Popular repugnance contrasts with legal bans on controversial markets

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We study popular attitudes in Germany, Spain, the Philippines, and the United States toward three controversial markets—prostitution, surrogacy, and global kidney exchange (GKE). Of those markets, only prostitution is banned in the United States and the Philippines, and only prostitution is allowed in Germany and Spain. Unlike prostitution, majorities support legalization of surrogacy and GKE in all four countries. So, there is not a simple relation between public support for markets, or bans, and their legal and regulatory status. Because both markets and bans on markets require social support to work well, this sheds light on the prospects for effective regulation of controversial markets.

Significance

Some jurisdictions ban markets regarded as repugnant. However, many bans foster black markets when the population insufficiently shares the repugnance that inspires the ban. Relationships between repugnance and regulation are important for understanding both when markets can operate effectively and when they can effectively be banned. We conduct surveys in Germany, Spain, the Philippines, and the United States about three controversial markets—prostitution, surrogacy, and global kidney exchange (GKE). Prostitution is the only one banned in the United States and the Philippines and only one allowed in Germany and Spain. Unlike prostitution, majorities support legal- ization of surrogacy and GKE in all four countries. There is not a simple relation between public support for markets, or bans, and their regulatory status.

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The authors declare no competing interest.


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answer that they favor having GKE be legal. Smaller majorities report favoring legal surrogacy, both where it is legal and where it is not. So, it is not the case that legislation necessarily reflects or is reflected in broad popular opinion about whether these transactions should be legally available. Prostitution is different: only minorities report favoring legalization in the places where it is presently illegal, and it is too close to call in Spain, where it is legal.

**Background: Repugnant Transactions, Monetary Payments, and Related Literature**

Transactions involving human bodies are a good place to study laws and repugnance because repugnance to these transactions has been phrased in very general terms. (See ref. 10 for further background.) For example, the Council of Europe (11) declares “The human body and its parts shall not, as such, give rise to financial gain.” This also points to the repugnance of monetary payments: the introduction of payment sometimes causes otherwise unrepugnant transactions to become repugnant.

Each of the three transactions we address involves human bodies. Prostitution also involves monetary payments from one side of the transaction to the other: payment is often one of the defining features of prostitution in related legislation. Surrogacy may or may not involve payments to the surrogate beyond reimbursement of direct expenses: when it does, it is called “commercial surrogacy.” Although all surrogacy is illegal in some countries, in other countries surrogacy is legal, but payments to surrogates beyond expenses are not (i.e., commercial surrogacy is banned). Kidney exchange does not involve any payments to the surrogate, and because kidneys need to be well matched to their recipients, often willing donors cannot donate to the patient they love. Kidney exchange allows such donors to nevertheless help their loved ones by exchange with other patient-donor pairs, so each patient receives a compatible kidney from another patient’s donor.

It has become a standard form of transplantation in the United States, particularly after Congress passed, without dissenting votes (i.e., with no evident repugnance), an amendment to the National Organ Transplant Act of 1984 specifying that the act’s ban on giving donors “valuable consideration” did not apply to kidney exchange, in which no donor receives payment. Kidney exchange has begun to be organized in Europe, particularly in the United Kingdom and the Netherlands, and to a much smaller extent in Spain and elsewhere.

In rich countries, in which kidney exchange is most active, there remain hard-to-match patient-donor pairs, typically because the patient is “highly sensitized,” with many antibodies to human proteins. Such patients can only receive a transplant if a rare kidney that would work for them becomes available, so they benefit from enlarging the set of patient-donor pairs available for exchange. Meanwhile, kidney failure has become a leading cause of death in middle-income countries, such as the Philippines, in which the national health insurance does not cover the costs of transplantation.

Recently, in the United States, a program of GKE across international borders has been piloted, in which foreign patient-donor pairs can participate in American kidney exchange, under the same terms as Americans. One obstacle facing such a program is to pay for costs that are not fully covered for all parties, and this becomes possible because transplantation is much cheaper than dialysis; therefore, the savings to a rich country’s medical system from taking a patient

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3Other general arguments about repugnance sometimes involve a distaste for markets or their globalization generally (see, e.g., Sandel (12); see also, e.g., Tetlock et al. (13) for discussions of repugnance to monetary payments).

4Surveys of repugnance to kidney sales are in Leider and Roth (14), Elias et al. (15), and particularly, Elias et al. (16) (see also Satel (17)).
Also, there are critiques by Delmonico and Ascher (29) and Wiseman and Gill (30) [and Nevada, including extraterritorial bans on international sex tourism probably older than agriculture. (See ref. 40 for more background.)

Unlike kidney transplantation and surrogacy, prostitution does not

Prostitution and International Sex Tourism

A gestational surrogate is a woman who becomes pregnant with a
case a living donor wishes to give a kidney to a particular patient but

Fertility Tourism

A kidney can come from a compat-

Previous cross-country studies (42, 43) have found that citizens in
countries where prostitution is criminalized hold less tolerant atti-
dutes toward it, while others have found mixed results (44, 45; ref.

Materials and Methods

We designed a survey that asks respondents in Germany, the Philippines, Spain, and the United States to make moral and legal judgments about three comparable scenarios involving surrogacy, prostitution, and GKE. Survey responses are sensitive to framing, and so, we begin with some remarks that guided our construction of the scenarios to which the respondents were asked to react.

To allow comparisons, all of the scenarios deal with international trans-

Participants were then introduced to the specific scenario:

James and Erica are a married couple in [home country]. James needs

In the surrogacy scenario, because some legal and regulatory bans on

In the surrogacy scenario, because some legal and regulatory bans on

Prostitution and International Sex Tourism

Unlike kidney transplantation and surrogacy, prostitution does not depend on recent technological innovations: some forms are probably older than agriculture. (See ref. 40 for more background.) Prostitution is illegal in all American states except (parts of) Nevada, including extraterritorial bans on international sex tourism involving minors. (See ref. 41.) Prostitution is legal and regulated in various ways in many European countries, including Spain and Germany, which allow sex work by self-employed adults. Some

**Also, there are critiques by Delmonico and Ascher (29) and Wiseman and Gill (30) [and also in Spanish newspapers; e.g., ref. 31 and replies by Marino et al. (32), Rees et al. (7), and Roth et al. (33, 34).**
The prostitution scenario was not introduced with an explanation of what constitutes prostitution (partly because that is contentious). We let the scenario speak for itself:

James is an unmarried man in [home country]. Maria is a married mother in the Philippines. Maria’s husband is out of work, and Maria has decided to become a prostitute to earn additional income. James visits the Philippines regularly for work, and regularly hires Maria for her services. James pays Maria a year’s average income in the Philippines.

After reading each scenario, the participants were asked to make a series of ethical judgments about the exchange. Specifically, they were instructed to “answer the following questions using a 0 to 100 scale: 0 to 14%: Definitely No; 15 to 39%: Probably No; 40 to 59%: Uncertain; 60 to 84%: Probably Yes; 85 to 100%: Definitely Yes.” The first issue was whether the couple uses Maria in this exchange, and if so, if it poses an ethical problem. Next, they were asked if they think the exchange is ethical in general. The participants are then asked, “should this exchange be legal or illegal?” (These are the answers displayed in Fig. 1.) They were also asked how strongly they felt about their answer to this question on a scale from 0 to 100. Finally, they had to decide whether the couple, Maria, both, or neither should be punished if the exchange is not permitted.

Participants in the United States, Germany, Spain, and the Philippines were recruited through Respondi (https://www.respondi.com/EN). Respondi maintains its own panel of respondents in Germany and Spain and worked with Prodege (https://www.prodege.com) for the US panel and dataSpring (https://www.dbaspring.com) for the Philippines panel. The participants were paid to complete the survey based on the length of time taken, at the usual Respondi rate. We first ran pilot surveys in Germany, Spain, and the United States with a target of 100 respondents each. The respondents did not indicate any confusion when they had the opportunity to give feedback at the end of the survey. We then targeted 400 more respondents for each of these countries for a total of 500.69 We subsequently conducted the survey in the Philippines with a target of 500 respondents. All surveys were fielded in the native language (translations were done via Upwork). Respondi aimed for representative samples in terms of gender, age, and regions. Table 1 presents the gender, age, and education breakdown by country.59 This study was reviewed and deemed exempt by the Stanford University Institutional Review Board and informed consent was not required.

After they had responded to the questions about each scenario, the order being surrogacy followed by prostitution followed by GKE, participants were asked two questions about attitudes toward immigration, specifically whether they want more or fewer immigrants separately from high-income countries and low-income countries on a 0 to 100 scale. Finally, they answered some standard demographic, political, and religious attitudes questions. Data and associated material are available at https://osf.io/w7u9f/.

Results

Fig. 1 summarizes the proportion of participants who think the three scenarios should be legal in each of the four countries. For both surrogacy and GKE, the proportions are all significantly greater than 50% ($P < 0.01$; i.e., both where it is legal and where it is banned). In contrast, the proportion of participants who believe the prostitution scenario should be legal is significantly below 50% in both the Philippines and the United States ($P < 0.01$) and not significantly different from 50% in Spain. The proportion is only significantly greater than 50% in Germany ($P < 0.01$).

We can also compare the proportion of participants who supported legality for each scenario across countries. For surrogacy, the proportions are not significantly different between the Philippines and the United States nor between Germany and Spain. However, the gap between these two sets of countries is significant ($P < 0.01$). For the prostitution scenario, all pairwise comparisons between countries are significantly different ($P < 0.01$; $P < 0.05$ for the comparison between Spain and the United States). The proportion of participants who think the GKE scenario should be legal in Germany is significantly less than in the Philippines ($P = 0.01$) and the United States ($P < 0.01$) and significantly more than in Spain ($P < 0.05$). Similarly, the proportion of participants who support legality in Spain is significantly less than in the Philippines and the United States ($P < 0.01$). Finally, there is no significant difference between the proportion of participants who believe the scenario should be legal in the Philippines and in the United States.

So, there is a correlation between expressions of support for legality and the current legal status as evident in Table 2. The coefficient on the current law dummy (legal = 1) in the probit regression with support for legality as the dependent variable is significantly positive ($P < 0.05$) for all three scenarios.

Table 2. Probit regression of support for legality on current law in country, age (under 35 dummy), and other demographic and opinion variables

<table>
<thead>
<tr>
<th>Surrogacy</th>
<th>Prostitution</th>
<th>GKE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current law</td>
<td>0.19 (0.023)</td>
<td>0.17 (0.026)</td>
</tr>
<tr>
<td>Under 35</td>
<td>0.024 (0.023)</td>
<td>-0.026 (0.026)</td>
</tr>
<tr>
<td>Income level</td>
<td>0.0070 (0.0034)</td>
<td>0.0032 (0.0037)</td>
</tr>
<tr>
<td>College degree</td>
<td>-0.0016 (0.020)</td>
<td>-0.027 (0.023)</td>
</tr>
<tr>
<td>Unemployed and looking</td>
<td>0.0025 (0.037)</td>
<td>-0.042 (0.041)</td>
</tr>
<tr>
<td>Single</td>
<td>-0.045 (0.028)</td>
<td>-0.0056 (0.031)</td>
</tr>
<tr>
<td>Children (dummy)</td>
<td>0.016 (0.026)</td>
<td>0.0095 (0.028)</td>
</tr>
<tr>
<td>Atheist</td>
<td>0.027 (0.025)</td>
<td>0.076 (0.029)</td>
</tr>
<tr>
<td>Social conservative</td>
<td>-0.042 (0.024)</td>
<td>0.031 (0.026)</td>
</tr>
<tr>
<td>Immigration from high-income countries</td>
<td>0.00061 (0.00045)</td>
<td>0.0010 (0.0005)</td>
</tr>
<tr>
<td>Immigration from low-income countries</td>
<td>-0.00060 (0.00045)</td>
<td>0.00058 (0.0005)</td>
</tr>
<tr>
<td>$N$</td>
<td>2,225</td>
<td>2,225</td>
</tr>
</tbody>
</table>

All coefficients are stated as marginal effects. Current law = 1 if legal. There are 12 income levels. Religious intensity = 1 if religious attendance is at least once a week.

89There were some delays in closing the surveys, so we actually had more than 500 respondents.

59Comparisons with country demographics are in SI Appendix; we note that young people were overrepresented in our Philippines internet sample. We were also conservative in who we coded as having a college degree in Germany given the multiple education tracks.

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attitudes toward immigration, but those are mostly not significantly correlated with opinions about legality across scenarios, with the exception of a positive correlation between attitude toward immigration from high-income countries and prostitution. There is also a positive correlation between income level and support for legality of surrogacy and GKE but not for prostitution. Those who identify as atheists are more likely to think that the prostitution scenario should be legal (there is no significant correlation for the other two scenarios). We code the religious intensity dummy variable as one if the respondent answers either daily or once a week or more to the question of how often she/he attends religious services. The coefficient on this variable is significantly negative in the probit regressions for all three scenarios, suggesting that the most outwardly religious devout are less likely to support legality.

Of course, what may matter for the legal landscape is not simply the direction of the public’s opinion on the legality of these exchanges, but the intensity of their opinion as well. We asked for the strength of the participants’ opinion on the legality question on a 0 to 100 scale (0 to 14%: very weakly; 15 to 39%: somewhat weakly; 40 to 59%: uncertain; 60 to 84%: somewhat strongly; 85 to 100%: very strongly).

The results do not support the hypothesis that the legal status of transactions reflects the strength of opinion of those who support or oppose legality, specifically that those with the minority opinion hold it more strongly. For surrogacy, the proportion of respondents who feel strongly or very strongly about the scenario being legal vs. illegal is only significantly different (P < 0.05) for Germany (81% for legal and 72% for illegal). For prostitution, the proportions are significantly different for all countries (P < 0.01) except for Germany. In the other three countries, a greater proportion of respondents strongly or very strongly supports the scenario being illegal (the Philippines: 91 vs. 75%; Spain: 80 vs. 68%; the United States: 87 vs. 74%). For GKE, the proportions are significantly different for all countries (P < 0.01) except for the Philippines. In the other three countries, more respondents strongly or very strongly support legality (Germany: 80 vs. 63%; Spain: 74 vs. 60%; the United States: 83 vs. 61%).

Table 3 shows that the relationship between overall judgment about legality and the judgment on Maria being used as well whether that is an ethical concern.

<table>
<thead>
<tr>
<th>Surrogacy</th>
<th>Germany</th>
<th>The Philippines</th>
<th>Spain</th>
<th>The United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Maria</td>
<td>-0.0083 (0.0024)</td>
<td>-0.0017 (0.0022)</td>
<td>-0.12 (0.0023)</td>
<td>-0.0015 (0.0028)</td>
</tr>
<tr>
<td>Ethical concern</td>
<td>-0.021 (0.0023)</td>
<td>-0.018 (0.0023)</td>
<td>-0.023 (0.0025)</td>
<td>-0.021 (0.0028)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.04 (0.17)</td>
<td>1.87 (0.19)</td>
<td>2.52 (0.18)</td>
<td>2.08 (0.17)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prostitution</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Maria</td>
<td>-0.0024 (0.0024)</td>
<td>-0.0043 (0.0023)</td>
<td>-0.0088 (0.0020)</td>
<td>-0.0058 (0.0020)</td>
</tr>
<tr>
<td>Ethical concern</td>
<td>-0.023 (0.0024)</td>
<td>-0.018 (0.0023)</td>
<td>-0.021 (0.0022)</td>
<td>-0.019 (0.0020)</td>
</tr>
<tr>
<td>Constant</td>
<td>1.87 (0.16)</td>
<td>1.05 (0.18)</td>
<td>1.94 (0.16)</td>
<td>1.48 (0.15)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GKE</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Used Maria</td>
<td>-0.013 (0.0029)</td>
<td>-0.0024 (0.0027)</td>
<td>-0.014 (0.0027)</td>
<td>-0.0025 (0.0029)</td>
</tr>
<tr>
<td>Ethical concern</td>
<td>-0.024 (0.0029)</td>
<td>-0.18 (0.0028)</td>
<td>-0.019 (0.0028)</td>
<td>-0.018 (0.0030)</td>
</tr>
<tr>
<td>Constant</td>
<td>2.42 (0.17)</td>
<td>2.02 (0.17)</td>
<td>2.18 (0.14)</td>
<td>1.97 (0.14)</td>
</tr>
</tbody>
</table>

The judgments about ethicality, whether Maria is being used, and whether that is an ethical concern. The respondents’ opinions about the ethicality of the three scenarios are in line with their thoughts on legality. For surrogacy, the average on the scale is 45 for Germany and 46 for Spain and higher for the Philippines and the United States at 55 and 62, respectively. For prostitution, Germany has a higher average at 47, mirroring the higher proportion of respondents who believed in legality, with an average of 35 for the Philippines and 38 for Spain and the United States. Finally, for GKE, the averages are 70 for Germany, 63 for the Philippines, 60 for Spain, and 72 for the United States.

Next, we summarize the cross-country opinions on whether Maria was used in each of the scenarios and whether that poses an ethical concern. For the surrogacy scenario, respondents judged that Maria was used an average of 60 on the scale in Germany, 66 in the Philippines, 56 in Spain, and 45 in the United States. On the related question of whether using Maria poses an ethical concern, the numbers are 55, 49, 55, and 40 for the four countries, respectively. For prostitution, respondents in the Philippines more strongly agreed that Maria was used, with an average of 77 compared with 61 for Germany, 63 for Spain, and 64 for the United States. They were also more likely to find it an ethical concern at 74 vs. 50, 62, and 65 for the other three countries, respectively. For GKE, the average response is again highest for the Philippines at 48, while it is 33 for Germany, 36 for Spain, and 30 for the United States. Respondents in all four countries did not find it to be much of an ethical concern, with a 32 average for Germany, 38 for the Philippines, 38 for Spain, and 31 for the United States.

Table 3 shows that the relationship between overall judgment about legality and the judgment on Maria being used as well whether that is an ethical concern varies across the scenarios and countries.

**Discussion**

We have considered three transactions that all involve human bodies (cf. 47). They differ in that (among other things) surrogacy and GKE but not for prostitution. Those who identify as religious devout are less likely to support legality. Descriptively, Americans and Filipinos support legality of prostitution less than Spaniards or Germans (and less than they support surrogacy or GKE), Germans support legal surrogacy less than legal prostitution, and Germans and Spaniards support legal surrogacy and GKE less than Americans or Filipinos.

However, the evidence does not suggest that the disconnect between bans and majority support for legality is due to changes in
over time since support for legality is not correlated with age (i.e., it is unlikely that when the laws were passed, support was below 50% but that it has since risen since we should be able to detect that through different attitudes across age groups).

All three transactions are the subject of current debate in at least one of the countries we surveyed. Based on the results of our surveys, we do not see entrenched popular resistance to either surrogacy or GKE (or simple kidney exchange) where it is presently illegal, and thus, we anticipate that efforts to lift or circumvent current restrictions are likely to be increasingly successful, while efforts to legalize or decriminalize prostitution where it is presently illegal may face greater opposition from the general public.

Understanding these issues is important, not just for the hundreds of Spanish couples stranded outside of Spain while they look for a way to bring their surrogate children home and not just for the people in need of kidney exchange but for whom it is out of reach in Germany or in the Philippines. These issues are also of importance to social scientists in general and economists in particular. When markets enjoy social support, when they are banned, and when, in turn, bans are socially supported are questions that touch upon many transactions, particularly as social and economic interactions are increasingly globalized.

Our findings suggest that the answer to these questions may not be found in general public sentiment in countries that ban markets or legalize them. Rather, we may have to look to the functioning of particular interested groups, perhaps with professional or even religious interests, that are able to influence legislation in the absence of strong views (or even interest) among the general public about the markets in question.##

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*Some Democratic candidates in upcoming elections have positions favoring legalization or decriminalization of prostitution (see, e.g., refs. 48 and 49), while the Fight Online Trafficking Act of 2017 (50) signed into law by President Trump facilitates prosecution. Similarly, debates swirl around surrogacy in New York State (38) and in Spain (51, 52), GKE in Spain and elsewhere (53), and kidney exchange in Germany (54).

*On coalitions of diverse interest groups (see, e.g., ref. 55) and on legislating morality (see, e.g., the debate between refs. 56 and 57 on the appropriateness of having public laws legislate private morality).


