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Cash transfers' effect on government support: the case of Fiji

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While some scholars have found that government post-disaster assistance supports the incumbent, others have shown that incumbent effects among beneficiaries are imperceptible or negative. This article contributes to this debate by using a regression discontinuity design of households affected by Tropical Cyclone Winston in Fiji to show that the type of assistance provided is an important variable in understanding the effects of aid on perceptions of the government. Residents of Fiji who received a post-disaster cash transfer are up to 20 per cent more likely to be very satisfied with the government than are those who did not. The probability further increases if the cash transfer was provided along with in-kind benefits or vouchers, but it is not affected if beneficiaries were also encouraged to use their own pension savings. This paper provides evidence in favour of the 'attentive citizen' theory by demonstrating that beneficiaries actively appraise government responses; it also reveals possible effects of elite capture on the relationship between the government and beneficiaries.

Keywords: cash transfer, elites, Fiji, government support, in-kind benefits, post-disaster, Tropical Cyclone Winston

Introduction

Studies of whether the provision of public aid and relief after catastrophes, such as those brought on by natural hazard events, affect government support have arrived at extraordinarily diverse conclusions. On the one hand, the 'attentive citizen' theory contends that beneficiaries can react rationally in the wake of a natural hazard and ensuing disaster by inferring government competence or redistributive preferences from its response (Drazen and Eslava, 2010; Lazarev et al., 2014). On the other, solid evidence indicates that even among governments that have distributed disaster aid effectively, the impacts on government support are sometimes inexistent or negative (Larreguy et al., 2015; Heersink et al., 2017; Blattman et al., 2018).

This paper explores how evaluations of government performance changed after a post-disaster cash transfer (CT) was provided to residents affected by Tropical Cyclone Winston in 2016 in Fiji. Our contribution is to test whether programme details, such as the type of benefit, matter in explaining differences in views of the government. We explore whether receiving the CT alone or in combination with vouchers, in-kind transfers, or other types of transfers makes a difference in beneficiaries' views of the government. In addition, we explore the effects of aid on support for the government among different elites.

We selected this case because Small Island Developing States such as Fiji are particularly susceptible to climate variability caused by rapid environmental change (Jenkins and Jupiter, 2015). Indeed, Fiji's annual economic losses caused by flooding are expected to increase up to 300 per cent due to climate change in the next 45 years (Brown et al., 2016). As risks of climate change increase around the world, lessons from Fiji could be used to understand political outcomes elsewhere on the planet. Furthermore, this paper could provide valuable information to the government of Fiji, potentially informing the island's efforts to enhance its disaster management capacity, a key area of opportunity (Méheux et al., 2010).

We used regression discontinuity design to randomly select a group of post-disaster CT recipients and a group of non-recipients. Using this specification, we evaluated how beneficiaries' perceptions of the government changed in response to receiving a CT, and whether we could observe changes in their perceptions when a CT was designed to come along with other forms of transfer or aid. In other words, we exploited discontinuities in the probability of treatment to explore the heterogeneous effects of receiving a CT and other types of transfer on beneficiaries' views of government performance.

Our results provide evidence of 'attentive' reactions by beneficiaries after catastrophic events. Even if views of the government were negatively affected by Tropical Cyclone Winston, residents of Fiji who received a post-disaster CT were up to 20 per cent more likely to be very satisfied with the government performance than those who did not receive a CT. The probability of being very satisfied increased further if the CT was provided along with in-kind food or water benefits, or with food or housing vouchers. Interestingly, CTs had no effect if they were provided while policies encouraged beneficiaries to use their own pension savings to cover part of their expenses, and a negative effect if they were delivered by non-government entities rather than by the government itself. Furthermore, we found evidence of possible effects of elite capture on the relationship between the government and beneficiaries. Specifically, our models show that the probability of being satisfied was less likely among 'high' status groups than 'lower' status groups.

Overall, our results make two contributions to the existing literature. First, this paper provides evidence to the debates about the impacts of post-disaster aid by exploring an ignored variable: policy design. We have a limited understanding of how variations in the design of government programmes—that is, the selection of a type of transfer—may create different political effects (Mares and Carnes, 2009; De la O, 2013), particularly in post-disaster settings (Saraçoğlu and Demirtaş-Milz, 2014). Second, this article contributes to a large literature that identifies how the type of aid that is provided may create different outcomes (Currie and Gahvari, 2008; Hidrobo et al., 2014). While several evaluations have been conducted to understand how various types of transfers could create different benefits for their recipients (as measured by key social and economic indicators), we are not aware of any published study that focuses, as this one does, on exploring how policy design may affect beneficiaries' views of the government. Most of the literature about types of transfers

remains focused on understanding changes in consumer utility or in general social outcomes, not on its potential political effects.

Our research is relevant because subjective views of government performance are critical to electoral outcomes and regime stability (Key, 1966; Fiorina, 1981). Individuals tend to use subjective performance perceptions as important indicators in evaluating the incumbents and, thus, in guiding their electoral behaviour (Popkin, 1994; Mares and Carnes, 2009). If varying types of transfer elicit different reactions from beneficiaries, self-interested government actors may be inclined to provide the type of transfer that generates more positive reactions, not necessarily the one that creates better development outcomes. In that sense, the political motivations behind the selection of different forms of benefit could end up defining the policies that ultimately get implemented.

A more detailed description of our analysis and results is provided in the following five sections. The first identifies the most relevant literature in the debate surrounding the effects of aid on government support and clarifies our contribution. The second section explores the context in which this paper was developed: a post-disaster environment in Fiji that witnessed the provision of different forms of government post-disaster assistance. The third section describes our empirical specification, including data and descriptive statistics. The fourth section presents our results, statistical simulations, and additional exercises. Finally, the fifth section offers concluding remarks and proposes avenues for future research.

Disasters and perceptions of the government

The question of how exogenous events such as disasters shape perceptions of governments and, thus, government support is at the heart of a longstanding debate. Initially, the topic fit neatly into 'blind retrospection' and 'responsive electorate' theories (Gasper and Reeves, 2011). Based on these theories, individuals irrationally or blindly attribute blame for their circumstances to politicians (Bodet et al., 2016; Chang and Berdiev, 2015).

Other branches of research soon showed that disasters could test the social contract and shake political structures or empower radical groups (Siddiqi, 2014; 2018), and that aid could change beneficiaries' perceptions (Arceneax and Stein, 2006; Healy and Malhotra, 2009; Gasper and Reeves, 2011; Bechtel and Hainmueller, 2011). In other words, beneficiaries were 'attentive'. They could engage and reward leaders in elections (Finan and Schechter, 2012; Lawson and Greene, 2014; Reeves, 2011; Cole et al., 2012; Lazarev et al., 2014); they could also react rationally to aid by using it as a proxy for evaluating government competence (Drazen and Eslava, 2010; Manacorda et al., 2011).

More recent evidence has displaced the 'attentive citizen' theory, suggesting that the distribution of disaster aid may not benefit, or may negatively affect, governments. Following the 1927 Great Mississippi Flood, votes for incumbent politicians dropped by 10 percentage points in counties that experienced extensive relief efforts

(Heersink et al., 2017). Similarly, in the 2004 summer hurricane season in Florida, voter turnout was lower among households that received aid from incumbent politicians (Chen, 2013). Further research also demonstrates that aid does not necessarily invite partiality, particularly among those who identify with other parties (Malhotra and Kuo, 2008; Chen, 2013).

As we explored whether receiving a combination of cash aid and vouchers, in-kind transfers, or other transfers makes a difference in beneficiaries' perceptions of the government, we teased out a variable that has long been overlooked in the literature: policy design.

The current understanding of how the designs of government programmes affect political variables remains limited (Mares and Carnes, 2009; De la O, 2013), particularly when policies are implemented after a natural hazard event (Saraçoğlu and Demirtaş-Milz, 2014; Tappis and Doocy, 2017). The few existing studies on post-disaster settings explore how CTs and in-kind transfers impact key social and economic indicators, without examining the political consequences of designs.[1]

In-kind transfers are recognised as social welfare maximisers. A government selects the goods for consumption—such as building materials and food—maximising the utility of taxpayers independently of the utility of transfer recipients. In-kind aid is provided because of bureaucratic self-interest, the fear of creating a culture of dependency or 'laziness', or anxiety about losing control (Harvey, 2007; Wright and Winters, 2010; Versluis, 2017). Such aid can be more politically viable to implement, especially among populations that are not eligible for the programmes but pay taxes (De Janvry et al., 1991; Epple and Romano, 1996; Bellemare et al., 2013). And it facilitates targeting by encouraging self-selection into and out of social protection programmes (Nichols and Zeckhauser, 1982; Moffitt, 1983; Alatas et al., 2012).

In post-disaster settings, in-kind aid largely is the norm (Drèze and Sen, 1989; Harvey, 2007; Hanlon et al., 2010). Compared to cash, it has fewer distorting effects on prices (Cunha, 2014); is more desirable in environments of constrained credit or asymmetric information among agents (Currie and Gahvari, 2008); and promotes higher labour supply (Gahvari, 1994). Evidence indicates that in-kind aid effectively increases per capita caloric intake (Hidrobo et al., 2014; Schwab et al., 2013), while vouchers and in-kind food assistance programmes effectively increase household food security in post-emergency settings (Schwab et al., 2013).

Recipients of post-disaster transfers consistently prefer cash for its flexibility and discretion (as there is no need to stand in long distribution lines, for instance) (Versluis, 2014); at the same time, distributors find cash easier and cheaper to transport (Hidrobo et al., 2014; Schwab et al., 2013; Kardan et al., 2010). When implemented at scale, cash has positive indirect market impacts (multiplier effects), injecting liquidity into and helping rebuild the local economy (Bauer et al., 2014; Husain et al., 2014; Davies, 2007; Lehmann and Masterson, 2014).

Operationally, CTs are proven to be cost-effective for implementing agencies and programme recipients (Aker et al., 2016). Compared to CTs, vouchers have a higher cost per beneficiary, increase household savings less effectively, and improve

household asset ownership and dietary diversity and quality similarly (Hidrobo et al., 2014; Tappis and Doocy, 2017). In the Democratic Republic of Congo, for example, voucher households saved less than CT households over the life of an intervention (Aker, 2013).

In general, CTs promote an individual's utility in ways that are efficient and flexible (Currie and Gahvari, 2008). Many theoretical models that focus on beneficiary utility maximisation argue in favour of CTs, contending that only beneficiaries know the best use of their resources.[2] A comprehensive review of 149 impact evaluations shows that most CT programmes meet their primary objectives (Fernald et al., 2012), ranging from health (Gaarder et al., 2010) to education and economic variables. Evidence indicates that CTs improve consumption, reduce poverty, enhance dietary diversity, and even increase human capital investments (Duflo, 2003; Barham and Maluccio, 2009; Baird et al., 2011; Lehmann and Masterson, 2014).

Fiji's case

From 1970 to 2007, Fiji reported at least 124 natural hazard events, of which half were tropical cyclones (Lal et al., 2009). One of the most devastating disasters happened in 1931, when a hurricane and flooding killed at least 225 people (Yeo and Blong, 2010). Tropical Cyclone Winston (TC Winston) struck Fiji as a category 5 tropical cyclone on 20 February 2016, killing 44 people and cutting a swath of destruction across the country.[3] It severely damaged large public buildings (particularly schools) and the power, transportation, and communications infrastructure. The rapid-onset disaster affected the livelihoods of an estimated 485,000 (55 per cent of the population) and damaged or destroyed more than 30,000 households, displacing 130,000 (15 per cent of the population). Total damages were estimated at USD 959 million (World Bank, 2016). Fiji's housing, agriculture, and fisheries sectors were the hardest hit. The housing sector alone accounted for 59 per cent of total damages. The agriculture and fishery sectors, which employ about 70 per cent of the working-age population, accounted for 61 per cent of total losses. Agriculture was expected to recover within three years. In view of the damage to coastal mangrove and coral reef habitats, fisheries were expected to need an additional seven years to recover (World Bank, 2016).

In response to the disaster, the government provided a post-disaster CT (top-up benefit) to beneficiaries of regular CT schemes,[4] in addition to other types of post-disaster assistance (Mansur et al., 2018). The post-disaster CT was equivalent to about three months of the regular CT; it was given to all registered beneficiaries, irrespective of whether they resided in areas that were heavily, lightly, or not affected.[5] Post-disaster CTs were distributed on 18 March 2016, about one month after TC Winston pummelled Fiji (Mansur et al., 2018).

Besides the post-disaster CT, the government provided other forms of assistance that can be broadly divided into three categories: in-kind benefits, vouchers, and special access to savings from public pension funds (Mansur et al., 2018).

In the immediate aftermath of the storm, government relief efforts in the form of in-kind benefits such as food, water, shelter, and other goods were provided as humanitarian aid (Mansur et al., 2018). The transfer of in-kind goods for the replanting of food crops began very soon after the cyclone hit and had to be repeated in some areas due to the heavy flooding caused by a subsequent weaker cyclone. In-kind transfers were distributed primarily by Fiji's government but also by relatives, non-governmental organisations, and the militaries of Australia, France, and New Zealand.

Vouchers for housing and food were also provided. The government introduced the Help for Homes initiative, which provided a total of FJD 70 million (USD 35 million) in vouchers to low-income households that were damaged or destroyed by the cyclone. Eligible households received an electronic card, which permitted them to spend the assistance on essential building materials at designated hardware retailers. The vouchers had to be used for repairs or reconstruction, and the amount depended on the extent of the damage incurred: FJD 1,500 (USD 750) for houses with partial roofing damage; FJD 3,000 (USD 1,500) for houses with extreme roofing damage; and FJD 7,000 (USD 3,500) for houses that were destroyed (Mansur et al., 2018).

Lastly, active members of the Fiji National Provident Fund (a contributory pension programme) located in affected areas were allowed to withdraw up to FJD 1,000 (USD 500), plus an additional FJD 5,000 (USD 2,500). Withdrawals were authorised for a period of 60 days. Within the first two months of the disaster, 170,000 applications were approved, injecting around FJD 250.2 million (USD 125.1 million)—equivalent to 3 per cent of GDP—into the economy (Mansur et al., 2018). This was noteworthy, given the low average balance maintained by active members of the fund. Indeed, more than 75 per cent of current members have less than FJD 10,000 (USD 5,000) in their account (Mansur et al., 2018).

Research design

Our data were collected about four months after the cyclone in the geographic area with the highest concentration of disaster-affected households: the provinces of Ba and Ra[6] on the northern coast of Viti Levu.[7]

We conducted a regression discontinuity design (RDD) to randomly select a representative set of post-disaster CT recipients and non-recipients in affected areas.

Applying an RDD requires two main conditions to be met: (i) a continuous eligibility index, in other words, a continuous measure used to rank the population of interest, such as a poverty index, a test score, or age; and (ii) a clearly defined cut-off score for the index, above or below which the population is classified as eligible for the programme. Our evaluation satisfies both conditions: eligibility for the CT is based on a continuous poverty index, and the threshold level of the poverty index (cut-off score) is used to determine eligibility.

We selected the treatment and control groups from the 20 per cent below and above the eligibility threshold.[8] The decision to limit the sample to 20 per cent below and

above the threshold was based on the distribution of poverty scores. Approximately 50 per cent of the total applicant households were within the 20 per cent cut-off below and above the threshold. One reason for choosing 20 per cent was to have a reasonable sample size while minimising the variation in poverty scores so that the control and treatment groups would remain comparable. As suggested by Cattaneo et al. (2016), it is best to first select observations that are closest to the cut-off of the running variable, which in this case was the poverty score.

The threshold is based on the poverty score, which was calculated using a proxy means test. Using the poverty threshold for the CT, we selected treatment and control groups and expected them to have comparable baseline characteristics. The treatment group comprises the regular CT-accepted households (20 per cent below threshold) in affected areas that received an intervention (top-up benefit in the form of a post-disaster CT) following TC Winston. The control group comprises households in affected areas that did not receive such an intervention.[9]

A total of 2,749 households in cyclone-affected areas applied for a CT in 2015–16 (prior to TC Winston). The distribution of the poverty scores ranged from 260 to 7,083, while the eligibility threshold was set at 1,400. To apply a stringent evaluation criterion, we limited the treatment and control groups to households that had poverty scores below and above the threshold, respectively.

Ultimately, we found and interviewed 733 households, representing 81 per cent of the target households, during the fieldwork. This is considered an excellent result, given the sampling difficulties encountered in the affected regions, where many beneficiaries had been forced to evacuate their homes (such as by staying with relatives or friends). All households were interviewed within a window of three weeks (the majority within two weeks), between 7 June and 1 July 2016.

Our dependent variable—beneficiaries' views of the government's performance—was constructed from household answers to the question: 'On a scale of 1 to 5, with 1 being very bad and 5 being perfect, in your opinion are you satisfied with the government's response to TC Winston?'[10] In our preferred econometric specification, the dependent variable was transformed to take values from 1 to 3, with 1 being 'very bad' or 'bad'; 2 being 'good/OK'; and 3 being 'very good' or 'perfect'. In terms of CT recipient satisfaction, 1 corresponds to 'unsatisfied'; 2 to 'satisfied'; and 3 to 'very satisfied'. For robustness checks, we used the 1–5 specifications. Both specifications show, on average, satisfaction with the government's emergency assistance.[11]

In terms of specification, we first used a one-way treatment threshold and then an interaction with one regressor.

A first specification, which evaluates changes in government approval ratings conditional on being benefited by the post-disaster CT, can identify a local average in treatment effects in the sense of Imbens and Lemieux (2008). Our first specification is given by:

$$Y_i = \beta_0 + \beta_1 x_i + \sum_{k=1}^{K} \beta_{k+1} w_{ik} + e_i$$

Where Y_i is a categorical dependent variable measuring satisfaction with government performance, x_i is different from zero if household *i* receives a post-disaster CT, and w_{ik} is a vector of k variables containing controls.

Since we used an RDD to select the sample, we did not expect that parameter estimates were sensitive to removing or adding controls to the model. Nevertheless, we used controls because adjusting for covariates can increase precision in a linear model. Specifically, adjusting for covariates increases the precision of the estimated treatment effect when these are predictive of the outcome and not correlated with the treatment variable. Controlling for covariates predictive of the outcome does increase efficiency when testing the null hypothesis of no treatment effect following a randomised study. When the sample size is small, it can be very helpful.

We employed an ordinal choice model as our method of analysis. We used an ordered probit, as our dependent variable of interest (beneficiaries' views of the government's performance) was categorical (with either three or five categories) and ordered. We also conducted additional tests with ordered logits.

The second specification focused on the identification of heterogeneous treatment effects within our RDD. Specifically, the heterogeneity of treatment effects pertains to interactions with exogenous observable variables, such as being a beneficiary of additional post-disaster assistance in the form of in-kind benefits, vouchers, or pension savings transfers. We exploited discontinuities in the probability of treatment conditional on receiving bundles of transfers (that is, cash and another benefit). The result is a research design in which Fiji's poverty threshold is an instrumental variable for the treatment status. This specification, which is made explicit in Percoco (2014) and Fuchs-Schündeln and Hassan (2016), has been used in many published papers, such as Duflo (2004) and Becker et al. (2013). We relied on this method to compare average changes in beneficiaries' views of the government for benefits not assigned according to the RDD threshold.

The model is given by the following equation:

$$Y_i = \beta_0 + \beta_1 x_i + \beta_2 z_i + \beta_3 x_1 z_i + \sum_{k=1}^{K} \beta_{k+3} w_{ik} + e_i$$

Where, in addition to the original model, z_i captures those receiving additional post-disaster assistance. Note that β_3 multiplies the interaction term $x_i z_i$ and is the coefficient of interest. The estimate is:

$$\beta_3 = (z_{i,1} - z_{i,0}) - (x_{i,1} - x_{i,0})$$

Three types of post-disaster transfers were evaluated in the model: in-kind, vouchers, and access to public pension savings. We created dummies for each. All models used clustered errors. Table 1 presents the combinations of CTs that were received.

In addition to bundles of transfers, we included an additional, preliminary test for possible effects of elite status on beneficiaries' views of the government. This test was inspired by the work of Takasaki (2011), who showed that, in the short term and

Table 1. Combination of transfers

	Received CT	Did not receive CT
Received in-kind	356	199
Did not receive in-kind	85	26
Received voucher	327	79
Did not receive voucher	114	146
Received access to pension savings	67	37
Did not receive access to pension savings	370	188

Source: authors.

within villages, elite ethnic groups may receive benefits earlier than others after a disaster. He presents his findings as evidence of elite capture or possible corruption in the allocation of aid. Our contribution is to test whether elite status may have an effect on beneficiaries' views of the government, even if aid is not given to elite ethnic groups first. This should be considered preliminarily testing. Following the literature on 'disconfirmation models', according to which beneficiaries' evaluations of the government are largely determined by the differences between performance and expectations, we expected that elites might be less satisfied with the government if, because of elite status and possible capture, they generally have higher expectations of how a government might react to a disaster.

We used two proxies to measure elite status. First, we created a variable indicating whether the ethnic affiliation of the household head was i-Taukei (*elite status*).[12] We consider identification as i-Taukei an indirect measure of elite status because individuals in this group tend to have more access to communal land, something that less favoured ethnic groups do not have (Bardhan and Mookherjee, 2006). In contrast, Indo-Fijians tend to own freehold land. Land rights in Fiji are critical to income and social status (Kumar and Prasad, 2004; Trnka, 2005).

Our second measure of elite status differentiates between elite groups that continue to live in their village (*i-Taukei village*), and elite groups that do not (*i-Taukei not-village*). In other words, this measure considers the difference between two categories of i-Taukei. We make this distinction because the first group has occupancy rights and direct access to productive land, and the latter does not (Jones, 2011).[13]

All of our models have controls for severity of the damage. We used six variables. First, we created a geo-referenced measure of whether a household's nearest market had been closed or made completely inaccessible because of TC Winston (*severity of the damage*) and a dummy for households that did not have a market even before TC Winston (*no market before*). These measures are useful because Winston's devastation had a clear geographical pattern. Moreover, the cyclone scourged the rural areas of Fiji, where average household incomes are lower, housing is less substantial, and agriculture is the main source of income.

We also measured changes in sources of income because of TC Winston (*change in income source*). Households could report that their main source of income was: (1) casual wage income, (2) wages and salary, (3) agricultural income, (4) formal business income, (5) pensions, social transfers, and remittances, (6) other source, or (7) no source of income. The variable takes the value of 1 if the household reported a different main source of income before and after TC Winston, and 0 otherwise.[14]

Changes in housing were measured by a variable indicating whether a household changed the ownership status of its dwelling after TC Winston (*change in housing*). Households could report that they: (1) own the living quarters, (2) rent from a private landlord, (3) rent from the Housing Authority, (4) occupy government or institutional housing, (5) occupy housing by leave of employer, or (6) occupy living quarters some other way. The variable takes the value of 1 if the household reported a different ownership status before and after TC Winston, and 0 otherwise.

Changes in consumption patterns were also measured (*change in consumption*). Households could report that they consumed less expensive food items because of TC Winston. The variable takes the value of 1 if they consumed less expensive food items after TC Winston, and 0 otherwise.

Finally, we measured changes in assets using a ratio of assets lost to total assets owned by the household before TC Winston (*change in assets*). Households could report having a car, a carrier or truck, a fridge, a computer, a video or TV, a radio, a washing machine, a gas stove, an outboard monitor, a boat or canoe, a water pump, and/or a brush cutter. Households also could report if they still had those items after TC Winston. We calculated the ratio by dividing the total items the household reported having after TC Winston by the total items the household reported having before TC Winston.

In addition to these six variables used to control for severity of the damage, and to add further robustness to our model, we created a variable to measure how difficult it was for household members to obtain CTs (*cost of cashing transfer*). To do this, we calculated the cost that each beneficiary had to pay to access the benefit provided. The variable takes values from USD 0 to USD 70 PPP, as reported by individuals themselves.

All our models control for the relevant socioeconomic and status characteristics of the households. This is relevant because the most vulnerable beneficiaries may be prone to evaluating government performance more positively. Economic status, for example, plays an important role in determining how satisfied beneficiaries are with government actions (Veenhoven, 1996; Blanchflower and Oswald, 2004; Ferrer-i-Carbonell and Frijters, 2004; Helliwell and Putnam, 2004). More specifically, Ghatak et al. (2016) show that individuals from affluent households are more likely to prefer cash to in-kind transfers than people from poorer households. In addition, Kelly and Swindell (2002) find that racial minorities tend to be less satisfied with government services. This literature also confirms that positive evaluations are explained by relative income or salary. Easterlin (1974) and Lall et al. (2006) examine determinants of household satisfaction with the duration of water supply. They note that satisfaction with this provision increases as the household's service level improves, relative to that of its reference group. Li et al. (2015) show that people who feel better

off and perceive themselves as high-status, in relative terms, are more satisfied with the anti-corruption performance of the government.

Accordingly, we measured socioeconomic variables that are strongly correlated with income levels, such as the size of the household (number of members, logged: *log household size*), the ratio of children to other household members (*child ratio*), and the age of the household head (*household head age*). While these proxies have limitations, time and budget constraints prevented us from gathering more detailed information on income levels as part of this study.

Finally, we control for beneficiaries' expectations of government actions. An important aspect of the literature is the argument in favour of 'disconfirmation models'. These models cast beneficiaries' evaluations of the government as largely determined by the differences between performance and expectations. In other words, when the service provision is either unexpected or better than expected, citizens' views become more positive (Tversky and Kahneman, 1975; Boulding et al., 1993; Hart and Johnson, 1999). In another example, Montalvo (2009) studies beneficiaries' evaluations of municipal services and finds they were more satisfied with

Table 2. Descriptive statistics

	Received CT	Did not receive CT
Beneficiaries' views of the government		
Very bad	1%	3%
Bad	9%	19%
Good/OK	31%	53%
Very good	32%	25%
Perfect	26%	13%
Controls		
Household head ethnicity is i-Taukei (elite status)	67%	78%
Elite households with occupancy rights (i-Taukei village)	43.3%	54.2
No market access after TC Winston (severity of the damage)	56%	74%
No market access before TC Winston (no market before)	18%	17%
Change in income source after TC Winston (change in income source)	5.9%	8.9%
Change in housing ownership status after TC Winston (change in housing)	87%	89%
Change in consumption after TC Winston (change in consumption)	80%	79%
Percentage of assets lost during TC Winston (change in assets)	11%	15%
Average cost of cashing transfer (cost of cashing transfer)	USD 2.55	0
Average log household size (log household size)	1.43	1.50
% of child members per household (child ratio)	5.6%	7.8%
Average household head age (household head age)	56	50
Households that did not anticipate the government transfer they received (surprise)	50%	0

Source: authors.

municipal services when their experiences were better than expected. As a proxy to control for expectations, we created a dummy variable to identify households that did not anticipate the government transfer they received (*surprise*).

Table 2 provides descriptive statistics conditional on whether the household received the post-disaster CT. Households that received post-disaster CTs expressed higher levels of approval of the government. Specifically, the proportion of households that characterised government efforts as 'perfect' and 'very good' was greater among cash beneficiaries. As expected, controls showed no meaningful differences.

Results

Our results show the impact of post-disaster CTs on beneficiaries' views of government performance. Table 3 lists the results associated with receiving a post-disaster CT. Columns (1) and (2) use a 1-to-3 dependent variable (short), and columns (3) and (4) use a 1-to-5 dependent variable (long). Odd columns show the effect of the post-disaster CT dummy, and even columns list the effect of the post-disaster CT amount.

As predicted by the 'attentive citizen' theory, in all our models, receiving the post-disaster CT significantly increased positive views of government performance. Model 1 shows that those who received the post-disaster CT had significantly more positive views of the government than those who did not. Model 2 reveals that those who received larger post-disaster CTs had more positive views of government performance. Our simulations indicate that for every FJD 10 (USD 5) provided in cash, beneficiaries' positive views of the government increased by 0.4 percentage points. Keeping all variables constant, those who received a post-disaster CT were 20 per cent more likely to describe government performance as 'good' than those who did not. Models 3 and 4 are similar to Models 1 and 2 but have a dependent variable of five levels. Keeping all variables constant, those who received the post-disaster CTs were 12 per cent more likely to rate government performance 'very good' than those who did not.

Our controls are significant for severity of damage and change in consumption, but not for the cost of cashing the transfer, household size, child ratio, age of household head, surprise transfer, or changes in income, housing, or assets. As expected, severity of damage is significantly and negatively related to beneficiaries' views of the government. Changes in consumption show that beneficiaries affected by a disaster had significantly more negative views of the government. Elite status is not significant for the extended form of dependent-variable models. Positive views of the government were less common among i-Taukei households than among those with other ethnic affiliations.

Table 4 presents the results for the second specification (heterogeneous effects). It can help evaluate changes in beneficiaries' views of government performance when cash is provided along with other forms of transfers. Model 1 shows the impact of post-disaster CTs with in-kind transfers, Model 2 with vouchers, and Model 3 with access to public pension funds.

Table 3. Randomised models for citizens' views of the government

	(1) Short	(2) Short	(3) Long	(4) Long
Cash beneficiary	0.5185*** (0.1192)		0.4631*** (0.1096)	
Cash amount		0.0009*** (0.0002)		0.0008*** (0.0002)
Elite status	-0.3367*** (0.1129)	-0.3385*** (0.1129)	-0.0964 (0.1009)	-0.0997 (0.1009)
Severity of the damage	-0.4182*** (0.1088)	-0.4101*** (0.1090)	-0.3244*** (0.0977)	-0.3147*** (0.0980)
No market before	-0.2990** (0.1432)	-0.2827** (0.1429)	-0.2613** (0.1293)	-0.2493* (0.1291)
Change in income source	-0.0418 (0.1868)	-0.0548 (0.1866)	-0.1210 (0.1715)	-0.1286 (0.1715)
Change in housing	0.0835 (0.1478)	0.0786 (0.1478)	0.0536 (0.1358)	0.0492 (0.1357)
Change in consumption	-0.6796*** (0.1404)	-0.6554*** (0.1401)	-0.5831*** (0.1207)	-0.5664*** (0.1207)
Change in assets	-0.0895 (0.1546)	-0.0814 (0.1546)	-0.0755 (0.1426)	-0.0696 (0.1426)
Cost of cashing transfer	-0.0041 (0.0082)	-0.0041 (0.0082)	-0.0008 (0.0075)	-0.0008 (0.0075)
Log household size	0.0207 (0.0891)	0.0266 (0.0892)	0.0158 (0.0809)	0.0225 (0.0809)
Child ratio	0.5156 (0.4510)	0.5144 (0.4513)	0.2929 (0.4100)	0.2895 (0.4100)
Household head age	0.0054 (0.0039)	0.0073* (0.0039)	0.0073** (0.0035)	0.0091*** (0.0035)
Surprise	-0.0847 (0.1201)	-0.0663 (0.1181)	0.0184 (0.1071)	0.0348 (0.1057)
Cut 1	-1.6155*** (0.3569)	-1.5137*** (0.3594)	-2.3688*** (0.3400)	-2.2777*** (0.3422)
Cut 2	-0.3811 (0.3528)	-0.2800 (0.3557)	-1.2264*** (0.3204)	-1.1375*** (0.3231)
Cut 3	–	–	-0.0070 (0.3162)	0.0810 (0.3194)
Cut 4	–	–	0.8680*** (0.3175)	0.9552*** (0.3209)
Observations	632	632	632	632

Notes: *p<0.1; **p<0.05: ***p<0.01. For the long specification (five levels), cases are distributed as follows: 11 for 'very bad'; 87 for 'bad'; 266 for 'good/OK'; 213 for 'very good'; and 154 for 'perfect'. For the short specification (three levels), cases are distributed as follows: 98 for 'very bad' or 'bad'; 266 for 'good/OK'; and 367 for 'very good' or 'perfect'.

Source: authors.

Table 4. Types of transfer

	(1)	(2)	(3)
Cash beneficiary	0.0958 (0.1132)	0.1236*** (0.0217)	0.5274*** (0.0198)
In-kind	-0.0883*** (0.0150)	–	–
Cash*in-kind	0.5042*** (0.0512)	–	–
Voucher	–	0.3477*** (0.0084)	–
Cash*voucher	–	0.3212*** (0.0194)	–
Pension fund access	–	–	-0.0091 (0.0083)
Cash*pension fund access	–	–	-0.0178 (0.0184)
Elite status	-0.3500*** (0.1305)	-0.3767 (0.2329)	-0.3224*** (0.1106)
Severity of the damage	-0.4481*** (0.1112)	-0.4865*** (0.1688)	-0.4332*** (0.0234)
No market before	-0.2931*** (0.0236)	-0.2032 (0.1586)	-0.3048*** (0.0089)
Change in income source	-0.0229 (0.1003)	-0.0055 (0.0438)	-0.0491 (0.1630)
Change in housing	0.0826** (0.0367)	0.1374 (0.1474)	0.0866 (0.1167)
Change in consumption	-0.7562*** (0.0767)	-0.7125*** (0.1082)	-0.6678*** (0.0192)
Change in assets	-0.1175*** (0.0211)	-0.1544*** (0.0068)	-0.0946 (0.1136)
Cost of cashing transfer	-0.0063 (0.0065)	-0.0062 (0.0065)	-0.0046*** (0.0012)
Log household size	0.0155 (0.1514)	-0.0084 (0.0626)	0.0115 (0.0213)
Child ratio	0.5187*** (0.1871)	0.5766*** (0.0615)	0.4794 (0.5011)
Household head age	0.0050*** (0.0007)	0.0037 (0.0027)	0.0053*** (0.0017)
Surprise	-0.0534 (0.0534)	-0.0193 (0.0525)	-0.0863*** (0.0109)
Cut 1	-1.8260*** (0.5271)	-1.7014*** (0.1872)	-1.6301*** (0.3288)
Cut 2	-0.5827 (0.4909)	-0.4313 (0.3133)	-0.3898 (0.3674)
Observations	632	632	628

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors.

Coefficients of the interactions between the post-disaster CTs and other types of post-disaster transfers are significantly positive for in-kind transfers and vouchers but not for access to pension funds. Since we calculated a non-linear model, the treatment effect was not the cross-difference but the difference between two cross-differences. Simulations show that Model 1 (cash with in-kind transfers) yielded the most significant effect, with households 18 per cent more likely to be very satisfied, describing the government's response as 'very good'. Model 2 (cash with vouchers) yields increases of 13 per cent, while the impact in Model 3 (cash with access to public pension funds) is indistinguishable since the joint effect of cash and access to public pension funds is not statistically significant.

In terms of controls, all models show significant severity of damage and change in consumption. For in-kind transfers and public pension funds, no market before and elite status are significant. For in-kind transfers and vouchers, child ratio and changes in assets are significant. Exclusively for in-kind transfers, household head age is significant. Exclusively for public pension funds, surprise and cost of cashing the transfer are significant. Finally, log household size and change in income source are never significant.

Tables 5 and 6 show the results of heterogeneous in-kind transfers and vouchers. We classified post-disaster in-kind transfers into four categories: (1) food and water, (2) shelter and housing, (3) personal items, and (4) productivity assets. We then created a dummy variable to indicate whether the household received each one of these in-kind transfers. Table 5 present the results for each specification. We also created specific dummies for each (voucher beneficiary food and voucher beneficiary housing); Table 6 shows the results for each specification.

In Table 5, the evidence of heterogeneous effects is strong. Simulations based on Model 1 show that providing cash and in-kind food and water yields the largest significant effect, with households 29 per cent more likely to rate government performance 'very good'. Model 4 indicates that providing cash and in-kind productivity items yields an increase of 16 per cent in the probability. The provision of cash and in-kind personal increases the likelihood by 9 per cent (Model 3). Finally, providing in-kind shelter and housing (Model 2) does not improve beneficiaries' views of the government. In Table 6, there are no significant heterogeneous effects for vouchers subclassified by type.

Table 7 lists the results of five different models designed as additional tests. Model 1 shows the impact of the post-disaster CT when market services are disrupted. Model 2 evaluates the impact of actors other than the government (such as non-governmental organisations, the private sector, or other countries) on beneficiaries' views of the government. Models 3 to 5 reveal the impact of elite status on beneficiaries' views of the government.

Column 1 reflects the impact of post-disaster CTs when beneficiaries were not able to spend them. As expected, the joint effect between cash and market disruption is significant. We find that the impact of post-disaster CTs on beneficiaries' views of government performance is highly dependent on the availability of markets. In

Table 5. In-kind transfers

	(1)	(2)	(3)	(4)
Cash beneficiary	-0.1418 (0.4997)	0.4543*** (0.0944)	0.4260*** (0.0720)	0.4483*** (0.0514)
Food/water	-0.3349 (0.3616)	–	–	–
Cash*food/water	0.8017* (0.4404)	–	–	–
Shelter/housing	–	0.1826** (0.0865)	–	–
Cash*shelter/housing	–	0.1758 (0.1323)	–	–
Personal items	–	–	0.2108*** (0.0758)	–
Cash*personal items	–	–	0.2368** (0.1084)	–
Productivity	–	–	–	0.2106*** (0.0393)
Cash*productivity	–	–	–	0.4696*** (0.0568)
Elite status	-0.3522*** (0.1305)	-0.3480** (0.1473)	-0.3547** (0.1509)	-0.3298** (0.1436)
Severity of the damage	-0.4444*** (0.1122)	-0.4787*** (0.1395)	-0.5066*** (0.1390)	-0.4919*** (0.1462)
No market before	-0.3060*** (0.0413)	-0.2671*** (0.0050)	-0.2764*** (0.0292)	-0.3024*** (0.0346)
Change in income source	-0.0129 (0.1103)	-0.0139 (0.1142)	-0.0271 (0.1063)	-0.0644 (0.1031)
Change in housing	0.0862** (0.0375)	0.1242** (0.0486)	0.1199** (0.0505)	0.1121** (0.0514)
Change in consumption	-0.7620*** (0.0786)	-0.7492*** (0.1257)	-0.7448*** (0.1216)	-0.7447*** (0.1437)
Change in assets	-0.1064*** (0.0186)	-0.1387*** (0.0516)	-0.1280** (0.0516)	-0.2094*** (0.0685)
Cost of cashing transfer	-0.0071 (0.0064)	-0.0048 (0.0048)	-0.0080* (0.0049)	-0.0111*** (0.0041)
Log household size	0.0111 (0.1513)	0.0254 (0.1512)	0.0079 (0.1563)	-0.0086 (0.1618)
Child ratio	0.5106** (0.2245)	0.3771* (0.2028)	0.5332*** (0.1658)	0.5687*** (0.1652)
Household head age	0.0048*** (0.0007)	0.0055*** (0.0009)	0.0059*** (0.0008)	0.0058*** (0.0008)
Surprise	-0.0510 (0.0543)	-0.0502 (0.0713)	-0.0380 (0.0747)	-0.0616 (0.0742)
Cut 1	-2.0609** (0.8800)	-1.6062*** (0.5222)	-1.6257*** (0.5301)	-1.6891*** (0.5886)
Cut 2	-0.8118 (0.8392)	-0.3600 (0.4756)	-0.3749 (0.4820)	-0.4288 (0.5359)
Observations	632	632	632	632

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors.

Table 6. Voucher transfers

	(1)	(2)
Cash beneficiary	0.2042** (0.0798)	0.4936** (0.2315)
Food voucher	0.2957*** (0.0510)	–
Cash*food voucher	0.2175 (0.2095)	–
Housing voucher	–	0.3536*** (0.0218)
Cash*housing voucher	–	-0.0197 (0.2798)
Elite status	-0.3231 (0.2104)	-0.3687 (0.2309)
Severity of the damage	-0.4794*** (0.1753)	-0.4538*** (0.1554)
No market before	-0.2653 (0.1819)	-0.2630* (0.1385)
Change in income source	-0.0189 (0.0410)	-0.0382 (0.0432)
Change in housing	0.1162 (0.1372)	0.1448 (0.1335)
Change in consumption	-0.7160*** (0.1039)	-0.6823*** (0.1150)
Change in assets	-0.1114*** (0.0242)	-0.1521*** (0.0110)
Cost of cashing transfer	-0.0078 (0.0064)	-0.0016 (0.0097)
Log household size	0.0008 (0.0623)	-0.0088 (0.0642)
Child ratio	0.5742*** (0.0705)	0.4934*** (0.0502)
Household head age	0.0048 (0.0029)	0.0043* (0.0024)
Surprise	-0.0497 (0.0528)	-0.0820 (0.0972)
Cut 1	-1.7014*** (0.2618)	-1.6196*** (0.2194)
Cut 2	-0.4449 (0.3916)	-0.3721 (0.3370)
Observations	632	630

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors.

Table 7. Additional tests

	(1)	(2)	(3)	(4)	(5)
Cash beneficiary	0.0743 (0.2059)	0.5744*** (0.1224)	0.9243*** (0.2113)	0.7995*** (0.1685)	0.3852*** (0.1396)
Severity of the damage	-0.8329*** (0.1915)	-0.4181*** (0.1092)		-0.3934*** (0.1092)	-0.3966*** (0.1097)
Cash*severity of the damage	0.6003*** (0.2257)	–	–	–	–
In-kind provided by others	–	0.3512 (0.3585)	–	–	–
Cash*in-kind by others	–	-0.7144* (0.4018)	–	–	–
Elite status	-0.3529*** (0.1131)	-0.3509*** (0.1133)	0.0303 (0.1925)	–	–
Cash*elite status	–	–	-0.5521** (0.2288)	–	–
i-Taukei village	–	–	–	0.1766 (0.1675)	–
Cash*i-Taukei village	–	–	–	-0.4662** (0.2073)	–
i-Taukei not-village	–	–	–	0.4268 (0.2839)	0.2972 (0.2682)
Cash*i-Taukei not-village	–	–	–	-0.5249 (0.3554)	-0.0914 (0.3420)
Indo-Fijian	–	–	–	–	-0.0308 (0.1963)
Cash*Indo-Fijian	–	–	–	–	0.5755** (0.2337)
No market before	-0.3239** (0.1440)	-0.2924** (0.1434)	-0.4649*** (0.1044)	-0.3716*** (0.1428)	-0.3174** (0.1445)
Change in income source	-0.0502 (0.1867)	-0.0269 (0.1868)	-0.0186 (0.1860)	-0.0253 (0.0885)	-0.0400 (0.1869)
Change in housing	0.1047 (0.1487)	0.0722 (0.1483)	0.0652 (0.1469)	0.4469 (0.4492)	0.0789 (0.1476)
Change in consumption	-0.6752*** (0.1411)	-0.7268*** (0.1457)	-0.5377*** (0.1260)	-0.6625*** (0.1406)	-0.6555*** (0.1417)
Change in assets	-0.0968 (0.1550)	-0.1124 (0.1554)	-0.1299 (0.1552)	-0.1018 (0.1548)	-0.1098 (0.1558)
Cost of cashing transfer	-0.0048 (0.0081)	-0.0054 (0.0082)	-0.0023 (0.0082)	-0.0027 (0.0082)	-0.0035 (0.0082)
Log household size	0.0217 (0.0890)	0.0321 (0.0895)	0.0232 (0.0892)	-0.0253 (0.0885)	0.0146 (0.0898)

	(1)	(2)	(3)	(4)	(5)
Child ratio	0.4977 (0.4517)	0.5521 (0.4524)	0.5152 (0.4507)	0.4469 (0.4492)	0.4808 (0.4547)
Household head age	0.0056 (0.0039)	0.0052 (0.0039)	0.0058 (0.0039)	-0.3934*** (0.1092)	0.0058 (0.0039)
Surprise	-0.0581 (0.1203)	-0.0636 (0.1206)	-0.1109 (0.1198)	-0.3716*** (0.1428)	-0.0837 (0.1206)
Cut 1	-1.9297*** (0.3786)	-1.6523*** (0.3599)	-1.1950*** (0.3806)	-1.1790*** (0.3570)	-1.3006*** (0.3399)
Cut 2	-0.6840* (0.3732)	-0.4122 (0.3557)	0.0382 (0.3782)	0.0545 (0.3546)	-0.0571 (0.3367)
Observations	632	632	632	632	632

Note: *p<0.1; **p<0.05; ***p<0.01.

Source: authors.

areas with market access, 62 per cent of post-disaster CT beneficiaries had positive views of the government. In areas without access to markets, 53 per cent of post-disaster CT beneficiaries had positive views of the government—almost 10 percentage points lower. Variables such as elite status, no market access before TC Winston, and change in consumption patterns continue to be significant.

Finally, column 2 tests for in-kind transfers provided by entities other than the government, such as non-governmental organisations, the private sector, and other countries. We find that the impact of post-disaster CTs with transfers provided by other organisations had a significant and negative joint effect on positive views of government performance. Specifically, 44 per cent of those who received post-disaster CTs with an in-kind transfer from entities other than the government had positive views of the government. Meanwhile, 57 per cent of those who received post-disaster CTs without an in-kind transfer from such entities had positive views of the government—almost 13 percentage points higher. Simulations show that the joint effect of post-disaster CTs with in-kind transfers from other entities decreases positive views of the government. This indicates that beneficiaries distinguish between aid sources.

Interestingly, columns 3 to 5 show evidence that members of local elites who receive cash are less likely to have positive views of the government than those who do not. The results hold for different specifications of elite status—from the simplest model (column 3), which identifies local elites as i-Taukei, to more complicated models, which equate elites with i-Taukei individuals who live in villages (column 4), or its inverse (column 5). Table 7 also suggests that Indo-Fijians are more satisfied with the government's performance than i-Taukei outside villages, and that i-Taukei outside villages are more satisfied than i-Taukei in villages. This could be evidence that ethnic status, and possibly elite capture and corruption, may have had an effect on beneficiaries' view of the government. These links may reflect a tendency among elite groups to have higher expectations of the government.

Conclusion

This paper provides empirical evidence that different types of transfer may affect beneficiaries' evaluations of government performance in post-disaster contexts. To date, most of the literature has been narrowly focused on understanding how the type of transfer affects consumption patterns and objective measures of well-being. Past scholarship has made little effort to determine how different forms of government intervention may affect how beneficiaries evaluate government performance, especially after a major natural hazard event and rapid-onset disaster. Our contribution begins to fill this research gap.

We collaborated with the Fiji Bureau of Statistics to design our unique survey and to select a representative set of transfer recipients and non-recipients from areas affected by Tropical Cyclone Winston in 2016. Our methods controlled for the severity of damage, socioeconomic status, beneficiaries' expectations of the government, and the magnitude of the transfers.

This paper provides evidence of sustained 'attentive' reactions by beneficiaries. Residents of Fiji who received post-disaster CTs were up to 20 per cent more likely to be very satisfied with the government's performance than those who did not receive a post-disaster CT. The probability of being very satisfied increases if the post-disaster CT is provided along with in-kind food or water benefits or with food or housing vouchers. It is absent when the post-disaster CT is provided with policies that encourage beneficiaries to use their own pension savings to cover part of their recovery costs and is negative if the post-disaster CT is delivered by non-government entities, rather than by the government itself.

Furthermore, we provide evidence of how aid provision could be creating different views of the government among more privileged beneficiaries. In particular, we show that elite groups in Fiji were less likely to have positive perceptions of the government than non-elite groups. Future research along the lines of Takasaki (2011) could help to shed light on the role of ethnic status, elite capture, and possible corruption in this context, and on how these factors can affect the relationship between beneficiaries and governments.

Our results are critical to a more nuanced and deeper understanding of the impacts of disaster relief policies on beneficiaries. At the same time, we should expect that self-interested government actors, in a context of political competition, may pursue policies that maximise voter satisfaction over those that make more socioeconomic sense.

The limitations of our approach partly reflect access constraints. In Fiji, many beneficiaries live in informal settlements or areas with very poor roads, where cyclone damage is usually extensive and assistance inadequate. Hence, it was not possible to conduct interviews in the most remote islands that were severely damaged by TC Winston. As a result, we focused on collecting data on the provinces of Ba and Ra on the northern coast of Viti Levu.

Furthermore, some beneficiaries had not received vouchers when the survey was implemented. Even for those who had received vouchers, construction materials were

not available due to the huge demand and delivery delays. As a consequence, our results for vouchers may be capturing only part of an effect that may be larger.

Finally, further studies could provide additional insight. It would be useful to undertake another survey to test whether views changed since we carried out our study. Similarly, it may be necessary to compare how the government provided aid in the past and how beneficiaries in Fiji perceived that aid. New studies could also help to establish whether other policy design factors could affect beneficiaries' evaluations of government performance—not only in a post-disaster context, but also with respect to cash transfers in general.

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Endnotes

[1] Outside post-disaster settings, most of the literature that explores types of transfer focuses on understanding the differentiated effects that a transfer may have on consumer utility or on general social outcomes (Skoufias et al., 2001; Handa and Davis, 2006; Currie and Gahvari 2008; Cuhna, 2014; Hidrobo et al., 2014; Gentilini, 2015).

[2] Common fears related to providing cash to beneficiaries, such as the fear of misuse, abuse, or the consumption of undesirable goods, have been debunked. It is now well accepted that people tend to spend the additional income from CTs on the goods and services that they need most, rather than on entertainment, tobacco, or alcohol (Evans and Popova, 2017). In the Philippines after typhoon Haiyan, for example, people used CTs to buy food, shelter, agricultural inputs, medicine, school fees, clothing, hygiene products, fishing equipment, and transportation, or to pay their debts (Cabot Venton et al., 2015). Interestingly, it has been proven that providing cash does not constrain the behaviour of the recipients and is effective as a development tool (Currie and Gahvari, 2008).

[3] Fiji is located in the Pacific Islands. It has a population of 910,000 (July 2015 estimate) and a total land mass of 18,274 km^2, consisting of 332 islands, about 110 of which are inhabited. Most of the population resides on the two main islands of Viti Levu and Vanua Levu. Fiji is a middle-income country with a per capita GDP of USD 9,000 PPP (2015 estimate) and a large tourism sector (World Bank, 2016).

[4] Fiji's CT programme is unconditional and targets the poorest 10 per cent of the population through a rigorous assessment process that involves household visits by a social welfare officer from the Department of Social Welfare and proxy means testing to identify households below the targeted threshold. Communities do not participate in aid-allocation decisions. Households receive a lump-sum payment of FJD 600 (USD 300) each month (Méheux et al., 2010).

[5] This decision was driven by the urgent need to respond to the situation, operational constraints (the database did not allow for the disaggregation of beneficiaries by degree of damage sustained in their areas), the fact that current beneficiaries were disadvantaged anyway (even if they happened to be in unaffected areas), and the belief that inter-household sharing of resources would take place (for example, households in non-affected areas would share the transfers with their extended kinship networks in affected areas) (Mansur et al., 2018).

[6] All welfare office databases in the selected districts were included in the evaluation except for Ba. The Ba Department of Social Welfare office is large, with six welfare officers and a senior welfare officer. It was not feasible to manually consolidate files from each of the welfare offices. Accordingly, this study randomly selected three of the six welfare office database sets.

[7] We excluded the island's second largest city (Lautoka) and the provincial capital of Naitasiri (Vunidawa), as both were partially impacted, and it was not possible to determine whether beneficiaries were in an affected area.

[8] To select households from a sample frame, we used two-stage stratified sampling. First, population points were randomly selected using a random start. Then, the same procedure was used to select a target number of households within a population point. Given the risk that beneficiaries had been displaced because of TC Winston and that they could not be tracked to their new locations, a reserve sample was created for each district. The records for each selected, approved beneficiary were checked against the payment spreadsheet held by the Department of Social Welfare and were found, with very few exceptions, to be correct.

[9] The sampling procedure took advantage of two populations for which we had data. The first is regular CT recipients. This population comprises people who had applied for the regular CT in 2015–16 (prior to TC Winston) and whose application had been scored and accepted. This group forms the universe for selecting the treatment group. The second population consists of those who had applied for the regular CT in 2015–16 (prior to TC Winston) and whose application had been scored and declined, but whose records and scores had been kept in the database. This group forms the universe for selecting the control group.

[10] This is not a measure of electoral support and was not supposed to be. Our paper explores subjective views of government performance rather than 'electoral support' in an effort to contribute a more holistic understanding of how a post-disaster CT may affect perceptions of the government. While subjective views of government performance are strong indicators of electoral outcomes (Key, 1966; Fiorina, 1981), they are seldom the only relevant factor. Popkin (1994) and Mares and Carnes (2009) offer interesting discussions about this issue. Beneficiaries' satisfaction with the government is critical, for example, in understanding regime stability (Fiorina, 1981), voter turnout (Nichter, 2008; De la O, 2013), and policy adoption (Alomari et al., 2012).

[11] For the *long* specification (five levels), cases were distributed as follows: 11 for 'very bad'; 87 for 'bad'; 266 for 'good/OK'; 213 for 'very good'; and 154 for 'perfect'. For the *short* specification (three levels), cases are distributed as follows: 98 for 'very bad' or 'bad'; 266 for 'good/OK'; and 367 for 'very good' or 'perfect'.

[12] Other ethnicities reported were almost entirely Indo-Fijian. Only two household heads reported an ethnic affiliation that was *other.* We also constructed a variable that measured the percentage of household members who self-identified as i-Taukei. However, the variable is practically identical to *elite status*.

[13] The current government has acted to reduce the opportunity for elite capture by traditional chiefly hierarchies and to increase opportunity for Fijians (i-Taukei and Indo-Fijians) who do not have a traditional village lifestyle. The political authority of the Great Council of Chiefs, for example, has been abolished (Ratuva and Lawson, 2016).

[14] Since the post-disaster CT was provided to all beneficiaries of the regular CTs (independently of the damage their homes sustained), this control is not affected by the treatment. The same can be said of all the *change* variables, which are discussed below. In any case, and as a measure of robustness, all the models were tested with and without these controls and the results did not change.

References

Aker, J. (2013) *Cash or Coupons? Testing the Impacts of Cash Versus Vouchers in the Democratic Republic of Congo*. CGD Working Paper No. 320. Center for Global Development, Washington, DC.

Aker, J., R. Boumnijel, A. McClelland, and N. Tierney (2016) 'Payment mechanisms and antipoverty programs: evidence from a mobile money cash transfer experiment in Niger'. *Economic Development and Cultural Change*. 65(1). pp. 1–37.

Alatas, V., A. Banerjee, R. Hanna, B. Olken, and J. Tobias (2012) 'Targeting the poor: evidence from a field experiment in Indonesia'. *American Economic Review*. 102(4). pp. 1206–1240.

Alomari, M., P. Woods, and K. Sandhu (2012) 'Predictors for e-government adoption in Jordan: deployment of an empirical evaluation based on a citizen-centric approach'. *Information Technology and People*. 25(2). pp. 207–234.

Arceneaux, K. and R. Stein (2006) 'Who is held responsible when disaster strikes? The attribution of responsibility for a natural disaster in an urban election'. *Journal of Urban Affairs*. 28(1). pp. 43–53.

Baird, S., C. McIntosh, and B. Ozler (2011) 'Cash or condition? Evidence from a cash transfer experiment'. *Quarterly Journal of Economics*. 126(4). pp. 1709–1753.

Bardhan, P. and D. Mookherjee (2006) 'Pro-poor targeting and accountability of local governments in West Bengal'. *Journal of Development Economics*. 79(2). pp. 303–327.

Barham, T. and J. Maluccio (2009) 'Eradicating diseases: the effect of conditional cash transfers on vaccination coverage in rural Nicaragua'. *Journal of Health Economics*. 28(3). pp. 611–621.

Bauer, J., S. Sandström, and H. Audi (2014) *Economic Impact Study: Direct and Indirect Effects of the WFP Value-based Food Voucher Program in Lebanon*. World Food Programme, Beirut.

Bechtel, M. and J. Hainmueller (2011) 'How lasting is voter gratitude? An analysis of the short- and long-term electoral returns to beneficial policy'. *American Journal of Political Science*. 55(4). pp. 852–868.

Becker, S., P. Egger, and M. von Ehrlich (2013) 'Absorptive capacity and the growth and investment effects of regional transfers: a regression discontinuity design with heterogeneous treatment effects'. *American Economic Journal: Economic Policy*. 5(4). pp. 29–77.

Bellemare, M., C. Barrett, and D. Just (2013) 'The welfare impacts of commodity price volatility: evidence from rural Ethiopia'. *American Journal of Agricultural Economics*. 95(4). pp. 877–899.

Blanchflower, D. and A. Oswald (2004) 'Well-being over time in Britain and the USA'. *Journal of Public Economics*. 88(7–8). pp. 1359–1386.

Blattman, C., M. Emeriau, and N. Fiala (2018) 'Do anti-poverty programs sway voters? Experimental evidence from Uganda'. *Review of Economics and Statistics*. 100(5). pp. 891–905.

Bodet, M., M. Thomas, and C. Tessier (2016) 'Come hell or high water: an investigation of the effects of a natural disaster on a local election'. *Electoral Studies*. 43. pp. 85–94.

Boulding, W., A. Kalra, R. Staelin, and V. Zeithaml (1993) 'A dynamic process model of service quality: from expectations to behavioral intentions'. *Journal of Marketing Research*. 30(1). p. 7.

Brown, P., A. Daigneault, and D. Gawith (2017) 'Climate change and the economic impacts of flooding on Fiji'. *Climate and Development*. 9(6). pp. 493–504.

Cabot Venton, C., S. Bailey, and S. Pongracz (2015) 'Value for money of cash transfers in emergencies'. Department for International Development, London.

Cattaneo, M.D., R. Titiunik, G. Vazquez-Bare, and L. Keele (2016) 'Interpreting regression discontinuity designs with multiple cutoffs'. *Journal of Politics*. 78(4). pp. 1229–1248.

Chang, C. and A. Berdiev (2015) 'Do natural disasters increase the likelihood that a government is replaced?'. *Applied Economics*. 47(17). pp. 1788–1808.

Chen, J. (2013) 'Voter partisanship and the effect of distributive spending on political participation'. *American Journal of Political Science*. 57(1). pp. 200–217.

Cole, S., A. Healy, and E. Werker (2012) 'Do voters demand responsive governments? Evidence from Indian disaster relief'. *Journal of Development Economics*. 97(2). pp. 167–181.

Cunha, J. (2014) 'Testing paternalism: cash versus in-kind transfers'. *American Economic Journal: Applied Economics*. 6(2). p. 195.

Currie, J. and F. Gahvari (2008) 'Transfers in cash and in-kind: theory meets the data'. *Journal of Economic Literature*. 46(2). pp. 333–383.

Davies, S. (2007) 'Making the most of it: a regional multiplier approach to estimating the impact of cash transfers on the market'. Concern Worldwide, Lilongwe, Malawi. http://www.cashlearning.org/downloads/resources/documents/concern-malawi_cashtransfers_makingthemostofit1.pdf (last accessed on 30 August 2019).

De Janvry, A., M. Fafchamps, and E. Sadoulet (1991) 'Peasant household behavior with missing markets: some paradoxes explained'. *Economic Journal*. 101(409). pp. 1400–1417.

De la O, A. (2013) 'Do conditional cash transfers affect electoral behavior? Evidence from a randomized experiment in Mexico'. *American Journal of Political Science*. 57(1). pp. 1–14.

Drazen, A. and M. Eslava (2010) 'Electoral manipulation via voter-friendly spending: theory and evidence'. *Journal of Development Economics*. 92(1). pp. 39–52.

Drèze, J. and A. Sen (1989) *Hunger and Public Action*. Clarendon Press, Oxford.

Duflo, E. (2003) 'Grandmothers and granddaughters: old-age pensions and intrahousehold allocation in South Africa'. *World Bank Economic Review*. 17(1). pp. 1–25.

Duflo, E. (2004) 'The medium run effects of educational expansion: evidence from a large school construction program in Indonesia'. *Journal of Development Economics*. 74(1). pp. 163–197.

Easterlin, R. (1974) 'Does economic growth improve the human lot? Some empirical evidence'. *Nations and Households in Economic Growth*. 89. pp. 89–125.

Epple, D. and R. Romano (1996) 'Ends against the middle: determining public service provision when there are private alternatives'. *Journal of Public Economics*. 62(3). pp. 297–325.

Evans, D. and A. Popova (2017) 'Cash transfers and temptation goods'. *Economic Development and Cultural Change*. 65(2). pp. 189–221.

Fernald, L., P. Kariger, M. Hidrobo, and P. Gertler (2012) 'Socioeconomic gradients in child development in very young children: evidence from India, Indonesia, Peru and Senegal'. *Proceedings of the National Academy of Sciences*. 109 (Supplement 2). pp. 17273–17280.

Ferrer-i-Carbonell, A. and P. Frijters (2004) 'How important is methodology for the estimates of the determinants of happiness?'. *Economic Journal*. 114(497). pp. 641–659.

Finan, F. and L. Schechter (2012) 'Vote-buying and reciprocity'. *Econometrica*. 80(2). pp. 863–881.

Fiorina, M. (1981) *Retrospective Voting in American National Elections*. Yale University Press, New Haven, CT.

Fuchs-Schündeln, N. and T. Hassan (2016) 'Natural experiments in macroeconomics'. In J. Taylor and H. Uhlig (eds.) *Handbook of Macroeconomics*. Vol. 2A. Elsevier, Cambridge, MA. pp. 923–1012.

Gaarder, M., A. Glassman, and J. Todd (2010) 'Conditional cash transfers and health: unpacking the causal chain'. *Journal of Development Effectiveness*. 2(1). pp. 6–50.

Gahvari, F. (1994) 'In-kind transfers, cash grants and labor supply'. *Journal of Public Economics*. 55(3). pp. 495–504.

Gasper, J. and A. Reeves (2011) 'Make it rain? Retrospection and the attentive electorate in the context of natural disasters'. *American Journal of Political Science*. 55(2). pp. 340–355.

Gentilini, U. (2015) 'Revisiting the "cash versus food" debate: new evidence for an old puzzle?'. *World Bank Research Observer*. 31(1). pp. 135–167.

Ghatak, M., C. Kumar, and S. Mitra (2016) 'Cash versus kind'. *Economic and Political Weekly*. 51(11). p. 51.

Handa, S. and B. Davis (2006) 'The experience of conditional cash transfers in Latin America and the Caribbean'. *Development Policy Review*. 24(5). pp. 513–536.

Hanlon, J., A. Barrientos, and D. Hulme (2010) *Just Give Money to the Poor*. Kumarian Press, Herndon, VA.

Hart, C.W. and M.D. Johnson (1999) 'Growing the trust relationship'. *Marketing Management*. 8(1). pp. 9–19.

Harvey, P. (2007) 'Cash-based responses in emergencies'. Overseas Development Institute, London.

Healy, A. and N. Malhotra (2009) 'Myopic voters and natural disaster policy'. *American Political Science Review*. 103(3). pp. 387–406.

Heersink, B., B. Peterson, and J. Jenkins (2017) 'Disasters and elections: estimating the net effect of damage and relief in historical perspective'. *Political Analysis*. 25(2). pp. 260–268.

Helliwell, J. and R. Putnam (2004) 'The social context of well-being'. *Philosophical Transactions of the Royal Society B: Biological Sciences*. 359(1449). p. 1435.

Hidrobo, M., J. Hoddinott, A. Peterman, A. Margolies, and V. Moreira (2014) 'Cash, food, or vouchers? Evidence from a randomized experiment in northern Ecuador'. *Journal of Development Economics*. 107. pp. 144–156.

Husain, A., J. Bauer, and S. Sandström (2014) *Economic Impact Study: Direct and Indirect Impact of the WFP Food Voucher Programme in Jordan*. World Food Programme, Amman.

Imbens, G. and T. Lemieux (2008) 'Regression discontinuity designs: a guide to practice'. *Journal of Econometrics*. 142(2). pp. 615–635.

Jenkins, A.P. and S. Jupiter (2015) 'Natural disasters, health and wetlands: a Pacific small island developing state perspective'. In C.M. Finlayson, P. Horwitz, and P. Weinstein (eds.) *Wetlands and Human Health*. Springer, Dordrecht. pp. 169–191.

Jones, P. (2011) 'The rise of the "rural village in the city" and "village cities" in the Pacific region'. Paper presented to the Asia Pacific Network for Housing Research Conference on Neoliberalism and Urbanization in the Asia Pacific, University of Hong Kong, 9 December.

Kardan, A., I. MacAuslan, and N. Marimo (2010) *Evaluation of Zimbabwe's Emergency Cash Transfer (ZECT) Programme: Final Report*. Oxford Policy Management, Concern Worldwide, and World Food Programme.

Kelly, J. and D. Swindell (2002) 'A multiple-indicator approach to municipal service evaluation: correlating performance measurement and citizen satisfaction across jurisdictions'. *Public Administration Review*. 62(5). pp. 610–621.

Key, V. (1966) *The Responsible Electorate: Rationality in Presidential Voting, 1936–1960*. Belknap Press of Harvard University Press, Cambridge, MA.

Kumar, S., and B.C. Prasad (2004) 'Politics of race and poverty in Fiji: a case of Indo-Fijian community'. *International Journal of Social Economics*. 31(5–6). pp. 469–486.

Lal, P.N., R. Singh, and P. Holland (2009) *Relationship between Natural Disasters and Poverty: A Fiji Case Study*. Pacific Islands Applied Geoscience Commission.

Lall, S., A. Suri, and U. Deichmann (2006) 'Household savings and residential mobility in informal settlements in Bhopal, India'. *Urban Studies*. 43(7) pp. 1025–1039.

Larreguy, H., J. Marshall, and L. Trucco (2015) *Breaking Clientelism or Rewarding Incumbents? Evidence from an Urban Titling Program in Mexico*. Working Paper. Harvard University, Cambridge, MA.

Lawson, C. and K. Greene (2014) 'Making clientelism work: how norms of reciprocity increase voter compliance'. *Comparative Politics*. 47(1). pp. 61–85.

Lazarev, E., A. Sobolev, I. Soboleva, and B. Sokolov (2014) 'Trial by fire: a natural disaster's impact on support for the authorities in rural Russia'. *World Politics*. 66(4). pp. 641–668.

Lehmann, C. and D. Masterson (2014) 'Emergency economies: the impact of cash assistance in Lebanon'. August. International Rescue Committee, Beirut. https://www.rescue.org/sites/default/

files/document/631/emergencyeconomiesevaluationreport-lebanon2014.pdf (last accessed on 30 August 2019).

Li, H., H. Xiao, and T. Gong (2015) 'The impact of economic well-being on perceptions of anti-corruption performance: evidence from China'. *Policy and Society*. 34(2). pp. 97–109.

Malhotra, N. and A. Kuo (2008) 'Attributing blame: the public's response to Hurricane Katrina'. *Journal of Politics*. 70(1). pp. 120–135.

Manacorda, M., E. Miguel, and A. Vigorito (2011) 'Government transfers and political support'. *American Economic Journal: Applied Economics*. 3(3). pp. 1–28.

Mansur, A., J. Doyle, and O. Ivaschenko (2018) 'Cash transfers for disaster response: lessons from Tropical Cyclone Winston'. Development Policy Centre, Australian National University, Canberra.

Mares, I. and M. Carnes (2009) 'Social policy in developing countries'. *Annual Review of Political Science*. 12. pp. 93–113.

Méheux, K., D. Dominey-Howes, and K. Lloyd (2010) 'Operational challenges to community participation in post-disaster damage assessments: observations from Fiji'. *Disasters*. 34(4). pp. 1102–1122.

Moffitt, R. (1983) 'An economic model of welfare stigma'. *American Economic Review*. 73(5). pp. 1023–1035.

Montalvo, D. (2009) 'Citizen satisfaction with municipal services'. *AmericasBarometer Insights*. 18. https://www.vanderbilt.edu/lapop/insights/I0818en.pdf (last accessed on 30 August 2019).

Nichols, A. and R. Zeckhauser (1982) 'Targeting transfers through restrictions on recipients'. *American Economic Review*. 72(2). pp. 372–377.

Nichter, S. (2008) 'Vote buying or turnout buying? Machine politics and the secret ballot'. *American Political Science Review*. 102(1). pp. 19–31.

Percoco, M. (2014) 'Regression discontinuity design: when series interrupt'. In M. Percoco (ed.) *Regional Perspectives on Policy Evaluation*. Springer, Heidelberg. pp. 9–20.

Popkin, S. (1994) *The Reasoning Voter: Communication and Persuasion in Presidential Campaigns*. University of Chicago Press, Chicago.

Ratuva, S. and S. Lawson (eds.) (2016) *The People Have Spoken: The 2014 Elections in Fiji*. Australian National University, Acton.

Reeves, A. (2011) 'Political disaster: unilateral powers, electoral incentives and presidential disaster declarations'. *The Journal of Politics*. 73(4). pp. 1142–1151.

Saraçoğlu, C. and N. Demirtaş-Milz (2014) 'Disasters as an ideological strategy for governing neoliberal urban transformation in Turkey: insights from Izmir/Kadifekale'. *Disasters*. 38(1). pp. 178–201.

Schwab, B., A. Margolies, and J. Hoddinott (2013) *Impact Evaluation of Cash and Food Transfers for the Seasonal Emergency Safety Net in Hajjah and Ibb Governorates, Yemen: Endline Report*. International Food Policy Research Institute, Washington, DC.

Siddiqi, A. (2014) 'Climatic disasters and radical politics in southern Pakistan: the non-linear connection'. *Geopolitics*. 19(4). pp. 885–910.

Siddiqi, A. (2018) '"Disaster citizenship": an emerging framework for understanding the depth of digital citizenship in Pakistan'. *Contemporary South Asia*. 26(2). pp. 157–174.

Skoufias, E., S. Parker, J. Behrman, and C. Pessino (2001) 'Conditional cash transfers and their impact on child work and schooling: evidence from the PROGRESA program in Mexico'. *Economia*. 2(1). pp. 45–96.

Takasaki, Y. (2011) 'Do local elites capture natural disaster reconstruction funds?'. *Journal of Development Studies*. 47(9). pp. 1281–1298.

Tappis, H. and S. Doocy (2017) 'The effectiveness and value for money of cash-based humanitarian assistance: a systematic review'. *Journal of Development Effectiveness*. 10(1). pp. 121–144.

Trnka, S. (2005) 'Land, life and labour: Indo-Fijian claims to citizenship in a changing Fiji'. *Oceania*. 75(4). pp. 354–367.

Tversky, A. and D. Kahneman (1975) 'Judgment under uncertainty: heuristics and biases'. In D. Wendt and C. Vlek (eds.) *Utility, Probability and Human Decision Making*. Springer, Dordrecht. pp. 141–162.

Veenhoven, R. (1996) 'Developments in satisfaction-research'. *Social Indicators Research*. 37(1). pp. 1–46.
Versluis, A. (2014) 'Formal and informal material aid following the 2010 Haiti earthquake as reported by camp dwellers'. *Disasters*. 38(s1). pp. s94–s109.
World Bank (2016) 'Post-Cyclone Winston emergency development policy operation'. World Bank Group, Washington, DC.
Wright, J. and M. Winters (2010) 'The politics of effective foreign aid'. *Annual Review of Political Science*. 13. pp. 61–80.
Yeo, S. and R. Blong (2010) 'Fiji's worst natural disaster: the 1931 hurricane and flood'. *Disasters*. 34(3). pp. 657–683.