between income inequality and internet searches for luxury brands before estimating multivariate hybrid models. The Google Trends data are suited for both between-country and within-country analyses: for the between-country analyses, we relied on between-country estimates of internet searches for luxury brands. The European country and the US state with the highest relative search frequencies in their respective region or country were assigned scores of 100, and this formed benchmarks for the other European countries and the US states. For the within-country analyses, we relied on within-country estimates of internet searches for luxury brands; the year with the highest relative search frequency was assigned a score of 100, and this formed a benchmark for the other years.

4.3 Results

How are materialistic values and behavior related? Table 2 presents the correlations between internet searches for several (types of) luxury brands and materialistic values. In Europe, the correlations between internet searches for luxury fashion and materialistic values and between luxury car brands and materialistic values are negative with coefficients of -0.201 and -0.004 , respectively. The correlation between internet searches for other luxury goods and materialism is positive with a coefficient of 0.483 . In the US, the correlation between materialistic values and internet searches for luxury brands is positive for all the search items (r is approximately 0.3). Interestingly, in the US, internet searches for luxury fashion, cars, and other brands are strongly correlated with one another (r is approximately 0.7); however, we see weaker correlations between

Table 2 Correlations between materialistic values and searching for luxurious brands. (all correlations are significant)

	Europe			US		
	Luxury fashion	Luxury cars	Other luxury goods	Luxury fashion	Luxury cars	Other luxury goods
Luxury cars	.364			.776		
Luxury other	-.153	.250		.618	.636	
Materialistic values	-.201	-.004	.483	.279	.333	.303

internet searches for fashion, cars, and other brands in Europe. The correlation coefficient between internet searching behavior and materialistic values in the US is 0.303 lower than that of Europe.

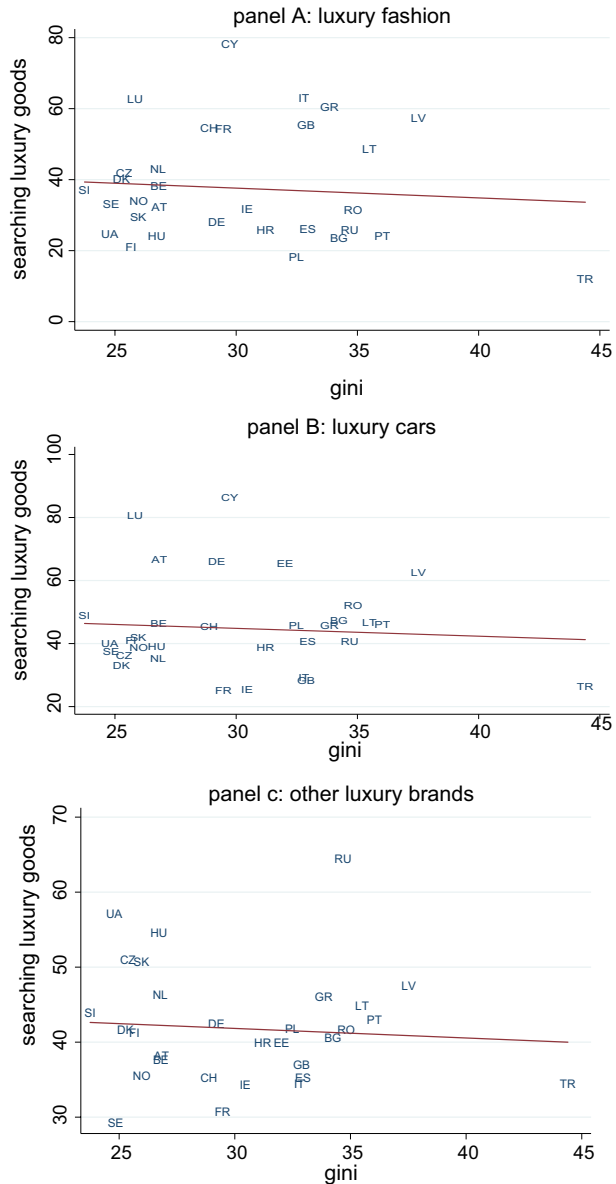
The differences in these correlations might indicate that the symbolic meanings of luxury cars, fashion, and other brands are more homogeneous in the US than they are in Europe and that the connections between these brands might be closer in the United States than they are in Europe. Possibly, searching for luxury products is more socially accepted in the United States, while there are fewer ‘exclusive fields’ – in Bourdieu’s terms – than there are in Europe. Several studies show that fashion, cars, and other luxury goods are in a separate realm from materialistic values in Europe (Bourdieu, 1984; Kraaykamp, 2002; Prieur & Savage, 2013; Prieur et al., 2008). This implies that behavior and values probably do not indicate the same phenomenon. In other words, in some countries, hardly anyone finds materialistic values to be important; nevertheless, these individuals search extensively for luxury fashion, cars and other luxury brands on the internet. For example, during 2016 in France, hardly anyone reported having materialistic values (mean = 1.032, the lowest overall score among countries), but many people searched for fashion brands (mean = 68.477, ranked 12th among 257 country-year combinations). This figure is consistent with the national characteristic of France that rejects (extreme) materialism and capitalism and that appreciates ‘culture and fashion’.

Furthermore, there are more missing data for European countries regarding searches for several luxury brands, especially during earlier years when Google was not yet very popular in many European countries. As scores are relative across countries, this missing data might have affected the results. Within-country comparisons are, however, not affected by this missing data and might therefore, particularly for Europe, be more reliable.

Figures 3a and 3b show that the correlations between the types of products and income inequality are strikingly similar, both in Europe and in the United States. In line with our hypothesis, there are weak negative correlations in Europe ($r_{\text{fashion}} = -.107$, $r_{\text{cars}} = -.161$, $r_{\text{other}} = -.134$), while there are substantive positive correlations in the United States ($r_{\text{fashion}} = 0.587$, $r_{\text{cars}} = 0.512$, $r_{\text{other}} = 0.349$).

Table 3 presents the multivariate hybrid models for Europe and the US. Panel A shows the results for Europe. Model 1 shows that, in line with Fig. 2a, there are weak negative between-country associations with regard to income inequality (Gini) and internet searches for luxury brands. Between-country differences are found only in the case of internet searches for ‘other goods’ when the control variables are added. This indicates that, in Europe, the between-country variation in internet searches for luxury fashion and cars is not explained by the level of income inequality. However, for the US, as shown in Panel B, this relation is found, and it conforms with the bivariate illustration in Fig. 2b; thus, in the

Fig. 3 a Bivariate relationship between income inequality and searching for luxury brands in Europe. **b** Bivariate relationship between income inequality and searching for luxury brands the United States



US, there is a strong, positive relationship between income inequality and internet searches for fashion, cars, and other luxury brands.

In Europe, an increase in inequality accompanies a decrease in internet search behavior for all kinds of luxury goods, as indicated by the significant within effects. In contrast to Europe, an increase in income inequality does not significantly affect internet searching behavior in the US. In addition, Europeans and Americans significantly differ in how often they search for other luxury products when income inequality is increasing. Europeans are

Table 3 Hybrid model on searching for luxury brands

	Fashion			Cars			Other					
	M2			M1			M2					
	b	se		b	se		b	se				
<i>Panel A: in Europe</i>												
Between												
Gini	-0.10	(.742)		.103	(.521)		-.187	(.398)	*	-1.160	(.321)	**
Gdp pc (in 10 k)	-.792	(2.482)		-3.115	(1.847)	+	-6.814	(1.218)	**			
Population size (in millions)	-.101	(.078)		-.119	(.063)	+				.065	(.040)	
Population density (in millions)	.027	(.024)		.004	(.020)					.002	(.012)	
Foreign born (%)	1.665	(.487)		1.238	(.380)	**				.387	(.249)	
Within												
Gini	-.618	(.210)	**	-.718	(.197)	**	-.814	(.197)	**	-.552	(.124)	**
Gdp pc (in 10 k)	13.899	(1.221)	**	13.899	(1.221)	**	11.618	(1.225)	**	4.600	(.758)	**
Year fixed effects	Yes			Yes			Yes			Yes		
<i>Panel B: in the United States</i>												
Between												
Gini	4.185	(.799)	**	3.339	(.771)	**	3.656	(.832)	**	2.006	(.753)	**
Gdp pc (in 10 k)	-.061	(1.573)		-.061	(1.573)		-1.576	(1.536)		.587	(.265)	*
Population size (in millions)	-.375	(.233)		-.375	(.233)		-.210	(.228)		-.273	(.541)	
Population density (in millions)	-.005	(.007)		-.005	(.007)		.003	(.006)		-.022	(.080)	
Foreign born (%)	1.884	(.254)	**	1.884	(.254)	**	2.025	(.248)	**	.313	(.087)	**
Within												
Gini	-.091	(.639)		-.150	(.601)		.172	(.603)		.565	(.378)	
Gdp pc (in 10 k)	1.530	(1.364)		1.530	(1.364)		.289	(1.368)		1.146	(.845)	
Year fixed effects	Yes			Yes			Yes			Yes		

Between effects is based on between country comparison of luxury goods. Within effects is based on within country comparison of luxury goods. Analyses consists of 36 countries, 13 years, 450 country-years. + $p < .10$, * $p < .05$, ** $p < .01$; **bold** coefficient differences significantly ($p < .05$) from the United States; *bold and in italics* coefficient differences significantly ($p < .10$) from the United States. Between effects are based on between country comparison of luxury goods. Consists of 51 states, 11 years, 561 country-years. Within model is based on within country comparison of luxury goods. Consists of 51 states, 11 years, 561 country-years. + $p < .10$, * $p < .05$, ** $p < .01$; **bold** coefficient differences significantly at $p < .05$ from Europe; *bold and in italics* coefficient differences significantly at $p < .10$ from Europe

less likely to search for these products when inequality is increasing, but this behavior is significantly different in the case of Americans.

Again, as a robustness check, we control for the KOF globalization index and communistic legacy of Europe, which led to similar results. For the US, these measures were not available.

In conclusion, we expected that Europeans would become less materialistic and that Americans would become more materialistic when income inequality is high or rising. In other words, we hypothesized a negative relationship between income inequality and materialism in Europe, and that this relationship would be positive in the US. To test this hypothesis, we examined the between- and within-country association between income inequality and materialistic values and behavior; that is, we examined how often individuals in a country search for luxury fashion, cars and other luxury brands.

For Europe, all the effects found related to internet search *behavior*, while there was no relationship between income inequality and materialistic *values*. In line with our hypothesis, these associations are negative. Three of them are within effects, meaning that when income inequality is rising, Europeans search for luxury fashion, cars, and other luxury brands more often. The negative and significant between effect shows that in the European countries with the highest inequality, citizens more often search for other luxury brands. In contrast to Europe, the between effects of materialistic behavior are positive in the US, meaning that the citizens of the US states with the highest inequality also search for luxury products the most. In addition, Europeans and Americans significantly differ in how often they search for other luxury products when income inequality is rising, with Americans being more likely to search for these products under conditions of income inequality than Europeans.

5 Conclusion

Inequality and materialism are said to go hand in hand. It is argued that inequality breeds a culture in which 'greed is good' because it amplifies status differences (Wilkinson & Pickett, 2017, p. 15). Whereas previous studies in the US on shopping behavior support this notion (Walasek & Brown 2015; Bricker et al., 2014; Walasek et al., 2018), European research on materialistic values has provided mixed evidence (Delhey et al., 2017; Layte & Whelan, 2014; Paskov et al., 2017). In this study, we tested whether the variation in these results can be explained by the differences in the measurements or contexts of Europe and the US while examining both within- and between-country variation in income inequality and materialism. To that end, we conducted two studies based on similar measurements in the US and Europe on the relationship between income inequality and materialistic values (study 1) and the relationship between income inequality and the frequency with which people searched for several types of luxury brands (study 2).

Contrary to our expectations, study 1 revealed that materialistic *values* are weak and not associated with income inequality in either the United States or Europe. Further and unexpectedly, the general level of materialistic values in the US is somewhat lower than it is in Europe.

In study 2, we found that Americans search the internet more often for luxury brands in states with higher inequality, irrespective of whether the searches are for luxury fashion, luxury cars, or other luxury consumer goods. In addition, when inequality *increases*, Americans are more likely than Europeans to increase their search frequency for other luxury brands

– but not for luxury cars or fashion. This supports the concept that Americans are likely to view inequality as an incentive and try to keep up with their neighbors when inequality is high and increasing. This is in line with classical work on economic incentives (Davis & Moore, 1945; Jin et al., 2011) and ideas on the psychosocial consequences of inequality and status competition (Wilkinson & Pickett, 2017). In contrast, in European countries, people search less frequently for all kinds of luxury consumer brands when inequality is increasing. Hence, Europeans may be more likely to ‘give up on keeping up’. This is in line with the idea that inequality reduces status competition by making mobility less likely (Veblen, 1931[1994]; Kreuger, 2012; Paskov et al., 2017) and with the idea that inequality causes people to reject society all together, including its materialistic values (Anderson et al., 2012).

These contrasting findings for Europe and the United States support our idea that Americans and Europeans react differently to income inequality. They show that the way in which people respond to inequality greatly depends on the structure of their societies and the cultural values that prevail within these societies. As we argued, it may ultimately be individuals’ perceptions of mobility, status competition and fairness that matter, and Europeans and Americans differ greatly in their perceptions regarding these factors (Alesina et al., 2004; Bjørnskov 2013; Corak, 2013).

Another difference between Europe and the US was found in the two different types of search *behavior* used as proxies for materialism. Especially in Europe, materialistic values and internet searches for luxury fashion or cars are poorly correlated, but they are positively related in the US. Interestingly, internet searching behavior for ‘other’ luxury consumer goods is positively correlated with materialism in both the US and Europe. This is interesting, as the previous research in the United States focused either on fashion (Walasek and Brown 2014; Walasek et al., 2018) or on car brands (Bricker et al., 2014) but did not compare different types of search behavior.

We are aware that our study has some important limitations. First, we compared European countries and US states, and the legitimacy of this comparison may be questionable. Europe is a region and consists of many culturally and linguistically diverse countries, while the United States is a country whose individual states, in many respects, bear more similarities to one another than do the European countries. One possible consequence of this is that the results from Europe might easily be attributed to omitted variables. To explore this possibility, we additionally controlled for the level of globalization of individual European countries. However, the results remained substantially the same. Nevertheless, we cannot rule out the possibility that our estimates are affected by the differences between Europe and the United States.

Second, for our measure of materialistic values, we were limited to the questions that were available both in a large number of European countries as well as in a large number of US states. More research is needed to test whether the same results are obtained when more extensive measures of materialistic values are used. Related to this subject, the question on materialistic values was only available for two waves of the survey for the United States, compromising the power that we had to test our hypotheses. In addition, for our analysis of the materialistic values in the United States, we relied on a relatively small sample size ($n_{\text{wave5}} = 1249$; $n_{\text{wave6}} = 2232$), which meant that we had relatively few observations for some US states. While our multilevel hybrid models account for the size of the clusters (i.e., states) the observed effects would have been more reliable with a larger sample. In addition, the social desirability bias of the respondents’ answers about materialism might have been stronger in some particular regions (such as France) than it was in others (such as Eastern Europe). This might explain that our results on materialistic values are less conclusive than the results on behavior.

Overall, our study supports the argument that the different results of American and European studies are due to their different contexts. Americans are more likely to try to keep up with their neighbors, which causes them to behave more materialistic when inequality increases. In contrast, Europeans are more likely to give up on keeping up. These different behavioral reactions of Europeans and Americans may have far-reaching consequences. Individuals viewing inequality as an incentive – and thus trying to keep up – might stimulate the economy; however, retreating – namely, giving up on keeping up – might correspond with lower economic growth. However, materialism is associated with stress, depression, poor health and well-being, and violence (Kasser, 2016; Twenge & Kasser, 2013; Vohs et al., 2006), and these societal effects are more prevalent in the United States than they are in Europe. Especially in the present time, when inequality is increasing in the United States and in many European countries, future research should examine how these different responses to inequality affect such societal outcomes.

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